# LARGE-SCALE RESIDENTIAL DEVELOPMENT FOR ZONES 7, 8 & 9 AT CLONGRIFFIN, DUBLIN 13

## ENVIRONMENTAL IMPACT ASSESSMENT REPORT (EIAR) VOLUME 2: MAIN TEXT

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# Environmental Assessment **Built Environment**

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# 1 Introduction

## 1.1 Overview

This Environmental Impact Assessment Report (EIAR) provides a statement of the effects that the proposed Large-scale Residential Development (LRD) on Zones 7, 8, & 9 at the Clongriffin Lands, Dublin 13 ('the proposed development'), if carried out, would have on the environment.

This EIAR has been prepared in accordance with the provisions of the *Planning and Development Act 2000*, as amended ('PDA 2000'), the *Planning and Development Regulations 2001*, as amended ('PDR 2001') and the relevant guidance documents, as detailed herein.

## 1.2 The Applicant

The Applicant for the proposed development is the Land Development Agency (LDA).

## 1.3 The proposed development

### 1.3.1 Site of the proposed development

The site is located within the administrative boundary of Dublin City Council, and as such is subject to the Dublin City Development Plan 2022-2028 (including adopted variations) (hereafter 'the Development Plan').

The proposed development is located at Clongriffin, Dublin 13 in the northern fringe of Dublin city administrative area, within the Clongriffin/Belmayne and Environs SDRA (refer to **Figure 1.1**). The site is located c. 9.5km north-east of the Dublin City Centre, c. 5km east of the M1/M50 network and adjacent to the administrative boundary with Fingal County Council.

The site occupies a prominent position immediately west of Clongriffin DART Station and forms part of a mixed-use urban quarter that is currently under phased development. The site lies at the edge of the established Belltree and Clongriffin neighbourhoods and represents one of the remaining large sites of development land within this part of a Strategic Development Regeneration Area (SDRA). To the immediate north of the site the permitted residential development (LRD6064/24-S3) is currently under construction.

To the west, the site is bound by the Belltree residential area, beyond which lies Father Collins Park (c. 200m), a significant public open space serving the wider community. To the east, the Clongriffin DART Station provides direct access to Dublin city centre, enhancing the area's connectivity and supporting transit-oriented development. To the south the site is surrounded by the Main Street. Further to the south lies residential and educational facilities such as Grange Community College and Gaelcholáiste Reachrann. The site is c. 350m south of the River Mayne and c. 1.2km west of Baldoyle Estuary.

The wider Clongriffin area has been planned as a high-density, mixed-use urban centre, combining residential, retail, educational, and community facilities within a sustainable urban framework. The site benefits from close proximity to local services such as Grange Community College and Learning Circle Childcare and is within walking distance of retail and community amenities in Clongriffin town centre. The combination of established infrastructure, public transport access, and surrounding green space positions the site as a key component in the continued development and consolidation of the Clongriffin/Belmayne urban area.

### 1.3.2 Overview of the proposed development

The development will consist of the construction of a residential development set out in 3 no. blocks (identified as Zones 7, 8 & 9), ranging in height from 5 to 10 storeys, to accommodate 711 no. apartments in addition to café/restaurant/retail units, community/cultural spaces, and a standalone creche building.

The 3 no. residential buildings are arranged around podium courtyards accommodating communal amenity spaces for future residents. Zone 7 is a 5 to 7 storey block located on Main St., Friar's St., Park St and the under-construction Market St. containing 280 no. apartments. Zone 8 is a 6 to 8 storey block between Main St. and Market St. containing 263 no. apartments. Zone 9 is a 6 to 10 storey block located on Main St., Station Square and Market St. containing 168 no. units.

Car and cycle parking for both residents and visitors is provided below podium and at surface level throughout the scheme. The proposed development includes all site landscaping works, open space, green roofs, lighting, servicing and utilities, signage, and associated and ancillary works, including site development works above and below ground.

The proposed development sits as part of a Masterplan for a wider Clongriffin landbank which includes the under-construction Blocks 5 & 6 to the north of Market Street.

Please refer to the *Planning Report & Statement of Consistency* prepared by Brady Shipman Martin (BSM) and submitted under separate cover for further details of the proposed development.

The site layout is shown on **Figure 1.2.**

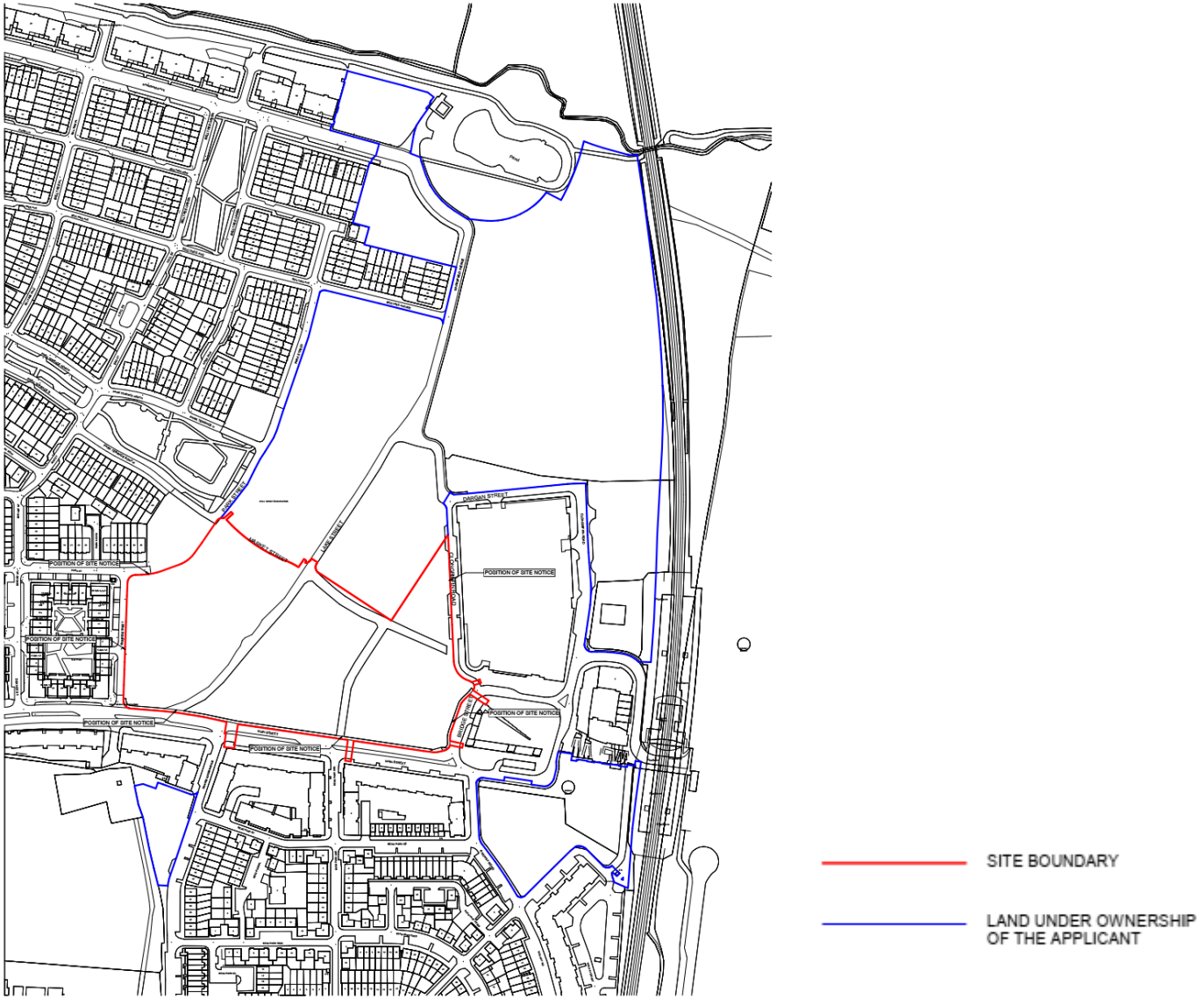



Figure 1.1 The location of the proposed development site (Source: Henry J Lyons Architects, 2026)

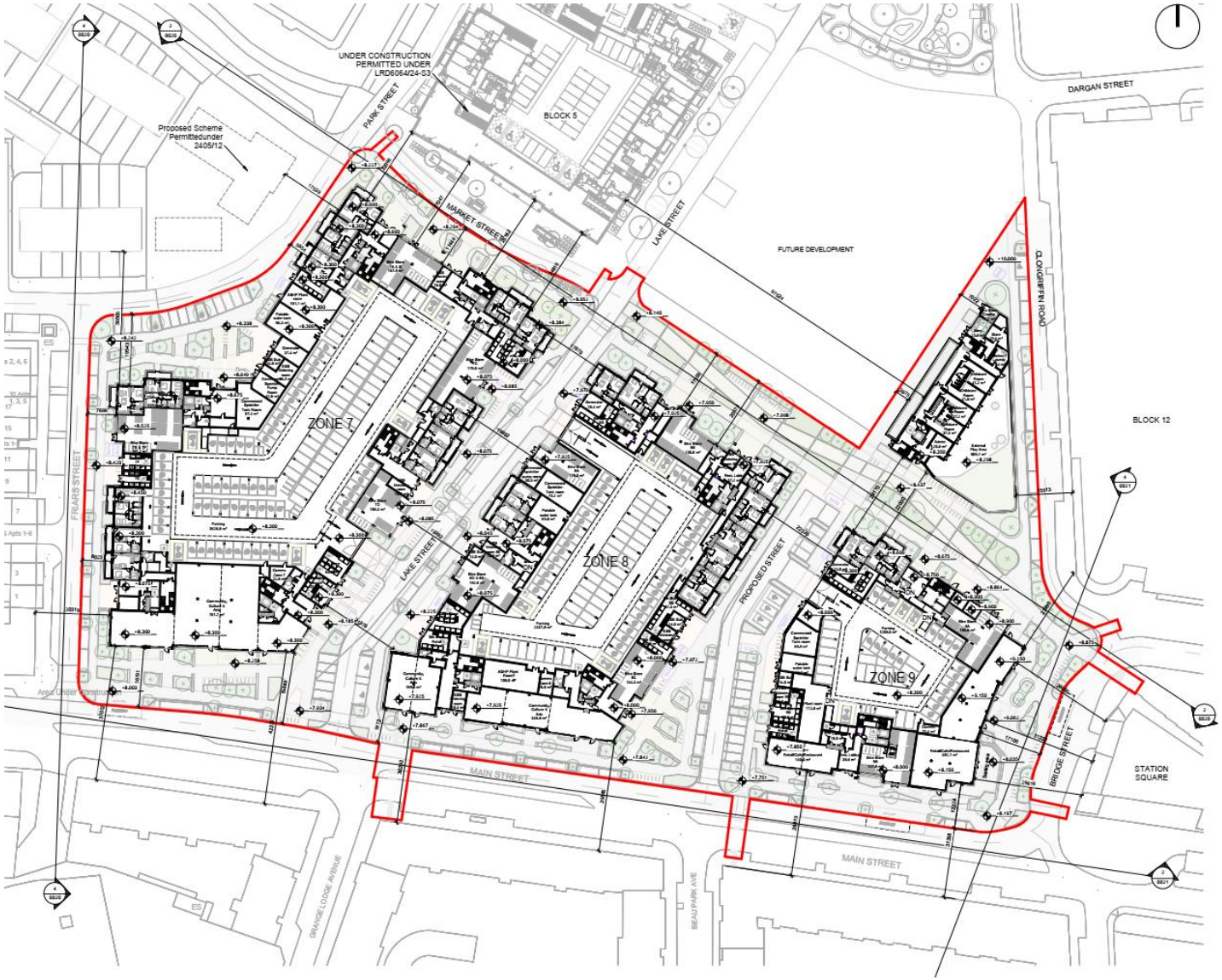



Figure 1.2 Proposed Site Layout (ground floor plan) for the proposed development at Clongriffin, Dublin 13 (Source: Henry J Lyons Architects, 2026)

### 1.3.3 Planning History

The LDA Clongriffin Lands fall within the wider Clongriffin masterplan which was originally granted planning permission in 2003 and was updated in 2018 which formed the basis for the recent SHD Planning Applications. There is a history of previous planning permissions for the lands, all of which have expired. The Planning Report and Statement of Consistency for the proposed development, prepared by BSM (2026) and submitted under separate cover as part of the planning application, details the planning history for the site and the immediate surrounds.

Currently, there is one valid permission that the LDA applied for as part of the Clongriffin Masterplan for Blocks 5 & 6 (DCC Reg. Ref: LRD6064/24-S3). Planning permission was lodged by the Land Development Agency on 16th August 2024 to Dublin City Council under the Large-Scale Residential Development (LRD) process. Permission was sought for a mixed-use residential development comprising two blocks (Blocks 5 and 6) providing a total of 408 apartments.

Block 5 ranges from 3 to 6 storeys and includes 138 apartments (58 one-bed, 78 two-bed, and 2 three-bed units). The block includes 879 sq.m of communal open space (736 sq.m at podium level, including play space, and 143 sq.m at roof level). At ground floor level, 502 sq.m of Community Arts and Cultural space is proposed. Parking provision includes 79 spaces (45 on-site, 34 on-street), 4 motorcycle and 290 bicycle spaces (220 resident, 70 visitor). Ancillary facilities include bin stores, energy centre, plant rooms, an ESB substation, and an on-street loading bay on Park Street.

Block 6 ranges from 4 to 7 storeys and includes 270 apartments (122 one-bed, 148 two-bed units). Communal open space of 2,678 sq.m (including play areas) is provided in a central courtyard at podium level. Ground floor uses include 707 sq.m of Community/Arts and Cultural space and a 413 sq.m childcare facility with an ancillary play area of 125 sq.m. Parking provision includes 181 car spaces (118 on-site, 63 on-street), 9 motorcycle and 568 bicycle spaces (418 resident, 136 visitor, 14 creche). Ancillary facilities include bin stores, energy centre, plant/tank rooms, two ESB substations, and a loading bay on Dargan Street. The development also includes associated public realm and infrastructure works.

Planning permission was granted by Dublin City Council on 27th November 2024 and has an expiry date of 10th January 2030. This permission is currently under construction.

## 1.4 Environmental Impact Assessment

Environmental Impact Assessment (EIA) is the *"process of examining the anticipated environmental effects of proposed project – from consideration of environmental aspects at design stage, through consultation and preparation of an Environmental Impact Assessment Report (EIAR), evaluation of the EIAR by a competent authority, the subsequent decision as to whether the project should be permitted to proceed, encompassing public response to that decision"*, as defined in the Environmental Protection Agency (EPA)'s 2022 *Guidelines on the information to be contained in Environmental Impact Assessment Reports* (Appendices, p. 73) ('the EPA guidelines'). The EIAR is prepared by the developer and is intended to assist the competent authority in carrying out of an EIA by reporting on the effects, if any, which the proposed development if carried out would have on the environment and includes the information specified in Article 5 and Annex IV of the EIA Directive.

An overview of the EIA process and steps involved is provided in Table 1.1. A detailed discussion of the EIA process is provided in Chapter 2.

Table 1.1 Overview of the EIA Process

| Stage | Description | Status |
|---|---|---|
| Screening | *Is an EIA required?* | Yes: Completed |
| Informal Scoping | Informal scoping, which has been considered throughout the preparation of the EIAR, assisted in identifying the significant issues which should be addressed in the EIAR, as well as the methods of carrying out the assessment | Completed |
| EIAR | This stage includes:<br>■ Collection of baseline information<br>■ Analysis of the proposed development<br>■ Assessment of impacts<br>■ Identifying appropriate mitigation and monitoring measures | Completed |
| Review & Decision | The EIAR accompanies the planning application to the planning authority (Dublin City Council) for determination of the application | Current Stage |
| Monitoring | Implementation of the proposed mitigation and monitoring measures | Implemented in case of development consent |

## 1.5 Format & Structure of the Environmental Impact Assessment Report

This EIAR has been completed in accordance with the requirements as set out in the EIA Directive, (2011/92/EU), as amended by Directive 2014/52/EU and relevant guidelines and documentation. The composition of this EIAR is in accordance with EPA Guidelines (2022) which requires that information contained within an EIAR should be in accordance with Article 3(1), Article 5(1) and any additional information specified under Annex IV under the Directive 2014/52/EU. Refer to **Table 1.2** below for the structure of this EIAR.

Table 1.2 Structure of the EIAR

| Section | Description |
|---|---|
| **Volume 1:** | **Non-technical Summary (NTS)** |
| A summary of the EIAR in non-technical language | |
| **Volume 2:** | **Main Report** |
| **Chapter 1** | Introduction |
| **Chapter 2** | The EIA Process |
| **Chapter 3** | Planning & Development Context |
| **Chapter 4** | Consideration of Alternatives |
| **Chapter 5** | Description of the proposed development |
| **Chapter 6** | Consultation |
| **Chapter 7** | Population & Human Health |
| **Chapter 8** | Biodiversity |
| **Chapter 9** | Land, Soils, Geology & Hydrogeology |
| **Chapter 10** | Hydrology |
| **Chapter 11** | Air Quality |
| **Chapter 12** | Climate |
| **Chapter 13** | Noise & Vibration |
| **Chapter 14** | Landscape & Visual |

| | |
|---|---|
| **Chapter 15** | Cultural Heritage, Archaeology & Architectural Heritage |
| **Chapter 16** | Microclimate – Daylight & Sunlight |
| **Chapter 17** | Microclimate – Wind |
| **Chapter 18** | Traffic & Transportation |
| **Chapter 19** | Material Assets – Waste |
| **Chapter 20** | Material Assets – Services |
| **Chapter 21** | Interactions |
| **Chapter 22** | Cumulative Impacts |
| **Chapter 23** | Mitigation Measures & Monitoring |
| **Volume 3:** | **Appendices** |
| Technical reference material supporting the EIAR chapters | |

Article 5(1) and Annex IV of the EIA Directive and Article 94 and Schedule 6 of the PDR 2001 provide details on the information to be included in an EIAR. **Table 1.3** provides a checklist of the information referred to in Article 5(1) of Annex IV and in Article 94 and Schedule 6 of PDR 2001 with a confirmation of where the relevant information is contained within the EIAR.

### Table 1.3 Information required under Article (5)1 of Annex IV of the EIA Directive and Article 94 and Schedule 6 of PDR 2001

| Information Referred to in Article 5(1) of Annex IV of the EIA Directive and Article 94 and Schedule 6 of PDR | EIAR Section |
|---|---|
| 1.Description of the project, including in particular: | |
| (a) a description of the location of the project; | Volume 2, Chapter 1 |
| (b) a description of the physical characteristics of the whole project, including, where relevant, requisite demolition works, and the land-use requirements during the construction and operational phases; | Volume 2, Chapter 1 & Chapter 5 |
| (c) a description of the main characteristics of the operational phase of the project (in particular any production process), for instance, energy demand and energy used, nature and quantity of the materials and natural resources (including water, land, soil and biodiversity) used; | Volume 2, Chapter 5 |
| (d) an estimate, by type and quantity, of expected residues and emissions (such as water, air, soil and subsoil pollution, noise, vibration, light, heat, radiation) and quantities and types of waste produced during the construction and operation phases. | Volume 2, Chapter 5<br>Volume 2, Chapter 7 to 20 |
| 2. A description of the reasonable alternatives (for example in terms of project design, technology, location, size and scale) studied by the developer, which are relevant to the proposed project and its specific characteristics, and an indication of the main reasons for selecting the chosen option, including a comparison of the environmental effects. | Volume 2, Chapter 4 |
| 3. A description of the relevant aspects of the current state of the environment (baseline scenario) and an outline of the likely evolution thereof without implementation of the project as far as natural changes from the baseline scenario can be assessed with reasonable effort on the basis of the availability of environmental information and scientific knowledge. | Volume 2, Chapter 1, Chapter 4, Chapter 7 to 20 |
| 4. A description of the factors specified in Article 3(1) likely to be significantly affected by the project: population, human health, biodiversity (for example fauna and flora), land (for example land take), soil (for example organic matter, erosion, compaction, sealing), water (for example hydromorphological changes, quantity and quality), air, climate (for example greenhouse gas emissions, impacts relevant to adaptation), material assets, cultural heritage, including architectural and archaeological aspects, and landscape. | Volume 2, Chapter 7 to 23 |

| Information Referred to in Article 5(1) of Annex IV of the EIA Directive and Article 94 and Schedule 6 of PDR | EIAR Section |
|---|---|
| 5. A description of the likely significant effects of the project on the environment resulting from, inter alia: | |
| (a) the construction and existence of the project, including, where relevant, demolition works; | Volume 2, Chapter 7 to 23 |
| (b) the use of natural resources, in particular land, soil, water and biodiversity, considering as far as possible the sustainable availability of these resources; | Volume 2, Chapter 7 to 23 |
| (c) the emission of pollutants, noise, vibration, light, heat and radiation, the creation of nuisances, and the disposal and recovery of waste; | Volume 2, Chapter 7 to 23 |
| (d) the risks to human health, cultural heritage or the environment (for example due to accidents or disasters); | Volume 2, Chapter 7, Chapter 15, Chapter 2 (Section 2.5.1) |
| (e) the cumulation of effects with other existing and/or approved projects, taking into account any existing environmental problems relating to areas of particular environmental importance likely to be affected or the use of natural resources; | Volume 2, Chapter 22 |
| f) the impact of the project on climate (for example the nature and magnitude of greenhouse gas emissions) and the vulnerability of the project to climate change; | Volume 2, Chapter 7 to 22 |
| (g) the technologies and the substances used. | Volume 2, Chapter 5 |
| The description of the likely significant effects on the factors specified in Article 3(1) should cover the direct effects and any indirect, secondary, cumulative, transboundary, short-term, medium-term and long-term, permanent and temporary, positive and negative effects of the project. This description should take into account the environmental protection objectives established at Union or Member State level which are relevant to the project. | Volume 2, Chapter 7 to 23 |
| 6. A description of the forecasting methods or evidence, used to identify and assess the significant effects on the environment, including details of difficulties (for example technical deficiencies or lack of knowledge) encountered compiling the required information and the main uncertainties involved. | Volume 2, Chapter 7 to 23 |
| 7. A description of the measures envisaged to avoid, prevent, reduce or, if possible, offset any identified significant adverse effects on the environment and, where appropriate, of any proposed monitoring arrangements (for example the preparation of a post-project analysis). That description should explain the extent, to which significant adverse effects on the environment are avoided, prevented, reduced or offset, and should cover both the construction and operational phases. | Volume 2, Chapter 7 to 23 |
| 8. A description of the expected significant adverse effects of the project on the environment deriving from the vulnerability of the project to risks of major accidents and/or disasters which are relevant to the project concerned. Relevant information available and obtained through risk assessments pursuant to Union legislation such as Directive 2012/18/EU of the European Parliament and of the Council (*) or Council Directive 2009/71/Euratom (**) or relevant assessments carried out pursuant to national legislation may be used for this purpose provided that the requirements of this Directive are met. Where appropriate, this description should include measures envisaged to prevent or mitigate the significant adverse effects of such events on the environment and details of the preparedness for and proposed response to such emergencies. | Volume 2, Chapter 2 (Section 2.5.1), Chapter 7 to 23 |
| 9. A non-technical summary of the information provided under points 1 to 8. | Volume 1 |
| 10. A reference list detailing the sources used for the descriptions and assessments included in the report. | Volume 2, Chapter 7 to 23 |

### 1.5.1 EIAR Chapter Structure

Each of the chapters in Volume 2 of this EIAR, will be generally presented under the following headings:

### Introduction

This section of each chapter provides an overview of aims and objectives of the chapter in assessing the proposed development and outlines the scope of the assessment.

### Method

This section of each chapter provides detail on the guidelines and methodologies used to describe the baseline environmental conditions and to predict likely effects on the environment of the proposed development during both the construction and operational phase. The data and survey requirements along with the study area for each chapter vary depending on the environmental topic and have been chosen by each specialist based on relevant legislation, best practise guidance, policy requirements, and professional judgement.

### Baseline Environment

Each chapter provides a description of the existing environmental conditions, focusing on aspects of the project relevant to the individual assessment. This section describes the findings of the desktop assessment, field surveys and information gained through any consultations carried out.

### Predicted Impacts

The main purpose of the EIAR is to identify, describe and evaluate the likely significant impacts of the proposed development on the environment both during construction and operational phase. Each specialist reviewed the details of the proposed development and along with the baseline information collected, predicted the impacts of the proposed development on the environment.

The EPA Guidance (2022) provides guidance on impact assessment methodology and has been describe further in Section 1.6.

### Mitigation Measures

Each chapter provides a description of any specific mitigation measures envisaged to avoid, prevent, reduce or, if possible, offset any significant adverse effects on the environment identified under the assessment of potential impacts described above. Furthermore, Chapter 23 of the EIAR collates and summarises the mitigation measures that have been identified in the individual chapters.

### Residual Impacts

The residual effects are the final predicted or intended effects which occur after the proposed mitigation measures have been implemented. Each chapter includes a section describing significant residual impacts that will continue to exist after mitigation has been implemented.

### Monitoring

Each chapter includes a description (if any) of the proposed monitoring of effects on the environment which might be necessary, covering the monitoring methods and the agencies responsible for their implementation. Furthermore, Chapter 23 of the EIAR collates and summarises the monitoring measures that have been identified in the individual chapters.

### Interactions

Each chapter of the EIAR provides a description of the key interactions and inter-relationships identified between the topics addressed within this EIAR. Chapter 21 of the EIAR provides an overview of the key interactions identified and addressed in the foregoing chapters of the EIAR.

### Cumulative Impacts

Chapter 22 of the EIAR discusses the potential for cumulative impacts to arise as a result of the proposed development in combination with other projects. Each of the specialist contributors to this EIAR have considered the potential for cumulative impacts to arise, with particular reference to the projects listed in Chapter 22.

### Difficulties Encountered

This section includes any limitations that may affect the reliability of baseline data and include the availability, completeness, accuracy, age and accessibility of data.

### References

Each chapter provides a list of documents and information used to inform the assessment.

## 1.5.2 The Environmental Impact Assessment Team

The EIAR was coordinated by BSM. Various environmental specialists were commissioned to complete the specialist chapters of the EIAR, as required by Directive 2014/52/EU on the assessment of the effects of certain public and private projects on the environment:

> *"Experts involved in the preparation of environmental impact assessment reports should be qualified and competent. Sufficient expertise, in the relevant field of the project concerned, is required for the purpose of its examination by the competent authorities in order to ensure that the information provided by the developer is complete and of a high level of quality."*

A description of experts who have contributed to this EIAR, their qualifications, experience and any other relevant credentials is provided in **Table 1.4.**

Table 1.4 EIAR Contributions

| Name | Company | Role / input | Qualifications |
|---|---|---|---|
| **Thomas Burns** | BSM | EIAR Technical Review | ▪ B.Agr.Sc. (Land.) Dip. EIA Mgmt., Adv. Dip. Plan. & Env. Law<br>▪ Environmental Planner and Landscape Architect<br>▪ Member of Irish Landscape Institute & Irish Environmental Law Association<br>▪ Over 30 years of experience in EIA and LVIA |
| **Pauline Byrne** | BSM | Project Manager | ▪ BSc Mgmt., Adv. Dip. Marketing, MA Regional & Urban Planning<br>▪ Head of Planning<br>▪ Member of Royal Town Planning Institute (MRTPI)<br>▪ Member of Irish Planning Institute (MIPI)<br>▪ Over 25 years of experience |

| | | | |
|---|---|---|---|
| **Sorcha Turnbull** | BSM | Senior Planner | ▪ BSc (Spatial Planning), Dip. EIA Mgmt<br>▪ Associate & Senior Planner<br>▪ Corporate Member of the Irish Planning Institute (IPI) & Associate Member of the Royal Town Planning Institute (RTPI)<br>▪ Over 15 years of experience |
| **Namrata Kaile** | BSM | EIAR Co-Ordinator; Background chapters; Population & Human Health; Material Assets - Services | ▪ BSc Life Sciences, MSc Env. Sciences<br>▪ Environmental Consultant & Ecologist<br>▪ Full Member CIEEM (MCIEEM)<br>▪ Over 6 years of experience |
| **Jade Schanen** | BSM | EIAR Co-Ordinator; Background chapters; Population & Human Health; Material Assets - Services | ▪ BA Mod in Environmental Science<br>▪ Environmental Consultant<br>▪ GradCIWEM<br>▪ Over 2 years of experience |
| **Matthew Hague** | BSM | Biodiversity; Appropriate Assessment Screening | ▪ BSc, MSc, Adv. Dip. Plan. & Env. Law<br>▪ Associate & Senior Ecologist<br>▪ Chartered Environmentalist – CEnv<br>▪ MCIEEM<br>▪ Member of Irish Environmental Law Association<br>▪ Over 20 years of experience |
| **Sadye Goldfarb** | BSM | Biodiversity; Appropriate Assessment Screening | ▪ Bachelor's degree in environmental science and a master's degree in Biodiversity and Conservation from Trinity College Dublin.<br>▪ Ecologist<br>▪ Qualifying Member of the Chartered Institute of Ecology and Environmental Management<br>▪ Over 2 years of experience |
| **Marcelo Allende** | AWN Consulting | Hydrology | ▪ Water Resource Civil Engineering (BEng, Hons), Bachelor of Science in Engineering (BSc, Hons)<br>▪ Principal Environmental Consultant<br>▪ Experienced in environmental investigations, geo-environmental impact assessments, surface and groundwater resource management, hydrological and hydrogeological conceptual and numerical modelling, strategic and site specific flood risk assessments (Stage 1,2 and 3), Due Diligence reporting, baseline studies, soils, surface water and groundwater monitoring and field sampling programmes<br>▪ Over 20 years of experience |

| | | | |
|---|---|---|---|
| **Ana Keeley** | AWN Consulting | Land, Soils, Geology & Hydrogeology; Hydrology | ▪ Environmental Consultant<br>▪ BSc in GeoScience from Trinity College Dublin.<br>▪ Has worked on a range of projects including environmental investigations, environmental impact assessment reports, hydrological risk assessments and ArcGIS mapping.<br>▪ Member of the International Association of Hydrogeologists (Irish Group). |
| **Lee Shelton** | AWN Consulting | Climate | ▪ Principal Environmental Consultant in Air Quality & Climate<br>▪ Chartered Environmentalist with 11 years' experience in environmental assessment<br>▪ BSc (Hons) in Environmental Protection from Scotland's Rural College through the University of Edinburgh. Specialises in in air quality assessment having worked on a number of projects requiring the quantification of emissions specific to local air quality. |
| **Sarah Berry** | AWN Consulting | Climate | ▪ Principal Environmental Consultant in Air Quality & Climate<br>▪ BSc in Physical Geography from the University of Leeds.<br>▪ 9 years' experience in climate change and sustainability, with expertise in greenhouse gas permitting, accounting and verification. |
| **Tanmay Gojamgunde** | AWN Consulting | Air Quality | ▪ MSc (Air Pollution Management and Control) BTECH (Environmental Engineering)<br>▪ Air Quality & Climate Consultant<br>▪ Member Institute of Environmental Sciences (IES)<br>▪ 1 year experience |
| **Alistair Maclaurin** | AWN Consulting | Noise & Vibration | ▪ Alistair Maclaurin (Senior Acoustic Consultant)<br>▪ Holds a BSc in Creative Music and Sound Technology and a Diploma in Acoustics and Noise Control. He is a member of the Institute of Acoustics.<br>▪ Alistair has worked in the field of acoustics since 2012. He has been the lead noise consultant across various sites on major infrastructure projects such as Crossrail and Thames Tideway Tunnel, specialising in construction noise assessment and control.<br>▪ Additionally, he has undertaken various other environmental noise assessments for infrastructure developments and planning reports. |
| **Richard Butler** | Modelworks | Landscape & Visual | ▪ B.L. Arch., MSc,<br>▪ Member of the Irish Landscape Institute and<br>▪ Member of the Irish Planning Institute.<br>▪ 30 years' experience in development and environmental planning, specialising in Landscape Townscape and Visual Impact Assessment (LVIA). |

| | | | |
|---|---|---|---|
| **Faith Bailey** | IAC Archaeology | Cultural Heritage | ▪ MA Cultural Landscape Management, BA (Hons) Archaeology<br>▪ Senior Archaeological and Cultural Heritage Consultant<br>▪ Licence eligible archaeologist, MIAI, MCIfA<br>▪ Over 21 years experience in the compilation of EIARs and assessments regarding the archaeological and cultural heritage resource, for all types of development nation-wide. |
| Ashish Nautiyal, | O'Connor Sutton Cronin | Microclimate – Daylight/ Sunlight & Microclimate - Wind | ▪ Senior Energy & Sustainability Engineer<br>▪ B.Tech. (Hons) in Mechanical Engineering and over<br>▪ 10 years' experience in the design and supervision of Energy & Sustainability services |
| Fionnán Burke | | Traffic & Transportation | ▪ Civil Engineer<br>▪ BSc and ME degrees in Civil, Structural, and Environmental Engineering<br>▪ Chartered Engineer, accredited by the Institute of Engineers of Ireland.<br>▪ 5 Years Experience |
| **Chonaill Bradley** | AWN Consulting | Material Assets - Waste | ▪ Bsc ENV,PG Dip Circ Econ<br>▪ Principal Environmental Consultant<br>▪ AssocCIWM<br>▪ 10+ Years Experience |

## 1.6 Impact Assessment Methodology

The impact assessment methodology is detailed in respect of the various environmental topics in the respective chapters herein. The assessment of impacts is based on the source-pathway-receptor model, which dictates that, for an environmental impact to occur, there must be a source, a receptor which is sensitive to the effect in question, and a pathway by which the effect can reach the receptor. Unless otherwise stated, effects/impacts will be described and characterised in accordance with the terminology and criteria set out in the EPA Guidance (as set out in **Table 1.5**). The significance of an impact is determined through comparison of the character of the predicted effect to the sensitivity of the environment / receptor in question (Error! Reference source not found.**Figure 1.3**).

Table 1.5 Description of effects (EPA, 2022)

| Criteria | Definition |
|---|---|
| Quality of Effects | |
| **Positive** | A change that improves the quality of the environment (for example, by increasing species diversity, improving reproductive capacity of an ecosystem, removing nuisances or improving amenities). |
| **Neutral** | No effects or effects that are imperceptible, within normal bounds of variation or within the margin of forecasting error. |
| **Negative / adverse** | A change that reduces the quality of the environment (for example, lessening species diversity, diminishing the reproductive capacity of an ecosystem, damaging health / property or causing nuisance). |

| Criteria | Definition |
|---|---|
| **Significance of Effects** | |
| Imperceptible | An effect capable of measurement but without significant consequences. |
| Not significant | An effect that causes noticeable changes in the character of the environment but without significant consequences. |
| Slight | An effect that causes noticeable changes in the character of the environment without affecting its sensitivities. |
| Moderate | An effect that alters the character of the environment in a manner that is consistent with existing and emerging baseline trends. |
| Significant | An effect that, by its character, magnitude, duration or intensity alters a sensitive aspect of the environment. |
| Very significant | An effect that, by its character, magnitude, duration or intensity significantly alters most of a sensitive aspect of the environment. |
| Profound | An effect that obliterates sensitive characteristics. |
| **Extent and Context of Effects** | |
| Extent | The size of the area, number of sites, or proportion of a population affected by an effect. |
| Context | Describes whether the extent, duration, or frequency will conform or contrast with established (baseline) conditions (i.e. *is it the biggest, longest effect ever?*) |
| **Probability of Effects** | |
| Likely | The effects that can reasonably be expected to occur because of a proposed development if all mitigation measures are properly implemented. |
| Unlikely | The effects that can reasonably be expected not to occur because of a proposed development if all mitigation measures are properly implemented. |
| **Duration, Reversibility & Frequency** | |
| Momentary | Effects lasting from seconds to minutes. |
| Brief | Effects lasting less than a day. |
| Temporary | Effects lasting less than a year. |
| Short-term | Effects lasting one to seven years. |
| Medium-term | Effects lasting seven to fifteen years. |
| Long-term | Effects lasting fifteen to sixty years. |
| Permanent | Effects lasting over sixty years. |
| Reversible | Effects that can be undone (for example, through remediation or restoration). |
| Frequency | How often the effect will occur (e.g. once, rarely, occasionally, frequently, constantly, hourly, daily, weekly, monthly, annually, etc.). |
| **Type of Effects** | |
| Indirect / secondary | Impacts that are not a direct result of a proposed development, often produced away from the site or because of a complex pathway. |
| Cumulative | The addition of many minor or significant effects, including effects of other plans and / or projects, to create larger, more significant effects. |
| Do-nothing | The environment as it would be in the future should the proposed development not be carried out. |
| Worst-case | The effects arising from a proposed development in the case where mitigation measures substantially fail. |
| Indeterminable | When the full consequences of a change in the environment cannot be described. |
| Irreversible | When the character, distinctiveness, diversity or reproductive capacity of an environment is permanently lost. |
| Residual | The effect that will occur after the proposed mitigation measures have been implemented. |

| Criteria | Definition |
|---|---|
| Synergistic | Where the resultant effect is of greater significance than the sum of its constituents (e.g. combination of $SO_x$ and $NO_x$ to produce smog). |

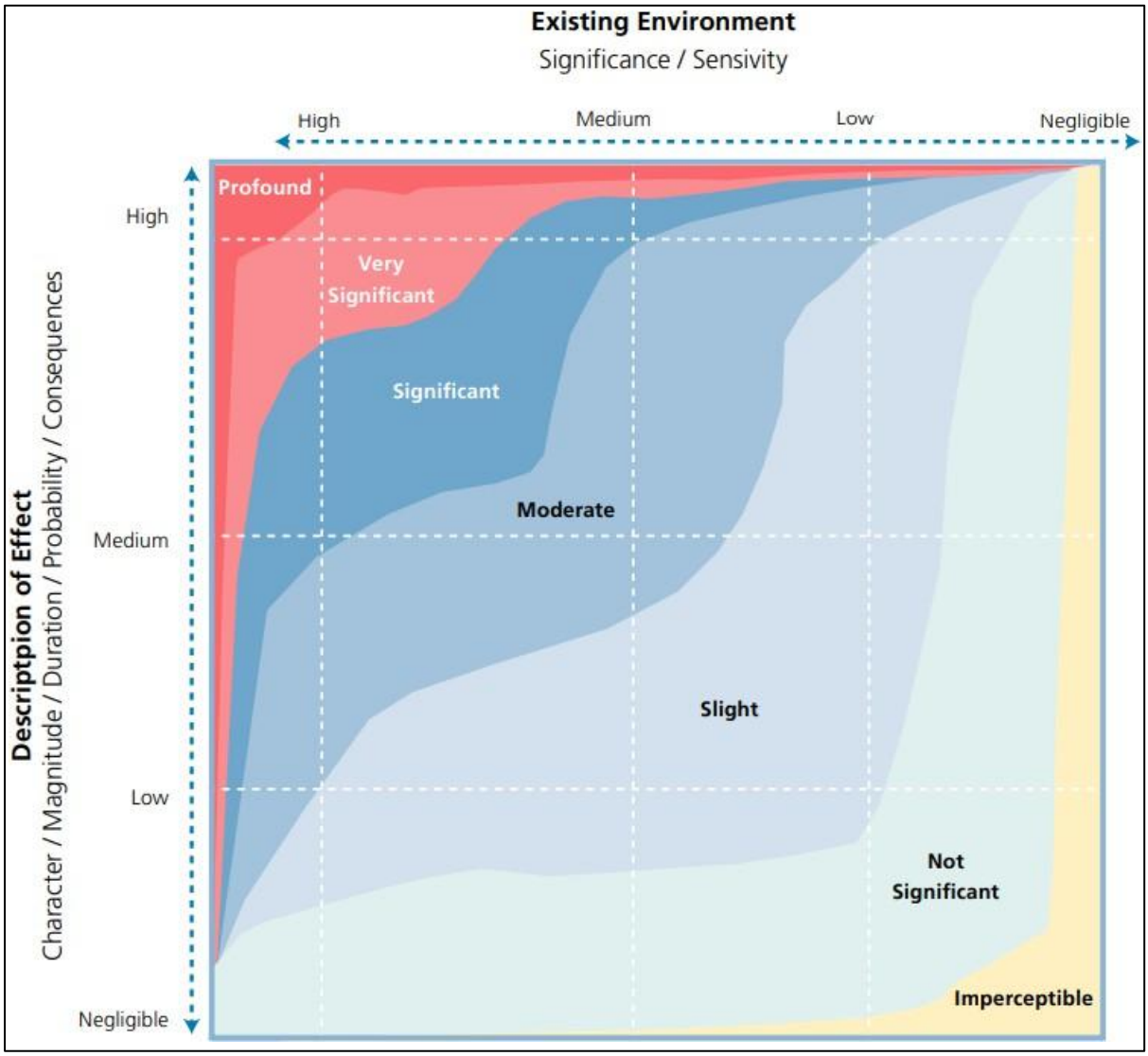



Figure 1.3 Determination of significance of effect (EPA, 2022)

# 2 The Environmental Impact Assessment (EIA) Process

## 2.1 Legislation

The EIA Directive is the cornerstone of EIA legislation. It aims to ensure a high level of protection for the environment and human health and provides for public participation in relation to development consent and environmental matters. It requires that an assessment of the 'likely significant effects' a proposed development will have on the environment is carried out, where relevant, before development consent is given.

The EIA Directive entered into force in 1985 (Directive 85/337/EEC). It was amended three times (in 1997, 2003 and 2009) and subsequently replaced and codified by Directive 2011/92/EU, which was itself amended in 2014 by Directive 2014/52/EU ('the amending Directive'). The EIA Directive is transposed into Irish legislation by the PDA 2000, the PDR 2001 and the European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018.

## 2.2 Guidelines

This EIAR has been prepared in accordance with the aforementioned legislative provisions and the following guidelines, among others, as specified in the various specialist EIAR chapters:

- EPA (2022). *Guidelines on the information to be contained in Environmental Impact Assessment Reports;*
- EC (2017). *Environmental Impact Assessment of Projects. Guidance on the preparation of Environmental Impact Assessment Report*;
- EC (2017). *Environmental Impact Assessment of Projects. Guidance on Scoping*;
- EC (2017). *Environmental Impact Assessment of Projects. Guidance on Screening*;
- Department of Housing, Planning and Local Government (DHPLG) (2019). *Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment;*
- DHPLG (2017). Circular letter PL 1/2017 – Advice on Administrative Provisions in Advance of Transposition;
- European Commission (EC) (1999). *Guidelines for the Assessment of Indirect and Cumulative Impacts as well as Impact Interactions;*
- EC (2013). *Guidance on Integrating Climate Change and Biodiversity into Environmental Impact Assessment.*

## 2.3 The EIA Process

EIA is the process of identifying, describing and assessing in an appropriate manner, the anticipated effects of a proposed project on the environment. It is defined in the amended Directive 2014/52/EU as follows:

> *"Environmental impact assessment means a process consisting of:*
>
> *(i) the preparation of an environmental impact assessment report by the developer, as referred to in Article 5(1) and (2);*
>
> *(ii) the carrying out of consultations as referred to in Article 6 and, where relevant, Article 7; the examination by the competent authority of the information presented in the environmental impact assessment report and any supplementary information*

*provided, where necessary, by the developer in accordance with Article 5(3), and any relevant information received through the consultations under Articles 6 and 7;*

*(iii) the reasoned conclusion by the competent authority on the significant effects of the project on the environment, taking into account the results of the examination referred to in point*

*(iv) and, where appropriate, its own supplementary examination; and*

*(v) the integration of the competent authority's reasoned conclusion into any of the decisions referred to in Article 8a."*

In this case, 'the developer' refers to the Applicant, and 'the competent authority' refers to the planning authority, i.e. Dublin City Council in this instance. It is important to emphasise that 'EIA' refers to the overall process of Environmental Impact Assessment, as defined above and illustrated in **Figure 2.1,** below.

The EIAR is prepared by the Applicant and submitted to the competent authority as part of the development consent process, i.e. as part of the planning application.

The EIAR entails a systematic analysis and assessment of the potential environmental effects of a proposed development on its receiving environment. Article 3(1) of the amended Directive prescribes matters that must be identified, described and assessed in the EIA process. The range of environmental topics that must be addressed in the EIAR, are set out in Article 5 and Annex IV.

Article 3 states as follows-

*"The environmental impact assessment shall identify, describe and assess in an appropriate manner, in the light of each individual case, the direct and indirect significant effects of a project on the following factors:*

*(a) population and human health;*

*(b) biodiversity, with particular attention to species and habitats protected under Directive 92/43/EEC[1] and Directive 2009/147/EC[2];*

*(c) land, soil, water, air and climate;*

*(d) material assets, cultural heritage and the landscape;*

*(e) the interaction between the factors referred to in points (a) to (d)[3]."*

Article 5(1) provides a non-exhaustive list of information that the EIAR shall contain, as follows:

*"… the developer shall include at least:*

*(a) a description of the project comprising information on the site, design, size and other relevant features of the project;*

*(b) a description of the likely significant effects of the project on the environment;*

*(c) a description of the features of the project and/or measures envisaged in order to avoid, prevent or reduce and, if possible, offset likely significant adverse effects on the environment;*

[1] Directive 92/43/EEC on the conservation of natural habitats and wild fauna and flora ('the Habitats Directive')
[2] Directive 2009/147/EC on the conservation of wild birds ('the Birds Directive')
[3] Refer to Chapter 19 (Interactions)

*(d) a description of the reasonable alternatives studied by the developer, which are relevant to the project and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the project on the environment;*

*(e) a non-technical summary of the information referred to in points (a) to (d); and*

*(f) any additional information specified in Annex IV relevant to the specific characteristics of a particular project or type of project and to the environmental features likely to be affected."*

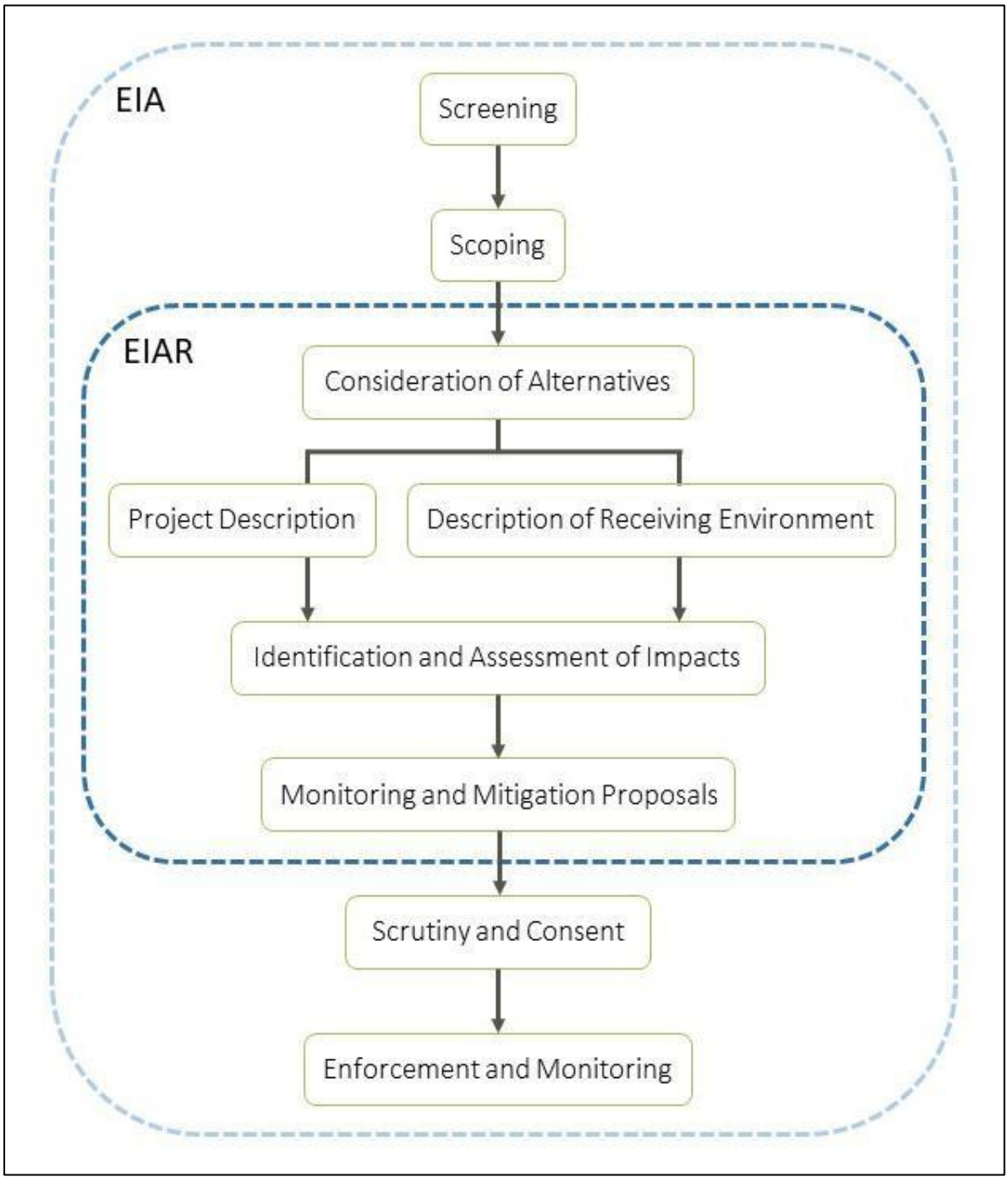



Figure 2.1 The EIA Process (EIA, 2022)

Where significant effects (as per the definition provided in **Table 1.5**) are identified during the preparation of an EIAR, it may be possible for these to be avoided or minimised through design changes ('mitigation by design') or through the identification of mitigation measures.

The EIA process may be summarised as follows:

- **Screening**: The process of determining whether a proposed development should be subject to EIA;
- **Scoping**: The process of identifying the topics that should be addressed in the EIAR as well as the methods to do. This can be informal and is considered throughout the preparation of the EIAR;
- **Consideration of Alternatives**: The presentation and consideration of the various reasonable alternatives at several key stages during the EIA process;
- **Description of the receiving environment**: This stage aims to establish a robust baseline (a description of the environmental characteristics of the receiving environment plus any relevant trends in status), utilising a review of existing available information and undertaking surveys and analyses, where appropriate;
- **Impact assessment**: The primary purpose of the EIAR is to identify, describe[4] and present an assessment of the likely significant impacts of a proposed development on the environment;
- **Mitigation**: Where appropriate, mitigation measures are identified to avoid, prevent, reduce or offset any likely significant negative effects identified during the preparation of the EIAR or as part of the consultation process; as well as any proposed monitoring arrangements;
- **Consultation**: With statutory bodies, the public and other stakeholders, as appropriate;
- **Decision**: The competent authority (Dublin City Council, in this case) decides, in the context of other considerations (including the outcomes of the consultation process), whether development consent should be granted;
- **Implementation and monitoring/ enforcement of conditions of development consent**: Assuming the development is permitted, the schedule of environmental commitments (including the mitigation and monitoring measures set out in the EIAR and any additional environmental conditions of the development consent) needs to be implemented.

## 2.4 EIA Screening

Screening is the initial stage in the EIA process, where a decision is made as to whether an EIA is required for the development in question.

The amended Directive specifies the classes of project for which an EIA is required by default. In accordance with Article 4(1), all projects listed in Annex I are considered as having significant effects on the environment and shall be subject to EIA. For projects listed in Annex II of the Directive, the Member States may determine whether an EIA is needed, either on the basis of thresholds/criteria or case-by-case examinations. These Annexes have been transposed into Irish law by the provisions of the PDA 2000 and the PDR 2001.

Parts 1 and 2 of Schedule 5 of the PDR 2001 list the classes of development for which EIA is required by default. In Part 1, major project classes (including industrial, chemical, energy, waste, infrastructural and intensive agricultural projects) are identified for the purposes of mandatory EIA. In Part 2, specific thresholds are cited; EIA is a requirement for projects of a class listed here that also meet or exceed the

[4] In accordance with the criteria set out in **Table 1.5** of this EIAR / Table 3.4 of the EPA guidelines

corresponding threshold (e.g. wind farms "*with more than 5 turbines or having a total output greater than 5 megawatts*").

The proposed development is not of a class of development listed in Part 1 of Schedule 5 of the PDR 2001 and, therefore, EIA is not a statutory requirement under this provision. However, the proposed development (Phase 2) does correspond with the classes of development listed in paragraphs 10(b)(i) and 10(b)(iv) of Part 2 of Schedule 5 of the PDR 2001 and exceeds the thresholds specified in relation to Class 10(b)(i) of development. When considered together with Phase 1 (Blocks 5 & 6, permitted under DCC Ref.: LRD6064/24-S3), the gross quantum of development also exceeds the thresholds specified in relation to Class 10(b)(i) of development, as detailed in **Table 2.1**, below. **Figure 2.2** below provides an overview for the phasing strategy for the overall Clongriffin masterplan lands, including the future development areas.

Therefore, under the provisions of the Section 176 PDA and Schedule 5 of PDR 2001, EIA is a statutory requirement for the proposed development, and the Applicant is required to prepare an EIAR.

Table 2.1 Statutory requirements for EIA under Part 2 of Schedule 5 of the PDR 2001

| Provision (Part 2 of Schedule 5 of PDR 2001) | proposed development (Phase 2 – Zones 7,8 &9) | Previously permitted development (Phase 1- Blocks 5 & 6) |
|---|---|---|
| Paragraph 10(b)(i):<br>*"Construction of more than 500 dwelling units."* | 711 no. units | Phase 1- 408 no. units permitted by Dublin City Council (DCC Ref. LRD6064/24-S3) |
| Paragraph 10(b)(iv):<br>*"Urban development which would involve an area greater than 2 hectares in the case of a business district, 10 hectares in the case of other parts of a built-up area and 20 hectares elsewhere."*[5] | c. 3.42 Ha | Phase 1- c. 2.2 Ha permitted by Dublin City Council (DCC Ref. LRD6064/24-S3) |

[5] Where 'business district' refers to a district within a city or town in which the predominant land use is retail or commercial use.

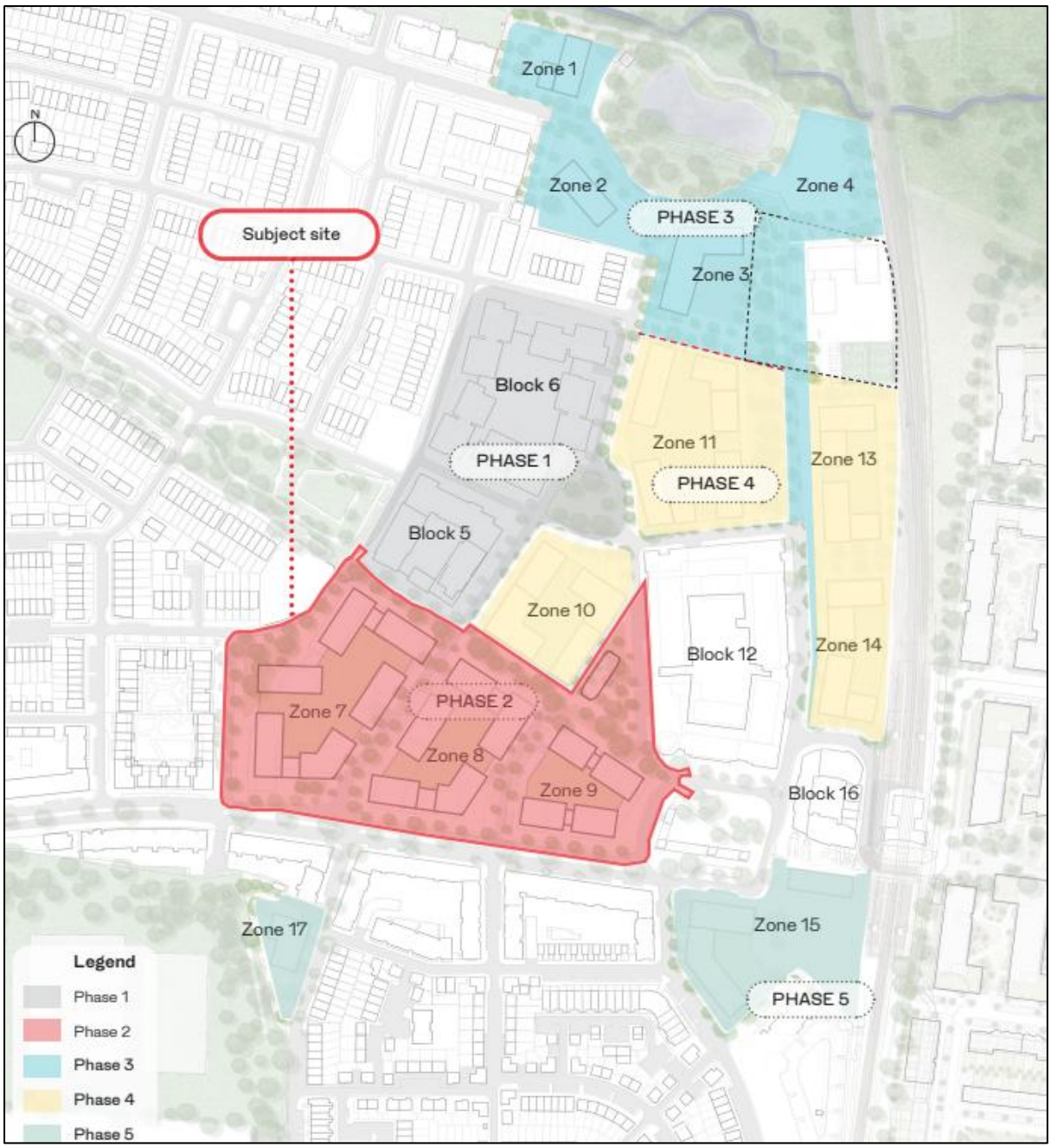



Figure 2.2 Phasing strategy for the overall Clongriffin masterplan lands, including future development areas (Source: HJL Architects, 2026)

## 2.5 EIA Scoping (Informal)

The scoping stage of the EIAR is a process of determining the content and extent of the matters which should be covered in the environmental information to be submitted in the EIAR. Scoping requires the consideration of the nature and likely scale of the potential environmental impacts likely to arise from a proposed development or project. It is an iterative process that is ongoing throughout the development of the EIAR. Although Scoping can be considered as a discrete stage in the EIA process, one which ends with the issuing of the terms of reference for the EIA Report, the activity of Scoping continues throughout, so that the scope of work can be amended in light of new issues and new information during the process or as a result of design changes or through consultations, to be

incorporated. The following topics, which include those stipulated in the amended Directive, have been scoped in for this assessment:

- Population and Human Health;
- Biodiversity;
- Land, Soils, Geology and Hydrogeology;
- Hydrology;
- Air Quality;
- Climate;
- Noise and Vibration;
- Landscape and Visual;
- Cultural Heritage, Archaeology & Architectural Heritage;
- Microclimate - Daylight and Sunlight;
- Microclimate - Wind
- Traffic and Transportation;
- Material Assets - Waste;
- Material Assets - Services; and
- Interactions between the above-listed topics

### 2.5.1 Major Accidents & Disasters

Reflecting the requirement set out in Article 3(2), Annex IV.8 requires that an EIAR shall provide-

> *"A description of the expected significant adverse effects of the project on the environment deriving from the vulnerability of the project to risks of major accidents and/or disasters which are relevant to the project concerned. Relevant information available and obtained through risk assessments pursuant to Union legislation such as Directive 2012/18/EU of the European Parliament and of the Council (*) or Council Directive 2009/71/Euratom (**) or relevant assessments carried out pursuant to national legislation may be used for this purpose provided that the requirements of this Directive are met. Where appropriate, this description should include measures envisaged to prevent or mitigate the significant adverse effects of such events on the environment and details of the preparedness for and proposed response to such emergencies."*

Further recital 15 states that –

> *"(15) In order to ensure a high level of protection of the environment, precautionary actions need to be taken for certain projects which, because of their vulnerability to major accidents, and/or natural disasters (such as flooding, sea level rise, or earthquakes) are likely to have significant adverse effects on the environment. For such projects, it is important to consider their vulnerability (exposure and resilience) to major accidents and/or disasters, the risk of those accidents and/or disasters occurring and the implications for the likelihood of significant adverse effects on the environment. In order to avoid duplications, it should be possible to use any relevant information available and obtained through risk assessments carried out pursuant to Union legislation, such as Directive 2012/18/EU of the European Parliament and the Council (4) and Council Directive 2009/71/Euratom (5), or through relevant assessments carried out pursuant to national legislation provided that the requirements of this Directive are met."*

The principal guidance and best practice documents used to inform the assessment of major accidents & disasters are as follows:

- Guidelines on the Information to be Contained in Environmental Impact Assessment Reports (hereafter referred to as the Environmental Protection Agency (EPA) Guidelines) (EPA, 2022);
- Environmental Impact Assessment (EIA) Directive Guidance on the Preparation of the Environmental Impact Assessment Report (European Commission, 2017);
- A Framework for Major Emergency Management, Department of Housing, Local Government and Heritage (published September 2021 and updated June 2025);
- LA 104 - Environmental Assessment and Monitoring, Design Manual for Roads and Bridges, Highways England, Revision 1 (August 2020);
- Guidance on technical land-use planning advice for planning authorities and COMAH establishment operators (Health and Safety Authority, 2021).

Additionally, the assessment of impacts in relation to Major Accidents and Disasters (MADs) refers to the 2020 Institute of Environmental Management and Assessment (IEMA) (now referred to as Institute of Sustainability and Environmental Professionals (ISEF)) document, *Major Accidents and Disasters in EIA: A Primer*. In relation to scoping, the document states that *"A major accidents and/or disasters assessment will be relevant to some developments more than others, and for many developments it is likely to be scoped out of the assessment"* (p. 11). It is further stated that the topic may be scoped out in the event that:

1. *There is no source-pathway-receptor linkage of a hazard that could trigger a major accident*[6] *and / or disaster*[7]*, or potential for the proposed development to lead to a significant environmental effect; or*
2. *All possible MADs are adequately considered elsewhere in the assessment or covered by existing design measures or compliance with legislation and best practice.*

Not all potential events will fall into the scope of a major accidents and/or disasters assessment. The level of risk therefore needs to be defined to inform what types of events are within the scope of the major accidents and/or disasters assessment. Events that have a high likelihood of occurring and would be of high consequence are a high risk and would be unacceptable for any development. These have already be managed or designed-out by a development. These might include, for example, an element of highway design that did not comply with standards leading to a major road traffic collision. These are therefore likely to be outside the scope of the assessment.

At the other end of the scale, low-impact events whatever the likelihood, such as minor spills, are low risk and are unlikely to be considered a major accidents and/or disasters risk. These events would not threaten immediate or delayed serious environmental effects to human health, welfare and/or the environment that require the use of resources beyond those of the client or its appointed representatives to manage. These are also therefore likely to be outside the scope of the assessment.

The assessment will typically focus on low likelihood but potentially high consequence events. The risks of feasible accidents and natural events are addressed, where relevant, in the various specialist

[6]An event "… that threaten immediate or delayed serious environmental effects to human health, welfare and/or the environment and require the use of resources beyond those of the client or its appointed representatives to manage" (IEMA, 2020, p. 4).
[7] A "… natural hazard (e.g. earthquake) or a man-made/external hazard (e.g. act of terrorism) with the potential to cause an event or situation that meets the definition of a major accident" (ibid.).

chapters herein. Flood risk, for instance, is addressed in Chapter 10 (Hydrology), risk of Climate Change is addressed in Chapter 12 (Climate) and geohazards are addressed in Chapter 9 (Land, Soils, Geology & Hydrogeology).

The MADs impact assessment also includes an assessment of the potential effects in relation to 'Seveso sites', i.e. major industrial establishments, which, because of the presence of certain dangerous substances in sufficient quantities, are regulated under Directive 2012/18/EU (the 'SEVESO III Directive') on the control of major-accident hazards involving dangerous substances, amending and subsequently repealing Council Directive 96/82/EC (the 'SEVESO II Directive'). The SEVESO III Directive has been transposed into Irish legislation through the Chemicals Act (Control of Major Accident Hazards Involving Dangerous Substances) Regulations 2015 (S.I. No. 209/2015) ('the COMAH Regulations').

The SEVESO III Directive provides that appropriate consultation distances must be put in place for Seveso sites, indicating the area that is liable to be affected by a major accident at the establishment in question; and that technical advice is available to planning authorities in respect of relevant establishments. The Health & Safety Authority (HSA) is the Central Competent Authority responsible for providing such advice, where appropriate, in respect of planning applications that fall within consultation distances of SEVESO sites.

In identifying the locations of Seveso sites in the receiving environment, regard has been had to the Development Plan, which states under Policy SI44 – *'To have regard to the provisions of the SEVESO III Directive (2012/18/EU) relating to the control of major accident hazards involving dangerous substances and its objectives to prevent major accidents and limit the consequences of such accidents. Dublin City Council will have regard to the provisions of the Directive and recommendations of the HSA in the assessment of all planning applications located on, or impacted by, COMAH establishments in accordance with Guidance on Technical Land-use Planning Advice: for planning authorities and operators of COMAH establishments (2021).'*

Volume 2, Appendix 8 of the Development Plan shows the locations of Seveso sites in the administrative area on their zoning maps. These sites, listed in **Table 2.2**, below. There are no Seveso sites situated in close proximity to the proposed development, and the proposed development does not fall within the consultation distance of any such site. Therefore, there is no real likelihood of the proposed development being affected by a MAD associated with any such site. Nor is it likely that the construction or operation of the proposed development would cause or exacerbate a MAD at any such site. Potential impacts related to Seveso sites are, therefore, discounted from further consideration.

Table 2.2 Seveso sites in the Dublin City Council & Fingal County Council Administrative Area

| Tier | Establishment[8] | Consultation distance[9] | Distance from proposed development |
|---|---|---|---|
| Upper | Calor Teoranta/ Calor Gas, Tolka Quay Road, Dublin Port, Dublin 1 | 600m | c. 6.48km |
| | Fareplay Energy Ltd./Circle K Ireland Holding Ltd., Fareplay Terminal Dublin, Promenade Road, Dublin Port, Dublin 3 | 400m | c. 6.97km |
| | Indaver Ireland Ltd., Tolka Quay Road, Dublin Port, Dublin 1 | 700m | c. 6.59km |
| | National Oil Reserves Agency Ltd./ NORA, Shellybanks Road, Ringsend, Dublin 4 | 300m | |

[8] Last updated 2nd December 2025
[9] From site perimeter

| Tier | Establishment[8] | Consultation distance[9] | Distance from proposed development |
|---|---|---|---|
| | National Oil Reserves Agency Ltd., Poolbeg Tankfarm, Pigeon House Road, Dublin 4 | 300m | c. 7.4km |
| | Tedcastles Oil Products/ TOP Oil, Yard 2, Tolka Quay Road, Dublin Port, Dublin 1 | 400m | c. 9.63km |
| | Tedcastles Oil Products, Yard 1, Promenade Road, Parish of St. Thomas, Dublin 3 | 400m | c. 9.63km |
| | Valero Energy Ireland Ltd., Dublin Joint Fuels Terminal, Alexandra Road/ Tolka Quay Road, Dublin Port, Dublin 1 | 400m | c. 6.75km |
| | Dublin Airport, Swords, Co Dublin, K67 X4X5 | 1,000m | c. 6.04km |
| Lower | Electricity Supply Board, North Wall Generating Station, Alexandra Road, Dublin 1 | 300m | c. 7.05km |
| | Synergen Ltd. t/a ESB Dublin Bay Power, Pigeon House Road, Ringsend, Dublin 4 | 300m | c. 7.71km |
| | Iarnród Éireann, Alexandra Road, Dublin Port, North Wall, Dublin 1 | 300m | c. 6.61km |
| | Iarnród Éireann, Iarnród Éireann Maintenance Works, Inchicore, Dublin 8 | 300m | c. 13.4km |
| | Circle K/ Fareplay Energy Ltd., Terminal 1, Alexandra Road, Dublin Port, Dublin 1 | 400m | c. 7.2km |
| | Circle K/ Fareplay Energy Ltd., Yard 3, Alexandra Road, Dublin Port, Dublin 1 | 300m | c. 7.2km |

Considering the nature of the proposed development and its receiving environment, there is no source-pathway-receptor linkage of a hazard that could trigger an event constituting a MAD. As such, an assessment of impacts specifically in relation to MADs has been scoped out of this EIAR.

## 2.6 Other Assessments

### 2.6.1 Appropriate Assessment

European Sites, also known as 'Natura 2000' sites, include Special Areas of Conservation (SACs) and Special Protection Areas (SPAs). These are a network of sites designated for nature conservation under Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (the 'Habitats Directive') and Directive 2009/147/EC on the conservation of wild birds (the 'Birds Directive'). The requirements for Appropriate Assessment (AA) are set out under Article 6 of the Habitats Directive, transposed into Irish law by the European Union (Birds and Natural Habitats) Regulations 2011 (as amended) (the 'Birds and Natural Habitats Regulations') and the PDA 2000.

Article 6(3) of the Habitats Directive states that:

> *"Any plan or project not directly connected with or necessary to the management of the site but likely to have significant effect thereon, either individually or in combination with other plans or projects, shall be subject to Appropriate Assessment of its implications for the site in view of the site's conservation objectives. In the light of the conclusions of the*

*assessment of the implications for the site and subject to the provisions of paragraph 4, the competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public*."

The first test is to establish whether, in relation to a particular plan or project, AA is required. Sections 177U of the PDA 2000 requires that the AA screening test must be applied to a proposed development, as follows:

- To assess, in view of best scientific knowledge, if the development, individually or in combination with another plan or project is likely to have a significant effect on a European site; and
- AA is required if it cannot be excluded, on the basis of objective information, that the development, individually or in combination with other plans or projects, will have a significant effect on a European Site.

An Appropriate Assessment Screening Report has been prepared by BSM in respect of the proposed development, in accordance with the requirements of the Habitats Directive and the Birds Directive, and the PDA 2000. It has concluded:

*"In view of best scientific knowledge this report concludes that the proposed Large-scale Residential Development at Clongriffin, individually or in combination with another plan or project, will not have a significant effect on any European sites. This conclusion was reached without considering or taking into account mitigation measures or measures intended to avoid or reduce any impact on European sites.*

*It is considered that this report provides sufficient relevant information to allow the Competent Authority (Dublin City Council) to carry out an AA Screening under Section 177(U) of the Planning Acts and reach a determination, under Article 6 of the Habitats Directive, that the proposed development will not have any likely significant effects on European sites in light of their conservation objectives."*

Please refer to the AA Screening Report, prepared by BSM (2026) and submitted under separate cover as part of this planning application.

### 2.6.2 Water Framework Directive Assessment

A Water Framework Directive (WFD) Assessment has been prepared by AWN Consulting (2026) and separate as part of the planning submission. The WFD Assessment concludes that there is no potential for adverse or minor temporary/ long-term or localised effects on the Mayne River, Mayne Estuary and European sites which the estuary hosts, nor on the Dublin groundwater body (GWB). Therefore, it has been assessed that the proposed development will not cause any significant deterioration or change in water body status or prevent attainment, or potential to achieve, future good status or to meet the requirements and/or objectives in the third RBMP 2022-2027 (River Basin Management Plan) and Water Action Plan 2024 - A River Basin Management Plan for Ireland.

### 2.6.3 Site Specific Flood Risk Assessment

A Site-Specific Flood Risk Assessment (SSFRA) has been prepared in respect of the proposed development by CS Consulting (2026), in accordance with the OPW guidelines *The Planning System and Flood Risk Management – Guidelines for Planning Authorities* (2009). The key findings and conclusions of the SSFRA are summarised as follows:

*"This Site Specific Flood Risk Assessment has been carried out in accordance with the requirements of the national flood guidelines and Dublin City Council's Development Plan. Its conclusions are summarised as follows:*

- *The development site historically has no recorded flood events, as noted in the OPW's historical flood maps.*
- *Predicted flood hazard mapping for fluvial flood events shows that the development site is at low risk of flooding from this source.*
- *Predicted flood hazard mapping for coastal and pluvial flood events show that the development site is at low risk of flooding from these sources.*
- *The proposed development is in an area for which the risk of groundwater flooding is considered low.*

*The proposed development is deemed to be suitable for the site location, as historical and potential flood routes have been reviewed and the likelihood of the development being subject to flooding is low."*

Please refer to the SSFRA prepared by CS Consulting submitted under separate cover as part of the planning application. Refer also to Chapter 10 (Hydrology).

# 3 Planning & Development Context

## 3.1 Introduction

This Chapter sets out the policy in relation to proper planning and sustainable development in the context of the proposed development. It has been prepared by Pauline Byrne, Snr Planner at Brady Shipman Martin (BSM). This chapter has been reviewed by Namrata Kaile, Ecologist & Environmental Consultant at BSM. Additionally, a technical review was completed by Thomas Burns, Partner at BSM and Namrata Kaile, Environmental Consultant at BSM. Refer to **Table 1.4** in Chapter 1 (Introduction) for qualifications of authors and reviewers.

The following policy documents of relevance are discussed in relation to the proposed development herein:

### International

- United Nations Sustainable Development Goals (2015)

### European

- Environmental Impact Assessment Directive (consolidated 2011/92/EU and 2014/52/EU);
- Birds (2009/147/EC) and Habitats Directive (92/43/EEC);
- EU Water Framework Directive (2000).

### National

- Project Ireland 2040 – National Planning Framework and National Development Plan (2021-2030) including the First Revision to the NPF (April 2025);
- Planning Design Standards for Apartments – Guidelines for Planning Authorities (2025);
- Delivering Homes, Building Communities 2025-2030 – An Action Plan on Housing Supply and Targeting Homelessness (2025)
- Urban Development and Building Heights – Guidelines for Planning Authorities (2018);
- Design Manual for Urban Roads and Streets (2019);
- Appropriate Assessment of Plans and Projects in Ireland – Guidance for Planning Authorities (2010);
- Sustainable Residential Development and Compact Settlements Guidelines for Planning Authorities (2024);
- The Planning System and Flood Risk Management – Guidelines for Planning Authorities (2009);
- Climate Action Plan 2025;
- Childcare Facilities – Guidelines for Planning Authorities (2001);
- Cycle Design Manual (2023);
- National Sustainable Mobility Policy (2022).

### Regional

- Eastern & Midland Regional Assembly Regional Spatial & Economic Strategy 2019 – 2031;
- Dublin City Development Plan 2022-2028 (including variations to the Plan);
- Transport Strategy for the Greater Dublin Area 2022 – 2042.

Topic-specific policies are addressed, where appropriate, in the relevant specialist chapters of this EIAR.

## 3.2 International Policy Context

### 3.2.1 United Nations Sustainable Development Goals (2015)

The United Nations' (UN) 17 Sustainable Development Goals (SDGs) provide a *"shared blueprint for peace and prosperity for people and the planet, now and into the future"* (**Figure 3.1**). They were adopted by the UN Member States – including Ireland – in 2015, as part of the adoption of the *2030 Agenda for Sustainable Development*. These high-level goals frame and inform Irish national agendas and policies to 2030, including (but not limited to) *Project Ireland 2040* (*National Planning Framework* and *National Development Plan*) and the Eastern and Midland Regional Assembly's *Regional Spatial and Economic Strategy*, discussed below.




Figure 3.1 United Nations Sustainable Development Goals (SDGs)

## 3.3 European Policy Context

### 3.3.1 Environmental Impact Assessment Directive (consolidated 2011/92/EU and 2014/52/EU)

Environmental Impact Assessment (EIA) is a procedure under the terms of European Directives on the assessment of the effects of certain public and private projects on the environment. The EIA Directive (2014/52/EU) became applicable in Ireland from May 16th, 2017, and amends Directive 2011/92/EU. The EIA Directive(s) have been transposed into Irish legislation through various, including and most relevant for the proposed development, by the PDA 2000 and the PDR 2001. The most recent 2014 EIA Directive has been transposed into Irish Legislation, through the European Union (Planning and Development) (Environmental Impact Assessment) Regulations (S.I. 296 of 2018) which came into effect on 1 September 2018. The EIAR has been prepared in accordance with all relevant legislation, including the 2018 Regulations. Projects for which an EIA is mandatory under Annex I of the Directive have been listed under Part 1 of Schedule 5 of the PDR 2001. Similarly, Part 2 of Schedule 5 outlines thresholds for other projects which also require EIA, as per Annex II of the Directive. In addition, a 'sub-threshold' EIA may be required, if the Planning Authority determines that the development would be likely to have significant effects on the environment. Schedule 7 of the Regulations details the criteria for determining whether a development would or would not be likely to have significant

effects on the environment considering the characteristics of the proposed development, its location and characteristics of potential impacts.

As detailed in Section 2 of this EIAR, the proposed development is not of a class of development listed in Part 1 of Schedule 5 of the PDR 2001 and, therefore, EIA is not mandatory for the proposed development on foot of Part 1 of Schedule 5 of the PDR 2001. However, the proposed development (Phase 2) does correspond with the classes of development listed in paragraphs 10(b)(i) and 10(b)(iv) of Part 2 of Schedule 5 of the PDR 2001 and exceeds the thresholds specified in relation to Class 10(b)(i) of development. When considered together with Phase 1 (Blocks 5 & 6, permitted under DCC Ref.: LRD6064/24-S3), the gross quantum of development also exceeds the thresholds specified in relation to Class 10(b)(i) of development. Therefore, under the provisions of the Part 2 of Schedule 5 of the PDR 2001, EIA is a statutory requirement for the proposed development.

### 3.3.2 Birds (2009/147/EC) and Habitats Directive (92/43/EEC)

Adopted in 1992, the Council Habitats Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora aims to promote the maintenance of biodiversity, taking account of economic, social, cultural and regional requirements. It forms the cornerstone of Europe's nature conservation policy with the Birds Directive 2009/147/EC and establishes the EU wide Natura 2000 ecological network of protected areas, safeguarded against potentially damaging developments.

Please refer to Chapter 8 (Biodiversity) and the AA Screening Report prepared by BSM (2026), submitted under separate cover as part of the planning application, for full details.

### 3.3.3 EU Water Framework Directive (2000/60/EC)

The Water Framework Directive (WFD) established a framework for the protection of inland surface waters, transitional waters, coastal waters and groundwater with the objective to protect and improve water quality in all waters to achieve good ecological status by 2027 at the latest.

Specifically, the WFD aims to:

- Prevent further deterioration and protect and enhance the status of aquatic ecosystems and, with regard to their water needs, terrestrial ecosystems and wetlands directly depending on the aquatic ecosystems;
- Promote sustainable water use based on a long-term protection of available water resources;
- Enhanced protection and improvement of the aquatic environment, through specific measures for the progressive reduction of discharges, emissions and losses of priority substances and the cessation or phasing-out of discharges, emissions and losses of priority hazardous substances;
- Ensure the progressive reduction of pollution of groundwater and prevents its further pollution; and
- Contribute to mitigating the effects of floods and droughts.

The Water Framework Directive is linked to a number of other EU directives in several ways. These include Directives relating to the protection of biodiversity (Birds and Habitats Directives), directives related to specific uses of waters (drinking water, bathing waters and urban wastewater directives) and to directives concerned with the regulation of activities undertaken in the environment (Industrial Emissions and Environmental Impact Assessment directives). More recent directives on topics such as Floods and the Marine Strategy Framework have significant linkages with the WFD which is also supplemented by the Priority Substances Directive and the Groundwater Directive.

EU member states are required to implement the WFD through *River Basin Management Plans* (RBMPs). Ireland's approach to water quality management has developed over the first and second RBMPs and will continue to evolve into the third cycle RBMP 2022 – 2027 to protect and improve water quality nationally and locally. The Minister for Housing, Local Government and Heritage, published the current RBMP in September of 2024, entitled *Water Action Plan 2024- A River Basin Management Plan for Ireland*. The Minister for Housing, Local Government and Heritage, published the Water Action Plan 2024 - A River Basin Management Plan for Ireland 2022-2027 in 2024.

The proposed development has considered the current water status of all relevant water bodies, and potential impacts have been considered in Chapter 9 Land, Soils, Geology and Hydrogeology and Chapter 10 Hydrology of this EIAR.

A WFD Assessment has been undertaken by AWN Consulting Limited (2026), in respect of the proposed development in response to the requirements of the Water Framework Directive. Refer to Appendix 10.2, Volume 3 of the EIAR. The WFD Assessment concludes that there is no potential for adverse or minor temporary/ long-term or localised effects on the Mayne River, Mayne Estuary and European sites which the estuary hosts, nor on the Dublin groundwater body (GWB). Therefore, it has been assessed that the proposed development will not cause any significant deterioration or change in water body status or prevent attainment, or potential to achieve, future good status or to meet the requirements and/or objectives in the third RBMP 2022-2027 (River Basin Management Plan) and Water Action Plan 2024 - A River Basin Management Plan for Ireland.

## 3.4 National Policy Context

### 3.4.1 Project Ireland 2040 – National Planning Framework (NPF)

*Project Ireland 2040* is the Government's overarching planning and development policy for the country to 're-imagine' Ireland and prepare for the future. It constitutes a "*strategy to make Ireland a better country for all of its people*" by setting public investment policy at a high level. It comprises two documents: the *National Planning Framework* (NPF), which details the strategy for development to 2040; and the *National Development Plan 2021-2030* (NDP), which outlines the public expenditure required to implement this strategy and identifies priority future projects.

The NPF is the Government's high-level strategic plan for shaping the future growth and development of Ireland to 2040. It is a framework to guide public and private investment to create and promote opportunities, and to protect and enhance the environment. At its core are ten National Strategic Outcomes (NSOs), "*a shared set of goals for every community across the country*" (p. 10), which the plan aims to deliver. With a view to achieving these NSOs, the NPF identifies a suite of National Policy Objectives (NPOs). The ten NSOs are as follows:

1. *Compact Growth*
2. *Enhanced Regional Accessibility*
3. *Strengthen Rural Economies and Communities*
4. *Sustainable Mobility*
5. *A Strong Economy, supported by Enterprise, Innovation and Skills*
6. *High-Quality International Connectivity*

7. *Enhanced Amenity and Heritage*
8. *Transition to a Low Carbon and Climate Resilient Society*
9. *Sustainable Management of Water and other Environmental Resources*
10. *Access to Quality Childcare, Education and Health Services*

The objectives of the NPF seek to address ongoing negative development trends, including sprawling peri-urban growth, stagnation of inner-city and old suburban areas, and loss of farmland and habitats to greenfield development. In particular, one of the key objectives of the NPF, compact growth, seeks to carefully manage the sustainable growth of compact cities, towns and villages and to add value and create more attractive places in which people can live and work. The NPF specifies that housing developments should be based on employment growth, higher densities, access to amenities and sustainable transport modes, in order to avoid long-distance commuting patterns and quality of life impacts within these areas.

First Revision - National Planning Framework (April 2025)

The National Planning Framework (NPF), published in 2018 has been revised and updated to take account of changes that have occurred since it was published in 2018 and to build on the framework that is in place. The final revised and approved NPF was published on 8th April 2025.

The revised NPF identifies that, as per updated projections, the population of Ireland will increase to approximately 5.7 million by 2030 and to 6.1 million by 2040, which is an increase of 250,000 people over that planned for in 2018. The scale of growth that is projected in Ireland to 2040 coupled with the need to transition to a lower carbon society requires an increased delivery of housing and the improved integration of land use and transport.

The Government's long-term vision for Ireland's housing future aims to balance the provision of good quality housing that meets the needs of a diverse population, in a way that makes our cities, towns, villages and rural areas good places to live now and in the future. The NPF sets out national core principles to guide the delivery of future housing at all levels of governance, as follows (p. 88):

- *Ensure a high standard quality of life to future residents as well as environmentally and socially sustainable housing and place-making through integrated planning and consistently excellent design.*
- *Allow for choice in housing location, type, tenure and accommodation in responding to need.*
- *Prioritise the location of new housing provision in existing settlements as a means to maximising a better quality of life for people through accessing services, ensuring a more efficient use of land and allowing for greater integration with existing infrastructure.*
- *Tailor the scale and nature of future housing provision to the size and type of settlement where it is planned to be located.*
- *Integrate housing strategies where settlements straddle boundaries (county and / or regional).*
- *Utilise existing housing stock as a means to meeting future demand.*

The NPF requires homes to be located in places that can support sustainable development; i.e. places that are served by existing infrastructure and a range of local services; and which can encourage the use of public transport, walking and cycling, in order to promote more efficient and low-carbon development. It notes under National Policy Objective 43 that – '*Prioritise the provision of new homes at locations that can support sustainable development and at an appropriate scale of provision relative*

*to location.'* It is noted that Ireland's future homes will '*still be located in our smaller towns, villages and rural areas, including the countryside, but at an appropriate scale that does not detract from the capacity of our larger towns and cities to deliver homes more sustainably*' (p. 89). In order to deliver compact, smart and sustainable growth, the NPF notes that half of the future (50%) population and employment growth is to be included in the existing five cities and suburbs, including Dublin.

Furthermore, the NPF has set out targets for delivery of housing under the National Policy Objective 42 – *'To target the delivery of housing to accommodate approximately 50,000 additional homes per annum to 2040.'*

The NPF notes that (p. 32):

*'One of the most significant spatial development changes in recent years is driven by the rising economic strength of Dublin, improving transport connectivity and issues relating to housing delivery and cost in the Capital. This has given rise to more intensive interactions between Dublin and towns along the key road and rail routes into Dublin, that function like a linear urban network.'*

Future planning, development and place-making policy priorities for the region are identified in the NPF, including the following of pertinence to the proposed development (p. 29):

- Enabling the complementary development of large and county towns in the wider Greater Dublin Area and Midland areas on the key strategic and public transport routes in a regionally co-ordinated manner, with an enhanced emphasis on measures to promote self-sustaining economic and employment-based development opportunities to match and catch-up on rapid phases of housing delivery in recent years.
- A focused approach to compact, sequential and sustainable development of the larger urban areas along the Dublin – Belfast economic and transport corridor, along which there are settlements with significant populations such as Dundalk and Drogheda.

The NPF identifies a number of key future growth enablers for Dublin City, it states that the *'Key priorities include enhanced airport and port access and capacity; expansion of the public transport network including the delivery of DART+, MetroLink, Luas expansion and BusConnects; and enhanced water and wastewater capacity through projects such as the Greater Dublin Drainage Project and the Water Supply Project, Eastern and Midlands Region.'* It further states – *'Delivering the key transport projects set out in the Transport Strategy for the Greater Dublin Area including DART+, MetroLink, Luas expansion, BusConnects Dublin and key elements of the metropolitan area cycle network, inclusive of commuter routes and urban greenways*', the delivery of which would further improve cyclist and public transport connectivity between Clongriffin and Dublin City.

The proposed development will provide 711 no. high-quality residential homes which will assist with the future growth of the city. The proposed layout has been carefully considered to promote lower car usage given the site's location to high accessibility transport links. The proposed development will provide a safe and secure development designed in compliance with national, regional and local planning policy.

The development is being proposed by The Land Development Agency (LDA). In respect of the LDA the NPF includes NPO 21 which states that '*The Government will support the LDA, in association with Local Authorities, to fulfil its statutory mandate to deliver a significant number of homes on State lands in major mixed tenure developments, with a particular focus on brownfield and infill urban sites in the five main cities and regional centres as a priority'.*

The Planning Report and Statement of Consistency for the proposed development, prepared by BSM (2026) and submitted under separate cover as part of the planning application, details the consistency of the proposed development with the NPOs.

### 3.4.2 Planning Design Standards for Apartments: Guidelines for Planning Authorities, 2025

The Minister for Housing, Local Government and Heritage published the *Planning Design Standards for New Apartments: Guidelines for Planning Authorities* (the 'design standards') in July 2025 under Section 28 of the Planning and Development Act 2000, as amended. The design standards provide an update to the previous guidelines in relation to apartment design: *Sustainable Urban Housing: Design Standards for New Apartments, Guidelines for Planning Authorities 2022 (updated July 2023),* which is now revoked.

The Guidelines are cognisant of the latest updates to the NPF and increasing pressure to accelerate the delivery of housing. The matters dealt with in the guidelines include apartment mix, internal space standards, dual aspect ratios, floor to ceiling heights, apartment to stair/lift core ratios, storage space, and amenity space.

The guidelines set out Specific Planning Policy Requirements (SPPRs), which planning authorities must apply as "*they take precedence over any conflicting policies and objectives of statutory plans*" (page 3).

The guidelines pay particular attention to the contents of the NPF, noting the planned delivery of 50,000 no. homes [per annum], and that "*It is therefore critical to ensure that apartment living is an attractive and desirable housing option for a range of household types and tenures, building on experience to date."* (page 9). The guidelines relate generally to:

*"Apartment mix; Internal space standards for different types of apartments; Dual aspect rations; Floor to ceiling heights; Apartment to stair/lift core ratios; Storage spaces; and Amenity spaces including balconies/patios."* (page 4).

As such the SPPRs contained within the guidelines are set out as follows:

- SPPR 1: Removal of restrictions on housing mix (save for certain prescribed developments);
- SPPR 2: Minimum floor area for apartments (except student housing):
  - Studio (1p): 32sq.m
  - 1-Bed (2p): 45sq.m
  - 2-Bed (3p): 63sq.m
  - 2-Bed (4p): 73sq.m
  - 3-Bed (4p): 76sq.m
  - 3-Bed (5p): 90sq.m
- SPPR 3: Minimum dual aspect ratios (25%, save for refurbishment schemes or urban infill);
- SPPR 4: Floor to ceiling heights (2.7m minimum, save for refurbishment schemes or urban infill);
- SPPR 5: Removal of restrictions on apartment to stair/lift core ratios;
- SPPR 6: Removal of blanket requirements for new Communal, Community and Cultural facilities within apartment schemes;
- SPPR 7: Presumption against consenting for development of shared accommodation/co-living development; and
- SPPR 8: Standards for purpose-built student accommodation.

Please refer to the *Housing Quality Audit (HQA)* prepared HJL Architects for a detailed demonstration of the compliance of the proposed units with the relevant guidelines, design standards and SPPRs as appropriate.

The Planning Report and Statement of Consistency for the proposed development, prepared by BSM (2026) and submitted under separate cover as part of the planning application, details the consistency of the proposed development with the Guidelines.

The proposed development is fully in compliance with the Dublin City Council Development Plan Standards (Chapter 15). Since the adoption of the Development Plan, the *'Planning Design Standards for Apartments- Guidelines for Planning Authorities, July 2025*' has replaced the *Sustainable Urban Housing: Design Standards for New Apartments- Guidelines for Planning Authorities' of July 2023* [*"the 2023 Guidelines"*] which are the standards included in the Dublin City Development Plan 2022-2028.

The 2025 Guidelines state:

*'Planning authorities and An Coimisiún Pleanála are required to have regard to the Guidelines and are also required to comply with any specific planning policy requirements (SPPRs) of the Guidelines, within the meaning of Section 28 (1C) of the Planning and Development Act 2000 (as amended) in carrying out their functions under the Act. Accordingly, where SPPRs are stated in this document, they take precedence over any conflicting policies and objectives of statutory plans'*

As such the proposed development has been assessed against the 2025 Guidelines which take precedence over the Development Plan standards. The Planning Report sets out compliance with these standards in tandem with the detail set out in the *Housing Quality Assessment*.

These Guidelines are the subject of a judicial review and therefore, the Planning Report also sets out how the proposed development also complies with the Dublin City Council Development Plan 2022-2028.

### 3.4.3 Delivering Homes, Building Communities 2025-2030: An Action Plan on Housing Supply and Targeting Homelessness

*Delivering Homes, Building Communities 2025-2030: Action Plan on Housing Supply and target Homelessness* is the Government's latest Housing Plan, launched in November 2025. This Plan replaces the previous *Housing for All* (2021) Plan.

The new Plan targets the construction of 300,000 homes up to 2030, including 72,000 social homes and 90,000 affordable housing supports and there is no upper limit on housing delivery envisaged over the plan period.

The Plan contains two key pillars:

1. *Pillar 1: Activating Supply*
   *is about removing structural barriers to homebuilding — unlocking land, reforming planning, delivering infrastructure and creating conditions for investment. It also involves boosting construction capacity, adopting modern methods of construction and addressing vacancy and dereliction to bring homes back into use.*
2. *Pillar 2: Supporting People*
   *is aimed squarely at making homes accessible and affordable, particularly those who are most at-risk of homelessness or those waiting on our housing lists around the country. It laser focuses on tackling homelessness and precarious living conditions,*

> *protecting children and families, increasing social and affordable housing output and seriously improving rental security. It supports homeownership — giving new buyers a chance to put down roots, while revitalising villages, towns and cities*

The Plan identifies a key role for the Land Development Agency in delivery of housing supply under the Plan with additional equity funding of €2.5 billion to be provided to the LDA, bringing total funding to €8.75 billion. It sets out that the LDA are active on over 40 sites and working on a pipeline of 27,000 units which include the Clongriffin lands.

The Plan expands the remit of the LDA enabling them to operate in a wider range of towns to deliver mixed tenure communities including more social homes and private housing within larger developments. The LDA will also continue to develop State-owned lands and strategically assemble land from both public and private sources to create a more stable and affordable housing market.

The subject site sits within a wider landbank that has been acquired by The Land Development Agency with a view to delivering approximately 1,700+ homes altogether. Phase 1 which is under construction is delivering 408 no. homes and Phase 2, which is subject of this LRD Planning Application will deliver a further 711 no. residential units. These will be affordable (cost rental) units delivered by the LDA.

As part of this Development, under Part V of the PDA 2001 (as amended), the applicant proposes 73 no. Part V units. The Applicant is committed to providing the full requirement under their Part V obligations. Further information can be found within the *Planning Report & Statement of Consistency* prepared by BSM as part of the planning application.

### 3.4.4 Urban Development and Building Heights – Guidelines for Planning Authorities (2018)

The *Urban Development and Building Heights- Guidelines for Planning Authorities* were published in December 2018 by the Minster for Housing, Planning & Local Government under Section 28 of the PDA 2000. The Guidelines support the objectives of the NPF, by securing a more compact and sustainable manner of development in urban areas.

The Minister's Foreward to the Guidelines sets out the Government policy on urban building heights, characterising the traditional settlement pattern of *"constantly expanding low-rise suburban residential areas resulting in ever longer commutes, more and more congestion, empty suburbs by day and empty city and town cores by night"* as *"completely unsustainable"*. The Guidelines support a departure from this trend, stating that *"our cities and towns must grow upwards, not just outwards"*

The Guidelines reference NPO 13 (from the NPF) which states:

*'In urban areas, planning and related standards, including in particular building height and car parking will be based on performance criteria that seek to achieve well-designed high-quality outcomes in order to achieve targeted growth. These standards will be subject to a range of tolerance that enables alternative solutions to be proposed to achieve stated outcomes, provided public safety is not compromised and the environment is suitably protected'.*

*It recognises that in meeting the challenge set out above new approaches to urban planning and development are required and that securing an effective mix of uses within urban centres is critical. To bring about this increased density and increased residential development in urban centres the Guidelines state that 'significant increases in the building heights and overall density of development is not only*

*facilitated but actively sought out and brought forward by our planning processes and particularly so at local authority and An Bord Pleanála levels'.*

As identified in the Urban Development and Building Height Guidelines, *"newer housing developments outside city and town centres and inner suburbs, i.e. the suburban edges of towns and cities, typically now include town-houses (2-3 storeys), duplexes (3-4 storeys) and apartments (4 storeys upwards). Such developments deliver medium densities, in the range of 35-50 dwellings per hectare net. Such developments also address the need for more 1 and 2 bedroom units in line with wider demographic and household formation trends, while at the same time providing for the larger 3, 4 or more bedroom homes across a variety of building typology and tenure options, enabling households to meet changing accommodation requirements over longer periods of time without necessitating relocation'.* The Guidelines identify that development proposals for more mixed heights can provide for a more attractive streetscape and should move away from 2-storey dominated approaches.

SPPR 4 in this regard states:

> *It is a specific planning policy requirement that in planning the future development of greenfield or edge of city/town locations for housing purposes, planning authorities must secure:*
>
> *1. the minimum densities for such locations set out in the Guidelines issued by the Minister under Section 28 of the Planning and Development Act 2000 (as amended), titled "Sustainable Residential Development in Urban Areas (2007)" or any amending or replacement Guidelines;*
>
> *2. A greater mix of building heights and typologies in planning for the future development of suburban locations; and*
>
> *3. Avoid mono-type building typologies (e.g. two storey or own-door houses only), particularly, but not exclusively so in any one development of 100 units or more.*

The proposed development features new residential buildings ranging in height from 5 to 10 storeys, to accommodate 711 no. apartments including retail and crèche units, community/cultural spaces, café/restaurant/retail units, and communal and public open space.

The proposed scheme seeks to achieve increased height and density in line with the SDRA Objectives, as set out in the Dublin City Development Plan 2022-28. The scheme's density reflects the site's size and proximity to the Clongriffin Train Station. The proposed development has a density of 206 uph. This proposed density, when considered in tandem with the permitted density of Clongriffin Phase 1 (185 uph), reflects National Guidelines for increased density in proximity to public transport, and in line with the Design Standards, set out above.

Please refer to The *Planning Report & Statement of Consistency* prepared by BSM and the *Architectural Design Statement* prepared by HJL Architects submitted under separate cover as part of the planning application, as they detail the consistency of the proposed development with these Guidelines.

### 3.4.5 Design Manual for Urban Roads and Streets (DMURS) (2019)

The *Design Manual for Urban Roads and Streets* (DMURS) was adopted by the Department of Transport and the Department of Environment (now Housing) in 2013 and was updated in 2019. In June 2022, National Guidelines and Standards (NGS) Circular 1 of 2022 issued updates in relation to Advice Note 2 on Materials and Specifications. DMURS sets out design guidance and standards for new and

reconfigured urban roads and streets in Ireland. It also outlines practical design measures to encourage more sustainable travel patterns in urban areas.

The DMURS Statement of Consistency prepared by CS Consulting (2026) and submitted under separate cover as part of the planning application, provides further detail in respect of the compliance of the proposed project with DMURS.

### 3.4.6 Appropriate Assessment of Plans and Projects in Ireland – Guidance for Planning Authorities (2010)

The Natura 2000 network is a pan-European Union network which provides for the protection of sites that are of particular importance for rare, endangered or vulnerable habitats and species. The Natura 2000 network in Ireland is comprised of Special Areas of Conservation (SAC) and Special Protection Areas (SPA). SAC are selected for the conservation and protection of habitats listed on Annex I and species (other than birds) listed on Annex II of Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora ('the Habitats Directive'), and their habitats. SPA are sites that have been selected and notified for the conservation and protection of bird species listed on Annex I of Directive 2009/147/EC on the conservation of wild birds ('the Birds Directive') and regularly occurring migratory species, and their habitats, particularly wetlands.

Appropriate Assessment (AA) examines the direct and indirect impacts that a plan or project might have on its own or in combination with other plans and projects, on one or more Natura 2000 sites in view of their conservation objectives. The obligation to undertake AA derives from Articles 6(3) and 6(4) of the Habitats Directive. The requirements of the Habitats Directive in relation to AA are similar in many respects to those associated with EIA, in respect of the obligation to explain environmental effects. However, the focus of AA is targeted specifically on Natura 2000 sites and their conservation objectives. Additionally, Articles 6(3) and 6(4) place strict legal obligations on Member States, with the outcome of AA fundamentally affecting the decision of whether or not a development consent will be granted.

The Ministerial Guidelines in relation to AA of plans and projects were published by the Minister for Environment, Heritage and Local Government in December 2009, and subsequently revised in February 2010. Their purpose is to assist and guide local and planning authorities in the application of Articles 6(3) and 6(4) of the Habitats Directive insofar as it relates to their roles, functions and responsibilities in the undertaking of AA of plans and projects.

An AA Screening Report has been prepared by BSM (2026) in respect of the proposed development, in accordance with the requirements of the Habitats Directive and the Birds Directive, the European Union (Birds and Natural Habitats) Regulations 2011 (as amended) and the PDA 2000.

Please refer to Section 2.6.1 of this EIAR Report and AA Screening Report submitted under separate cover by BSM as part of the planning application, for full details.

### 3.4.7 Sustainable Residential Development and Compact Settlement Guidelines for Planning Authorities (2024)

These 2024 Guidelines replace the previous *Sustainable Residential Development in Urban Areas Guidelines for Planning Authorities* (2009). The Guidelines set out policy and guidance in relation to the planning and development of urban and rural settlements, with a focus on sustainable residential development and the creation of compact settlements.

Since the publication of the Residential Density Guidelines 1999 and subsequent 2009 Guidelines, planning authorities have been recommended to promote increased residential densities at appropriate locations. The Guidelines noted that:

> "*… given the NPF priorities for compact growth […], the Government considers that it is necessary to expand on the number of density bands contained in the 2009 Guidelines in order to ensure that densities are efficient while, at the same time, tailored to settlement context*." (p. 16)

These Guidelines set out the area and density range applicable to Dublin and Cork City and Suburbs considering factors such as proximity to high-frequency transport in order to maximise the return on public transport investment. The subject site is therefore categorized as "City-Urban Neighbourhoods" where "…r*esidential densities range from 50 dph to 250 dph. (net)*". (p. 22)

The subject site is approximately c. 230m from the Clongriffin Railway Station. As such it is in an ideal location to maximise return on previous and future public transport investment. Therefore, it is considered that the site is within proximity to a High Capacity Public Transport Node or Interchange. In this respect, a density of c. 206 uph is achieved within the density parameters of 50 dph to 250 dph set out above. The Development Plan highlights this aspect of the subject site as it relates to Z14 Zoned areas, describing this site as an "*important public housing regeneration areas and other related to former brownfield lands with capacity for significant redevelopment.*" (p. 543) As a Strategic Development Regeneration Area (SDRA), specific development principles apply to this area, as they are seen as an important aspect in delivery of the core strategy for the city.

The Guidelines reinforce that the planning authority "*… is required to have regard to the polices and objective of the Guidelines and to apply the specific planning policy requirements (SPPRs)".* Alignment with the 4 no. SPPRs in the Guidelines, in relation to separation distances (SPPR 1), minimum private open space standards for houses (and not applicable to this development) (SPPR 2), car parking (SPPR 3) and cycle parking and storage (SPPR 4), is further set out in the accompanying *Planning Report & Statement of Consistency,* prepared by BSM.

For further details on site accessibility with reference to these Guidelines, please refer to the *Traffic and Transportation Assessment* (TTA) prepared by CS Consulting, and for alignment with the Guidelines, please refer to the *Planning Report & Statement of Consistency* by BSM, submitted as standalone documents within this planning application.

### 3.4.8 The Planning System and Flood Risk Management – Guidelines for Planning Authorities (2009)

The *Planning System and Flood Risk Management – Guidelines for Planning Authorities* was published by the Office of Public Works (OPW) and Department of Environment, Heritage and Local Government in 2009. The Guidelines introduce comprehensive mechanisms for the incorporation of flood risk identification, assessment and management into the planning process. They aim to, among other things, avoid inappropriate development in areas at risk of flooding and avoid new developments increasing flood risk elsewhere.

A Site-Specific Flood Risk Assessment (SSFRA) has been prepared in respect of the proposed development by CS Consulting (2026), in accordance with the OPW guidelines *The Planning System and Flood Risk Management – Guidelines for Planning Authorities* (2009). The key findings and conclusions of the SSFRA are summarised as follows:

*"This Site Specific Flood Risk Assessment has been carried out in accordance with the requirements of the national flood guidelines and Dublin City Council's Development Plan. Its conclusions are summarised as follows:*

- *The development site historically has no recorded flood events, as noted in the OPW's historical flood maps.*
- *Predicted flood hazard mapping for fluvial flood events shows that the development site is at low risk of flooding from this source.*
- *Predicted flood hazard mapping for coastal and pluvial flood events show that the development site is at low risk of flooding from these sources.*
- *The proposed development is in an area for which the risk of groundwater flooding is considered low.*

*The proposed development is deemed to be suitable for the site location, as historical and potential flood routes have been reviewed and the likelihood of the development being subject to flooding is low."*

Please refer to the SSFRA prepared by CS Consulting submitted under separate cover as part of the planning application. Refer also to Chapter 10 (Hydrology).

### 3.4.9 Climate Action Plan (2025)

The *Climate Action Plan 2025* (CAP25) is the fourth Climate Action Plan prepared under the *Climate Action and Low Carbon Development (Amendment) Act 2021* and is the third annual update to the Guidelines. CAP25 was approved on the 15th April 2025 and implements carbon budgets, sectoral emissions ceilings and sets out a roadmap for taking decisive actions to halve emissions by 2030 and ultimately reach net zero no later than 2050.

CAP25 builds upon the last year's Plan (CAP24) by refining and updating the measures and actions required to deliver the carbon budgets and sectoral emissions ceilings and it should be read in conjunction with Climate Action Plan 2024. The Plan provides a roadmap for taking decisive action to halve Ireland's emissions by 2030 and achieve climate neutrality by no later than 2050, as committed to in the *Climate Action and Low Carbon Development (Amendment) Act 2021*.

As with CAP24, the CAP25 Annex of Actions contains new, high-impact actions for delivery in 2025. The full set of measures and actions are set out in the Plan to provide the legally required roadmap of actions to reach climate targets while also supporting enhanced energy security with renewables, cleaner air, warmer homes with reduced energy bills, and better urban and rural transport services.

The proposed development has been designed to assist in achieving actions and policies as set out in the CAP25 and is set out in documents supporting this LRD application including the Chapter 12 Climate of this EIAR, which includes specific reference to section 15(1) of the Climate Action and Low Carbon Development Act 2015, as amended. Furthermore, a *Climate Action and Energy Efficiency Repor*t has been prepared by EDC Progressive Engineering (2026) to comply with the relevant policies set out in the Development. Please refer to this standalone report submitted under separate cover as part of the planning application.

### 3.4.10 Guidelines for Planning Authorities on Childcare Facilities (2001)

The *Childcare Facilities – Guidelines for Planning Authorities* were published by the Government in 2001. They provide a framework to guide both local authorities in preparing development plans and assessing applications for planning permission, and developers and childcare providers in formulating

development proposals. They state the Government policy on childcare provision, which is "*to increase the number of childcare places and facilities available and to improve the quality of childcare services for the community*" (p. 3).

The Guidelines indicate that Development Plans should facilitate the provision of childcare facilities in appropriate locations. These include larger new housing estates, where planning authorities should require the provision of a minimum of one childcare facility (with 20 places) for every 75 dwellings.

However, the *Planning Design Standards for Apartments Guidelines for Planning Authorities* (Department of Housing, Local Government and Heritage, 2025) state that:

> "*Notwithstanding the Planning Guidelines for Childcare Facilities (2001), which are subject to review, and which recommend the provision of one child care facility (equivalent to a minimum of 20 child places) for every 75 dwelling units, the threshold for provision of any such facilities in apartment schemes should be established having regard to the scale and unit mix of the proposed development, the existing geographical distribution of childcare facilities and the emerging demographic profile of the area. One-bedroom or studio type units should not generally be considered to contribute to a requirement for any on-site childcare provision and subject to the factors above, this may also apply in part or whole, to units with two or more bedrooms*" (p. 27)

The proposed development generates the demand for c. 95 no. childcare places. As part of the proposed development a 2-storey childcare facility of c. 911sqm and c.120 no. spaces is proposed. It should be noted that the 413sqm Crèche in Block 5 and 6 currently under construction, has over-provided c.38 no. childcare spaces. It is considered that these childcare facilities will broadly meet the demand generated by the development.

A *Schools Demand & Childcare Facilities Assessment Report* has been prepared by BSM and is submitted as part of the planning application under separate cover.

### 3.4.11 Cycle Design Manual (2023)

The *Cycle Design Manual* has been prepared by the National Transport Authority (NTA) and overseen by the Department of Transport. The Cycle Design Manual replaces the previous National Cycle Manual, published by the NTA in 2011.

This manual draws on the experience of delivering cycling infrastructure across Ireland over the last decade, as well as learning from international best practice, and has been guided by the need to deliver safe cycle facilities for people of all ages and abilities. This manual provides guidance on the design of both on-road and off-road cycle facilities for both urban and rural locations. The manual details on the requirements for cycle-friendly infrastructure, key design principles, types of cycle vehicles, types of cycle links, choosing appropriate facilities and widths. The manual also discusses planning, design and implementation and maintenance of cycling and cycling infrastructure and cycle parking.

As detailed in the *Traffic & Transportation Assessment* (TTA) prepared by CS Consulting, a pedestrian access to the proposed Blocks shall be directly from the surrounding streets (including those street elements to be completed as part of the development). Access to internal long term bicycle parking shall be via dedicated bicycle store entrances from the surrounding street network. Raised pedestrian footpaths with a minimum width of 2.0m shall be provided along all new street sections, in keeping with the design of the existing surrounding Clongriffin road network.

A total of 1,603 no. cycle parking spaces are proposed as part of the subject site development proposal, comprising 1,186 no. 'long term' (residents) bicycle parking spaces and 412 no. 'short term' (visitor) cycle spaces. For further information in this regard, refer to the *TTA* and *DMURS Design Statement* prepared by CS Consulting and submitted under separate cover as part of the planning application.

### 3.4.12 National Sustainable Mobility Policy (2022)

The *National Sustainable Mobility Policy* was published in April 2022 by the Department of Transport and replaces *Smarter Travel - A Sustainable Transport Future 2009 – 2020*. This policy sets out a strategic framework to 2030 for active travel and public transport to support Ireland's overall requirement to achieve a 51% reduction in carbon emissions.

The Policy aims to improve the delivery of sustainable mobility by –

- *Implementing the accompanying action plan to 2025 and a reviewed and updated action plan for 2026 to 2030.*
- *Establishing a Leadership Group to oversee and drive implementation of the Policy and delivery of the action plan and agree a programme of "pathfinder" projects at local level.*
- *Introducing a new annual National Household Travel Survey to measure progress against the Policy's targets.*
- *Convening a new National Sustainable Mobility Forum to provide a platform for collaborative engagement with national, regional and local stakeholders.*
- *Increasing public engagement around the benefits of sustainable mobility and raising awareness of the availability of alternative options to the private car.*
- *Establishing a new National Transport Authority Advisory Council to engage with the NTA around the discharge of its functions.*
- *Developing a transport research network to support existing research programmes and draw on the sustainable mobility expertise available across academia and industry, both in Ireland and internationally.*

The Policy is guided by three key principles which are underpinned by 10 high-level goals:

*Principle 1: Safe and Green Mobility*

1. *Improve mobility safety.*
2. *Decarbonise public transport.*
3. *Expand availability of sustainable mobility in metropolitan areas.*
4. *Expand availability of sustainable mobility in regional and rural areas.*
5. *Encourage people to choose sustainable mobility over the private car.*

*Principle 2: People Focused Mobility*

1. *Take a whole of journey approach to mobility, promoting inclusive access for all.*
2. *Design infrastructure according to Universal Design Principles and the Hierarchy of Road Users model.*
3. *Promote sustainable mobility through research and citizen engagement.*

*Principle 3: Better Integrated Mobility*

1. *Better integrate land use and transport planning at all levels.*
2. *Promote smart and integrated mobility through innovative technologies and development of appropriate regulation.*

The policy is accompanied by an Action Plan with a total 91 actions organised by goal, to be completed by April 2025.

- National Sustainable Mobility Policy Action Plan 2022-2025: The action plan to 2025 contains actions to improve and expand sustainable mobility options across the country by providing safe, green, accessible and efficient alternatives to car journeys. It also includes demand management and behavioural change measures to manage daily travel demand more efficiently and to reduce the journeys taken by private car.

In the three years since the policy action plan was first released, 46 actions have been fully completed. Delivery of the remaining actions is expected to continue throughout the life of the current plan.

Various aspects of the design of the proposed development (e.g. provision of secure bike stores for residents and external stands for visitors, and dedicated pedestrian and cycle routes) will facilitate walking and cycling among residents and visitors. The design of the internal road and street layout is consistent with the *DMURS* and *Cycle Design Manual*.

The site is well serviced by accessible, high-capacity public transport infrastructure, in the form of the rail and bus services, which connect the town of Clongriffin directly to Dublin City Centre and surrounding suburbs.

The subject Phase 2 development site is c. 230m -west of the Clongriffin Railway Station. Clongriffin station is frequently served by the Dublin Area Rapid Transit (DART) trains operating between Malahide and Bray or Greystones, via Dublin City Centre, providing trains throughout the week and peak hours. The commuter rail line also provides services from the Clongriffin station northbound to Drogheda/Dundalk and southbound to Dublin Connolly station before ending in Bray and connecting into the wider rail network.

Dublin Bus operates route number 15 services to the Clongriffin area daily, traveling between Clongriffin and Ballycullen in south-west Dublin, via Dublin city centre. There are 4 no. existing bus stops located on Station Square and Clongriffin Main Street, at the boundaries of the subject site and within walking distance of the proposed development.

Four new bus routes are to run to and from Clongriffin Station. The D1 and D3 arterial routes and the N8 and L80 orbital/local routes will be within c.100m from the front of the site. In addition to these, it is proposed to extend the H1 arterial route, which currently runs between Dublin City Centre and Baldoyle, as far as Clongriffin Station. This is however contingent on the completion of a bus ramp over the railway line to provide a direct road connection between Station Square and Red Arches Road, to the east.

For further information, refer to the *Planning Report & Statement of Consistency*, prepared by BSM and *Traffic and Transportation Assessment*, prepared by CS Consulting and submitted as part of the planning application under separate cover.

## 3.5 Regional Policy Context

### 3.5.1 Eastern and Midland Regional Spatial and Economic Strategy 2019-2031 (RSES)

The Regional Spatial and Economic Strategy (RSES) is a strategic plan and investment framework to shape the future development of the Eastern & Midland Region to 2031, implementing Project *Ireland 2040* and its accompanying documents- *National Planning Framework* and *National Development Plan.*

The Region is the smallest in terms of land area but the largest in population size and is identified as the *"economic engine of the state"* because it contains the capital city (p. 14).

The Strategy identifies that the region "*is home to over 800,000 households, with 4 out of 5 living in conventional housing while apartments account for around 18% of our housing stock. One of the challenges facing the region is the continued growth rates of household formation coupled with a severe slowdown in the development of new housing stock during the economic recession, resulting in housing supply and affordability pressures in both sale and rental markets, particularly in Dublin and urban areas but affecting all of the region*".

The Strategy is underpinned by key principles that reflect the three pillars of sustainability: Social, Environmental and Economic, and expressed in a manner which best reflects the challenges and opportunities of the Region. The plan identifies that the central need is for the RSES to be people focused, as 'quality of life' encapsulates strong economic output and stability, good environmental performance and a good standard of living for all.

The subject site is located within the Dublin Metropolitan Area (DMA), as designated by the Strategy. The Metropolitan Area Strategic Plan (MASP) which is part of the RSES seeks to focus on a number of large-scale strategic sites, based on key corridors that will deliver significant development in an integrated and sustainable fashion. To achieve the overall vision the MASP identifies a number of guiding principles of sustainable development within the DMA including:

- *Integrated Transport and Land Use - To focus growth along existing and proposed high quality public transport corridors and nodes on the expanding public transport network and to support the delivery and integration of 'BusConnects', DART expansion and LUAS extension programmes, and Metro Link, while maintaining the capacity and safety of strategic transport networks.*

To achieve the objectives of the NPF, *'the MASP identifies strategic residential and employment corridors along key public transport corridors existing and planned, that contain development opportunities*.' The subject site is located in the 'North – South Corridor' strategic development corridor as designated by the Metropolitan Area Strategic Plan (MASP) which supports ongoing large-scale urban expansion.

Section 4.4 of the RSES supports continued population and economic growth in Dublin City and suburbs, with high quality new housing promoted and a focus on the role of good urban design, brownfield redevelopment and urban renewal regeneration. The RSES is referenced in section 1.9.6 of the *Dublin City Development Plan 2022-2028* (p. 34) and notes that the MASP supports a sequential approach to residential development with a primary focus on the consolidation of sites within or contiguous to Dublin City and Suburbs.

For further information, please also refer to Section 3.5.2 below and the *Planning Report & Statement of Consistency*, prepared by BSM and submitted as part of the planning application under separate cover.

### 3.5.2 Transport Strategy for the Greater Dublin Area 2022-2042

This strategy provides the framework for the planning and delivery of infrastructure and services in the Greater Dublin Area up to 2042 and replaces the previous Transport Strategy for the Greater Dublin Area 2016 – 2035. The framework aims to "*To provide a sustainable, accessible and effective transport*

*system for the Greater Dublin Area which meets the region's climate change requirements, serves the needs of urban and rural communities, and supports the regional economy*". The transport measures encompass the strategy's principles of effective, efficient and sustainable transport whilst helping to reduce modal share of car based commuting to a maximum of 45%.

To achieve these principles, future developments must:

- Have transport as a key consideration in land use planning – integration of land use and transport as to reduce the need to travel, reduce the distance travelled, reduce the time taken to travel, promote walking and cycling especially within development plans;
- Protect the capacity of strategic road network;
- Ensure a significant reduction in share of trips taken by car, especially those trips which are shorter or commuter trips;
- Take into account all day travel demand from all groups; and
- Provide alternate transport modes in order to reduce strain on M50 as current increase in traffic is unsustainable.

The strategy also highlights how it is necessary for the expansion of attractive public transport alternatives to car travel, to reduce congestion and emissions and enable the transport sector to cater for the demands associated with longer term population and employment growth in a sustainable manner.

For further information, please also refer to the *Planning Report & Statement of Consistency*, prepared by BSM and submitted as part of the planning application under separate cover.

## 3.6 Local Policy Context

### 3.6.1 Dublin City Development Plan 2022- 2028

The subject site is located within the administrative area of Dublin City Council. The *Dublin City Development Plan 2022-2028* (as referenced 'the Development Plan') sets the statutory planning policy for development within the city boundary, having regard to national and regional plans and policies. The Development Plan, in addition to national policy as set out above, provides the planning policy framework, and the design and development standards, for development of the subject lands.

The Development Plan sets out '*an integrated, coherent spatial framework to ensure our city is developed in an inclusive way which improves the quality of life for its citizens and ensures that it is an attractive place to live, work and visit'*. Section 1.2 outlines how to achieve this and the following is of relevance:

*a) Social/Residential – creating a more compact city with a network of sustainable neighbourhoods (aligned with the principle of the 15 minute city) which have a range of facilities and a choice of tenure and house types, promoting social inclusion and integration of all ethnic/minority communities.*

*d) Cultural/Built Heritage – making provision for cultural facilities throughout the city and increasing awareness of our cultural and built heritage and promoting safe and active streets through the design of buildings and the public realm.*

*e) Urban Form – creating a connected, legible and liveable city with a distinctive sense of place, based on active streets, quality public spaces and adequate community and civic infrastructure.*

*f) Healthy Placemaking - ensuring quality architecture, urban design and green spaces to provide quality of life and good health and wellbeing for all.*

### Core Strategy

Chapter 2 sets out the Core Strategy for the Plan. The aim of the core strategy is to guide how and where development should happen in the city. This strategy sets out the long-term vision for the city and promotes 'compact growth'. Compact growth involves the better use of available land within built up areas close to public transport and the city centre for development opportunities. It is also growth that is in line with developments for public transport, including cycle paths and quality footpaths.

Table 2-7 of the Core Strategy identifies that the Development Plan must accommodate between 20,120 – 31,520 additional persons up to an overall population target of between 625,750 and 640,000 by 2028. The housing demand calculated sets a requirement for the Development Plan to provide for approximately 40,000 housing units between 2022 and 2028.

Section 2.4.1 of the Core Strategy notes that Z14 lands have been identified as one of the nine zoning objectives which can accommodate residential development. Table 2-8 sets out the breakdown of zoned lands and primarily accounting for SDRA zoned lands. It also includes identified lands within the North-east Corridor and within the MASP Corridors, which includes Clongriffin lands. Table 2-9 sets out the capacity of existing zoned lands outside of SDRAs. In this regard, the subject Z14 zoned lands are included in Core Strategy calculations for achieving sufficient zoned lands to cater for targeted population growth. The development of the lands for residential purposes supports the achievement of Core Strategy targets.

Overall, the proposed development has had careful regard to the policies and objectives contained within the Development Plan. In particular the proposed development supports the achievement of Objective CS07:

*CS07: Promote Delivery of Residential Development and Compact Growth - To promote the delivery of residential development and compact growth through active land management measures and a co-ordinated approach to developing appropriately zoned lands aligned with key public transport infrastructure, including the SDRAs, vacant sites and underutilised areas.*

The design, layout and open space will result in a high-quality community and residential environment.

In summary the proposed development supports the achievement of the above vision by providing high quality residential development in proximity to public transport corridors. This development will foster a new community through its landscaped and open space strategy; mix of unit types and sizes; and provision of residential, commercial, community/cultural facilities; and, high quality architectural design.

### Residential Development

Chapter 5 of the Development Plan relates to Quality Housing Objectives. The Development Plan identifies that the provision of quality homes which provide for the needs of the city's population, and which contribute to the making of good, connected neighbourhoods as a key priority. In this regard it is the policy of DCC:

*QHSN10: To promote residential development at sustainable densities throughout the city in accordance with the core strategy, particularly on vacant and/or underutilised sites, having regard to the need for*

*high standards of urban design and architecture and to successfully integrate with the character of the surrounding area.*

The Development Plan further notes that, in Dublin City, it is envisaged that the majority of new housing in the city area will be apartments or another typology that facilitates living at sustainable urban densities. With regards to apartments, the DCC policies are as follows:

*QHSN36: To promote the provision of high quality apartments within sustainable neighbourhoods by achieving suitable levels of amenity within individual apartments, and within each apartment development, and ensuring that suitable social infrastructure and other support facilities are available in the neighbourhood.*

*QHSN38: To encourage and foster the creation of attractive, mixed use, sustainable residential communities which contain a wide variety of housing and apartment types, sizes and tenures, in accordance with the Housing Strategy and HNDA, with supporting community facilities and residential amenities. Further detail in regard to unit mix is set out in Chapter 15: Development Standards. Unit mix requirements for the Liberties and the North Inner City are set out in Section 15.9.1 and Table 37 of the Housing Strategy in Appendix 1*

The scheme as proposed introduces a mix of residential unit types and sizes to an existing and emerging strategic development regeneration area (SDRA).

### Zoning

The site is predominantly zoned Z14 *'Strategic Development and Regeneration Areas (SDRAs)*', which has the stated aim *"To seek the social, economic and physical development and/or regeneration of an area with mixed-use, of which residential would be the predominant use."* The area immediately east is zoned as '*Z4: Key Urban Villages/Urban Villages' and the areas immediately west and south are zoned as 'Z1: Sustainable Residential Neighbourhoods'.* The area directly north has the same Z14 zoning as the site itself.

The Development Plan identifies 12 Key Urban Villages (KUV) for the city and includes the Clongriffin/Belmayne SDRA, referenced as SDRA 1. The Clongriffin/Belmayne and Environs SDRA focuses on creating a sustainable mixed-use neighbourhood. The SDRA designation ensures a coordinated framework for the completion of undeveloped land, aligning with the objectives of the Development Plan and regional strategies (RSES and MASP) to promote compact growth within the Dublin Metropolitan Area. These lands are strategically positioned to deliver significant new residential and mixed-use development, particularly around Clongriffin's transportation hub.

Permissible uses and open for consideration uses on Z14 lands include:

- Permissible Uses: *Assisted living/retirement home, beauty/ grooming services, bed and breakfast, buildings for the health, safety and welfare of the public, café/ tearoom, childcare facility, community facility, conference centre, craft centre/ craft shop, cultural/recreational building and uses, delicatessen, education, embassy office, embassy residential, enterprise centre, financial institution, guesthouse, halting site, home-based economic activity, hotel, industry (light), live-work units, media-associated uses, medical and related consultants, mobility hub, office, off-licence, off-licence (part), open space, park and ride facility, place of public worship, primary health care centre, public house, public service installation, residential, restaurant, science and technology-based*

*industry, shop (local), shop (neighbourhood), sports facility and recreational uses, student accommodation, take-away, training centre, veterinary surgery.*

- Open for Consideration Uses: *Advertisement and advertising structures, betting office, car park ancillary to main use, car trading, civic and amenity/recycling centre, cultural, creative and artistic enterprises and uses, funeral home, garage (motor repair/service), garden centre/ plant nursery, hostel (tourist), internet café/call centre, laundromat, nightclub, office-based industry, outdoor poster advertising, petrol station, pigeon lofts, postal hotel/motel, shop (district), shop (factory shop), warehousing (retail/non-food)/retail park, warehousing.*

The elements of the proposed development are in accordance with the zoning objective and permitted uses. Refer to the *Planning Report & Statement of Consistency* prepared by BSM and submitted with this planning application for further details on the planning policy and context for the proposed development.

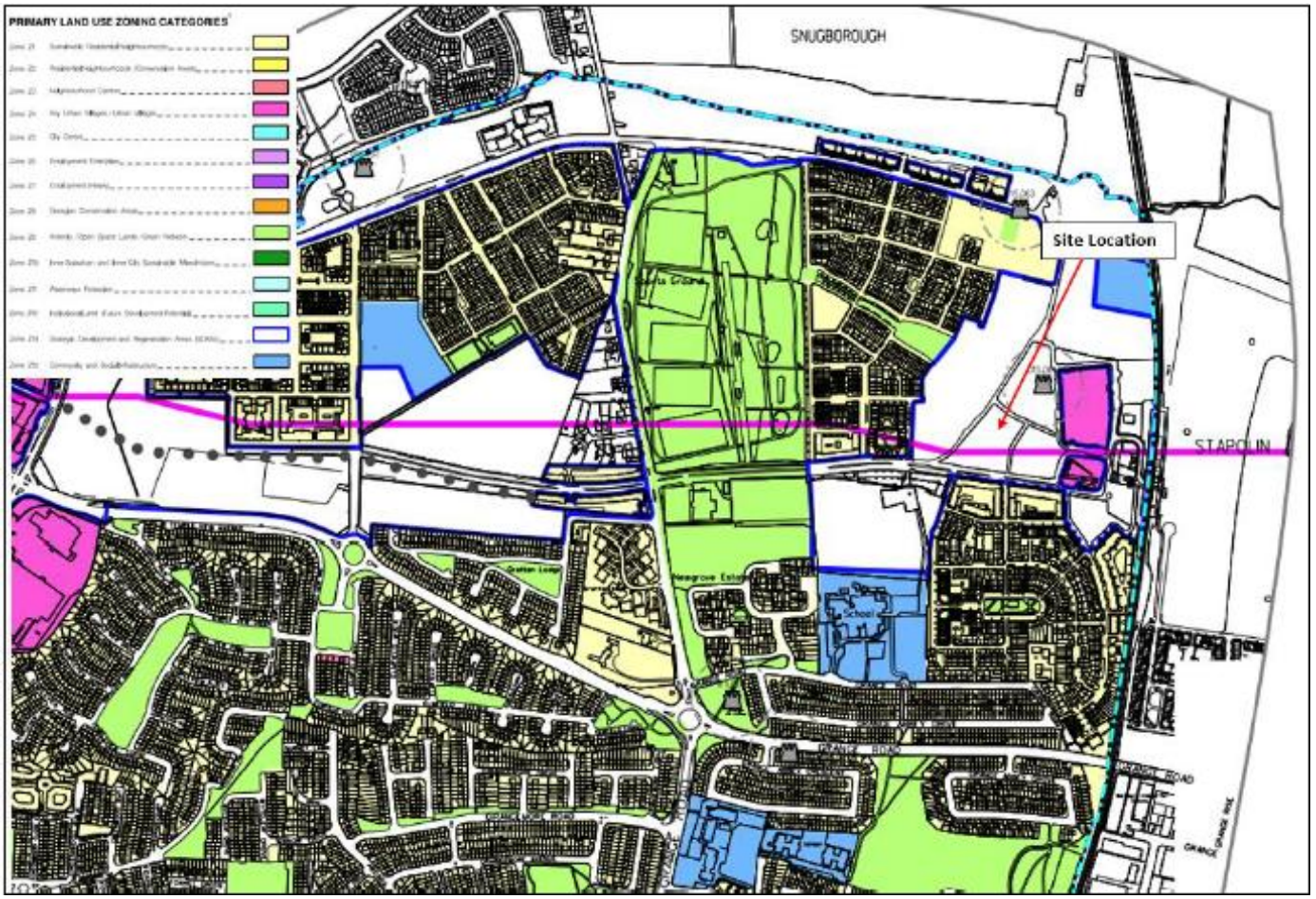



Figure 3.2 Land Use zoning at the location of the proposed development (Source: Dublin City Development Plan 2022-2028; Mapset C)

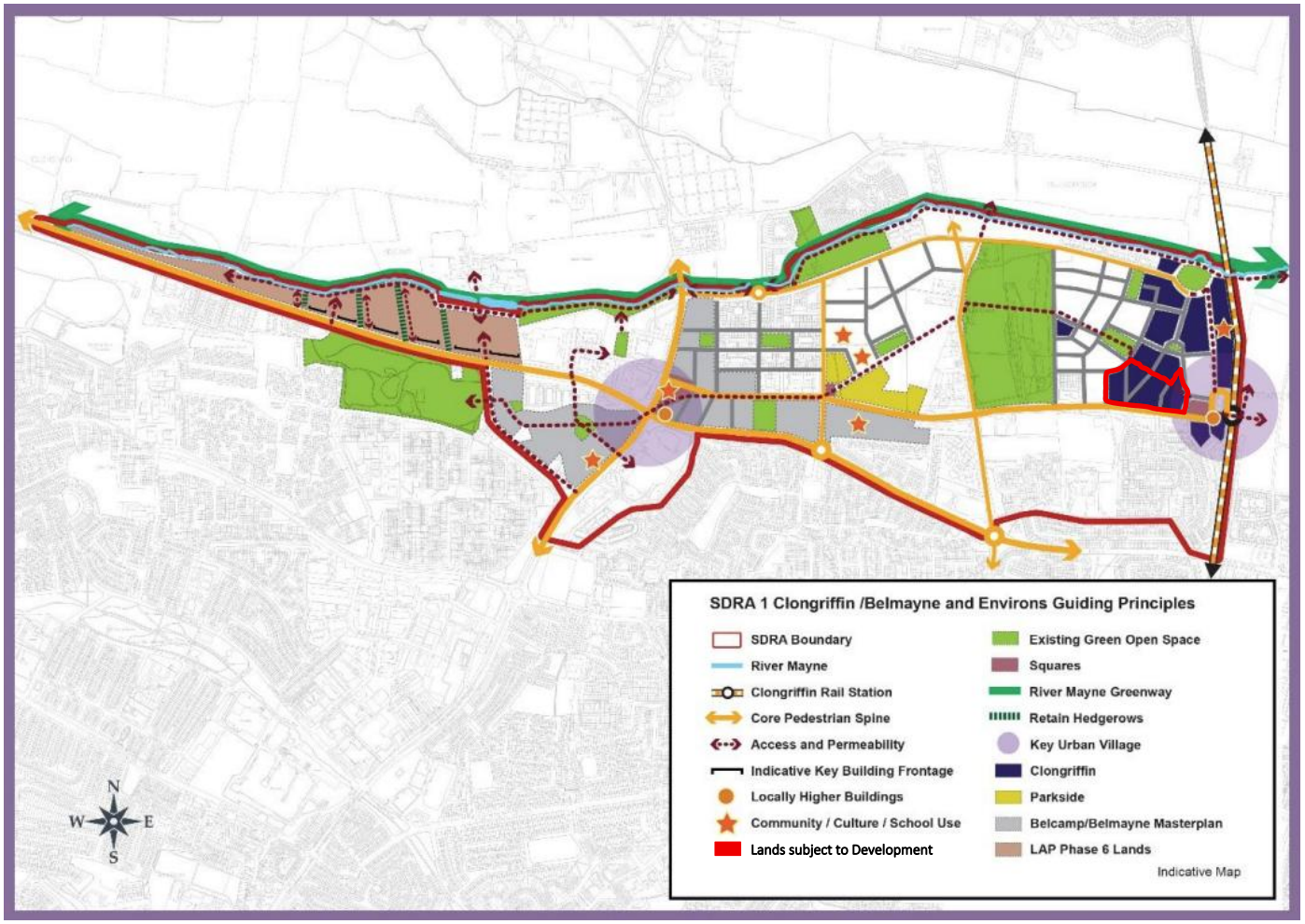



Figure 3.3 SDRA 1 Clongriffin/Belmayne and Environs Guiding Principles Map (Source: Dublin City Development Plan 2022-2028; Figure 13-4)

# 4 Consideration of Alternatives

## 4.1 Introduction

Consideration of alternatives is an important step in the EIA process, which is necessary to evaluate the likely environmental consequences of a range of development strategies for the delivery of the proposed development. This chapter provides an overview of the alternatives that have been considered for the proposed development.

## 4.2 Legislation

Article 5(1) of the amended Directive requires the consideration of reasonable alternatives that are relevant to the proposed development, taking into account the effects of the proposed development on the environment. Article 5(1)(d) states that the information contained in the EIAR shall include:

> *"… a description of the reasonable alternatives studied by the developer, which are relevant to the project and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the project on the environment. "*

Further, Annex IV(2) states that the information for the EIAR shall include:

> *''A description of the reasonable alternatives (for example in terms of project design, technology, location, size and scale) studied by the developer, which are relevant to the proposed project and its specific characteristics, and an indication of the main reasons for selecting the chosen option, including a comparison of the environmental effects.''*

Part 1(d) of Schedule 6 of the PDR 2001 transposes this requirement, stating that an EIAR shall include:

> *"A description of the reasonable alternatives studied by the person or persons who prepared the EIAR, which are relevant to the proposed development and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the proposed development on the environment."*

## 4.3 Method

In accordance with the EIAR guidelines, different classes of alternatives may be considered at key stages during the process. As environmental issues emerge during the preparation of the EIAR, alternative designs may need to be considered early on in the process, or alternative mitigation options may need to be considered towards the end of the process. The EPA guidelines state that:

> *"The objective is for the developer to present a representative range of the practicable alternatives considered. The alternatives should be described with 'an indication of the main reasons for selecting the chosen option'. It is generally sufficient to provide a broad description of each main alternative and the key issues associated with each, showing how environmental considerations were taken into account in deciding on the selected option. A detailed assessment (or 'mini-EIA') of each alternative is not required." (p. 33)*

The EPA Guidelines indicate that alternatives should be considered under the following headings:

1. 'Do-Nothing' Alternative;
2. Alternative Locations;

3. Alternative Layouts;
4. Alternative Designs;
5. Alternative Processes; and
6. Alternative Mitigation Measures

## 4.4 Do-Nothing Alternative

The 'Do-Nothing' alternative considers the likely scenario that would arise, assuming the proposed development was not progressed, i.e. if nothing were done. Note that this Chapter discusses the Do-Nothing scenario in terms of development (or lack thereof) in the absence of the proposed development. The likely impacts of a Do-Nothing scenario in relation to the various environmental topics (e.g. architectural heritage, biodiversity, traffic and so on) is discussed in the respective chapters of this EIAR. For instance, Chapter 15 (Cultural Heritage, Archaeology & Architectural Heritage) discusses the implications of a Do-Nothing scenario for the Protected Structures on the Site.

The most likely Do-Nothing scenarios in this case are:

a) A continuation of the existing status and use of the lands and buildings (i.e. disused and undeveloped town centre lands); or

b) Development (likely residential) under the scope of a separate application / proposal, at some point in the future.

The current site is not in use and remains fenced off which given its location on the Main St is detracting from the success of this Strategic Development & Regeneration Area.

In the context of the ongoing housing crisis in Dublin City, the former scenario (a) is considered to represent an inefficient, uneconomical and socially suboptimal use of these identified development lands. The opportunity cost, in this scenario, would include the 711 proposed residential units, and the accommodation that these would otherwise provide.

The latter scenario (b) is considered somewhat more likely, taking into consideration the following contextual factors and trends:

- The Clongriffin lands are zoned as Z14, 'Strategic Development and Regeneration Areas (SDRAs)', under the Dublin City Development Plan (2022 – 2028), which states- *"To seek the social, economic and physical development and/or regeneration of an area with mixed-use, of which residential would be the predominant use*."
- The lands are strategically located in terms of public transport / mobility, proximity to employment and community amenities;
- Significant demand for housing in Dublin Metropolitan Area; and
- The policy context at national and regional levels for 'compact urban development', whereby additional units are preferentially delivered within the existing built-up footprint of urban areas.

Given these contextual factors and the extent of the project need, it is very likely that an alternative residential development proposal would be submitted in a do-nothing scenario for this project. Like this project, such other proposal would be assessed on its merits.

## 4.5 Alternative Locations

The proposed development site is zoned predominately as Z14 – 'Strategic Development and Regeneration Areas (SDRAs)' which has the objective - "*to ensure existing environmental amenities are protected in the predominantly residential future use of these lands*". The area immediately east is zoned as '*Z4: Key Urban Villages/Urban Villages' and the areas immediately west and south are zoned as 'Z1: Sustainable Residential Neighbourhoods'.* The area directly north has the same Z14 zoning as the site itself.

Based on the zoning of the Clongriffin lands, as described above, it is considered that the site is entirely suitable for the proposed nature of this LRD application. It is not considered that the consideration of alternative locations is relevant in this case. As stated in the EPA guidelines that:

> *"Some locations have more inherent environmental sensitivities than others. Depending on the type of project and the range of alternatives which the developer can realistically consider, it may be possible to avoid such sites in favour of sites which have fewer constraints and more capacity to sustainably assimilate the project. It can be useful to ensure that a range of options, that may reasonably be available, are included in the evaluation."* (p. 35)
>
> *[…]*
>
> *"Clearly in some instances some of the alternatives described below will not be applicable – e.g. there may be no relevant 'alternative location'…"* (p. 33)

At this location, the proposed development will deliver additional dwellings along with associated infrastructure and commercial and community facilities. The subject lands will gain benefit from existing transport, social and community infrastructure. It is considered that the site is entirely suitable for the nature of the proposed development, and it is not necessary to consider alternative locations or sites.

## 4.6 Alternative Layouts & Design

The evolution of the design and layout for the proposed development has been an iterative process which involved the entire design team and thorough pre-planning engagement with DCC. The design has undergone rigorous appraisal, which has led to a final layout that responds appropriately to the site characteristics, opportunities and constraints. The final layout is presented in the Architectural Drawings and the Architectural Design Statement (Henry J Lyons, 2026), which have been submitted under separate cover and should be read in conjunction with this chapter.

This EIAR demonstrates that the site and the surrounding area have the environmental capacity to accommodate the proposed development without significant risk of impact upon environmental sensitivities due to the location or nature of the proposed development.

The proposed layout is designed to function, in combination with the already permitted developments on the wider Masterplan site, as a mixed-use (predominantly residential) development on a significantly underutilised and strategically located site. A detailed discussion of the architectural design rationale and strategy for the proposed development and wider Masterplan site is presented in the Site Masterplan Framework Report and Architectural Design Statement, all of which have been prepared by HJL Architects and submitted under separate covers as part of this application.

The subject application (Phase 2) forms part of a wider Masterplan for lands within the Clongriffin area and is a follow-on application to DCC Reg. Ref: LRD6064/24-S3 which represents the permitted Phase 1 of the Masterplan. This phase is under construction.

This section sets out the intermediate design progressions of the proposed development, includes figures showing the proposed layout at each stage of this process, and summarises the main considerations that have influenced the progression of the design. The Strategic Development & Regeneration Area Objectives for the area set out clear parameters in terms of form, height and land use so as such there is more limited scope to consider variants on the site.

Given the site's location, proximate to Dublin City and significant employment centres, the site is suitable to an increased density and height of development in order to optimise residential development on strategic sites. An apartment scheme is appropriate in this site as trying to provide housing typologies would represent an underutilisation of land. The scheme, within apartment only typologies, provides for a range of sized units from studios to 3-bed units offering diversity of units for different demographics and typologies found in the immediate area.

As discussed in Chapter 6 (Consultation), the proposed development has also been subject to a series of consultation meetings with DCC and the wider community and local representatives.

### 4.6.1 Alternative Layout 1

**Initial Massing & Site Layout**

At initial project inception and interpretation of the SDRA Objectives, a number of matters were raised regarding the baseline and conceptual design. These issues included the grouping and height of the development blocks which resulted in the following:

- Opportunity to provide for increased heights and density;
- The need to provide sufficient **sunlight** access to the communal amenity spaces;
- The need to provide sufficient and good quality communal **open space**;
- The need to have regard to provision of a new frontage on Main St, Market St and Station Square and **appropriate design** in context with the area;
- Integration of the proposed ground floor community and commercial elements.

The issues raised relate to the following environmental aspects:

- Population & Human Health- Impact on adjacent residential buildings
- Landscape & Visual- lack of continuity of form along Main Street, which risks producing a fragmented urban landscape lacking visual harmony.
- Microclimate - Daylight/Sunlight- Impact on adjacent residential buildings

**Figure 4.1** below illustrates the initial conceptual design.




Figure 4.1 Alternative Design Layout 1

### 4.6.2 Alternative Design 2

**Emerging Massing & Layout**

The proposed project evolved from the SDRA Objectives, as set out in the Masterplan Framework, and the consideration of an alternative design resulted in significant environmental improvements in terms of Population & Human Health, Microclimate (Daylight/Sunlight) and Landscape & Visual as a result of an iterative design process and engagement with local communities and Dublin City Council. The alternative design No. 2 resulted in:

- Increased south and east light penetration;
- Increased height to the eastern edge of the Site fronting Station Square;
- Rationalisation of the community and cultural uses within the site.

Figure 4.2 illustrates the alternative design which was progressed at design stage. The red shading and arrows in the figure indicate areas of increased light penetration.




Figure 4.2 Alternative Design Layout 2

### 4.6.3 Alternative - The proposed development

The final preferred proposed layout has been progressed via an iterative process, with changes having been made during the pre-application process with DCC based on their comments and consideration of all environmental factors pertaining to the development. The resulting proposed development alternative was designed to address environmental considerations and has particular consideration for the following:

- Increase in height at key locations onto Station Square and a well-defined and engaging street presence along Market Street;
- Enhanced dual aspect ratios;
- Increased separation between blocks;
- Well-structed public spaces and connectivity;
- Blocks arrangement provides more private, protected and safe communal open spaces.

Figure 4.3 below illustrates the proposed development design alternative. The red shading and arrows in the figure indicate areas of increased light penetration.




Figure 4.3 The Proposed Project Alternative

## 4.7 Alternative Processes

Having regard to the nature of the proposed development, this is not considered a relevant class of alternatives in this case. The proposed construction works comprise relatively standard building construction processes. As such there is no specific alternative construction processes identified in this EIAR.

However, the residential units will have a detailed designed to comply with the building regulations framework and the requirement to achieve Nearly Zero Energy Building (NZEB) standard for new developments.

## 4.8 Alternative Mitigation Measures

Where appropriate, alternative mitigation measures will be considered by the relevant specialist contributors to the EIAR as listed in Table 1.4.

## 4.9 Reasons for Selecting the Preferred Alternative

The design of potential alternatives for the proposed development evolved through an iterative process and a number of key structuring principles.

During the design process for the proposed development a number of iterations of alternative designs were considered. The proposed scheme has been prepared in accordance with the requirements of the National and Local Planning Policy and Design Standards.

The proposed scheme has been the subject of a number of pre-application meetings with the Dublin City Council prior to lodgement (see Section 6.2 of this EIAR and the Planning Report which accompanies this planning application). The proposed scheme was also subject of an LRD Opinion Meeting and Formal Opinion with Dublin City Council, with design alterations arising out of this process also.

The key considerations which influenced the design of the proposed development were as follows:

- To provide and promote a residential development in this Strategic Development & Regeneration Area, with regard to the need for high standards of urban design/architecture and to successfully integrate the development with the character of the surrounding area to increase the landscape and visual amenity of the development.
- The need to promote sustainable development of vacant or under-utilised sites and to consider higher density proposals.
- The need to provide sustainable neighbourhoods by achieving suitable levels of amenity.
- The need to provide suitable social infrastructure and other support facilities are available in the neighbourhood.
- The need to include community hubs, sports and recreational green open spaces and suitable shops contributing to the creation of sustainable neighbourhoods.
- The quality of the urban environment to be delivered and the associated improvement of population and human health.
- Maximise the daylight/sunlight influx through strategic design and layout of the proposed development blocks.

The Architects Design Statement, prepared by HJL Architects sets out the overall approach to the site and how it meets the objectives of the Masterplan as well as the specifics of the proposed development and how it complies with appropriate development standards.

On the basis of the foregoing, it is considered that all reasonable alternatives to the project are considered and no alternatives have been overlooked which would significantly reduce or further minimise environmental effects.

Having considered all alternatives, the final design chosen by the developer (i.e. the project as presented) is deemed to be the most suitable project for the site.

# 5 Description of the proposed development

## 5.1 Introduction

This chapter provides a description of the proposed development in accordance with Article 5(1)(a) of the 2011 EIA Directive, as amended by Directive 2014/52/EU, the description should comprise *"…information on the site, design, size and other relevant features"*. It provides the basis against which the specialist assessments are undertaken. Note that specific details of the proposed development that are of relevance to particular specialist topics are also set out, where relevant, in the corresponding EIAR chapters.

## 5.2 Site of the proposed development

### 5.2.1 Site Location

The site is located within the administrative boundary of Dublin City Council, and as such is subject to the *Dublin City Development Plan 2022-2028* (including adopted variations) (hereafter 'the Development Plan').

The proposed development is located at Clongriffin, Dublin 13 in the northern fringe of Dublin city administrative area, within the Clongriffin/Belmayne and Environs Strategic Development Regeneration Area (SDRA). The site is located c. 9.5km north-east of the Dublin City Centre, c. 5km east of the M1/M50 network and adjacent to the administrative boundary with Fingal County Council.

The site occupies a prominent position immediately west of Clongriffin DART Station and forms part of a mixed-use urban quarter that is currently under phased development. The site lies at the edge of the established Belltree and Clongriffin neighbourhoods and represents one of the remaining large sites of development land within this part of a Strategic Development Regeneration Area (SDRA). To the immediate north of the site the permitted residential development (LRD6064/24-S3) is currently under construction.

To the west, the site is bound by the Belltree residential area, beyond which lies Father Collins Park (c. 200m), a significant public open space serving the wider community. To the east, the Clongriffin DART Station provides direct access to Dublin city centre, enhancing the area's connectivity and supporting transit-oriented development. To the south the site is bounded by Main Street. Further to the south lies residential and educational facilities such as Grange Community College and Gaelcholáiste Reachrann. The site is c. 350m south of the River Mayne and c. 1.2km west of Baldoyle Estuary.

The wider Clongriffin area has been planned as a high-density, mixed-use urban centre, combining residential, retail, educational, and community facilities within a sustainable urban framework, as described in the Dublin City Development Plan 2022-2028 (refer to Section 3.6.1). The combination of established infrastructure, public transport access, and surrounding green space positions the site as a key component in the continued development and consolidation of the Clongriffin/Belmayne urban area.

Refer to **Figure 1.1** and **Figure 1.2** in Chapter 1 (Introduction).

### 5.2.2 Site History

The LDA Clongriffin Lands fall within the wider Clongriffin masterplan which was originally granted planning permission in 2003 and was updated in 2018 which formed the basis for the recent SHD Planning Applications. There is a history of previous planning permissions for the lands, all of which have expired. The Planning Report and Statement of Consistency for the proposed development, prepared by BSM (2026) and submitted under separate cover as part of the planning application, details the planning history for the site and the immediate surrounds.

Currently, there is one valid permission that the LDA applied for as part of the Clongriffin Masterplan for Blocks 5 & 6 (DCC Reg. Ref: LRD6064/24-S3). Planning permission was lodged by the Land Development Agency on 16th August 2024 to Dublin City Council under the Large-Scale Residential Development (LRD) process and was granted on 27th November 2024. Permission was granted for a mixed-use residential development comprising two blocks (Blocks 5 and 6) providing a total of 408 apartments.

Phase 1 lands (Blocks 5 & 6) are currently under construction and will be ready for occupation by late 2026.

### 5.2.3 Masterplan Framework for the Clongriffin wider Lands

The site falls under the wider Clongriffin lands, for which a Masterplan has been prepared by HJL Architects on behalf of the LDA. The masterplan framework sets forth a vision for a mixed-use residential development on a designated site within Clongriffin, with the aim of creating a vibrant, sustainable, and inclusive community that serves a diverse population. This framework is designed to guide the development process in alignment with both local and regional planning objectives.

The site is predominantly zoned Z14 *'Strategic Development and Regeneration Areas (SDRAs)*', which has the stated aim *"To seek the social, economic and physical development and/or regeneration of an area with mixed-use, of which residential would be the predominant use."*

The Clongriffin wider lands framework plan comprises a total masterplan area of c. 10.08ha. The proposed development, that is, Phase 2 comprises of Zones 7, 8 & 9 including the stand alone creche. Future development areas are preliminarily outlined but remain flexible to accommodate evolving requirements.

- Phase 1: Blocks 5 & 6 - currently under construction.
- Phase 2: Subject site of this planning application - Development of apartment buildings in the southern sector of the site. Zones 7, 8 & 9 and stand alone creche.
- Phase 3: Low-rise residential typologies (affordable purchase units) in the northern sector, along the crescent of the pond. Zones 1, 2, 3 & 4 to be submitted to DCC.
- Phase 4: Indicative.
- Phase 5: Indicative.

Refer to **Figure 5.1**, below.

The Clongriffin Masterplan Framework promotes the enhancement of the urban environment, creating interconnected green spaces that support ecological and social functions. Tree planting and green corridors will enhance biodiversity, improve air quality, and promote wildlife movement. The use of native plants reduces maintenance and preserves the area's natural character, contributing to climate resilience, water management, and community well-being.

For further information, refer to the *Clongriffin Wider Lands Framework* by HJL Architects, submitted under separate cover as part of this application.

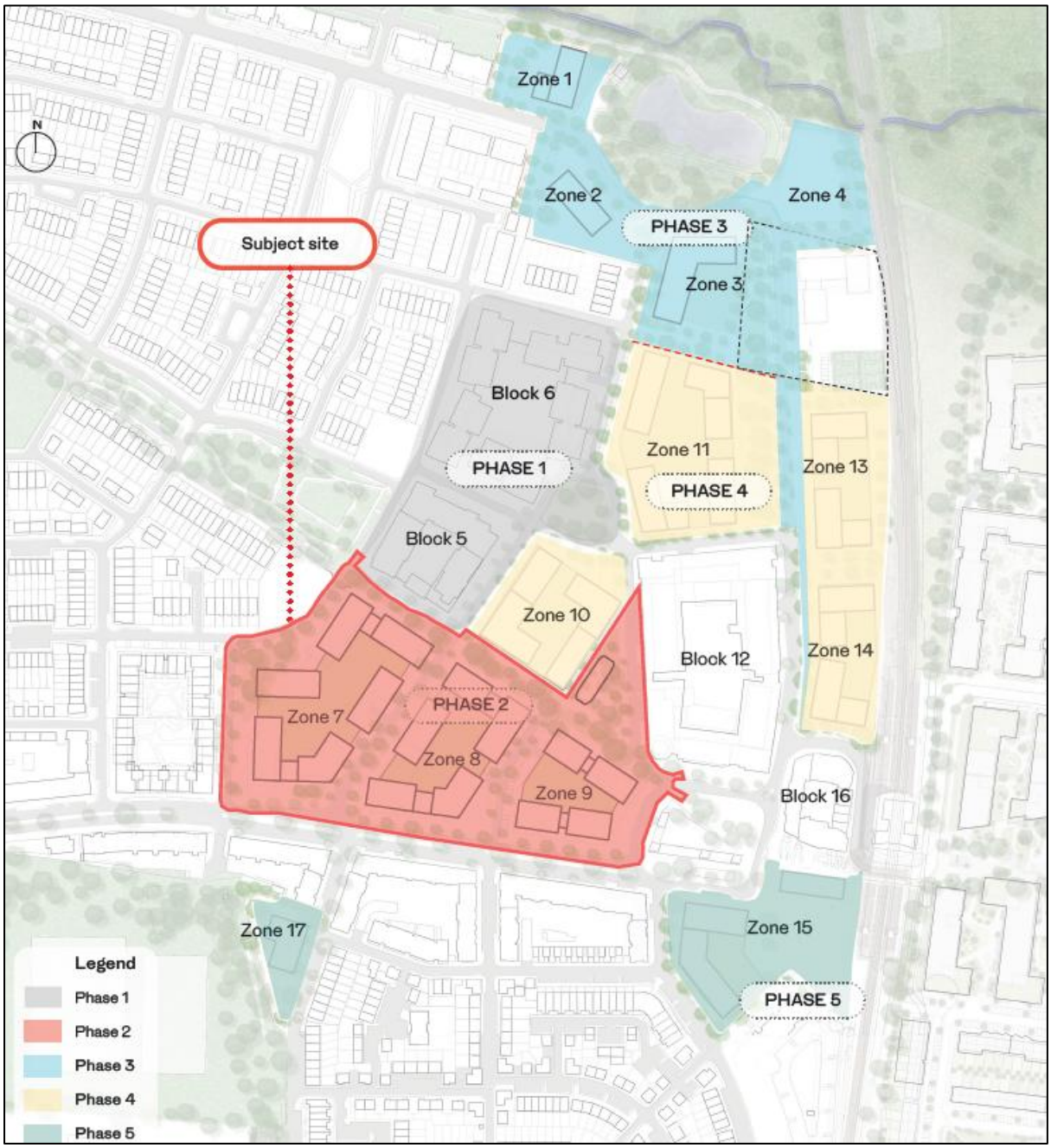



Figure 5.1 Phasing strategy for the overall Clongriffin masterplan lands, including future development areas (Source: HJL Architects, 2026)

## 5.3 Need for proposed development

The development of the proposed site is supported by both national and regional policy and guidance documents, as detailed in Chapter 3 (Planning and Development Context) and in the *Planning Report and Statement of Consistency* prepared by BSM and submitted under separate cover as part of the planning application pack.

## 5.4 Characteristics of the proposed development

### 5.4.1 Overview

The development will consist of the construction of a residential development set out in 3 no. blocks (identified as Zones 7, 8 & 9), ranging in height from 5 to 10 storeys, to accommodate 711 no. apartments in addition to café/restaurant/retail units, community/cultural spaces, and a standalone creche building.

The 3 no. residential buildings are arranged around podium courtyards accommodating communal amenity spaces for future residents. Zone 7 is a 5 to 7 storey block located on Main St., Friar's St., Park St and the under-construction Market St. containing 280 no. apartments. Zone 8 is a 6 to 8 storey block between Main St. and Market St. containing 263 no. apartments. Zone 9 is a 6 to 10 storey block located on Main St., Station Square and Market St. containing 168 no. units.

Car and cycle parking for both residents and visitors is provided below podium and at surface level throughout the scheme. The proposed development includes all site landscaping works, open space, green roofs, lighting, servicing and utilities, signage, and associated and ancillary works, including site development works above and below ground.

The proposed development sits as part of a Masterplan for a wider Clongriffin landbank which includes the under-construction Blocks 5 & 6 to the north of Market Street.

Please refer to the *Planning Report & Statement of Consistency* prepared by Brady Shipman Martin (BSM) and submitted under separate cover for further details of the proposed development.

### 5.4.2 Detailed Development Description

The proposed development will consist of:

- The construction of a residential development with a gross floor area (GFA) of c. 73,641.91 sq.m set out in 3 no. residential blocks, ranging in height from 5 to 10 storeys, to accommodate 711 no. apartments, with associated ground floor retail/café/restaurant units and community/arts/cultural uses, and a standalone childcare facility. The site will accommodate a total of 335 no. car parking spaces and 1,605 no. bicycle parking spaces. Landscaping will include new public realm and communal courtyards at podium level. The proposed development sits as part of the wider Land Development Agency landbank at Clongriffin which includes the under-construction Blocks 5 & 6 to the north of Market Street (as permitted under LRD6064/24-S3).
- The 3 no. residential buildings range in height from 5 to 10 storeys, accommodating 711 no. apartments comprising 50 no. studios, 304 no. 1-bed units, 351 no. 2-bed units (68 no. 2-bed (3P) & 283 no. 2-bed (4P)) and 6 no. 3-bed (5P) units. The breakdown of residential accommodation is as follows:
  - Zone 7 is a 5 to 7 storey building, including setbacks and balconies, accommodating 280 no. units (5 no. studios, 117 no. 1-bed units, 16 no. 2-bed (3P), 136 no. 2-bed (4P) and 6 no. 3-bed (5P) units). Communal Amenity Space of c.2,202 sq.m is provided at podium level. The ground floor includes for 1 no. community/cultural/arts unit of c.781 sq.m, ground floor own door residential units, cycle parking, waste stores and plant areas. It includes for below podium/undercroft parking in Zone 7 containing 130 no. car spaces.
  - Zone 8 is a 6 to 8 storey building, including setbacks and balconies, accommodating 263 no. units (29 no. studios, 106 no. 1-bed units, 21 no. 2-bed (3P) and 107 no. 2-bed (4P)). Communal

Amenity Space of c.1,600 sq.m is provided at podium level. The ground floor includes for 2 no. community/cultural/arts units of c.199 sq.m and c.346 sq.m, ground floor own door residential units, cycle parking, waste stores and plant areas. It includes for below podium/undercroft parking in Zone 8 containing 82 no. car spaces.

- Zone 9 is a 6 to 10 storey building, including setbacks and balconies, accommodating 168 no. units (16 no. studios, 81 no. 1-bed units, 31 no. 2-bed (3P), and 40 no. 2-bed (4P)). Communal Amenity Space of c.969 sq.m is provided at podium level. The ground floor includes for 2 no. retail/café/restaurant units of c. 140 sq.m and c.482 sq.m, ground floor own door residential units, cycle parking, waste stores and plant areas. It includes for below podium/undercroft parking in Zone 9 containing 40 no. car spaces.

- A standalone two-storey crèche of c. 911 sq.m (with an external play area of c. 509 sq.m) is provided to the north of Zone 9 along Market Street and Clongriffin Road.
- The proposed development also includes for the completion of the eastern section of Market St, which is currently under construction, to where it meets Clongriffin Road/Station Square. The remainder of Market St, north of Zone 8 and 9, will be a landscaped pedestrianised/cycle route, containing seating, external community/cultural space, cycle parking and planting.
- The site will accommodate a total of 335 no. car parking spaces (317 no. for residents and 18 no. for visitors/crèche) and 1,605 no. bicycle parking spaces including cargo bikes, EV charging and shared bikes (1,193 for residents/staff and 412 no. for visitors) in separate secure below podium areas and at surface level. A total of 317 residents car parking spaces are provided with 252 spaces located below podium/undercroft and 65 spaces provided at surface level. A total of 1,178 no. resident's bicycle stores and 15 no. staff parking, including cargo spaces are provided at below podium/ground level within the blocks. In addition, 18 no. car parking spaces are located at surface level to include visitor, childcare facility parking, accessible and car club as well as 412 no. short stay bicycle parking spaces.
- The proposed application includes all site landscaping works, green and blue roofs, lighting, servicing, signage, junction upgrades, ESB Substations, solar PV panels at roof level and all associated and ancillary works, including site development works above and below ground including site drainage and infrastructure.

An Environmental Impact Assessment Report has been prepared in respect of the proposed development.

### 5.4.3 Design Rationale

As outlined above, Z14 lands and the Strategic Development Regeneration Area (SDRA), form the majority of the subject lands and have specific requirements and objectives that have to be met in the proposed development of residential on the lands.

The proposal centres on consolidating and developing a diverse mix of retail, commercial, and civic amenities. The goal is to create a vibrant and dynamic central hub for the community. The site's design prioritises connectivity through integrated green routes and residential streets, with all residential areas located within a 10-minute walk of key destinations.

The Main Street boulevard is designed to encourage people to meander, linger, and enjoy a vibrant setting. This will be achieved through landscaping measures such as wide pavements, street furniture,

green spaces, and robust materials. Retail space is located along the street to promote public interaction and activity. Lush planting and street furniture will create a biodiverse Market Street that connects residents with Father Collins Park. The green route links into existing green spaces, extending and strengthening the natural environment. Open spaces are incorporated into the streetscape to encourage social interaction, relaxation, and community gatherings. These green areas enhance both the liveability and attractiveness of the area. The design of the residential streets creates a safe, friendly, and well-connected environment for pedestrians, cyclists, and vehicles. Carefully considered north–south alignments and enhanced public spaces ensure pleasant streets that enable community interaction.

As set out in the Architect's Design Statement the design intent for Clongriffin sets out a cohesive vision for a vibrant and resilient urban neighbourhood. Building massing is carefully arranged to create a legible streetscape, balancing scale and proportion while establishing a clear hierarchy of spaces and connections.

A robust material palette of brick, metal, and natural finishes anchors the architecture, chosen for durability, sustainability, and low maintenance. Variations in brickwork bring character and identity, while metal balconies and architectural detailing add depth and refinement to facades.

The ground floor design plays a pivotal role in activating the street. Community and cultural spaces, and retail, and food & beverage units, create continuous engagement and vibrancy, with well-defined entrances to apartment blocks emphasising accessibility, security, and a strong sense of address.

The public realm draws together buildings and landscape into a coherent whole. Landscaped streets, green spaces, and podium gardens prioritise pedestrians and cyclists, integrating seating, planting, and SuDS features to foster social interaction and environmental comfort. Together, these elements combine architecture, materials, and landscape into a unified design that enhances daily life and strengthens the identity of Clongriffin.

### 5.4.4 Drainage

The proposed drainage design is detailed in the Engineering Services Report (2026) and corresponding drawings prepared by CS Consulting, submitted under separate cover as part of this application.

The design of the drainage system will be detailed in accordance with Part H of the Building Regulations, Uisce Éireann's *Code of Practice for Wastewater*, and in accordance with all Dublin City Council Drainage Division and Uisce Éireann requirements.

#### 5.4.4.1 Existing Infrastructure – Masterplan Lands

As detailed in the Engineering Services Report (CS Consulting, 2026), development of the wider Clongriffin area has been carried out in accordance with a 10-year masterplan planning permission granted to Gannon Homes on 27th June 2003 (DCC Reg. Ref. 1302/02 (An Bord Pleanála ref. PL29N.131058)). This provided for development consisting of 3,576no. dwellings and 80,600m$^2$ of mixed retail, commercial, leisure and community use, associated car parking and engineering works and provision for a railway station. Overall infrastructure completed as part of the aforementioned parent permission, or separate planning permissions for individual sites within the masterplan area, includes:

- Clongriffin Railway Station and its associated infrastructure.

- The 2no. access roads from the Hole in the Wall Road (Clongriffin Main Street and Marrsfield Avenue).
- The
- masterplan area's internal roads required for general movement.
- Comprehensive internal foul drainage and surface water drainage networks, including a foul pumping station and a stormwater attenuation pond in the north-east corner of the masterplan area.
- A well-developed internal potable water supply network.

#### 5.4.4.2 Foul Drainage System

As detailed in the Engineering Services Report (CS Consulting, 2026), an Uisce Éireann trunk foul sewer runs along Marrsfield Avenue to the north section of the wider Clongriffin development lands. In the immediate vicinity of the proposed development site, the local foul drainage network includes foul sewers along the existing extents of Belltree Avenue, Lake Street, and Park Street.

The Uisce Éireann *Code of Practice for Wastewater Infrastructure* specifies an average foul effluent flow rate of 165 litres per person per day for domestic dwellings (150 litres per person per day, plus a 10% allowance for external infiltration) and an average occupancy of 2.7 persons per residential unit. The maximum design population is therefore 1,909 people (1,909 pe), and the maximum average effluent flow (dry weather flow or DWF) to be generated by the proposed development is 3.65l/s.

Surface water runoff from the proposed development shall be treated and attenuated within the site and shall not discharge to any foul sewer. In the wider Clongriffin masterplan area, a local foul drainage network was designed and constructed under the masterplan parent permission (Reg. Ref. 0132/02). These local foul sewers remain under private ownership and are not shown on Uisce Éireann records. All foul effluent collected by this network drains to the Clongriffin wastewater pumping station (WwPS); this was likewise constructed under the masterplan parent permission but has since been transferred to Uisce Éireann's control. A short foul rising main (also in Uisce Éireann ownership) conveys the pumped effluent to the Uisce Éireann trunk foul sewer. To serve the development lands it is proposed to extend and connect to this existing infrastructure.

Following a Pre-Connection Enquiry, UÉ has issued a Statement of Design Acceptance for the proposed development (Ref No. CDS25001826). Refer to Appendix 20.1.

#### 5.4.4.3 Surface Water Drainage System

As detailed in the Engineering Services Report (CS Consulting, 2026), within the Clongriffin masterplan area, a local surface water drainage network was designed and constructed under the masterplan parent permission (Reg. Ref. 0132/02). These local surface water sewers remain under private ownership. All runoff collected by this network drains to the Clongriffin attenuation pond, which is located adjacent to the Mayne River, at the northern boundary of the masterplan area. The attenuation pond discharges to the Mayne River and at a controlled rate of 249l/s, as permitted under the masterplan parent permission. The attenuation pond was designed and sized to accommodate rainfall events exceeding a 1% Annual Exceedance Probability (i.e. a 1-in-100-year storm event) and has over 6,400m$^3$ of attenuation storage on top of a permanent volume of approximately 2,500m$^3$. In the immediate vicinity of the subject development site, the local surface water drainage network includes surface water sewers along the existing extents of Belltree Avenue, Lake Street, and Park Street.

As part of the proposed development, it is proposed to increase the permissible discharge rate from the existing pond to the river from 249 l/s to 268 l/s, as detailed in the Surface Water Management Plan (CS Consulting, 2026). Runoff from the building sites and plots shall be managed at source, limited to a rate of 4.6l/s/ha in accordance with QBAR. All new building plots shall be designed to attenuate runoff from a 1-in-100-Year storm event, with an additional 20% allowance for Climate Change.

Green roofs shall be incorporated in line with DCC Green Blue Roof Policy standards as introduced in the Dublin City Development Plan 2022-2028, while blue roofs shall be implemented at podium level to provide source attenuation at a rate of 4.6 l/s/ha. Localised SuDS features will be introduced within individual plots to facilitate interception, treatment, and storage of runoff from parking areas, pavements, and internal roads. Additional SuDS elements shall be integrated into new roads and pavement areas to provide interception storage. Roads and pavements located outside the individual building plots will discharge directly into the existing stormwater network, which will subsequently outfall into the existing pond.

The proposed Sustainable Drainage Systems (SuDS) measures will be designed in accordance with the requirements of Dublin City Council and the Dublin City Development Plan objectives (refer to Section 3.6.1), to provide on-site first stage interception of surface water run-off, improving its overall quality prior to ultimate discharge.

### 5.4.5 Water Supply

As detailed in the Engineering Services Report (CS Consulting, 2026), the North Fringe trunk watermain runs along Marrsfield Avenue. A local network of distribution watermains connects to the North Fringe trunk watermain and serves the Clongriffin masterplan lands north of Main Street. A secondary connection to this network is also provided from the Hole in the Wall Road trunk watermain, approx. 300m west of Park Avenue.

In the immediate vicinity of the subject development site, the watermain network include a 100mm diameter watermain on Friars Street, along the site's western boundary; and a 100mm diameter watermain on Railway Court, along the site's southern boundary.

The Uisce Éireann *Code of Practice for Water Infrastructure* specifies an average potable water demand of 150 litres per person per day for domestic dwellings, and an average occupancy of 2.7 persons per residential unit. The proposed development comprises a total of 711 no. apartments and therefore has a design population of 1,909 people (1,909 pe), and the average potable water demand of the proposed development is 3.31l/s. It is proposed to connect to the existing watermain to the north of the site.

Following a Pre-Connection Enquiry, UÉ has issued a Statement of Design Acceptance for the proposed development (Ref No. CDS25001826). Refer to Appendix 20.1.

### 5.4.6 Incorporated Design Mitigation

The proposed development incorporates comprehensive individual and specific measures that are required by legislation, regulations and guidelines, by Dublin City Development Plan 2022-2028, and by applicable standards and construction best practices that are generally required for proposed developments of this nature.

The design of the proposed development has evolved through a process of design iteration, with particular emphasis on minimising the potential for environmental impacts, where practicable, whilst

ensuring that the objectives of the proposed development are attained and that the environment of the completed development is enhanced insofar as possible.

While these design measures are inherent in the design development of the proposed development, appropriate mitigation is also detailed in the relevant chapters of this EIAR where likely significant environmental effects have been identified during the environmental impact assessment process.

## 5.5 Construction Phase

An Outline Construction Management Plan (OCMP) has been prepared in respect of the proposed development by CS Consulting (refer to standalone document submitted under separate cover). It contains best practice measures and protocols to be implemented during the construction phase of the proposed development to avoid / minimise environmental impacts.

The appointed contractor will be responsible for the implementation of the CMP. To ensure these documents remain fit for purpose, they will be maintained as live documents. The appointed contractor will be responsible for updating the CMP, as required; e.g. to reflect the publication of relevant new or revised guidelines and / or new statutory requirements. The full schedule of environmental commitments (i.e. all mitigation measures set out in the CMP and Environmental Impact Assessment Report as part of the planning application, as well as any applicable conditions of development consent) will be included in the CMP by the appointed contractor.

### 5.5.1 Indicative Construction Methodology

As described in the OCMP (CS Consulting, 2026), the development is expected to be constructed in accordance with the following indicative sequence of works:

- Establishment of site perimeter hoarding and access provisions, maintaining existing pedestrian and traffic routes around the site.
- Site clearance.
- Reduced level excavations.
- Site services installation (drainage, power, water).
- Construction of building frames and envelopes.
- Internal roadway and footpath construction.
- Internal building fit-out and exterior landscaping

#### 5.5.1.1 Site Establishment

All necessary accommodation, material handling, and secure storage facilities will be provided and maintained for construction site operations. These shall include:

- Construction plant
- Hoisting equipment and cranes
- Scaffolding, platforms, access ladders, barriers, handrails
- Barricades and hoardings
- Temporary driveways, road crossovers and construction zone
- 24/7 emergency vehicle access to site during working hours
- On-site hardstand areas for vehicle loading and unloading
- Storage sheds and compounds
- Rubbish sorting areas

- Site amenities with all required equipment and facilities
- Construction worker accommodation
- First aid facilities
- Site administration accommodation

Construction plant and site amenities shall comply with the requirements of all relevant authorities and be wholly contained within the hoarded site. All construction plant and equipment shall be progressively removed when no longer required.

First aid facilities for the use of all construction staff shall be maintained at all times, in the form of a fully provisioned first aid area within the site office with lifesaving and safety equipment, as required by the relevant statutes, authorities, and awards. All required permits will be obtained where applicable.

#### 5.5.1.2 Site Security

Prevention of unauthorised access to the site is a very high priority and shall be vigorously managed throughout the construction period. Controlled access points to the site, in the form of gates or doors, will be kept locked at any time that these are not in use (e.g., outside working hours).

Access to site will be controlled and monitored. During working hours, a gateman shall control traffic movements and deliveries. Outside of site working hours, 24-hour site monitoring will be implemented by either onsite personnel or CCTV.

Perimeter hoarding will be provided around the site to provide a barrier against unauthorised access from the public areas. A project signboard will be erected on the hoarding at each main entrance point, to identify the site. Hoardings will contain graphics portraying project information.

The hoarding will be well-maintained and will be painted. Hoardings and signboards at the perimeter of the site shall comply with the requirements of the relevant authorities and the relevant Health and Safety Acts.

#### 5.5.1.3 Site Accommodation

On-site facilities shall include:

- Materials and equipment storage area
- Site office and meeting room
- Staff welfare facilities (including but not limited to toilets, drying room, canteen)

Electricity will be provided to the site via the national grid, subject to the restrictions and requirements of ESB Networks. Water supply to the site will be provided by means of a temporary connection to the public watermain. Similarly, a temporary connection for foul water drainage will be made to the public network. The locations and sizes of these temporary connections will be determined through consultation with Uisce Éireann and DCC, and shall be subject to any restrictions and requirements they may impose.

#### 5.5.1.4 Services Relocations and Screening

Prior to commencement of works, detailed dilapidation reports shall be carried out for footpaths, kerbs, road pavements, and utility infrastructure features of the main access routes in the vicinity of the site.

Protection will be provided to existing surrounding building elements potentially impacted by the works.

Protection may be in the form of screened hoardings, scaffolding and fencing, taped drop sheets and the like, all installed prior to commencement. The type of required hoardings, scaffolding and fencing shall vary over the duration of the works, depending on how the site activities potentially impact on the adjoining public domain. Dial-before-you-dig enquiries and detailed services location investigations shall be carried out to identify any need for temporary protection of elements of existing utility infrastructure that are not to be diverted as part of the works. All temporary protection will be installed and maintained for the duration of the works, until no longer required.

#### 5.5.1.5 Major Plant and Equipment

Plant and equipment expected to be used during the construction works include:

- Articulated and rigid trucks
- Rigs, bulldozers, excavators, backhoes, with ancillary equipment (rock hammers or saws)
- Mobile cranes
- Concrete delivery trucks
- Concrete pumps
- Man and material hoists
- Scissor, boom, and fork lifts

All plant and equipment shall be operated by experienced and qualified personnel with appropriate registrations.

#### 5.5.1.6 Superstructure

The construction of the superstructure will involve complex sequencing of activities and various construction methodologies could be adopted. It is envisaged that all buildings will be constructed as reinforced concrete frames (walls and columns), supporting precast concrete floor slabs overlaid with structural screed. At first floor level there will be elements of transfer structure above the undercroft car parks. Façades will consist of a combination of brickwork and rendered blockwork. As noted, the construction methodology and therefore the programme of the construction activities will be dictated by the Contractor.

The following outlines a general construction sequence for the superstructure.

- Buildings Structure:
  - Installation of piled foundations, pile caps, and ground beams.
  - Construction of load bearing walls and reinforced concrete beams and columns.
  - Installation of precast floor panels (including roof) on load bearing walls.
  - Installation of screed on precast floor panels.
- Envelope / Cladding:

Commencement of envelope works to ground floor when structure has progressed to approximately Level 2/3, with suitable temporary openings in the façade left for ease of transport of construction material.

Advancing of external leaf two or three levels behind the structure.

- Mechanical & Electrical fit-out:
  - First fix will commence at each level behind structure
  - This will be followed by the second fix and the final connections
- General fit-out:
  - Initial installation of stud work when cladding is complete, and floor is weather tight.
  - Installation of equipment and associated connection to services.
  - Completion of finishes.
- Commissioning:
  - The final commissioning period will commence during fit-out.

#### 5.5.1.7 Staff Training and Certification

It will be ensured that all personnel working on the site have a valid Safe Pass card, as well as the requisite certification(s) pertaining to the specific tasks that they will perform on site. Staff compliance with all site protocols will be monitored, and corrective action taken in response to any breaches.

In consultation with the Project Supervisor Construction Stage (PSCS), initial site-specific induction training will be provided for all construction operatives (including sub-contractors) regular 'tool-box talks', refresher training, and task-specific training will be organised as necessary throughout the construction works.

#### 5.5.1.8 Record Keeping

Records will be kept by the main Contractor and/or by the PSCS (as appropriate) to satisfy the applicable legislation and best practice guidelines in relation to all activity on site. These records will be made available for review and audit as required by DCC, the Health & Safety Authority (HSA), the Environmental Protection Agency (EPA), and any other entities with a legitimate interest.

These records must include (but may not be limited to):

- Records of all personnel working on site (including dates present).
- Records of all visitors attending site.
- Records of all training sessions conducted.
- Records of all plant and machinery used on site (including dates of arrival, dates of operation, and dates of removal).
- Records of all deliveries made to site.
- Records of all potentially hazardous materials stored on site.
- Records of all potentially hazardous materials encountered on site.
- Records of all waste material leaving the site (whether for reuse, recycling, recovery, or disposal).
- Records of any accidents or spills occurring on site.
- Records of engagement with the Project Ecologist, Project Archaeologist, and Site Engineer.
- Records of any site protocol breaches by construction personnel.
- Records of all noise level, vibration level, and air quality monitoring.

#### 5.5.1.9 Designated Community Liaison Officer and Complaints Procedure

A Designated Community Liaison Officer (DCLO) shall be appointed as a point of contact with local residents, DCC, and An Garda Síochána. The DCLO shall also consult and coordinate with DCLOs on

other nearby active sites and ensure that the CMP for the development speaks to the CMPs of the adjacent and interfacing sites.

The Designated Community Liaison Officer shall be responsible for ensuring that complaints are dealt with and shall do so in accordance with the Complaints Procedure System outlined above. The DCLO shall liaise with members of the public as required to provide updates on the status of complaints and to ensure complaints are treated fairly and transparently. Where record of complaints is required by the complainant this shall be provided to the complainant by the DCLO. Requests by DCC or by members of the public for complaint records shall be dealt with in accordance with the requirements of GDPR legislation.

A Complaints Procedure System shall be drawn up and administered by the main Contractor. A record of each complaint shall be logged (date and time, description of complaint, complainant details, etc.), including actions to be carried out and ultimately confirmation that the complaint has been closed out by both Contractor and complainant. Records shall be kept and made available to DCC upon request. Where a record of a complaint is requested by the complainant, this shall be made available to that complainant upon request.

### 5.5.2 Vehicular Access to Site & Construction Compound

All vehicular traffic to and from the site will travel to/from the west, via Clongriffin Main Street. It is noted that the existing configuration of Main Street allows left turns only for any traffic turning onto Main Street at any point between Park Avenue and Station Square. Traffic arriving from the north and heading west must therefore first follow Main Street to the east and then make a loop around Station Square before continuing westward back along Main Street. To minimise departing construction traffic's travel distance around Station Square, it is instead proposed to route this traffic via Clongriffin Road, approaching Station Square directly from the north. An alternative departure route would follow Park Street and Park Avenue, this would however require greater travel distance along residential streets with perpendicular parking and with more numerous pedestrian crossing points.

Security personnel will be present at the entrance/exit of the site to ensure all exiting traffic will exit safely. A vehicle wheel wash system will be operated at the exit from the site, when conditions require it, to minimise dirt being carried out into the public road, and a road sweeper will be employed as required to keep public roads around the site clean. The vehicular access to the construction site shall include the following design elements:

- Sufficient entrance width to permit two rigid body vehicles to pass one another (i.e. one can enter while another waits to leave).
- An entrance gate set back a minimum of 18m from the public road edge, to ensure that vehicles may leave the road completely before having to stop.
- Appropriate sight lines for vehicles exiting onto the public road, to be ensured by removing existing visual obstructions and by appropriate design of perimeter hoarding.
- Directional signage for site traffic and advance warning signage for all other road users.

An indicative designated route for construction traffic and construction compound is shown in **Figure 5.2.**




Figure 5.2 Indicative construction traffic route and site construction compound (Source: CS Consulting, 2026)

### 5.5.3 Vehicle Movements During Construction

The major construction activities include site clearance, excavation, construction, and fit out. Heavy Goods Vehicle (HGV) construction traffic to and from the site shall reach a peak during preliminary earthworks, which may require the removal of spoil from the site and/or the importation of soil and aggregate. The final programming and scheduling of any such material transfer shall be determined by the lead Contractor appointed to the project. Under a 'worst-case' scenario, however, it is possible that up to 4no. such HGV trips may be made to the site each hour (one HGV arrival and one HGV departure every 15 minutes). This would equate to total traffic movements of 18 Passenger Car Units (PCU) in each of the background peak hours.

In addition to HGV traffic, periodic deliveries of materials to site shall be made by Light Goods Vehicles. To the extent possible, these shall be scheduled to take place outside of the background peak traffic hours. Such trips are also unlikely to occur frequently during the stages of construction that require bulk excavation or the importation of fill material; LGV trips are therefore unlikely to occur in significant numbers at the same time as HGV trips take place. For the purposes of estimating a worst-case construction traffic generation scenario, however, 5no. LGV arrivals and 5no. LGV departures (total traffic movements of 10 PCU) are assumed in each of the background peak hours.

As car parking for construction personnel will be provided on site during construction works, some vehicular trips shall be made to and from the site each day by construction personnel commuting to and from work. The majority of these trips are expected to fall outside the background traffic peak

hours. In the worst-case scenario, it is assumed that 10no. such light vehicle trips may be made to the site during the AM peak hour, and 10no. such trips may be made from the site during the PM peak hour.

### 5.5.4 Construction Traffic Management

Vehicle parking for construction personnel shall be accommodated within the construction compound. To the extent possible, personnel shall however be encouraged to use public transport, and information on local transportation shall be published on site.

All deliveries to site will be scheduled to ensure their timely arrival and avoid need for storing large quantities of materials on site. Deliveries will be scheduled outside of background peak traffic hours (within the permitted site working hours) to avoid disturbance to pedestrian and vehicular traffic in the vicinity of the site.

Prior to works commencing on site, the lead Contractor appointed to the project will develop a detailed works-specific Construction Traffic Management Plan (CTMP) within the Outline Construction Environmental Management Plan (refer to Appendix 5.2), reflecting the specifics of their final site management and construction methodologies. This plan shall be prepared in consultation with the Design Team, with Dublin City Council (DCC), and with An Garda Síochána, and shall be updated as required throughout the project.

The principal objective of the CTMP is to proactively manage the impacts of all construction traffic related to the proposed development, upon both the public (off-site) and internal (onsite) environments. It shall aim to ensure that the safety of the public and of construction workers is maintained at all times, that disruptions are minimised, and that all operations are undertaken within a risk-controlled environment. It is noted that the impact of the construction works on the surrounding road network will be temporary in nature. Issues addressed in the CTMP shall include - public safety, construction traffic routes, deliveries schedule, special deliveries (wide and long loads), traffic flows, signage and lighting, road opening requirements, road closures and lighting.

The final CTMP will be prepared in accordance with the principles outlined below and shall always comply with:

- Chapter 8 of the Department of Transport Traffic Signs Manual, current edition, published by The Stationery Office and available from the Government Publications Office, Sun Alliance House, Molesworth Street, Dublin 2.
- the Guidance for the Control and Management of Traffic at Road Works (June 2010) prepared by the Local Government Management Services Board.
- the Construction Site Traffic Management Plan (CSTMP) Guidance prepared by the Health and Safety Authority.
- any additional requirements detailed in TII standards or in the Design Manual for Urban Roads and Streets (DMURS).

A liaison officer will be appointed as a point of contact with local residents, DCC, and An Garda Síochána. Among the traffic management measures to be included in the CTMP are:

- Securely fencing off the site from adjacent properties, public footpaths and roads during the pre-construction stage.

- Providing signage on the surrounding road network to define the access and egress routes for the development.
- Strictly controlling the traffic generated by the construction stage of the development in order to minimise the impact of this traffic on the surrounding road network.
- Adequately signposting and enclosing all road works to ensure the safety of all road users and construction personnel.
- Accommodating all unavoidable personnel and visitor vehicle parking demands onsite or within designated off-site parking areas.
- Implementing a programme of street cleaning as required.
- Making arrangements to facilitate the delivery of abnormal loads to the site.
- Implementing measures to avoid queuing of construction traffic on the adjoining road network.

The following specific traffic control and marshalling measures are to be included in the CTMP, to minimise the potential for obstruction of surrounding streets:

- At no time will construction associated vehicles be stopped or parked along haulage routes.
- Haulage vehicles will not travel in convoys of greater than two vehicles at any time.
- Haulage vehicles will be spaced by a minimum of 250m at all times.
- At no time will haulage vehicles be parked or stopped at the entrance to the site.
- All loading of excess material will occur within the site boundary.
- All off-loading of deliveries will take place within the site, away from the public road and will access via the construction site access.

### 5.5.5 Construction Phasing & Duration

Subject to a successful grant of planning, it is intended for the works to commence in Q4 2026. The proposed development is anticipated to be constructed in a single phase over a period of approximately 24 months, with final occupation in 2028.

### 5.5.6 Excavation work

The proposed development will involve excavation and removal of material from site for foundations. It is not envisaged that rock will be encountered during the excavation works. The appointed lead Contractor will engage with the project archaeologist prior to the commencement of excavation on site. Excavation will be carried out under the supervision of the project archaeologist.

The lead Contractor will prepare a Construction Waste Management Plan in accordance with the *Best Practice Guidelines for the Preparation of Resource & Waste Management Plans for Construction & Demolition Projects* (EPA, 2021) and must ensure that all material is disposed of at an appropriately licensed land fill site. Any materials identified as being hazardous will be removed and disposed of in strict accordance with the applicable legislation.

CS Consulting Civil, Structural and Traffic Engineering ('CS Consulting') have estimated that approximately 1,550m3 of material will be excavated as part of these works.

### 5.5.7 Construction Working Hours

Construction works will be limited to the times below, as per the OCMP, unless otherwise stipulated in the conditions to the planning permission:

- Monday to Friday 08:00 to 19:00 hrs

- Saturdays 08:00 to 14:00 hrs
- Sundays and Public Holidays No work on site*

*However, where required for specific circumstances (e.g. exceptional / emergency circumstances, such as connections to public service systems or utilities), it may be necessary for certain construction operations to be undertaken outside these times. The timing of such works will be agreed in advance with Dublin City Council as well as with any other affected neighbouring stakeholders.

### 5.5.8 Resource and Waste Management Plan (RWMP)

A Resource & Construction Waste Management Plan (prepared by AWN Consulting Ltd., 2026) will be implemented during the construction phase, and is submitted as part of the planning application. This document shall be finalised by the appointed contractor, in agreement with Dublin City Council, prior to the commencement of the proposed works. For further information, refer to Chapter 19 (Material Assets – Waste and Appendix 19.1 (Volume 3) RWMP).

## 5.6 Operational Phase

These plans are being submitted under separate cover as part of this application in outline form and will reflect the specific, final terms of this EIAR. If permission is granted the plans will be updated in accordance with the terms of the planning permission and all conditions attached thereto. It is proposed to implement the following plans of pertinence to the Environmental Impact Assessment Report:

### 5.6.1 Residential Travel Plan

A Residential Travel Plan (RTP) has been prepared by CS Consulting (2026) for the operational phase of the proposed development (refer to standalone document submitted under separate cover), to promote sustainable mobility among the residents of the proposed development through a range of measures. The appointed Mobility Management Coordinator of the site during the operational phase will be responsible for ensuring for the implementation of the Plan. This is intended to be a live document, to be updated by the Applicant / Operator, where appropriate, e.g. to ensure the Plan remains fit for purpose and up-to-date with relevant policy.

### 5.6.2 Operational Waste Management Plan

An Operational Waste Management Plan (OWMP) has been prepared by AWN Consulting Ltd. (submitted as part of the planning application – Appendix 19.2, Volume 3), containing measures to promote operational phase waste management in accordance with the waste hierarchy, i.e. high rates of reuse, recycling and recovery. The Operator / Facilities Management of the site during the operational phase will be responsible for ensuring – allocating personnel and resources, as needed – the ongoing implementation of this OWMP. This is intended to be a live document, to be updated by the Applicant / Operator, where appropriate, e.g. to ensure the Plan remains fit for purpose and up-to-date with relevant policy.

# 6 Consultation

## 6.1 Introduction

Consultation is a key element in the EIA process. The *"carrying out of consultations"* is included in the definition of EIA as set out in Article 1(a) of the amended EIA Directive. Consultation at various stages of the EIA process provides for timely and proportionate consideration of potential significant effects, early identification of stakeholder concerns, and facilitates public participation in the development consent process. Consultations may be statutory (i.e. required by law) or non-statutory / informal. Consultations may be undertaken by the Applicant or the Competent Authority, as appropriate and as required.

The United Nations Economic Commission for Europe (UNECE) *Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters* (the Aarhus Convention), which came into force in October 2001, establishes a number of rights of the public with regard to the environment, including the right to access to environmental information and the right to access to public participation in environmental decision-making.

The non-technical summary (NTS) (Volume 1) is particularly important in disseminating the information contained in the EIAR to the wider public and facilitating public participation in the development consent process. As stated in the EPA guidelines:

> *"Compliance with the Aarhus Convention requires that the structure, presentation and the non-technical summary of the EIAR, as well as the arrangements for public access, all facilitate the dissemination of the information contained in the EIAR. The core objective of public consultation is to ensure that the public is made as fully aware as possible of the likely environmental impacts of projects prior to a decision being made by the CA [Competent Authority]."*

In addition, where required specialists have consulted relevant Departments and Bodies in order to acquire additional information to undertake the assessment.

## 6.2 Pre-Planning Consultation

### 6.2.1 Planning Authority

Both the context and approach to the application site and the design rationale for the proposed development, have been subject to consultation with the DCC Planning Department under Section 247 of the PDA 2000 (as amended). Pre-planning consultation meetings were held with DCC on 22nd July 2025 and 15th September 2025 (LRD6098/25).

### 6.2.2 Community Engagement

In progressing its plans and proposals, the Land Development Agency (LDA) promotes a proactive and inclusive approach to community and stakeholder engagement, from the earliest stages in the planning and design process, through to construction and eventual occupation of a housing scheme. The LDA supports proactive engagement processes, aiming to provide opportunities to hear the views of communities at key stages. The LDA believes that adopting this ethos will support improved design and planning outcomes, and ultimately the delivery of sustainable, inclusive developments that are well integrated with existing communities. The views of stakeholders vary and are diverse – the LDA is

committed to finding resolutions that balance common concerns and reflect the wider public interest in a manner consistent with the goal to build sustainable, affordable housing developments.

The Agency adopts a tailored, project specific approach to each community and stakeholder engagement process it undertakes. The scale, scope and methods applied to undertake non-statutory engagement varies according to specific requirements and condition.

Since taking over the Clongriffin Wider Lands in December 2023 the LDA has undertaken continuous engagement with local community groups and residents.

The first steps in 2024 were to bring an amended planning application for Block 5 & 6 through a Large-Scale Residential Development (LRD) process with Dublin City

A Public Information process in June 2024 outlined an executive summary of the main aspects of this plan to inform members of the public and all interested stakeholders. The main changes made to this application were bringing the mix of housing to be provided into alignment with Dublin City Council's Development Plan policies, as well as allocating space for a further Community, Cultural and Arts provision in line with DCC's objectives.

An LRD Planning application was made in July 2024, for Blocks 5 & 6 (Phase 1) with planning permission granted by Dublin City Council in late 2024. There were no third-party appeals. This first phase of construction began in early 2025, when Walls Construction Ltd commenced work on 408 new homes, a new creche, community facilities and a public park. This first phase is now approximately six months away from practical completion.

Following extensive work which the LDA has carried out with its Design team, the LDA revised an overall Masterplan Framework for development in co-operation from DCC, so that an overarching vision for all of the LDA's lands would guide each subsequent phase of development. This Masterplan Framework is submitted as part of the application documentation. The Clongriffin Central Vision Document1 (the Vision) document was developed by the LDA and Henry J Lyons (HJL), to focus engagement with the local community. The Vision sets out a comprehensive plan for the transformation of c.13.2 hectares of strategic land located in this vibrant north Dublin suburb.

Following the successful approval of the principles of this Masterplan Framework by DCC, the LDA was then in a position to launch a Vision Document for Clongriffin Central (Phase 2) alongside a full public consultation stage in June 2025.

The Vision demonstrates how state investment in this area will enhance an already thriving north Dublin community neighbourhood, by connecting the existing adjacent residential and business communities and by regenerating brownfield lands which have lain unused for around twenty years or so, since the previous landowner did not develop their original plans for the area. The LDA proposes unlocking this land for much needed new homes and services, which are located beside a key transport corridor to the city, with major transport links, and will integrate this into the fabric of the existing town and enhance the area's potential as a place to live, work, and play.

Six Guiding Objectives were key to this Vision:

- High Quality Homes
- Integrated Communities
- Dynamic Town Centre
- Improved Connectivity

- Green Spaces
- Sustainability

From the early stages of the project, a wide range of meetings took place with DCC officials, State Agencies, statutory bodies and relevant local stakeholders, as well as local community groups and representatives to develop an understanding for the site and wider area. The local area councillors, as well as the Dublin Bay North TD's have also contacted the LDA and meetings have been held with them to include them in the evolution of the project. A briefing session was held with local area councillors at key junctures and in advance of launching each phase of this public consultation.

A Consultation & Stakeholder Engagement Plan was developed in 2023 and preparations for a full public launch and consultation were planned for 2024.

The Public Consultation and Stakeholder Engagement Report was completed and finalised in May 2026, following the second stage of the public consultation. A dedicated website was created to share the proposals in a public forum www.clongriffincentral.ie with communications channels as follows:

A dedicated Email address: community@clongriffincentral.ie

A Phone number to contact: 01-4102040

And a Postal Address: The Land Development Agency Ashford House, Tara St, Dublin 2, D02 VX67

Several meetings were held with local elected representatives, the Clongriffin Community Association and a number of drop-in clinics were held to allow the public give feedback and submit observations and ideas on the Vision document.

The Vision document was well received, and feedback was collated and given back to the LDA's internal and external teams, so they could understand the core reactions and engagement and further understand the context of the area and the issues people are facing in the area. The LDA is very appreciative of the time people gave to attend both the drop-in clinics and to communicate via the website as well.

In the intervening period, the LDA worked with the Design team to formulate a Planning application for the second Phase at Clongriffin, working closely with external stakeholders, the Planning and other technical Departments of DCC, and other relevant statutory bodies.

In February 2026, a public consultation phase was launched for Phase 2 of Clongriffin Central. This Phase aligns with the overarching principles set out within the Vision Document previously released for Clongriffin Central and has been carefully crafted to align with the development of the neighbouring Stapolin Square, ensuring a cohesive and integrated overall plan for the area. Stapolin Square comprises 18-hectares of land with permission granted for 1,931 homes, creches, commercial units, new parks, improved transport facilities and other public infrastructure.

Consultation was undertaken to gather community views on the scale, pace, and nature of proposed development. Feedback reflected strong aspirations for a balanced approach that delivers new housing alongside the timely provision of essential social infrastructure, transport upgrades, and local amenities. The full consultation and stakeholder engagement report to accompany the application is available at www.clongriffincentral.ie

The key themes raised are summarised below.

### 1. Infrastructure and Services Deficit

As Clongriffin continues to evolve; local services and amenities are an important priority for residents:

- There is strong interest in seeing more everyday amenities such as shops, supermarket, cafés, community spaces, sports, recreation and cultural facilities.
- Access to schools, healthcare services, childcare, youth facilities and supports for older persons, was identified as a key concern, particularly in relation to existing capacity and future demand.
- Many residents would like facilities to be conveniently located within walking distance.
- There was support for community, cultural and arts spaces being delivered at each project phases.
- Residents highlighted the importance of coordinating new homes with supporting infrastructure and transport improvements.
- Residents also noted the importance of ensuring proposed commercial development is planned and activated to support long-term viability, including in the context of concerns regarding existing vacant units on Main Street.

#### LDA Response:

In response to the priorities raised, Phase 2 of Clongriffin has been developed to strengthen the town centre and support a more active, service rich environment.

- Community and cultural amenities, retail units, a standalone creche, and food and beverage spaces are proposed to encourage activities throughout the day and evening.
- Phase 1 of Clongriffin includes a crèche, community/cultural spaces & Grant Park completing in 2027.
- The Community, Cultural and Arts (CCA) strategy is being progressed in consultation with Dublin City Council, with a focus on avoiding piecemeal provision or dispersed delivery across multiple phases, which could result in a fragmented approach and potentially undermine the long-term viability and activation of these spaces. Instead, a more cohesive and shared strategy is being prioritised to support an integrated approach to CCA provision and to respond effectively to demand at the neighbourhood scale.
- The LDA is in ongoing consultation with Dublin City Council regarding a more consolidated approach in the next phase of the project.
- Retail and amenity uses are strategically distributed across Station Square, Main Street and Market Street, consolidating activities around Station Square as the town centre focal point, while reactivating surrounding streets and integrating new development with the existing character of Clongriffin to create a balanced, walkable and cohesive neighbourhood. As a result, Phase 2 has made allowance for a number of retail/café/restaurant units.
- The LDA commercial team will work closely with prospective end users and relevant stakeholders in relation to the proposed commercial spaces, with the aim of supporting appropriate activation, responding to local needs, and promoting the long-term viability and successful occupation of these uses. Phase 2 will provide a second Crèche (noting a creche provided as part of the development of Blocks 5 & 6 by the LDA), where early years childcare and after school services can be provided.

### 2. Housing Mix

The engagement received highlighted the importance of creating a balanced and sustainable neighbourhood:

- A mix of housing tenures was seen as important to support a diverse community.
- There was interest in a range of home types, including houses with gardens alongside apartments.

- Many participants expressed a preference for additional 2- and 3-bedroom homes suitable for families.
- Building height and scale were identified as important and to be considered within the surrounding context.

LDA Response:

Phase 2 has been shaped to provide high-quality, affordable and long-term homes that support a balanced and sustainable community:

- The majority of the homes will be delivered as cost rental or affordable for sale, providing secure, below-market accommodation managed by the LDA. This allows people to obtain a new home on a more cost-effective basis. A proportion of the homes will also be for DCC Social Housing, as required under legislation, and this has been discussed with them in advance of planning lodgement.
- The residential mix has been carefully planned, offering a choice of studio units, 1-bed, 2-bed, and 3-bed apartments to support various household needs and life stages. Some homes are situated at the ground floor of the building, giving them their own front door and a private terrace at street level. Each home has a private open space in the form of a balcony or a private terrace, and all homes have access to communal courtyard gardens.
- Future phases will integrate lower-rise houses and duplex-style units, ensuring a varied tenure and typology of housing. The homes are modelled to ensure the daylight and sunlight standards as set out by Dublin City Council, have been achieved. Care is taken to ensure the quality of the homes is high and they are well designed with ample storage provisions.
- The proposed building heights are aligned with the parameters set out in the Strategic Development Regeneration Area for Clongriffin.
- Building heights will transition gradually across the site, with taller elements near the town centre and lower-rise buildings near existing homes, to create a balanced townscape. The buildings have been modelled to check their impact on the existing adjoining properties, and meet the required separation distances set out in DCC's Development Plan to ensure they are not negatively impacting the surrounding existing buildings.

3. Connectivity

In terms of the engagement received, it was identified that connectivity was a key consideration for future development.

- The relationship between population growth and the timely delivery of transport infrastructure and services was highlighted as an important consideration.
- Concerns were raised regarding existing road congestion, public transport capacity and connectivity, with support expressed for transport upgrades alongside development.
- Improved connections across the railway line for pedestrians, cyclists and vehicles, including connectivity between Clongriffin and Stapolin, were raised.
- Residents highlighted the importance of ongoing communication regarding the progress, timing and delivery of future connectivity improvements.

LDA Response:

Connectivity has been a key consideration in the development of the Phase 2 proposals.

- Phase 2 and future phases of Clongriffin Central will support enhanced transport infrastructure, including provision for a future Bus Connects D3 bus route and new cycle lanes along Marrsfield Avenue, improving connections between Clongriffin Station and the wider area. Detailed engagement and coordination has taken place with the National Transport Authority (NTA) to facilitate the route for the D3 route, as well as coordination on the provision of the existing bus infrastructure and strengthening the frequency and capacity of the services to the area.
- The overall approach prioritises walkability, cycling and public transport accessibility, with strong pedestrian and cycle connections linking Father Collins Park directly to Clongriffin Station, while maintaining appropriate vehicular connectivity. The objectives within DCC's Development plan are to encourage use of public transport, cycling, and reduce car parking provisions to encourage future residents to use more sustainable forms of transport. This will mean that future developments do not add even more car traffic and congestion to existing local roads.
- The connectivity strategy reflects a shared vision developed in collaboration with key stakeholders, including the National Transport Authority (NTA), Córas Iompair Éireann (CIE), Fingal County Council (FCC) and Dublin City Council (DCC), and Irish Rail, with a particular focus on strengthening and improving connections between Clongriffin Central and Stapolin Square.

### 4. Green Space and Sustainability

The feedback received emphasised the value of high-quality open space and environmental consideration:

- Protecting and integrating existing trees and biodiversity was seen as important.
- Participants expressed interest in new green areas, recreational routes and outdoor facilities.
- Sports and play facilities were identified as supporting health and wellbeing.
- Long-term stewardship and maintenance of open spaces were noted as important considerations.

### LDA Response

Phase 2 places strong emphasis on delivering high-quality green space alongside a low-impact and climate-responsive design approach:

- The landscape strategy integrates native, climate-resilient planting and green corridors to protect ecological health and support wildlife movement across the site.
- New public spaces and public realm is provided, including a green travel corridor on Market Street which strengthens recreational links to Beltree, Father Collins, and Grant Parks.
- Health and wellbeing are supported through the provision of shaded seating, and social nodes within both Station Square and landscaped podium-level courtyards.
- Environmental resilience is prioritised through Sustainable Drainage Systems (SuDS), including green roofs and rain gardens, ensuring the long-term management of surface water
- The landscape design places a focus on increasing and enhancing the biodiversity of the site and will add additional tree planting and green spaces at street level, as well as a high quality design for the communal open spaces which will be accessible to those future residents.

### 5. Community Safety

The feedback received spoke about the importance of fostering a strong sense of community:

- Facilities and spaces that encourage positive activity and interaction were highlighted.
- Youth amenities and inclusive spaces were seen as contributing to wellbeing.

- Many participants expressed a desire to see Clongriffin continue to grow as a cohesive and welcoming neighbourhood.

LDA Response:

Phase 2 is designed to support community interaction and positive activity:

- Active frontages, well-overlooked streets and welcoming shared spaces have been integrated to promote natural surveillance and everyday interaction.
- Opportunities for youth-focused and community-oriented uses are included within the Community Culture and Arts spaces.
- Focus on the delivery of high-quality public realm, with an overall layout that supports walkability, interaction and neighbourhood identity.

### 6. Transparency and Phasing

The feedback received by the LDA highlighted the importance of clarity and engagement as the project progresses:

- Clear communication around phasing and delivery was requested.
- Participants expressed interest in understanding how consultation feedback informs evolving plans.
- Estate management and long-term governance were raised as topics residents would like more information on.

LDA Response:

The LDA has aimed to provide clarity and engage constructively with the local community throughout the development process:

- The Vision for Clongriffin Central sets out a phased delivery framework, outlining the sequencing of key development components over time.
- The pre-planning public consultation for Phase 2 aimed to demonstrate how feedback received during the Vision consultation has been considered and has informed the evolving proposals.
- Summary materials have been, and will continue to be, published to outline the feedback received and summarise how it has been reflected in the design
- The longer term management of the buildings and the surrounding public realm areas will become the responsibility of the Estate Management Company who the LDA will engage to manage the blocks on their behalf. They will work with existing local residents to encourage good integration and encourage interaction in order to foster greater community collaboration.

This Vision for Clongriffin Central is a shared commitment to creating a place that supports everyday life, strengthens community connections and responds positively to local needs and aspirations. Phase 2 has been carefully shaped through consultation, collaboration and a clear focus on delivering practical improvements that will benefit both existing and future residents.

The LDA is working closely with Dublin City Council to progress these plans in a coordinated and responsible way. Through the delivery of high-quality homes, improved amenities, enhanced public spaces and better connectivity, Phase 2 aims to build on what already exists while bringing forward meaningful change that will support a stronger and more vibrant town centre.

### 6.2.3 LRD Opinion

An LRD Opinion Request was lodged with Dublin City Council on 21st November 2025 and an LRD Meeting was held on the 13th January 2026. An LRD Opinion was issued by DCC on 9th February 2026. The LRD Opinion concluded that:

*Following consideration of the issues raised during the LRD meeting, the Planning Authority is of the opinion that the documentation submitted in accordance with Section 32B of the 2021 Act, requires further consideration and amendment to constitute a reasonable basis for an application for Large-scale Residential Development.*

The proposed development, as now submitted for LRD Application, has taken account of the items raised by DCC in the LRD Opinion. This is addressed throughout the various consultant documents and drawings and in the Response to LRD Opinion Report.

# 7 Population & Human Health

## 7.1 Introduction

The Population and Human Health chapter of the EIAR is prepared by Brady Shipman Martin. This chapter of the EIAR presents an assessment of the likely impacts on the local population during both the construction and operational phases of the proposed Large-scale Residential Development (LRD) for Zones 7, 8 & 9 at Clongriffin, Dublin 13 ('the proposed development').

The proposed development is described in Chapter 5, and these details are reiterated in this chapter only insofar as is relevant to population and human health.

This chapter has been prepared by Jade Schanen, Environmental Consultant at Brady Shipman Martin. A technical review was completed by Thomas Burns, Partner at Brady Shipman Martin. Refer to Table 1.4 in Chapter 1 (Introduction) for qualifications of authors and reviewers.

This chapter considers and assesses the potential effects of the proposed development on the people and businesses in the surrounding community, during the construction and operational phases.

## 7.2 Method

The amended Directive 2014/52/EU updated the list of topics to be addressed in an EIAR and has replaced '*human beings*' with '*population and human health*'. The term '*human health*' is not defined in the amended Directive; however, the European Commission Guidance on the Preparation of the EIAR states that:

> *"Human health is a very broad factor that would be highly Project dependent. The notion of human health should be considered in the context of other factors in Article 3(1) of the EIA Directive and thus environmentally related health issues (such as health effects caused by the release of toxic substances to the environment, health risks arising from major hazards associated with the Project, effects caused by changes in disease vectors caused by the Project, changes in living conditions, effects on vulnerable groups, exposure to traffic noise or air pollutants) are obvious aspects to study. In addition, these would concern the commissioning, operation, and decommissioning of a Project in relation to workers on the Project and surrounding population"* (p. 37).

The EPA guidelines state that:

> *"In an EIAR, the assessment of impacts on population and human health should refer to the assessments of those factors under which human health effects might occur, as addressed elsewhere in this EIAR e.g. under the environmental factors of air, water, soil etc..."* (p. 28).

The EPA guidelines advise that the topics of employment, human health, baseline population and amenity should be addressed in this chapter of the EIAR. It is noted that *"The transposing legislation does not require assessment of land-use planning, demographic issues or detailed socio-economic analysis" (p. 28).*

There is significant potential for interactions between population and human health and other topics addressed in the EIAR, since impacts on the local population may arise due to effects in relation to traffic and transportation, air quality and climate, noise and vibration, landscape and visual amenity,

microclimate, material assets, and flood risk, among others. These interactions are addressed in this chapter and, where appropriate, in the relevant other specialist chapters.

The EPA guidelines also state that:

> *"Assessment of other health & safety issues are carried out under other EU Directives, as relevant. These may include reports prepared under the Industrial Emissions, Waste Framework, Landfill, Strategic Environmental Assessment, Seveso III, Floods or Nuclear Safety Directives. In keeping with the requirement of the amended Directive, an EIAR should take account of the results of such assessments without duplicating them." (p. 28).*

This chapter has been prepared with reference to the following guidance documents:

- EPA (2022). Guidelines on the information to be contained in Environmental Impact Assessment Reports ('the EPA guidelines');
- IEMA (2022). Effective Scoping of Human Health in Environmental Impact Assessment;
- IEMA (2022). Determining Significance for Human Health in Environmental Impact Assessment;
- IEMA (2017). Health in Environmental Impact Assessment: A Primer for a Proportionate Approach;
- Institute of Public Health (2021). Health Impact Assessment Guidance: A Manual. Standalone Health Impact Assessment and health in environmental assessment.

A desk study was carried out to develop a description of the receiving environment (baseline) in relation to population and human health. The following sources were referred to, among others:

- Central Statistics Office (CSO) census data from 2011, 2016 and 2022;
- Dublin City Council (2022). Dublin City Development Plan 2022 – 2028;
- Department of Housing, Planning & Local Government (DHPLG) (2026). My Plan Map Viewer;
- Department of Health (2025). Health in Ireland – Key Trends 2024;
- Department of Health (2019). Healthy Ireland Framework 2019-2025;
- Department of Health (2025). Healthy Ireland Survey 2025;
- Health Service Executive (HSE) (2026). Public Health Strategy 2025-2030;
- AIRO Census Mapping;
- Eastern and Midlands Regional Assembly (2019). Regional Spatial and Economic Strategy 2019-2031.

The proposed development is materially consistent with the Development Plan which was the subject of separate assessments under the SEA Directive (SEA), the Habitats and Birds Directives (AA), the Water Framework Directive and the Floods Directive (see SFRA), and the results of those assessments have been considered in the preparation of this EIAR.

Receptors were identified and assessed for sensitivity, magnitude and significance to provide an appropriate and adequate assessment of how they could be impacted by the construction and operational phases of the proposed development.

Effects have been characterised in accordance with the EPA guidelines (refer to Section 1.6 in Chapter 1).

## 7.3 Baseline Environment

The proposed development is located at Clongriffin, Dublin 13 in the northern fringe of Dublin city administrative area, within the Clongriffin/Belmayne and Environs SDRA (refer to **Figure 1.1**). The site

is located c. 9.5km north-east of the Dublin City Centre, c. 5km east of the M1/M50 network and adjacent to the administrative boundary with Fingal County Council. The site occupies a prominent position immediately west of Clongriffin DART Station and forms part of a mixed-use urban quarter that is currently under phased development.

Development objectives applicable to the location of the proposed development are discussed in Chapter 3 (Planning & Development Context).

This section provides a description of the relevant aspects of the baseline environment in relation to population and human health. The baseline environment is considered in this section under the following headings:

### 7.3.1 Land Use Zoning

As detailed in Section 3.5 in Chapter 3 (Planning & Development Context), the site is predominantly zoned *Z14 'Strategic Development and Regeneration Areas (SDRAs)*', which has the stated aim *"To seek the social, economic and physical development and/or regeneration of an area with mixed-use, of which residential would be the predominant use."* The area immediately east is zoned as '*Z4: Key Urban Villages/Urban Villages' and the areas immediately west and south are zoned as 'Z1: Sustainable Residential Neighbourhoods'.* The area directly north has the same Z14 zoning as the site itself. Refer to Figure 7.1 for a zoning map with a red line denoting the site.

The Development Plan identifies 12 Key Urban Villages (KUV) for the city and includes the Clongriffin/Belmayne SDRA. The Clongriffin/Belmayne and Environs SDRA focuses on creating a sustainable mixed-use neighbourhood. The SDRA designation ensures a coordinated framework for the completion of undeveloped land, aligning with the objectives of the Development Plan and regional strategies (RSES and MASP) to promote compact growth within the Dublin Metropolitan Area. These lands are strategically positioned to deliver significant new residential and mixed-use development, particularly around Clongriffin's transportation hub.

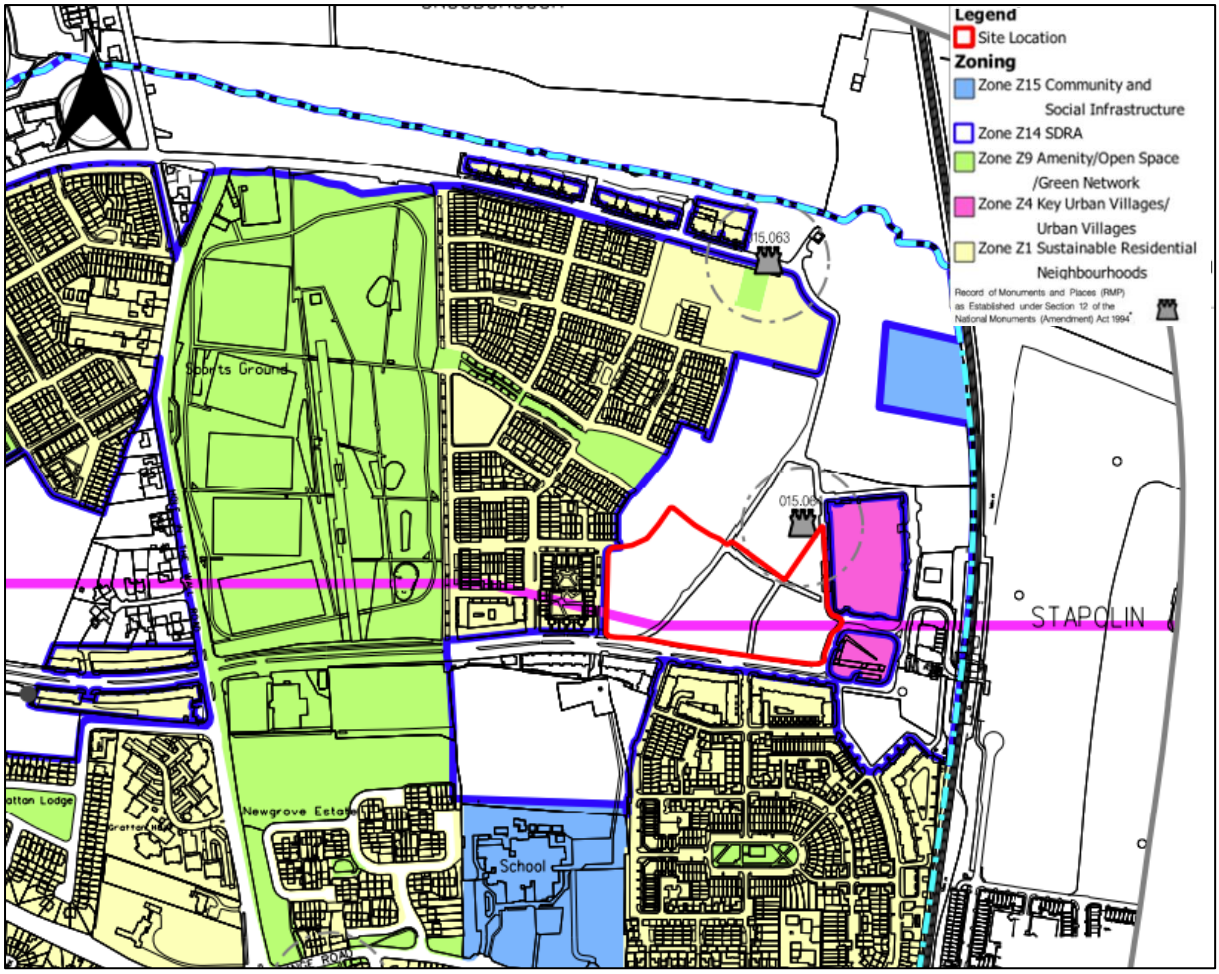



Figure 7.1 Land Use Zoning at the location of the proposed development (Source: Dublin City Development Plan 2022-2028; Mapset C)

### 7.3.2 Population

The Central Statistics Office (CSO) is the authority responsible for carrying out national censuses and publishing official population statistics to inform decision-making. The CSO provides data on population and socio-economic aspects of the population at different levels from the State, county level, Local Electoral Area (LEA), individual Electoral Districts (ED) to Small Areas (SA) within each County. Most recent census was undertaken in April 2022. CSO published preliminary results for 'Census of Population 2022' on 23 June 2022 (updated September 2022) which have been superseded by the main results published from May 2023 onwards. A series of themed reports, Small Area Population Statistics (SAPS), population distribution and movements, housing, households, families and childcare, disability, health and carers, diversity and migration, homelessness, employment, occupations, commuting, Irish language and education and their detailed statistical analysis have been provided as per the latest data published by CSO. This chapter uses the most up to date and detailed statistical data that is available at the time of writing this chapter.

The site of the proposed development is situated in the Local Electoral Area (LEA) of 'Donaghmede' and the Electoral Division (ED) of 'Grange B'. The CSO data illustrates that the population location at national, regional and local scales are presented in Table 7.1.

The rate of growth has increased from 3.8 % to 8.1% as compared to the previous census, with the largest inward migration to Dublin. The economy has recovered since the last census with consequent

population growth predominantly attributed to natural increase, greater economic activity, increased job opportunities and continued immigration.

In the period between 2016 and 2022, the population in the administrative area of DCC increased by 6.9% as compared to the previous increase of 5.1% between 2011 and 2016. The population statistics indicate growth at the level of the ED between 2011 and 2016 is lower when compared to the growth between 2016 and 2022, as shown in **Table 7.1.**

Table 7.1 Population change: State, LEA, and ED level: 2011-2022 (CSO 2012; 2017; 2022)

| Area | Number of persons | | | |
|---|---|---|---|---|
| | 2011 | 2016 | 2022 | Change |
| **Ireland (State)** | 4,588,252 | 4,761,865 | 5,149,139 | +**8.1%** (2016-2022)<br>+**3.8%** (2011-2016) |
| **Dublin City Council Administrative Area** | 527,612 | 554,554 | 592,713 | +**6.9%** (2016-2022)<br>+**5.1%** (2011-2016) |
| **'Grange B' ED** | 4,565 | 5,326 | 7,438 | +**39.6%** (2016-2022)<br>+**16.7%** (2011-2016) |

The DCC Planning portal indicates continued development within the Clongriffin masterplan lands and close proximity, with numerous medium- to large-scale developments permitted or proposed, as detailed in Chapter 22 (Cumulative Impacts).

The age profile data for Grange B ED shown below in **Figure 7.2.**

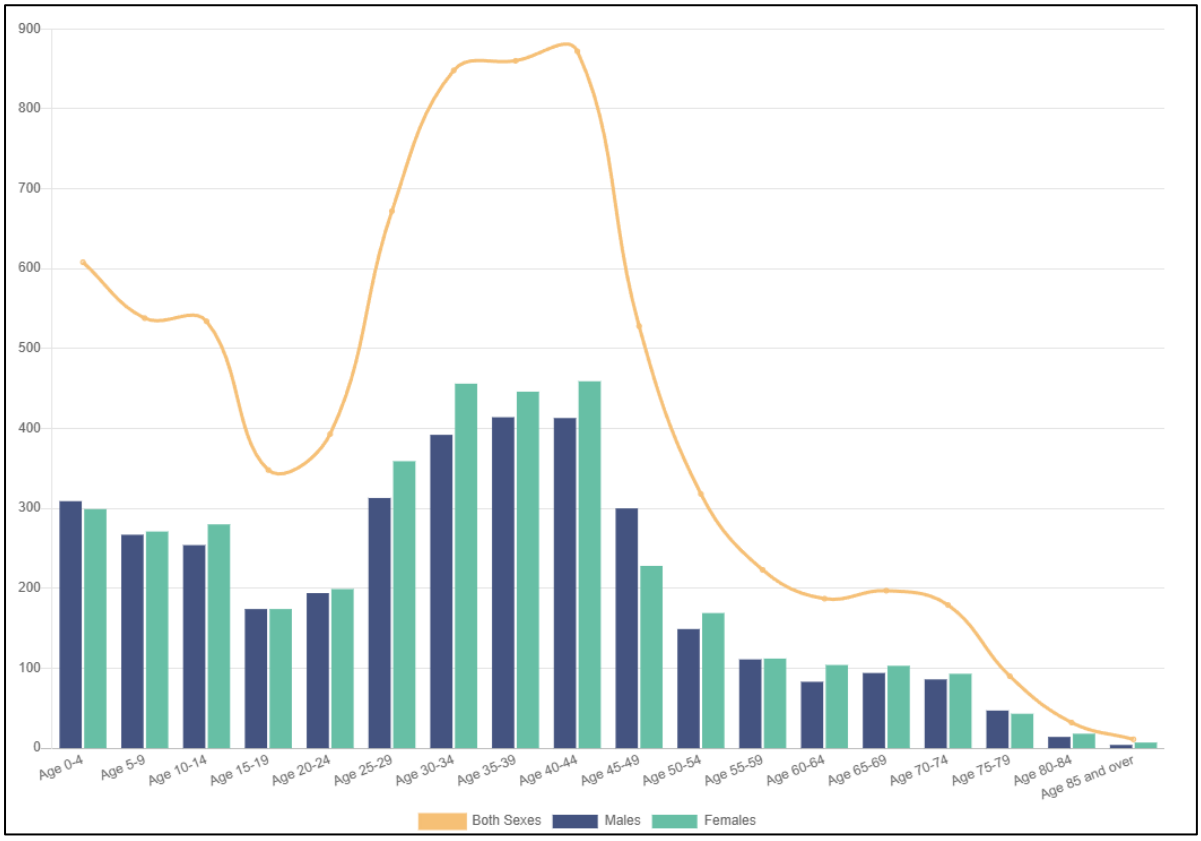



Figure 7.2 Age Profile Data- Grange B, 2022 (CSO 2023)

### 7.3.3 Land Use and Settlement Patterns

The site of the proposed development is situated in Clongriffin, Dublin 13 in the northern fringe of the Dublin Metropolitan Area. The site occupies a prominent position immediately west of Clongriffin DART Station and forms part of a mixed-use urban quarter that is currently under phased development. The site lies at the edge of the established Belltree and Clongriffin neighbourhoods and represents one of the remaining large sites of development land within this part of a Strategic Development Regeneration Area (SDRA).

To the immediate north of the site the permitted residential development (LRD6064/24-S3) is currently under construction. To the west, the site is bound by the Belltree residential area, beyond which lies Father Collins Park (c. 200m), a significant public open space serving the wider community. To the east, the Clongriffin DART Station provides direct access to Dublin city centre, enhancing the area's connectivity and supporting transit-oriented development. To the south the site is bounded by Main Street. Further to the south lies residential and educational facilities such as Grange Community College and Gaelcholáiste Reachrann. The site is c. 350m south of the River Mayne and c. 1.2km west of Baldoyle Estuary.

The wider Clongriffin area has been planned as a high-density, mixed-use urban centre, combining residential, retail, educational, and community facilities within a sustainable urban framework. The combination of established infrastructure, public transport access, and surrounding green space positions the site as a key component in the continued development and consolidation of the Clongriffin/Belmayne urban area.

Residential development in this area is predominantly comprised of housing estates (Error! Reference source not found.), with a number of large-scale residential developments under construction or permitted, and with scattered apartment developments also represented.

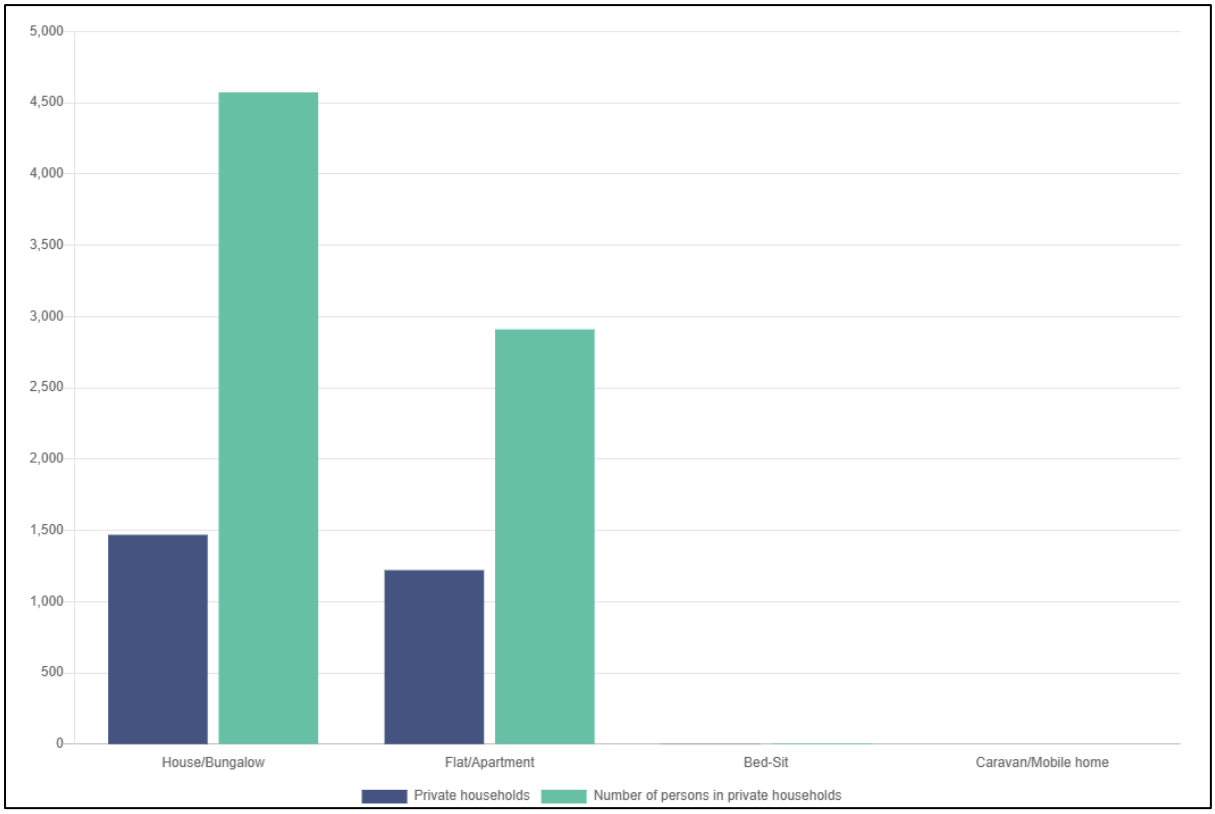



Figure 7.3 Private households by accommodation type- Grange B ED, 2022 (CSO, 2023)

Clongriffin is situated in the administrative area of Dublin City Council and, as such, is subject to the Dublin City Development Plan 2022-2028.

Clongriffin is served by high-capacity public transport infrastructure, in the form of the DART services, providing access to Bray or Greystones via city centre (southbound) and Malahide (northbound). Commuter rail services on the Drogheda/Dundalk to Dublin/Bray route also call at this station, though less frequently. The current bus provisions include 2 no. stops at Station Square and along Clongriffin Main Street, served by Bus Service number 15. Chapter 18 (Traffic & Transportation) details the existing transport infrastructure at the location of the proposed development.

A proposed core bus corridor is to be introduced as part of the BusConnects project with 4 no. new high frequency routes (D1, D3, N8, and L80 Orbital) running from Clongriffin Station. All routes will be within c.100m from the front of the site. In addition to these, it is proposed to extend the H1 arterial route, which currently runs between Dublin City Centre and Baldoyle, as far as Clongriffin Station. This is however contingent on the completion of a bus ramp over the railway line to provide a direct road connection between Station Square and Red Arches Road.

Figure 7.4 illustrates the census data for the primary means of travel to work, school or college in the ED in 2022. It shows that private car use (~39%) is the principal mode for commuting in the Clongriffin area, followed by public transport (bus or train) (~ 26%).

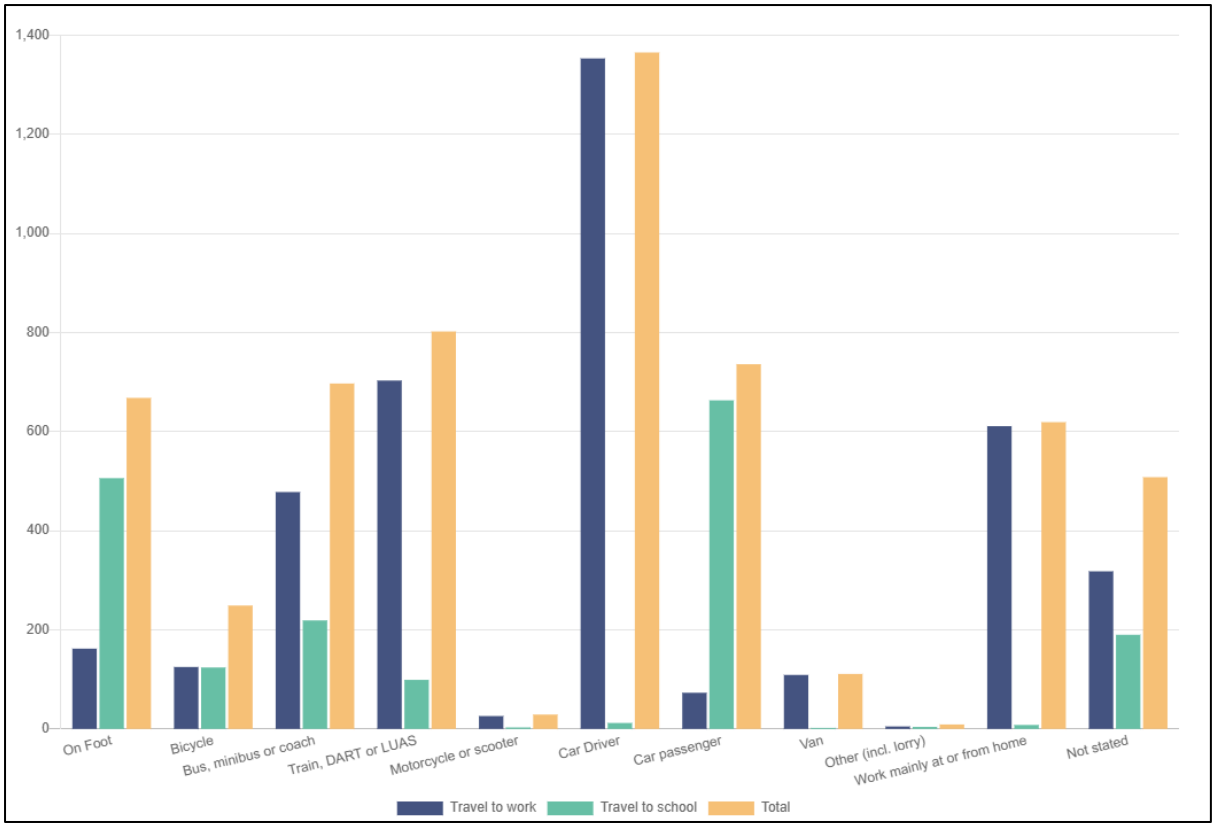



Figure 7.4 Population aged 15 years and over means of travel to work, school or college - Grange B ED (CSO, 2023)

### 7.3.4 Economic Activity Employment

The CSO's Labour Force Survey (LFS) is the official source of labour market statistics for Ireland, including the official rates of employment and unemployment. The LFS data are based on the International Labour Organisation (ILO) methodology.

The most recent national employment rate (from Q3 of 2025) reported an employment rate of 74.7%. It is estimated that employment rate decreased by 0.6% between Q3 2024 and Q3 2025. Refer to **Table 7.2.**

Table 7.2 Labour Force Survey Data for Ireland (CSO, 2025)

| Indicator | Status | |
|---|---|---|
| | Q3 2024 | Q3 2025 |
| Employment rate among 15- 64 year olds | 75.3% | 74.7% |
| Unemployment rate among 15-74 year olds | 4.5% | 5.3% |

CSO census data for 2022 indicate a high rate of employment among residents in the ED, at the time of the 2022 census (Error! Reference source not found.). **Figure 7.6**, below, presents the occupational classes of residents in the ED at the time of the 2022 Census.

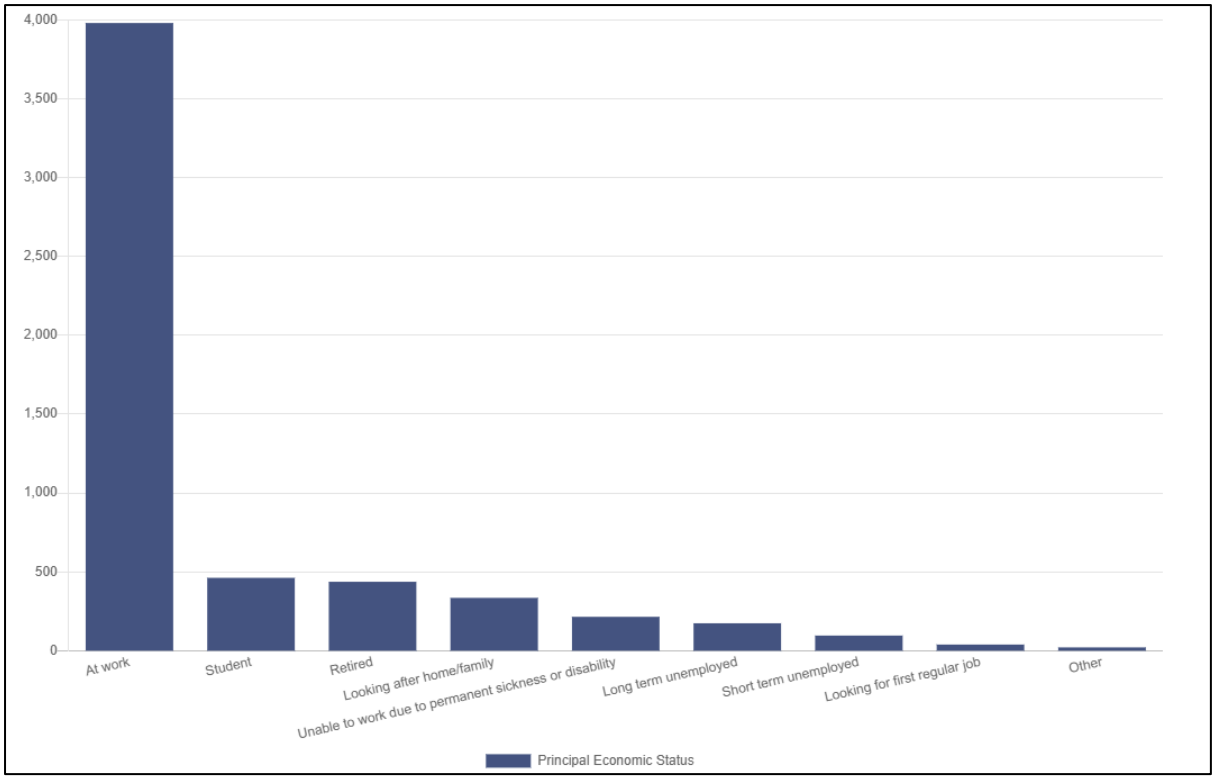



Figure 7.5 Principal Economic Status- Grange B ED (CSO, 2023)

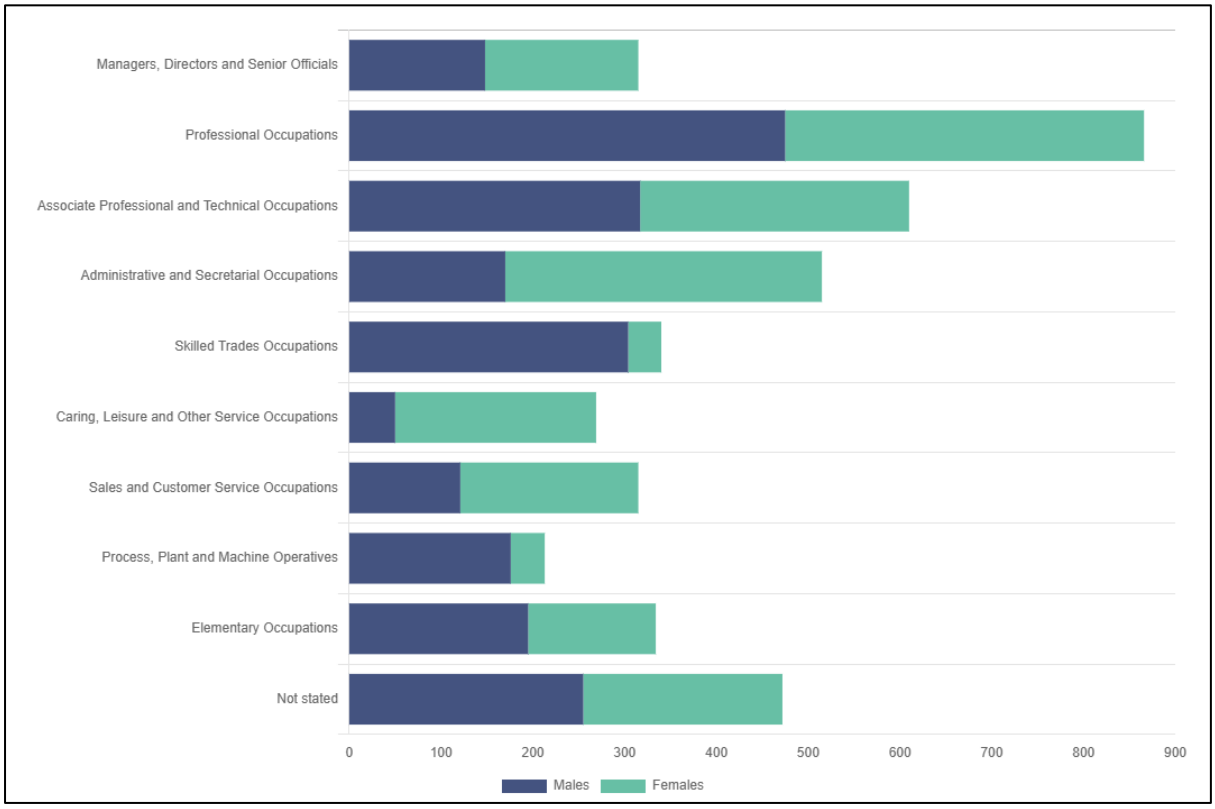



Figure 7.6 Occupation – Grange B ED (CSO, 2023)

### 7.3.5 Tourism and Amenity

Generally speaking, the location of the proposed development is not an important area in terms of tourism or tourist accommodation. However, Clongriffin contains a number of recreational amenities

and attractions including Father Collins Park (c. 380m to the Northwest) which features 26 ha. featuring 2 no. formal playgrounds, a skatepark, pond, 4 no. pitches and an all-purpose athletic field. The Grange Community College

Leisure and amenity resources/facilities in the immediate area include scattered restaurants, bars and cafés; grocery shops; sports facilities (including various gyms, Trinity Sports & Leisure, Football Club), Belltree Park, Grant Park (Permitted in Blocks 5 & 6), Griffith Park, the Mayne River linear park and the Royal Canal.

### 7.3.6 Community Infrastructure

For the purposes of the proposed development, BSM has prepared a *Community, Cultural, Arts & Social Infrastructure Report* and *Schools Demand & Childcare Facilities Assessment Report*. These have been submitted under separate cover as part of the planning application.

The *Schools Demand & Childcare Facilities Assessment Report* (BSM, 2026) has determined that within the 2km catchment area there are 29 no. childcare facilities, of which 7 no. of the facilities fall within a 1km radius from the site. Furthermore, there are 15 no. primary schools within 2 km of the site, and 4 no. primary schools within 1km (Gaelscoil Ghráinne Mhaol, Stapolin National Educate Together School, St Kevins Junior NS, and Scoil Naomh Colmcille). There are 6 no. secondary schools within the catchment area of the proposed development, 2 no. secondary schools (Gaelcholáiste Reachrann, Grange Community College) are within a 1km radius from the site. The development generates the need for approximately 118 no. primary school places and 77 no. secondary school places which can be sufficiently met by the existing primary and secondary school provision within a 2km radius of the subject site.

The *Community, Cultural, Arts & Social Infrastructure Report* (BSM, 2026) states that the proposed development is located in close proximity to Clongriffin urban area and Congriffin Rail Station and has approximately 22no. community facilities to avail of, with 10 no. facilities within 1.5km of the subject site and 3 no. within 750m; catering for all age groups. The 2 no. community centres closest to the subject site are Clongriffin Junction and Clongriffin Hub situated on Station Sq. and Main St, respectively. There are 2 no. public Libraries within the catchment area as well, this includes the Donaghmede (c.1.36km) and the Baldoyle (c.1.86km). Error! Reference source not found. below provides an overview of the community infrastructure in the area. Healthcare facilities are addressed in the following section. There are c. 29 outdoor recreation facilities, with 9 no. within 1km of the subject site. The site is within 2 km of 30 no. total retail facilities, 4 no. of which are shopping centres.

Table 7.3 Social and Community Facilities within 2km of the subject site (Source: BSM, Google Earth 2026)

| Type | Name | Distance |
|---|---|---|
| Community Centre | Clongriffin Junction | 0.01 km |
| | Clongriffin Hub | 0.13 km |
| | Baldoyle Racecourse Community Centre | 0.98 km |
| | KEEP Project, belmayne | 1.46 km |
| | Baldoyle Community Hall | 1.60 km |
| | Ballgriffin Hall | 1.55 km |
| | Bayside Community Centre | 1.67 km |
| | YMCA New Community Hub | 1.87 km |

| Type | Name | Distance |
|---|---|---|
| Community Garden | Baldoyle Racecourse Community Garden | 0.98 km |
| | Bayside Community Orchard | 1.81 km |
| Banks | Bank of Ireland | 1.6 km |
| Emergency Services | Kilbrrack Fire Station | 1.44 km |
| Post Office | An Post- Baldoyle Racecourse Industrial Estate | 0.59 km |
| Library | Donaghmede Library | 0.97 km |
| | Baldoyle Library | 1.83 km |
| Charity | St Vincent's de Paul | 1.89 km |
| Youth Club | The Scout Centre- 46th Dublin Scout Group | 0.84 km |
| | Baldoyle Youth Club | 1.16 km |
| Credit Union | Member First Credit Union Trinity | 0.83 km |
| ATM | YourMoneyKiosk ATM | 1.09 km |
| | AT Bank of Ireland | 1.60 km |
| | UB ATM | 1.68 km |
| Outdoor Recreation | Mayne River Greenway | 0.48 km |
| | Beau Park | 0.09 km |
| | Beltree Park | 0.12 km |
| | Beltree Green | 0.26 km |
| | Dianas Park | 0.31 km |
| | Father Collins Park | 0.39 km |
| | Stapolin Park | 0.83 km |
| | Playground Park | 1.02 km |
| | Donaghmede Park | 1.15 km |
| | Baldoyle Racecourse Park | 1.18 km |
| | Parkside Park | 0.78 km |
| | The Lawn | 1.26 km |
| | Seagrange Playground | 1.3 km |
| | Seagrange Park | 1.47 km |
| | Portmarnock Mound | 1.49 km |
| | Balgriffin Park | 0.76 km |
| | Belmayne Park | 1.19 km |
| | Grangemore Park | 1.06 km |
| | Donahies Field | 1.54 km |
| | Bayside Playground | 1.63 km |
| | Basketball Court | 1.63 km |
| | The Lamb Chop | 1.69 km |
| | St. Benedicts Park | 1.75 km |
| | O'Tooles GAA - Millbrook Pitch | 1.76 km |
| | Bayside Community Orchard | 1.81 km |
| | Playground St. Anne's Square | 1.87 km |
| | Moyclare Playground | 1.88 km |
| | Kilbarrack Playground | 1.94 km |
| | Streamville Park | 1.53 km |
| Shopping Centre | Racecourse Shopping Centre | 1.13 km |
| | Donaghmede Shopping Centre (with An post and a Bottle Bank) | 0.99 km |
| | Clarehall Shopping Centre/Retail Park (with An Post and a Bottle Bank) | 1.64km |

| Type | Name | Distance |
|---|---|---|
| | Bayside Shopping centre | 1.68 km |

### 7.3.7 Human Health

Health, as defined by the World Health Organization (WHO), is *"a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity"*. The *Healthy Ireland Framework 2013 – 2025* defines health as *"everyone achieving his or her potential to enjoy complete physical, mental and social wellbeing"*.

The Department of Health's 2025 report, *Health in Ireland – Key Trends 2024*, provides summary statistics on health and health care in Ireland and touches on several areas, including demographics, population health, hospital and primary care, health sector employment and expenditure. Each section has a series of detailed charts and tables relevant to that aspect of healthcare in Ireland. It highlights the significant achievements that Ireland has made for key health outcomes in the past decade. However, it also highlights the challenges that persist in terms of the accessibility of timely and efficient healthcare across the population.

The report highlights the following key trends:

- Ireland has the highest self-perceived health status in the EU, with c. 80.0%[10] of people rating their health as good or very good;
- The population in Ireland in 2024 is estimated to be 5.15 million, an increase of 2.6% on Census 2022 and the largest change was seen in the over 65 age group which increased by 36.5%[11] since 2014;
- Life expectancy has improved in Ireland since the past decade, however the rate of increase of life expectancy has been declining;
- Over the past decade, both cigarette and alcohol consumption has declined. The alcohol consumption has declined at a slower rate than cigarette consumption.

At the national level, population health data presents a picture of decreasing mortality rates and high self-perceived health over the past ten years. Ireland has the highest self-perceived health status in the EU, with 80% of people rating their health as good or very good. In 2023, 80.0% of males and 79.1% females rated their health as being good or very good. However, health status reflects income inequality, people in higher income brackets tend to report better health than those in lower income brackets.

Human health has the potential to be affected by exposure to toxic substances or pathogens in environmental media, such as air, water and soil. Human health impacts can also arise due to anthropogenic or naturally occurring accidents or disasters; such as landslides, flooding or structural failures. Nuisance and negative psychosocial impacts can also arise as a direct result of environmental factors; e.g. as a result of noise, dust, unsafe environments and / or crime; or indirectly, e.g. as a result of economic hardship. Occupational health and safety risks to construction site personnel are also inherent where demolition and construction works are proposed.

[10] Population health - https://assets.gov.ie/static/documents/chapter-2-population-health.html#health-status
[11] Demographics - https://assets.gov.ie/static/documents/chapter-1-demographics.html

The baseline environments in terms of air, surface water and groundwater / soil are detailed in Chapter 11 (Air Quality), Chapter 10 (Hydrology) and Chapter 9 (Land, Soils, Geology & Hydrogeology), respectively.

The risks of accidents and disasters are addressed, where relevant, in the various specialist chapters herein. Flood risk, for instance, is addressed in Chapter 10 (Hydrology); while geohazards are addressed in Chapter 9 (Land, Soils, Geology & Hydrogeology).

In relation to the potential human health risks associated with the proposed works, an Outline Construction Management Plan (OCMP) has been prepared by CS Consulting (2026) and submitted under separate cover as part of this application. It outlines how the proposed works will be delivered safely and in a manner which minimises risk to human health, including that of site personnel.

Healthcare within the study area is provided by a range of different organisations including public, voluntary and private agencies. The Health Services Executive is the primary agency responsible for delivering health and personal social services in Ireland. In recent years, primary care has been identified as the most effective and cost-efficient way to treat patients. This offsets dependence on the hospital system allowing most patient care to take place at local, community locations which feature multi-disciplinary teams of healthcare professionals working together.

The proposed development is located within the DCC administrative area which has access to national public hospitals, private hospitals, high-tech hospitals, accident and emergency services, psychiatric hospitals, rehabilitation centres, orthopaedic hospital and hospices.

There are a range of healthcare facilities in the study area within a 2 km distance of the proposed development, as listed in Table 7.4, below.

Table 7.4 Healthcare Facilities in the Surrounding Area - 2km radius

| Name/Type | Address |
|---|---|
| Praxis Care | 2 Clongriffin Rd, Donaghmede, Dublin, D13 NR76 |
| Clongriffin Medical Centre | 17a Main Street, Clongriffin, Dublin, D13 N2Y4 |
| Clongriffin Dental | 17A Main St, Clongriffin, Dublin, D13 N2Y4 |
| Stacks Pharmacy Clongriffin | Unit 13, Main Street Clongriffin Town Centre Clongriffin, Dublin 13 |
| Grange Clinic | Grange Road, Grange, Dublin, D13 F7H9 |
| McCartan's Pharmacy (Bayside) | Unit 3 Bayside Shopping Centre Bayside, Dublin 13 |
| Donaghmede Medical Centre | Unit 40a Donaghmede Shopping Centre, Grange Road, Donaghmede, Dublin, D13 V9X6 |
| Donaghmede Allcare Pharmacy | Units 5 - 6 Donaghmede Shopping Centre |
| Corr's Pharmacy (Clarehall) | Unit 4 Clarehall Shopping Centre Elmfield Rise |
| Grange Dental | 2nd Floor, The Grange Clinic, Grange Rd, South, Donaghmede, Co. Dublin, D13 F7H9 |
| Boots Pharmacy (Donaghmede) | Unit 1 Ground Floor Grange Clinic, Grange Road |
| Complete Womens Health Care | Grange Rd, Donaghmede, Dublin 13, D13 F7H9 |
| Baldoyle Medical Centre | Racecourse Shopping Centre, Grange Road, Baldoyle, Dublin, D13 N6W7 |
| Adrain Dunne Pharmacy | Unit 4 Racecourse Shopping Centre Baldoyle, Dublin 13 |
| Ibrahim Surgery | 52 Ardara Avenue, Donaghmede, Dublin, D13 RK03 |
| Medibelle Clinic | 59A Seacliff Rd, Kilbarrack Lower, Dublin 13 |
| Brookstone Family Practice | Brookstone Family Practice, 13 Brookstone Rd, Baldoyle, Dublin 13 |

| Name/Type | Address |
|---|---|
| Baldoyle Medical | Baldoyle Medical, Brookstone, Brookstone Ln, Brookstone Rd, Baldoyle, Dublin 13 |
| Cleary's Pharmacy Portmarnock | Unit 1, Block 2, 74 the Avenue St Marnocks Bay Portmarnock, Dublin 13 D13 W32H |
| Baldoyle Health Centre | Baldoyle Health Centre, Willie Nolan Rd, Baldoyle, Dublin 13 |
| Limitless Health Pharmacy | Unit 4, Burnell Court, Malahide Rd, Northern Cross, Coolock, Co. Dublin, D17 KF95 |
| Northern Cross Medical Centre | Unit 4 Burnell Court, Malahide Road , Priorswood, Dublin, D17 KF95 |
| Limitless Health Pharmacy | Unit 4, Burnell Court, Malahide Rd, Northern Cross, Coolock, Co. Dublin, D17 KF95 |
| St. Patrick's Care Centre | Dublin St, Baldoyle, Dublin |
| Unit 2, Burnell Court | Mayne River St, Northern Cross, Dublin, D17 FH67 |
| McCabes Pharmacy (Clarehall) | Unit 1-2 Clarehall Shopping Centre Malahide |
| The Meridian Clinic Clarehall | 3rd Floor Clarehall Shopping Centre, Malahide Road, Northern Cross, Dublin, D17 NX38 |
| Northern Cross Dental | Unit 8/9, Burnell Square, Malahide Rd, Northern Cross, Dublin, D17 DK71 |
| Rose-Marie Daly Dentistry for Children | Burnell Court, Unit 9 Block 9, Malahide Rd, Northern Cross, Dublin, D17 H213 |
| Carechoice Malahide Road | Mayne River St, Northern Cross, Dublin |
| Rose-Marie Daly Dentistry for Children | Unit 9 Block 9, Malahide Rd, Northern Cross, Dublin, D17 H213 |
| Bayside Medical Centre | Bayside Shopping Centre, Bayside Square East, Sutton, Dublin, D13 W2K1 |
| Smile Hub Dental Clinic | Bayside Medical Centre, Bayside Shopping Centre, Bayside Square E, Kilbarrack Lower, Sutton, Co. Dublin, D13 W2K1 |
| Bayside Family Practice | Bayside Shopping Centre, Bayside Square East, Killbarrack, Dublin, D13 KT59 |
| Dublin Denture Clinic | 16 Main St, Baldoyle, Co. Dublin, D13 DC98 |
| Smile Design Dental Clinic | 16 Main St, Baldoyle, Co. Dublin, D13 DC98 |
| Kilbarrack Dental Care | 49 Kilbarrack Rd, Raheny - Greendale, Dublin, D05 A8N6 |
| Fresenius Medical Care Ireland Limited | Grattan House, Fresenius Medical Care Ireland Limited, City Junction Business Park, Dublin |
| Ryans Pharmacy | Unit 1, Greendale Shopping Centre, Greendale Rd, Raheny - Foxfield, Dublin, D05 Y0X2 |

Figure 7.6, below, presents the self-reported health status of the population in Grange B ED, as reported in the 2022 Census. While the data is self-reported and, therefore, does not provide an entirely accurate picture of the health profile of the area, the responses indicate a relatively high level of individual wellbeing in the area. Furthermore, the high levels of walking as a principal means of personal mobility in the area (Error! Reference source not found., above) would indicate a relatively active lifestyle among a large proportion of residents.

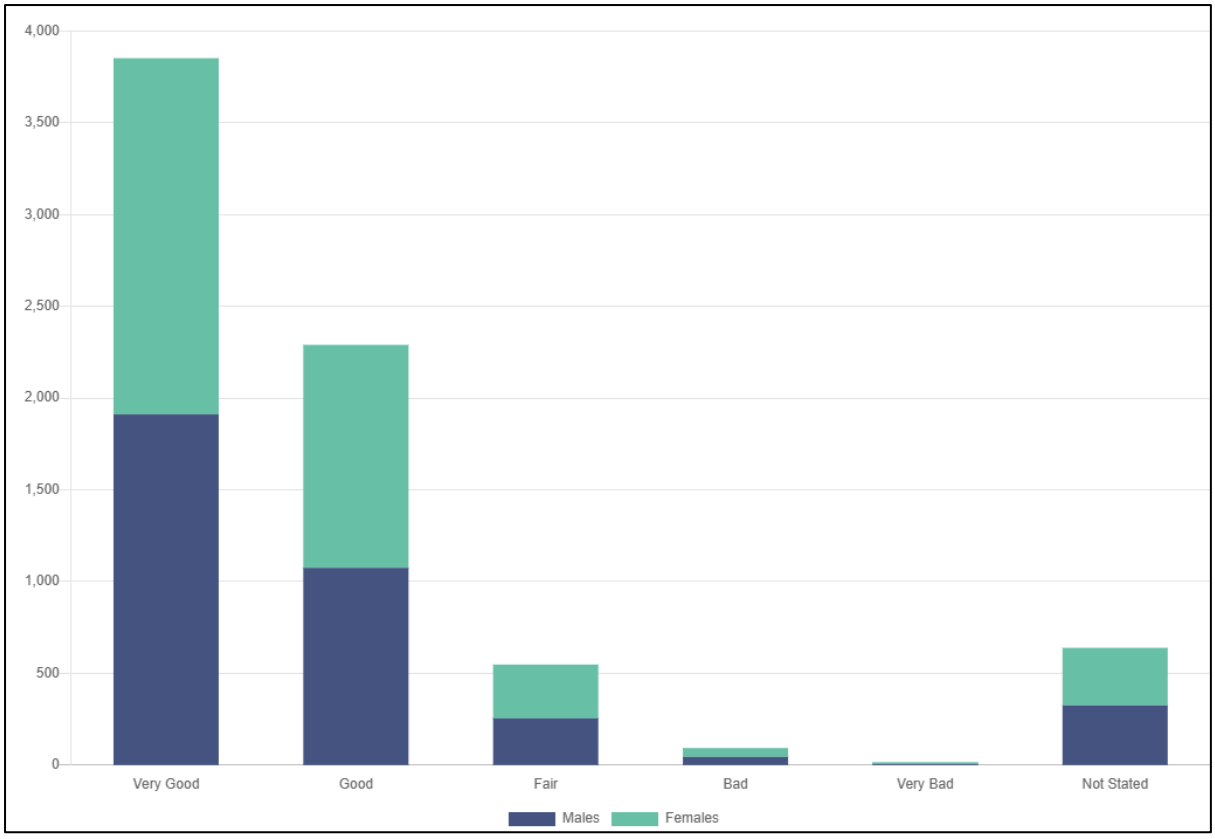



Figure 7.7 Self-report health status - Grange B ED (CSO, 2022)

## 7.4 Predicted Impacts of the proposed development

### 7.4.1 Do-Nothing Impact

The 'Do-Nothing' alternative considers the likely scenario that would arise, assuming the proposed development were not progressed, i.e. if nothing were done. In this case, the Do-Nothing scenario might entail:

- A continuation of the existing status and use of the lands and buildings (i.e. land and buildings on the site are significantly underutilised at present); or
- Development (likely residential as per the Development Plan) under the scope of a separate application / proposal, at some point in the future.

In the context of the ongoing housing crisis in Dublin City and the zoning of the site, the former scenario (a) is considered to represent an inefficient, uneconomical and socially suboptimal use of the Clongriffin SDRA lands. The opportunity cost, in this scenario, would include the 711 proposed residential units, and the accommodation that these would otherwise provide. In this scenario, the long-term impacts associated with the operation of the proposed development on population and human health (as assessed below) would not arise. The short-term construction phase impacts (as assessed below) would also be avoided.

The latter scenario (b) is considered somewhat more likely, considering the nature of the lands, their zoning status, and the ongoing trends and policies in relation to housing and residential development at the national and regional levels. It is not possible to assess in full, the likely impacts of scenario (b), as the nature and scale of any potential future proposals for the site (in the absence of the proposed

development) are not known. However, in the light of the zoning objectives and requirements of the Development Plan for this site, it is likely that any such development will be materially consistent with the Plan's requirements and the effects are likely to be similar to the effects of the proposed development.

### 7.4.2 Construction Phase

The duration of the construction phase is anticipated to be somewhere in the region of 60 months (or five years). As such, associated impacts are expected to be short-term in duration according to the EPA Guidelines. During this time, there will be no severance of land, loss of rights of way or amenities as a result of the proposed development.

As part of this assessment, the other specialist chapters of the EIAR have been reviewed to identify potential interactions. In the absence of standard good construction practice and mitigation measures, the following potential impacts have been identified during the construction phase:

- Nuisance / health impacts related to exposure to dust;
- Impacts due to greenhouse gas emissions and climate vulnerability;
- Nuisance / disturbance related to elevated noise levels;
- Impacts on traffic / parking due to presence of construction traffic;
- Potential negative impacts on landscape and visual amenity due to presence of construction site and effects of construction activities (e.g. dust, dirt, stockpiling of soils, removal of vegetation, etc.);
- Health impacts related to improper waste management;
- Health impacts related to improper safety protocols, e.g. related to diversions of gas / power lines;
- Nuisance / impacts on residential amenity due to potential service / power outages;
- Impacts due to changes to daylight and sunlight availability on the receiving environment;
- Economic impacts related to construction employment / increased demand for goods and services.

These are discussed and characterised, where relevant, in the following sections.

#### 7.4.2.1 Air Quality and Climate

An adverse air quality impact during the construction phase can cause health and dust nuisance issues. There is a low risk of dust-related human health impacts during the construction phase of the proposed development. Best practice mitigation measures will be implemented during the construction phase to ensure that the impact of the proposed development complies with all ambient air quality legislative limits. Therefore, the predicted impact is **direct, short-term, negative, localised** and **not significant** during the construction phase.

The extent of dust generation is dependent on the type of dust; the nature of construction activities; and meteorological factors, such as rainfall, wind speed and wind direction. As such, the degree and severity of dust generation is expected to fluctuate across the duration of the proposed works. However, dust generation of some degree may be anticipated throughout.

Chapter 11 (Air Quality) has rated the sensitivity of the area to dust soiling is considered high and the sensitivity of the area to human health is considered low. Chapter 11 (Air Quality) states that there is an overall high to medium risk of dust soiling impacts on people & property and a low risk of dust-

There is the potential for release of a number of greenhouse gas emissions to atmosphere during the construction of the proposed development. As detailed in Chapter 12 Climate, the impact of the proposed development in relation to GHG emissions prior to mitigation measures being put in place is

considered **long-term, negative and slight.** There is also potential for impacts due to climate change on the proposed development. As detailed in Chapter 12, in relation to climate change vulnerability, climate change impacts are already occurring with significant periods of drought and more intensive storms and pluvial flooding. The impact of the proposed development in relation to construction phase climate vulnerability emissions is therefore considered **long-term, negative and imperceptible.**

Corresponding mitigation measures have been set out in Chapter 11 and 12.

#### 7.4.2.2 Noise & Vibration

Chapter 13 (Noise & Vibration) has assessed the potential noise, and vibration impacts of the proposed development during the construction phase in relation to construction activities, plant and equipment, and construction traffic. The surrounding environment in the vicinity of the site is primarily residential, with sports fields to the north-west and south, with a mix of schools and offices further south and west.

As described in Chapter 13, an environmental noise survey has been conducted at the site in order to quantify the existing noise environment. The noise measurement locations were selected to represent the noise environment at noise sensitive locations surrounding the proposed development. The closest noise sensitive locations to construction works are the commercial and mixed retail buildings on Clongriffin Rd (c. 20 m from the site) and Main St (c. 30 m from the site), and residential properties on Main St, Friar St and Park St (c. 20 m from the site)

For the purposes of the *noise impact assessment*, 'Category A' noise threshold level with threshold value of 65 dB(A) will be applied to the nearest noise sensitive locations. In the absence of mitigation, the most intrusive early-stage activities relating to demolition and piling works will have **negative, significant to very significant and temporary effect** for residential noise sensitive locations immediately within 20m to 30m (as described above) of the site boundary. During structural works including those associated with basement excavation and foundation works the impact without mitigation will be **negative, moderate to significant and short-term** at noise sensitive locations immediately within 20-30m of the activity. Once the most intrusive ground works have been completed on site, noise levels associated with the general construction of the superstructure will be significantly reduced. The impact without mitigation during this phase will be **negative, slight to moderate and short-term** at noise sensitive locations. It should also be noted that construction works will not consistently take place along the site boundary; therefore, the predicted levels represent a worst-case scenario.

Traffic data provided by the traffic consultants indicates that the additional construction traffic on local roads will have a minimal impact in terms of noise generation. The traffic assessment indicates that the worst affected road will see an increase of 16.8% HGV's and 0.5% increase in traffic overall. An increase in traffic volumes of around 25% would be needed to raise noise levels by just 1 dB. The impact is therefore considered **negative, imperceptible, and short-term**.

In relation to construction vibration, any construction activities undertaken on the site will be required by the Contractor to operate below the recommended vibration criteria set out in the Chapter 13. The impact without mitigation for human response is **negative, moderate to significant and temporary** during any vibration works at NSLs at 40m of the activity.

#### 7.4.2.3 Landscape and Visual

##### 7.4.2.3.1 Visual Amenity

During the estimated 24 month construction phase, the site and immediate environs would be disturbed by construction activity, and the incremental growth of the buildings on site. The magnitude of visual change would range from high in the immediate environs, to low, negligible or none with increasing distance from the site. A detailed assessment of effects on viewpoint is contained in Section 14.4 of this EIAR.

##### 7.4.2.3.2 Townscape Character

During the estimated 24 month construction phase, the site and immediate environs would be disturbed by construction activity, and the incremental growth of the buildings on site. The magnitude of townscape change would be medium (considering (a) that the context is a new urban area in the process of development, where similar change has been ongoing for approximately 20 years, and (b) the construction phase is short term).

Therefore, **the significance of the townscape effects during construction would be moderate negative**. Such temporary negative townscape effects are unavoidable during the construction phase of a development.

#### 7.4.2.4 Traffic

Additional traffic on the road network as a result of the proposed works has the potential to cause or exacerbate congestion, resulting in impacts on journey characteristics (i.e. amenity, duration and / or length) for local residents, workers and road users.

All vehicular traffic to and from the site will travel to/from the west, via Clongriffin Main Street. Subject to planning permission, construction of the proposed development is expected to commence in 2026 and to be completed by 2028, with vehicular construction traffic to and from the site reaching a peak in the year 2027.

Chapter 18 (Traffic & Transportation) state that during Phase 1 access to the construction will be limited to a maximum of 12 HGV trips per hour and 4 LGV trips per hour in addition to no onsite car parking for construction personnel. Refer to Chapter 18 that provides a breakdown of the total number of expected inbound vehicle trips per construction phase, broken down to peak times and daily totals.

Chapter 18 has estimated that construction phase traffic generated by the proposed development shall have a negligible influence on the operation of the modelled junctions, resulting in no discernible increase in vehicle queueing and a maximum increase of 3 second in average delay on any junction approach.

The likely construction-phase impact of the proposed development on the operation of the surrounding road network is thereby shown to be **negative** in nature, **short-term** in duration, but **not significant**.

### 7.4.3 Operational Phase

The duration of the operational phase of the proposed development is assumed to be long-term in duration, as per the definitions in the EPA guidelines.

The proposed development will comply with the statutory land use zoning policies and objectives of the Dublin City Development Plan (2022 – 2028) and the Government's National Planning Framework

(NPF). Development of the site will align with the NPF's high-level objective to achieve compact, sustainable growth and, in doing so, will realise the efficient use of currently underutilised former institutional lands with higher housing density. Refer to Chapter 3 (Planning & Development Context) for an in-depth discussion of the proposed development's consistency with national and regional planning and development policy.

In the absence of mitigation, potential impacts on population and human health as a result of the operational phase of the proposed development may be summarised as follows:

- Potential impacts due to greenhouse gas emissions and climate vulnerability;
- Potential nuisance and disturbance of residents due to noisy building services plant and vehicular deliveries / collections within the site
- Potential negative impacts on journey characteristics due to additional operational phase traffic generated by the proposed development;
- Positive impacts on journey characteristics due to enhanced permeability across the site;
- Potential visual impacts due to completion of proposed development, establishing substantial new residential development;
- Potential positive impacts by retention and enhancement of the landscape and biodiversity value of the parts of the site;
- Potential positive impact of the proposals to retain and improve existing architectural and cultural heritage while demolishing structures which detract from that heritage, making it more accessible and visible to the local population and future occupants;
- Health impacts related to improper waste management;
- Potential impacts due to daylight and sunlight availability for the proposed development;
- Potential socio-economic impacts due to demand for goods and services locally;
- Positive socio-economic impacts due to provision of significant additional housing;
- Positive impacts on existing and new residents due to provision of new community amenities and facilities.

These are discussed and characterised, where relevant, in the following sections and in the corresponding chapters of the EIAR.

#### 7.4.3.1 Air Quality and Climate

During the operational phase, Chapter 11 Air Quality identifies that the impact of traffic emissions on air quality and human health during the operational phase will **long-term, localised, direct, negative** and **not significant**.

The proposed development is committing to reducing climate impacts, where feasible, and the development will comply with the Do-Minimum standards set through regulation – many of which are embedded design mitigations. The impact of the proposed development in relation to GHG emissions prior to mitigation measures being put in place is considered **long-term, negative and slight.**

In addition, the proposed development has been designed to reduce the impact to climate where possible (see the project Climate Action & Energy Efficiency Report prepared by EDC (2026) for full details).

Furthermore, Chapter 12 Climate has considered the following climate hazards in the context of the proposed development: flooding (coastal, pluvial, fluvial); extreme heat; extreme cold; wildfire; drought; extreme wind; lightning, hail, landslides and fog. With design mitigation in place, there are no significant risks to the proposed development due to climate change and the impact of the proposed development in relation to climate vulnerability emissions is considered **long-term, negative and imperceptible.**

#### 7.4.3.2 Noise

There will be building services plant items required to serve the development. The location or type of building services plant has not yet been established, therefore it is not possible to calculate noise levels to the surrounding environment, however, it is noted that air source heat pumps are likely to be installed for the project. Plant items will be selected, designed and located so that there is no negative impact on sensitive receivers within the development itself, given that there will be large air source heat pumps in use they will likely require additional screening. The cumulative operational noise level from building services plant at the nearest noise sensitive location will be designed/attenuated to meet the relevant BS 4142 noise criteria for day and night-time periods as set out in this assessment. Based on the baseline noise data collected for this assessment it is considered an appropriate design criterion for noise at offsite receptors is:

- Day - 49 dB $L_{Aeq,1hr}$;
- Night - 39 dB $L_{Aeq,15min}$;

The criteria has been selected to be equal to or less than the existing background noise level. Giving consideration to the criteria outlined in Section 13.2.4.2 it can be considered that when plant is designed to meet these thresholds the impact will be **neutral, not significant and long-term**.

Once the development is operational, the potential noise impacts to the surrounding environment are minimal. The residential aspect of the development is not expected to generate any significant noise sources over and above those which form part of the existing environment at neighbouring residential areas (road traffic noise, estate vehicle movements, children playing etc.) and hence no significant impact is expected from this area of the development site.

The main potential noise impact associated with the proposed development is considered therefore to relate to the generation of additional traffic to and from the site as a result of the new residential and commercial buildings. Increases are estimated to be between 0.0 - 0.2dB by 2028 and between 0.0 – 1.2 dB by 2043. The impact of noise from additional traffic will be **neutral to negative, not significant and long-term**.

Once operational, there are no vibration sources associated with the development site.

#### 7.4.3.3 Traffic

Additional traffic generated by a residential development has the potential to create or exacerbate congestion on the local road network, resulting in negative impacts on journey characteristics (i.e. amenity, duration and length) for other road users.

Chapter 18 has predicted total trip generation to and from the proposed development (across all modes) for the weekday AM and PM peak hour periods, as well as for an average full day (AADT) using the Trip Rate Information Computer System (TRICS) database. The assessment assumes that the whole development is fully operational. This modelling exercise has determined that the predicted percentage increase in Annual Average Daily Traffic flows (AADT) as a result of the development, in all scenarios, ranges between 1% and 9%, except for Junction 7 at Hole in the Wall Road / Main Street (16% increase in AM Peak and 10% increase in PM Peak) and Junction 9 at Main Street / Park Avenue (32% increase in AM Peak and 21% increase in PM Peak).

Additional microsimulation modelling was done for the year 2043 with the inclusion of operational traffic generated by the subject proposed development. The traffic flows applied for this assessment scenario are those surveyed in 2019, adjusted to account for interim development between 2019 and 2024, scaled up to 2043 levels using TII growth factors, and including the operational phase traffic.

These results show that Junction 7 shall operate within its effective capacity on all approaches during the AM peak period, but shall exceed its effective capacity within the PM peak period. Junction 7 shall remain within its ultimate capacity on all approaches. Junction 9 shall experience no discernible vehicle queueing and negligible delays.

The likely operational-phase impact of the proposed development on the overall operation of the surrounding road network is thereby shown to be **negative** in nature, **long-term** in duration, and of **moderate** significance.

#### 7.4.3.4 Landscape and Visual Amenity

##### 7.4.3.4.1 Visual Amenity

Chapter 14 (Landscape and Visual) identified 16 no. viewpoints that were individual assessed for impacts in Section 14.4.3 of this EIAR.

##### 7.4.3.4.2 Townscape Character

This receiving environment, a planned town centre comprised of modern residential and mixed use buildings of varying typology, scale and architecture, with areas still under construction or undeveloped, is not sensitive to change. The impacts on the townscape character are predicted to be **high, significant and positive**, based on **Table 14.6**.

#### 7.4.3.5 Waste

Incorrect management of waste material during the operation phase can result in littering, presence of vermin and / or pollution, with associated potential for negative impacts on human health and residential amenity. Chapter 19 (Material Assets – Waste) assesses the impacts of the proposed development in this regard. In the absence of proper waste management procedures (e.g. littering or use of non-permitted waste contractors / facilities), a **negative, significant and long-term impact** is

predicted. Corresponding mitigation measures have been proposed in Chapter 19, and are discussed in Section 7.5, below.

#### 7.4.3.6 Microclimate – Wind

Chapter 17 Microclimate – Wind assessed the potential effects on wind microclimate at the site during the operational phase for the proposed development in the absence of landscaping elements. Overall, the proposed development is expected to provide a suitable environment for pedestrians and occupants to carry out a wide variety of 'sitting', 'standing' and 'strolling' activities. Mitigation measures to reduce excessive windiness have been developed through the design process and embedded in the building design. These include the use of solid balustrades or side screens in balconies that were exposed to excessive windiness. The existing and proposed mature landscaping is expected to further mitigate the wind effects in and around the proposed development, especially during the spring and summer seasons when trees are in full foliage. **No significant impacts** are predicted.

#### 7.4.3.7 Microclimate – Daylight and Sunlight

Chapter 16 Microclimate – Daylight & Sunlight assessed the level of impact and state that No properties experience moderate adverse or major adverse effects. Annual Probable Sunlight Hours (APSH) and Annual Probable Winter Hours (WPSH) analysis for all the surrounding properties and 100% of spaces complied against APSH and 87.15% against WPSH criterion. Chapter 17 also tested adjacent amenity spaces and concluded the proposed development does not have a perceptible impact on sunlight in the existing adjacent amenity spaces.

An **imperceptible impact with a neutral, long-term effect** is expected for approximately 1.1% of rooms within the apartment blocks of the proposed development, in relation to daylight levels experienced by future occupants. Supplementary mitigation measures have been incorporated for the affected rooms, as outlined in Section 16.5.2. A **non-significant impact with a neutral, long-term effect** is expected for the remaining 98.9% of rooms.

#### 7.4.3.8 Economic Impacts

By creating additional demand for goods and services, population growth contributes positively to the local economy and creates critical mass that supports the viability of further community infrastructure. This is expected to result in a **positive, moderate, long-term** socioeconomic impact.

Additionally, the proposed development is expected to increase the local population by the order c. 1,516 persons[12], creating additional demand for goods and services in the local area, benefitting local businesses and resulting in a **positive, moderate and long-term** socioeconomic impact.

The most significant positive impact of the proposed development will be the provision of a large number (711 no.) of high-quality apartments with supporting amenities and facilities, providing a high standard of housing for a variety of household sizes. In the context of the ongoing housing crisis in Dublin City, the predicted impact is **moderate to significant and positive**.

At the same time, a substantial new residential population can place strain on the capacity of existing infrastructure, goods, services and amenities in an area. In this regard, Community, Cultural, Arts & Social Infrastructure Report and Childcare Facilities and School Demand Assessment reports have been

[12] Assuming occupancy rates of 1.5 persons per 1-bed or studio unit, and 2.76 persons per unit (exc. Studio and 1no. bed units).

prepared and submitted under separate cover as part of the planning application. The assessment concluded that there is sufficient infrastructure in the area to meet the resultant demand for school places and community amenities. Significant negative impacts are not predicted in this regard.

The operation of the proposed development is expected to significantly enhance the community amenities and facilities offering in the area. The proposed development will include a high-quality network of public realm areas, among other assets; as well as retail/café/restaurant units, crèche, cultural/community/arts spaces; all of which will be accessible to on-site residents and neighbouring residents and workers alike. The design of the proposed development will also facilitate cycling as a healthy means of personal mobility and as an alternative to the private car, thereby promoting healthy and more environmentally sustainable lifestyles among its residents. Thus, the proposed development is expected to create opportunities for recreation, socialisation and physical activity, as well as providing practical community amenities (i.e. shopping and childcare), resulting in a **positive, moderate, long-term impact on the local population**.

## 7.5 Mitigation Measures

Mitigation measures have been prescribed elsewhere in this EIAR which will avoid / minimise the predicted impacts detailed above. These are measures required by law, by the Development Plan 2022-2028, by guidance and regulations, and by standards for good construction practice and operational standards that are generally applicable to developments of this nature. In order to avoid, where possible, and in other cases minimise, negative impacts on population and human health, it is imperative that all of the mitigation measures set out in this EIAR are properly implemented in full. These mitigation measures (set out in the specialist chapters of the EIAR and also within Ch 23 that includes the schedule of mitigation measures) are summarised as follows, insofar as they relate to population and human health.

### 7.5.1 Construction Phase

- An OCMP has been prepared by CS Consulting for the proposed development (refer to standalone document submitted as part of the planning pack). It contains best practice measures and protocols to be implemented during the construction phase of the proposed development to avoid / minimise environmental impacts.
    - The appointed contractor will be responsible for the implementation of the CEMP & CMP. To ensure these documents remain fit for purpose, they will be maintained as live documents. The appointed contractor will be responsible for updating the CEMP & CMP, as required; e.g. to reflect the publication of relevant new or revised guidelines and / or new statutory requirements. The full schedule of environmental commitments (i.e. all mitigation measures set out in the CEMP and Environmental Impact Assessment Report as part of the planning application, as well as any applicable conditions of development consent) will be included in the CEMP & CMP by the appointed contractor.
- A Community Liaison Officer (CLO) will be appointed by the contractor for the duration of the construction phase. They will be responsible for keeping the local community and businesses informed of the timing and duration of potentially disruptive works, and for receiving and addressing concerns of local residents and businesses in relation to the proposed works;

- Chapter 11 (Air Quality) & Chapter 12 (Climate) include a suite of mitigation measures to minimise air quality (including dust) impacts during the construction phase. Dust minimisations measures are included in Chapter 11 and shall be finalised by the appointed contractor in agreement with Dublin City Council, and implemented during the proposed works. Other mitigation measures are included in relation to community liaison, site management, maintenance of site, control of construction machinery, waste management especially demolition works, earthworks and measures specific to trackout. Further, as detailed in Chapter 5 & OCMP, adequate surface water drainage and management during construction phase shall be undertaken so as to avoid impacts on local population and human health;
- Chapter 13 (Noise & Vibration) includes a suite of mitigation measures to minimise noise impacts during the construction phase. Mitigation measures are included in relation to selection of quiet plant, noise control at source, screening, adherence to noise limits and community liaison;
- Chapter 14 (Landscape & Visual) includes a number of mitigation measures to minimise the impacts of the proposed works on landscape and visual amenity. These include measures in relation to visual impact of construction works, landscape character and existing vegetation;
- Chapter 18 (Traffic & Transportation) includes measures in relation to construction traffic and parking management to minimise the impacts of construction traffic on the local community and the operation of the existing road network in the area.
- Additionally, each appointed contractor will ensure that their compound set up accounts for appropriate spatial provision for waste management segregation, logistical deliveries and day to day contractor car parking. Appropriate overflow contractor carparking can be made available in areas of client landholding. This area(s) may change subject to works phasing and ongoing construction activities.
- Chapter 19 (Material Assets - Waste) includes a suite of measures in relation to management of construction waste to minimise the impacts of all site construction activities;
- Chapter 20 (Material Assets – Services) includes a suite of measures in relation to management of services in the vicinity of the works and regard shall be had to the Gas Networks Ireland *Guidelines for Designers and Builders – Industrial and Commercial (Non-Domestic) Sites (2018),* the Health & Safety Authority (HSA) *Code of Practice for Avoiding Danger from Underground Services (2016)*, and the ESB Networks & Health and Safety Authority *Code of Practice for Avoiding Danger from Overhead Electricity Lines (2019).*

### 7.5.2 Operational Phase

- Chapter 18 (Traffic & Transportation) includes measures in relation to mobility management and car parking management during the operational phase. It requires the implementation of a Resident Travel Plan, to encourage sustainable travel patterns among residents of the proposed development;
- Chapter 11 (Air Quality) & Chapter 12 (Climate) includes a suite of mitigation measures to minimise future climate change impacts during the operational phase. These measures have been incorporated into the design of the development to mitigate against the impacts of future climate change. For example, adequate attenuation and drainage have been incorporated into the design of the development to avoid potential flooding impacts as a result of increased rainfall events in

future years. The proposed development has been designed to reduce the impact on climate as a result of energy usage during operation;

- Chapter 19 (Material Assets- Waste) includes a suite of measures in relation to management of operational phase waste to minimise the impacts of the operational phase of the proposed development. Waste generated within the proposed development will be managed in accordance with the *Waste Management Act 1996, as amended*, associated Regulations and the *Litter Pollution Act 1997* and the *NWMPCE*. Measures will focus on segregation, reuse, recycling, and recovery, with disposal as a last resort, in line with the waste hierarchy and circular economy principles.

## 7.6 Residual Impacts

### 7.6.1 Construction Phase

Assuming the proper and full implementation of the mitigation measures in this EIAR (summarised above in relation to population and human health), the following significant, negative, residual impacts on population and human health are predicted:

The application of binding noise limits and hours of operation, along with implementation of appropriate noise and vibration control measures (as set out in Chapter 13), will ensure that noise and vibration impacts are minimised as far as practicable. Appropriate mitigation measures will be implemented in this regard. The predicted impact for the demolition and construction period will be **negative, slight to significant and temporary,** depending on the proximity of the works to the site boundary. For the remaining phases of construction work, structural development and general construction, the residual construction noise and vibration effects will be **negative, slight to moderate and short-term** depending on the proximity of the works to the site boundary. As such, it is considered that this potentially significant, negative, residual impact on the local population is commensurate with the proposed development and acceptable considering the net merit of the proposal, and that the likely alternative to this proposed development is a development of a similar nature in accordance with the land use zoning objectives and requirements for the site as set out in the DCC Development Plan 2022-2028, which was subject to SEA, AA and SFRA prior to its adoption

The landscape and visual residual impacts on surrounding areas as a result of the proposed works, as follows:

- The visual effects during the construction phase have been classified for each viewpoint (see Chapter 14, **Tables 14.6** and **14.7**). Where the site is visible, the effects would be negative as construction is inherently unsightly. Site hoarding is only effective as a visual screen for ground level activity. Once buildings under construction rise above ground level, they are exposed, and until they are completed their visual effects are negative. Such temporary negative visual effects are unavoidable during the construction phase of a development.

As stated in Chapter 19, the potential significant impact in relation to construction waste management identified in Section 7.4, above, will be mitigated by the measures set out in Chapter 19 and Appendix 19.1 such that the residual impact is predicted to be ***neutral, imperceptible and short-term***.

No other significant, negative residual impacts are predicted in relation to population and human health during the construction phase.

### 7.6.2 Operational Phase

Assuming the proper and full implementation of the mitigation measures in this EIAR (summarised above in relation to population and human health), **no significant, negative, residual impacts are predicted to occur during the operational phase in the long-term.** However, as discussed below, there is the potential for **significant, negative, short-term visual impacts** to occur.

As stated in Chapter 19, the potential significant impact in relation to operational waste management identified in Section 7.4, above, will be mitigated by the measures set out in Chapter 19 such that the residual impact is predicted to be **neutral, imperceptible and long-term**.

As stated above, there is the potential for **short-term significant, negative visual impacts** to viewpoints in the surrounding area upon the completion of the proposed development, but that these are expected to ameliorate to an **overall neutral to positive visual impact in the long-term**, once the proposed development has become established in its surroundings.

As stated above, the net operational phase impact on population and human health is predicted to be positive, principally because the proposed development will deliver a high volume of high-quality housing in accordance with the development objectives for the site as set out in the DCC Development Plan 2022-2028 and in the context of an ongoing housing crisis and predicted continued increase in housing demand in the area, in a manner that is consistent with national and regional-level policy.

## 7.7 Monitoring

Monitoring and maintenance recommended in Chapters 11 (Air Quality), 13 (Noise & Vibration), 14 (Landscape & Visual), 18 (Traffic & Transportation), 19 (Material Assets - Waste) and 20 (Material Assets – Services) shall be implemented in full during the construction and / or operational phases of the proposed development, as specified in those respective chapters. Beyond that which has been recommended elsewhere in this EIAR, no additional monitoring is considered necessary in respect of population and human health.

## 7.8 Interactions

Population and Human Health is an EIA topic which tends to interact with numerous other environmental topics addressed elsewhere in the EIAR. Where the potential for impacts on population and human health has been identified as a result of such interactions, these have been addressed comprehensively above.

The noteworthy interactions with population and human health and other topics are summarised below. All of these interactions have been addressed above and, where feasible, appropriate mitigation measures have been prescribed in the corresponding specialist chapter.

**Land, Soils, Geology & Hydrology (Chapter 9)**

A reduction in soil quality via unmitigated pollutants entering the soil has the potential to lead to negative impacts on human health and populations. Exposure to contaminated soils and potential gases during the construction phase may give rise to health impacts. However, mitigation measures during the construction phase of the proposed development will ensure that dust generation is minimised and the effect on Human Health will be **neutral, imperceptible, and short-term**.

There are no interactions identified between Land, Soils & Geology with Human Health and Population during the operational phase.

Air Quality (Chapter 11)

There is potential for nuisance impacts on the local receptors due to dust-generating activities of proposed development during construction phase. With appropriate mitigation measures in place the interaction will be **negative, not significant and short-term impact.** During operation phase of the proposed development the predicted impact on population and health due to air quality and climate will be **long-term, not significant and negative**.

Noise & Vibration (Chapter 13)

The interaction between population and human health and noise and vibration during construction phase is due to potential nuisance and disturbance due to noisy construction activities, plant and equipment and construction traffic noise. Appropriate mitigation measures will be implemented in this regard. The predicted impact for the demolition and construction period will be **negative, slight to significant and temporary,** and will vary depending on the proximity of the works to the site boundary. For the remaining phases of construction work, structural development and general construction, the residual construction noise and vibration effects will be **negative, slight to moderate and short-term** depending on the proximity of the works to the site boundary.

During the operational phase there is no potential for significant nuisance and potential disturbance due to additional operational phase traffic. With appropriate mitigation measures in place, **no significant impacts** are predicted in relation to this interaction.

Landscape & Visual (Chapter 14)

During the construction phase there is potential for interaction between population and human health and landscape and visual due to negative impacts due to presence of construction site and effects of construction activities (e.g. dust, dirt, stockpiling of soils, removal of vegetation, etc.). The predicted impact will be **significant to slight, negative and short-term**.

The operational phase will result in positive contribution to the emerging residential community of the wider area, as well as enhancing green infrastructure and green space connectivity. The overall assessment of the impact on townscape effects is that the development is consistent with emerging trends in development within the city and that key characteristics are not adversely altered, therefore, the impact is assessed as being moderate, neutral and long-term. The predicted visual impact will be **significant to moderate, negative in the short-term, and significant, positive in the long-term** as the landscape (including replacement tree planting) matures and the views become more residential.

Traffic & Transportation (Chapter 18)

There is potential for impacts on population and human health during the construction phase due to negative impacts on journey characteristics due to additional (construction) traffic on road network and the potential for nuisance and disturbance due to construction traffic noise. With appropriate mitigation measures in place such as warning signage and designated haul route for HGVs the predicted impact will be **negative**, **slight to moderate**, over the **short term**.

During the operational phase there is potential for negative impacts on population and human health due to journey characteristics and additional traffic on road network during the operational phase. However, the development will create additional road network and enhance connectivity in the area

with the provision of active travel measures. With appropriate mitigation measures in place the predicted impact will be **positive, slight and long-term**.

Microclimate- Daylight & Sunlight (Chapter 16)

There is potential impacts due to changes to daylight and sunlight availability on the population and human health e.g. overshadowing of neighbouring buildings, can negatively or positively affect residential amenity in the receiving environment. As described in Section 7.4, **no significant impacts** to neighbouring residential areas are predicted, and the proposed development itself will provide well-lit homes and amenity areas.

Microclimate – Wind (Chapter 17)

There is a potential interaction between Chapter 7 (Population & Human Health) and Chapter 17 (Microclimate – Wind), since the wind conditions at the proposed development site can affect the amenity and safety of residents and visitors. The proposed development will deliver a wind microclimate that is either suitable for all intended pedestrian uses, or calmer than required for the intended uses. In a number of instances, the proposed development will result in an improved (i.e., calmer) wind microclimate relative to the baseline scenario. Therefore, **no significant impacts** on population and human health are predicted as a result of the wind effects of the proposed development.

Material Assets- Waste (Chapter 19)

During the construction and operational phase there is potential for impacts on human beings in relation to the generation of waste and if wastes are not managed correctly, littering and reduced recycling, and re-use opportunities which could cause a nuisance to the public and attract vermin. The implementation RWMP and OWMP will ensure appropriate the impact of waste arisings are impacts on the local population and human health are **neutral**, **imperceptible and long-term**.

Material Assets- Services (Chapter 20)

In worst-case scenarios (e.g. where works are not carried out safely or in accordance with the applicable codes and standards), accidents during works (e.g. contact with live powerline or gas explosions) or water quality impacts resulting from works to utilities infrastructure, have the potential to result in human health impacts. Service outages resulting from works can temporarily affect the residential amenity of local residents and / or the operation of local businesses. The mitigation measures that will be put in place at the proposed development will ensure that the impact of the proposed development complies with all the specifications and guidelines of the relevant service providers. Therefore, the predicted impact **no likely significant impact** is envisaged with respect to population and human health during construction or operational phase.

## 7.9 Indirect and/or Secondary Impacts

It is not envisaged that there will be any indirect and/or secondary impacts outside of the items covered in this chapter.

## 7.10 Cumulative Impacts

The potential for cumulative impacts to arise as a result of the proposed development in combination with other existing / proposed plans and projects, as listed in **Table 22.1** in Chapter 22 (Cumulative

Impacts) in respect of the EIA topics and environmental media of relevance to population and human health, has been discussed in the respective EIAR chapters – refer to Chapters 11 (Air Quality) & 12 (Climate), 13 (Noise & Vibration), 14 (Landscape & Visual), 16 (Microclimate- Daylight and Sunlight), 17 (Microclimate – Wind) and 18 (Traffic & Transportation).

It is considered that the potential impacts of the proposed development on population and human health have been mitigated by the design of the proposed development, and mitigation measures set out herein, such that significant negative cumulative impacts on population and human health are not likely to occur as a result of the proposed development in combination with one or more of the plans / projects set out in Chapter 23 (Cumulative Impacts).

## 7.11 Difficulties Encountered

As outlined in the chapter above, this chapter uses the most up to date and detailed statistical data that is available at the time of writing this chapter. More up-to-date information might become available at a later stage.

No other difficulties were encountered in the preparation of this chapter.

## 7.12 References


- AIRO Census Mapping;
- CSO (2012). 2011 Census Data
- CSO (2017). 2016 Census Data.
- CSO (2022). 2022 Census Data.
- CSO (20225). *Labour Force Survey Quarter 1 2025.*
- CSO (2025). *Labour Force Survey Quarter 4 2024.*
    - CSO (2024). *Labour Force Survey Quarter 3 2024.*
    - CSO (2024). *Labour Force Survey Quarter 2 2024.*
    - CSO (2024). *Labour Force Survey Quarter 1 2024*.
    - DCC (2022). *Dublin City Development Plan 2022 – 2028*.
    - Department of Health (2013). *A Framework for Improved Health and Wellbeing 2013 – 2025*.
- Department of Health (2025). Health in Ireland – Key Trends 2024;
- Department of Health (2019). Healthy Ireland Framework 2019-2025;
    - DHPLG (2025). *My Plan Map Viewer*.
    - Eastern & Midlands Regional Assembly (2019). *Regional Spatial and Economic Strategy 2019 – 2031*.
- EPA (2022). *Guidelines on the Information to be Contained in Environmental Impact Assessment Reports*.
    - Government of Ireland (2025). *Health in Ireland – Key Trends 2024*.
- HSA (2013). *Asbestos-containing Materials (ACMs) in Workplaces: Practical Guidelines on ACM Management and Abatement*.
- IEMA (2022). Effective Scoping of Human Health in Environmental Impact Assessment.
- IEMA (2022). Determining Significance for Human Health in Environmental Impact Assessment.
- IEMA (2017). *Health in Environmental Impact Assessment: A Primer for a Proportionate Approach*
- Institute of Public Health (2021). *Health Impact Assessment Guidance: A Manual. Standalone Health Impact Assessment and health in environmental assessment.*

# 8 Biodiversity

## 8.1 Introduction

This chapter of the EIAR comprises an assessment of the likely significant effects on Biodiversity (Flora & Fauna) of a proposed Large-scale Residential Development (LRD) of Phase 2 of the LDA lands at Clongriffin, Dublin 13. The proposed development is described in detail in Chapter 5 of this EIAR (and in the Statutory Notices).

The potential for any impacts on sites designated as European (Natura 2000) sites under the EU Habitats and Birds Directives was also appraised, and the results of that study are presented in a separate Appropriate Assessment Screening report (AASR) that accompanies this application under separate cover.

## 8.2 Expertise and Qualifications

Brady Shipman Martin was commissioned to prepare this chapter of the report on behalf of the applicant. The work was carried by Sadye Goldfarb and Matthew Hague, ecologists at Brady Shipman Martin.

Sadye Goldfarb holds a bachelor's degree in Environmental Science from the University of Vermont and a master's degree in Biodiversity and Conservation from Trinity College Dublin. She is a Qualifying Member of the Chartered Institute of Ecology and Environmental Management and is experienced in drafting and reviewing EIAR Biodiversity chapters, Natura Impact Statements, AA Screening Reports, EIA Screening Reports and SEA Screening Reports. She is also experienced in undertaking baseline ecological surveys, preparing Ecological Impact Assessments Reports (EcIA) and undertaking Biodiversity Net Gain (BNG) assessments.

Matthew Hague BSc MSc Adv. Dip. Plan. & Env. Law CEnv MCIEEM, Senior Ecologist and Associate at Brady Shipman Martin, is a highly experienced and qualified ecologist, with a master's degree in Ecosystem Conservation and Landscape Management. He has over 20 years of experience in ecological and environmental consultancy, across a wide range of sectors. He has prepared numerous reports for AA Screening as well as Natura Impact Statements, for projects of all scales, from small residential developments to nationally important infrastructure projects. Recent projects, undertaken in 2025 and 2026, of a similar scale or larger than the proposed development at Clongriffin include the preparation of EIAR biodiversity chapters and Natura Impact Statements/Appropriate Assessment Screening Reports for Large Scale Residential Developments at Belcamp, Ballymastone and Portmarnock South (all Fingal County Council), Holy Cross College, Clonliffe Road (Dublin City Council) and Adamstown SDZ (Soth Dublin County Council) among others. Matthew is a Chartered Environmentalist (CEnv) and a full member of the Chartered Institute of Ecology and Environmental Management (MCIEEM). Matthew has also completed an Advanced Diploma in Planning and Environmental Law, at King's Inns and is a member of the Irish Environmental Law Association (IELA).

Additional, dedicated biodiversity surveys were undertaken by ecologists Brian Keeley and colleagues of Wildlife Surveys Ireland (bats and large mammals) and ornithologist John Fox (winter and summer bird surveys). Botanical surveys were carried out by Sadye Goldfarb of Brady Shipman Martin.

## 8.3 Methodology

A comprehensive desk-based assessment has been undertaken, and numerous site visits have been carried out by the authors and other specialist ecologists, between January 2025 and February 2026, as detailed below.

### 8.3.1 Desk Study

This Ecological Impact Assessment (EcIA) and EIAR Biodiversity chapter has been prepared in accordance with the following **publications**:

- EPA *Guidelines on the Information to be Contained in Environmental Impact Assessment Reports* (EPA, 2022).
- *Environmental Impact Assessment of Projects – Guidance on Screening* (European Commission, 2017).
- *Environmental Impact Assessment of Projects: Guidance on the Preparation of the Environmental Impact Assessment Report* (European Commission, 2017).
- EPA Advice Notes of Current Practice (in the Preparation of Environmental Impact Statements) (EPA, 2003) (and revised advice notes 2015).
- OPR Practice Note PN02: Environmental Impact Assessment Screening (Office of the Planning Regulator (OPR) (2021).
- *Guidance on Integrating Climate Change and Biodiversity into Environmental Impact Assessment* (European Commission, 2013).
- *Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment* (Department of Housing, Local Government and Heritage, 2018).
- *Guidelines for Assessment of Ecological Impacts of National Road Schemes* (Transport Infrastructure Ireland (formerly the National Roads Authority), 2009).
- Chartered Institute of Ecology and Environmental Management (CIEEM). *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine*, September 2018, updated in September 2019 (V1.1), further updated in April 2022 (V1.2) and again in September 2024 (V1.3).

The proposed development complies with the following **legislative instruments**:

- The Planning and Development Act 2000, as amended (the "Planning Acts").
- The Planning and Development Regulations 2001, as amended (the "Planning Regulations").
- The Wildlife Act 1976 as amended, and the Wildlife (Amendment) Act 2000 as amended.
- Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (the "Habitats Directive").
- Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds (the "Birds Directive").
- European Communities (Birds and Natural Habitats) Regulations 2011, as amended.
- Flora (Protection) Order 2022 (SI No. 235 of 2022).
- Directive 2014/52/EU of the European Parliament and of the Council of 16 April 2014 amending Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment (the "EIA Directive").
- European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018 (S.I. No. 296 of 2018).

The chapter has regard to the following **Policies and Plans**:

- *Ireland's Fourth National Biodiversity Plan 2023-2030* (National Parks and Wildlife Service, 2023).
- *Planning for Watercourses in the Urban Environment* (Inland Fisheries Ireland, 2020).
- *Guidelines on Protection of Fisheries During Construction Works in and Adjacent to Waters* (Inland Fisheries Ireland, 2016).
- *All-Ireland Pollinator Plan 2021 – 2025* (National Biodiversity Data Centre, 2021).
- *Dublin City Development Plan 2022 – 2028*, including the accompanying Appropriate Assessment documentation (Natura Impact Report), and specifically the numerous policies and objectives relevant to biodiversity, climate and sustainable development, such as Policy Objective CA9, SI21, SI22, GI3, GI5, GI8, GIO7, GI16, GI24, and GI40.

Information was collated from the **sources** listed below was reviewed:

- Data on rare and protected plant and animal species contained in the following databases:
  - The National Parks and Wildlife Service (NPWS) of the Department of Culture, Heritage and the Gaeltacht (npws.ie).
  - The National Biodiversity Data Centre (NBDC) (biodiversityireland.ie).
  - Birdwatch Ireland (birdwatchireland.ie).
  - Bat Conservation Ireland (batconservationireland.org.
- Recent aerial photography and photographs taken at the site).
- Recent and historic ordnance survey (OSi) mapping (geohive.ie).
- Information on protected areas, as well as watercourses, catchments and water quality in the area available from the EPA (gis.epa.ie/EPAMaps/).
- Information on soils, geology and hydrogeology in the area available from the Geological Survey of Ireland (GSI) (gsi.ie).
- The NPWS Article 17 Reports:
  - The Status of EU Protected Habitats and Species in Ireland – Volume 1 (NPWS, 2025a).
  - The Status of EU Protected Habitats and Species in Ireland – Volume 2 (Habitat Assessments) (NPWS, 2025b).
  - The Status of EU Protected Habitats and Species in Ireland – Volume 3 (Species Assessments) (NPWS, 2025c).
- Information on land-use zoning from the online mapping of the Department of the Environment, Community and Local Government (myplan.ie/en/index.html).
- Gilbert, G., Stanbury, A. and Lewis, L. (2021) *Birds of Conservation Concern in Ireland 4: 2020 – 2026* (Irish Birds 43: 1-22).
- Benson, L. (2009). *Use of Inland Feeding Sites by Light-bellied Brent Geese in Dublin 2008 – 2009: A New Conservation Concern?* Irish Birds 8: 563-570.
- EU Biodiversity Strategy to 2030.
- Technical Guidance Note on Biodiversity for Development Management in Dublin City (DCC 2021).
- Dublin City Council Biodiversity Action Plan 2021 – 2025.

This chapter of the EIAR takes full account of the design of the proposed development, and a detailed examination of all relevant elements of the proposal as it currently stands, was undertaken. This includes the following documents, among others submitted with the planning application:

- Engineering Services Report (CS Consulting, 2026).

- Site Specific Flood Risk Assessment (CS Consulting, 2026).
- Surface Water Management Plan (CS Consulting, 2026).
- Outline Construction Environmental Management Plan (CS Consulting, 2026).
- Landscape Architecture Design Report and drawings (The Paul Hogarth Company (TPHC), 2026).
- Water Framework Directive Assessment (AWN Consulting, 2026).
- Resource and Waste Management Plan (AWN Consulting, 2026).
- Operational Waste Management Plan (AWN Consulting, 2026).
- External Lighting Report (EDC, 2026).

### 8.3.2 Field Biodiversity Surveys

Walkover biodiversity surveys have been undertaken by and on behalf of ecologists from Brady Shipman Martin on several occasions between January 2025 and February 2026 in the preparation of this chapter.

The baseline surveys covered the following elements and where relevant the results are included in this document:

- Habitat and botanical surveys and mapping
- Rare plant surveys and surveys for invasive alien plants
- Large mammal surveys
- Bat activity and roosting surveys
- Bird surveys
- Appraisal of site suitability for lepidoptera, amphibians and reptiles

The following fieldwork was also carried out in support of the planning application:

A full **habitat and botanical survey** of the site, including rare and legally protected plants and invasive species, was carried out by Ecologist Ms Sadye Goldfarb of Brady Shipman Martin in March and May 2025.

Ornithologist Mr John Fox and bat and large mammal specialist Mr Brian Keeley and others from Wildlife Surveys Ireland (WSI) have also undertaken biodiversity surveys at the site as part of this project. These surveys, which include **bat surveys**, **large mammal surveys**, **breeding bird surveys** and **winter bird surveys**, commenced in February 2025 and continued until February 2026.

The biodiversity surveys were undertaken on the following dates:

- Habitat and botanical surveys (Brady Shipman Martin)
  - A preliminary survey took place on 14 January 2025
  - Detailed habitat and botanical surveys took place on 12 March and 22 May 2025
- Bat and large mammal Surveys (Wildlife Surveys Ireland)
  - 7 and 8 July 2025 (bats, including dusk/dawn bat detector surveys)
  - 25 February 2026 (large mammals)
  - The bat and large mammal survey report is included at **Appendix 8.1** of this EIAR
- Bird surveys (Ornithologist John Fox):
  - A total of 12 winter bird visits were carried out, with four taking place in February and March 2025 and eight between November 2025 and mid-February 2026
  - A total of three breeding bird visits were carried out, in May and June 2025

- The bird survey report is included at **Appendix 8.2** of this EIAR

#### 8.3.2.1 Habitats and Flora

The surveys undertaken built on previous assessments that were carried out by Brady Shipman Martin in 2025 as part of the master planning of the wider landholding at Clongriffin on behalf of the LDA.

In order to provide a comprehensive baseline on the local ecological environment, ecological surveys were first undertaken at the subject site by Ecologist Sadye Goldfarb of Brady Shipman Martin in March and May 2025.

During the course of the site visits, the habitats were identified, described and mapped. Habitats were surveyed using the *Best Practice Guidance for Habitat Survey and Mapping*[13] and were classified using *A Guide to Habitats in Ireland*[14] with due regard to the *Interpretation Manual of European Habitats*[15]. Vascular plant nomenclature follows that of the *New Flora of the British Isles 4th Edition*[16].

On each visit, the site was searched for evidence of large mammals, such as badger and otter, both within the site itself and in the riparian corridor of the River Mayne on the northern boundary of the wider Masterplan lands. A note was also made of any amphibians and lepidoptera (butterflies and moths) present on site during the surveys. Biological kick-sampling, a method of assessing the ecological quality of a watercourse, was not carried out, as there are no watercourses within the subject site.

#### 8.3.2.2 Bats

Dusk and dawn bat surveys were carried out at the site in **July 2025** by specialist bat and bird ecologist Mr Brian Keeley and colleagues, of Wildlife Surveys Ireland (WSI). The detailed bat and large mammal survey report is included at **Appendix 8.1** of this EIAR.

The bat surveys undertaken are consistent with the level of survey recommended in the NPWS documents *Bat Mitigation Guidelines for Ireland – Wildlife Manuals No. 134* and *No. 25*. In addition, an examination of available information from Bat Conservation Ireland (BCI), previous data from neighbouring sites was also undertaken to compile a list of most likely species in the overall area in addition to the evaluation of the habitat for bats. There are no bat species listed as Qualifying Interests in any European sites within the Zone of Influence. However, Article 12 of the Habitats Directive requires Member States to take requisite measures to establish a system of strict protection of animal species listed in Annex IV(a) in their natural range.

[13] Smith, G. F., O'Donoghue, P., O'Hora, K., and Delaney, E. (2010) "*Best Practice Guidance for Habitat Survey and Mapping*". Available at: https://www.heritagecouncil.ie/content/files/best_practice_guidance_habitat_survey_mapping_onscreen_version_2011_8mb.pdf [accessed May 2026]
[14] Fossitt, J. (2000) "*A Guide to Habitats in Ireland*". Heritage Council. Available at: https://www.npws.ie/sites/default/files/publications/pdf/A%20Guide%20to%20Habitats%20in%20Ireland%20-%20Fossitt.pdf [accessed June 2025]
[15] European Commission (2007) "*Interpretation Manual of European Union Habitats*". Available at: https://www.miteco.gob.es/content/dam/miteco/es/biodiversidad/temas/espacios-protegidos/doc_manual_intp_habitat_ue_tcm30-207191.pdf [accessed June 2025]
[16] Stace, C. (2019) "*New Flora of the British Isles, 4th Edition*". Cambridge University Press.

#### 8.3.2.3 Birds

Winter and breeding season bird surveys were undertaken by ornithologist Mr John Fox at the subject site in support of the planning application. A total of 15 site visits took place (see list above) across two winter seasons and one breeding season.

During each visit the accessible lands were walked slowly. The routes walked focused primarily on areas with pools, wet areas, scrub and meadow. All birds detected were recorded on field sheets. Bird species that were heard or seen were identified their activity and approximate locations noted.

The bird surveys carried out by Mr Fox are included as **Appendix 8.2** of this EIAR.

### 8.3.3 Evaluation of Ecological Features

The methodologies used to determine the value of ecological resources, to characterise impacts of the proposed development, and to assess the significance of impacts and any residual effects are consistent with the EPA *EIAR Guidelines* (2022) and are in accordance with the NRA (TII) *Guidelines for Assessment of Ecological Impacts of National Road Schemes* (2009) (the '*NRA Guidelines*' hereafter). This methodology is in turn consistent with the *Guidelines for Ecological Impact Assessment in the United Kingdom and Ireland – Terrestrial, Freshwater, Coastal and Marine* (Version 1.3) (2018, updated 2024) (the '*CIEEM Guidelines*' hereafter)[17]. The methodology allows the baseline to be comprehensively evaluated. This then makes it possible to assess the potential impacts (including cumulative impacts) of the proposed development, to set out appropriate mitigation measures and to assess the residual impacts of the proposed development.

In accordance with the *NRA (TII) Guidelines*, impact assessment is undertaken of sensitive ecological receptors ('Key Ecological Receptors') within the Zone of Influence of a proposed development. According to the Guidelines, the Zone of Influence is the 'effect area' over which change resulting from the proposed development is likely to occur, and the Key Ecological Receptors are defined as features of sufficient value as to be material in the decision-making process for which potential impacts are likely. In the context of the proposed development, a Key Ecological Receptor is defined as any feature valued as follows:

- International Importance;
- National Importance;
- County Importance; and
- Local Importance (Higher Value).

Features of local importance (Lower Value) and features of no ecological value are not considered to be Key Ecological Receptors, in accordance with the *NRA (TII) Guidelines*.

## 8.4 Baseline Environment

### 8.4.1 General Description of the Subject Site

The site of the proposed development is located at Clongriffin, Dublin 13 in the northern fringe of Dublin city administrative area, within the Clongriffin/Belmayne and Environs SDRA (refer to **Figure 8.1**). The

[17] The NRA Guidelines, while originally developed for roads projects, provide clear, comprehensive and logical methods for evaluating the potential impacts of significant projects of all kinds in Ireland. The methodologies presented in the Guidelines are reproducible and reliable and are thus appropriate to the proposed development.

site is located c. 9.5km north-east of the Dublin City Centre, c. 5km east of the M1/M50 network and adjacent to the administrative boundary with Fingal County Council.

The site occupies a prominent position immediately west of Clongriffin DART Station and forms part of a mixed-use urban quarter that is currently under phased development. The site lies at the edge of the established Belltree and Clongriffin neighbourhoods and represents one of the remaining large sites of development land within this part of the SDRA. To the immediate north of the site the permitted residential development (LRD6064/24-S3) is currently under construction.

To the west, the site is bound by the Belltree residential area, beyond which lies Father Collins Park (c. 200m), a significant public open space serving the wider community. To the east, the Clongriffin DART Station provides direct access to Dublin city centre, enhancing the area's connectivity and supporting transit-oriented development. To the south the site is surrounded by the Main Street. Further to the south lies residential and educational facilities such as Grange Community College and Gaelcholáiste Reachrann. The site is c. 350m south of the River Mayne and c. 1.2km west of Baldoyle Estuary.

The wider Clongriffin area has been planned as a high-density, mixed-use urban centre, combining residential, retail, educational, and community facilities within a sustainable urban framework. The site benefits from close proximity to local services such as Grange Community College and Learning Circle Childcare and is within walking distance of retail and community amenities in Clongriffin town centre. The combination of established infrastructure, public transport access, and surrounding green space positions the site as a key component in the continued development and consolidation of the Clongriffin–Belmayne urban area.

The Dublin City Development Plan 2022-2028 (Zoning Map C) zones the site as '*Z14: Strategic Development and Regeneration Areas (SDRAs)*' which aims '*to seek the social, economic and physical development and/or regeneration of an area with mixed-use, of which residential would be the predominant use*.' The area immediately east is zoned as '*Z4: Key Urban Villages/Urban Villages*' and the areas immediately west and south are zoned as '*Z1: Sustainable Residential Neighbourhoods*'. The area directly north has the same Z14 zoning as the site itself.

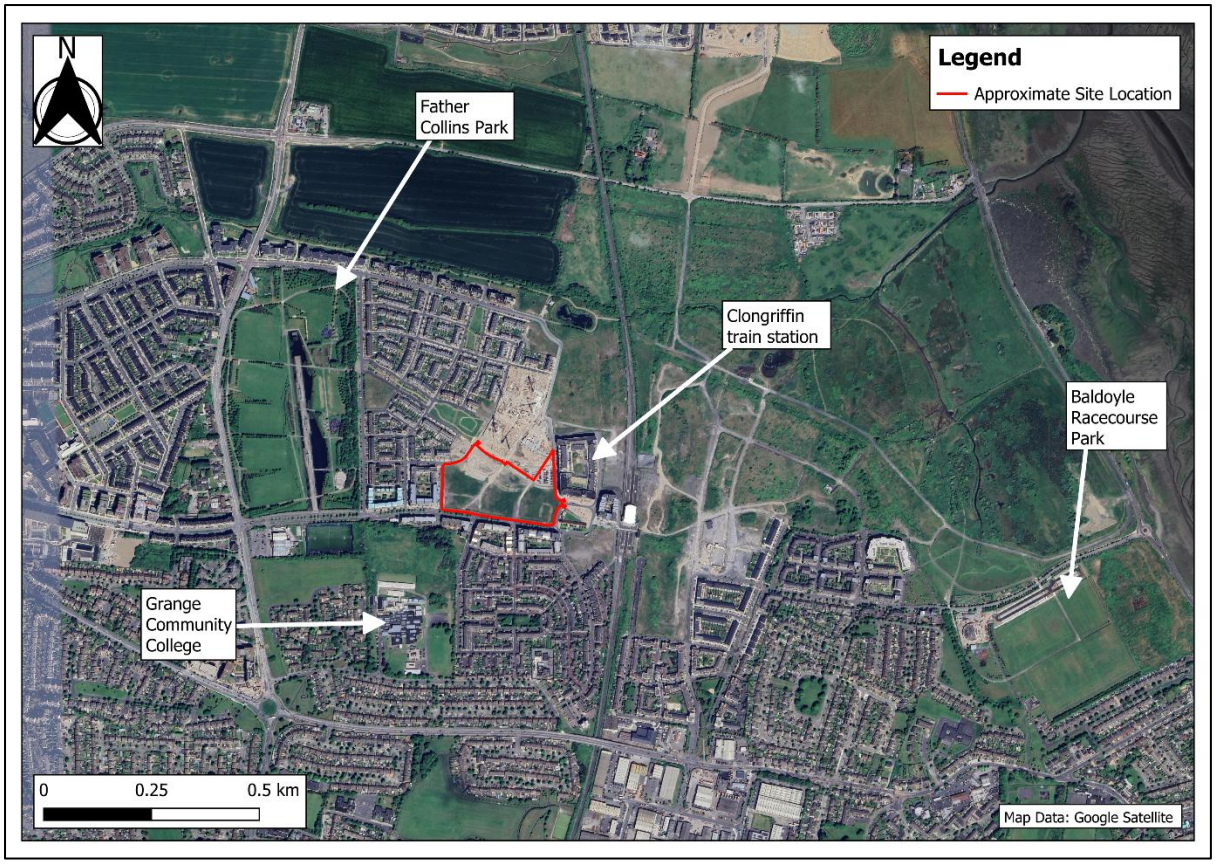



Figure 8.1 Location of the proposed development – (refer to accompanying documentation for full details).

### 8.4.2 Description of the proposed development

The development will consist of the construction of a residential development set out in 3 no. blocks (identified as Zones 7, 8 & 9), ranging in height from 5 to 10 storeys, to accommodate 711 no. apartments in addition to cafe/restaurant/retail units, community/cultural spaces, and a standalone creche building.

The 3 no. residential buildings are arranged around podium courtyards accommodating communal amenity spaces for future residents. Zone 7 is a 5 to 7 storey block located on Main St., Friar's St., Park St and the under-construction Market St. containing 280 no. apartments. Zone 8 is a 6 to 8 storey block between Main St. and Market St. containing 263 no. apartments. Zone 9 is a 6 to 10 storey block located on Main St., Station Square and Market St. containing 168 no. units.

Car and cycle parking for both residents and visitors is provided below podium and at surface level throughout the scheme. The proposed development includes all site landscaping works, open space, green roofs, lighting, servicing and utilities, signage, and associated and ancillary works, including site development works above and below ground.

The proposed development sits as part of a Masterplan for a wider Clongriffin landbank which includes the under-construction Block 5 & 6 to the north of Market Street.

### 8.4.3 Designated Conservation Areas

For an effect to occur, there must be a 'source' (such as a construction site); a 'receptor' (such as a designated site for nature conservation); and a 'pathway' between the two (such as a watercourse that

links the construction site to the designated site). A construction site or completed development may also create a barrier to movement, for example, by preventing the migration of fauna along a river corridor, or by obstructing the migration of birds.

Identification of a potential effect means that there is a possibility of ecological or environmental damage occurring, with the level and significance of the impact depending upon the nature and exposure to the potential effect and the characteristics of the receptor. Although there may be a risk of an impact, it may not necessarily occur, and if it does occur, it may not be significant. In other words, the existence of a source, a pathway and a receptor does not necessarily mean that a significant effect is likely.

The potential for any significant effects on European sites arising as a result of the proposed development has been considered. Full details of that study are presented in the stand-alone Appropriate Assessment Screening Report.

#### 8.4.3.1 Relevant European Sites

No designated conservation areas occur within or in the immediate vicinity of the area of the proposed development at Clongriffin. There are a number of designated sites within the potential Zone of Influence of the proposed development; however, the AA Screening report (refer to the report submitted separately for full details) concludes that, on the basis of objective information, it can be excluded that the construction and operational phases of the proposed development, individually or in-combination with other plans or projects, will have significant effects on any European site.

The nearest European sites are as follows:

- Special Areas of Conservation (SACs):
  - Baldoyle Bay SAC (site code 000199), c. 720m to the north-east
  - North Dublin Bay SAC (site code 000206), c. 2.1km to the south-east
  - Malahide Estuary SAC (site code 000205), c. 4.0km to the north-east
  - Howth Head SAC (site code 000202), c. 4.9km to the south-east
  - Ireland's Eye SAC (site code 002193), c. 5.4km to the east
  - Rockabill to Dalkey Island SAC (site code 003000), c. 5.5km to the east
  - South Dublin Bay SAC (site code 000210), c. 7.0km to the south
  - Rogerstown Estuary SAC (site code 000208), c. 10.5km to the north
  - Lambay Island SAC (site code 000204), c. 12.2km to the north-east
- Special Protect Areas (SPA):
  - Baldoyle Bay SPA (site code 004016), c.1.2km to the north-east
  - North Bull Island SPA (site code 004006), c. 2.1km to the south-east
  - North-west Irish Sea SPA (site code 004236), c. 2.6km to the north-east
  - Malahide Estuary SPA (site code 004025), c. 4.6km to the north-east
  - South Dublin Bay and River Tolka Estuary SPA (site code 004024), c. 5.1km to the south
  - Ireland's Eye SPA (site code 004117), c. 5.2km to the east
  - Howth Head Coast SPA (site code 004113), c. 6.5km to the south-east
  - Rogerstown Estuary SPA (site code 004015), c. 10.2km to the north
  - Lambay Island SPA (site code 004069), c. 12.0km to the north-east
  - Dalkey Islands SPA (site code 004172), c. 14.2km to the south-east
  - Skerries Island SPA (site code 004122), c. 18.8km to the north-east

- Rockabill SPA (site code 004014), c. 19.0km to the north-east

Site Specific Conservation Objectives have been established for all the listed European sites. The Conservation Objectives of these sites are to maintain (or restore) the favourable conservation condition of the QIs / SCIs in question. Where specific conservation objectives have been set out by the NPWS, 'favourable conservation condition' is defined in respect of specific attributes and targets for the habitat or species in question. Note that the above-listed distances are linear (i.e. 'as the crow flies').

The European sites are shown in **Figure 8.2**, below.

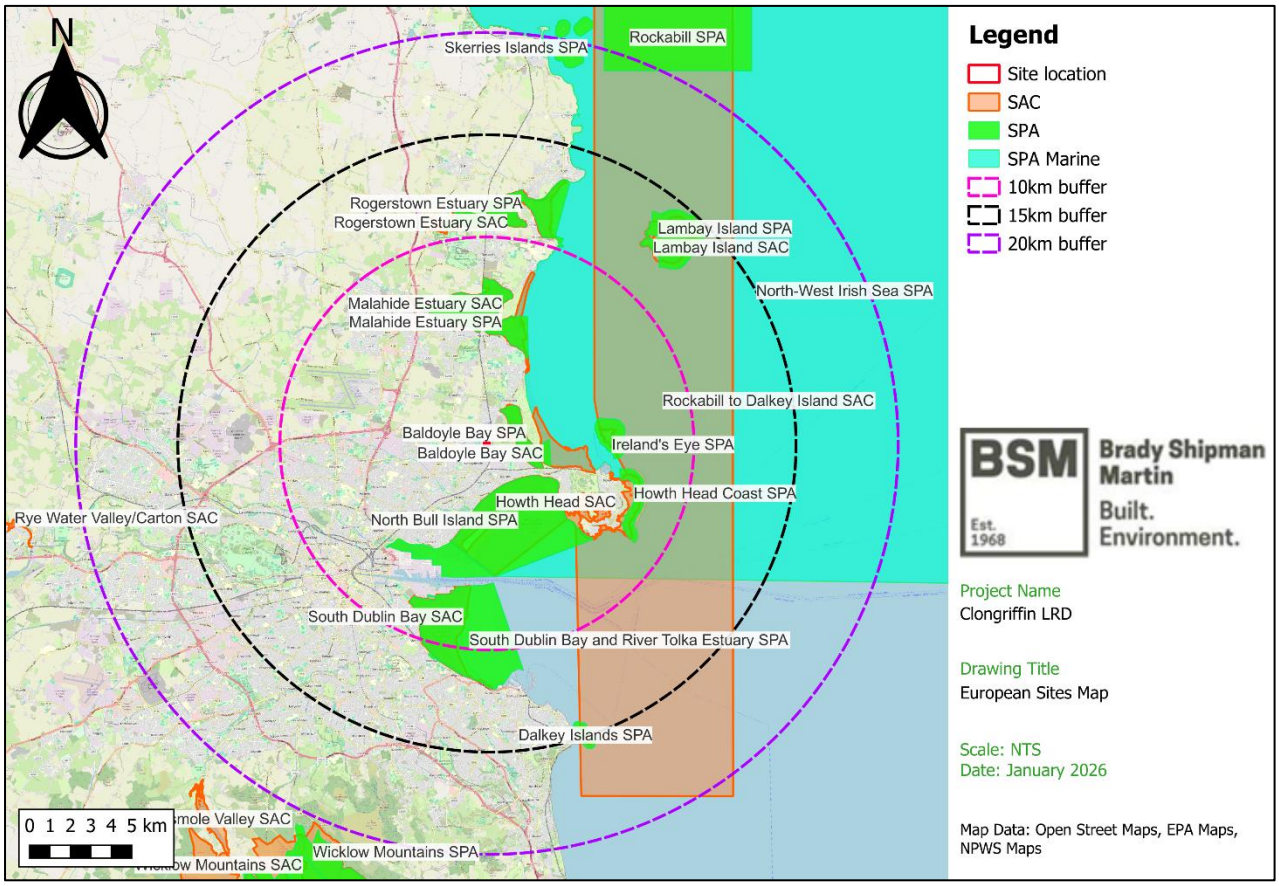



Figure 8.2 Relevant European Sites (10, 15 and 20km radii are shown for scale).

### 8.4.3.2 Other Designated Conservation Areas

The nearest NHA/pNHAs to the proposed development site are as follows (see **Figure 8.3**):

- Natural Heritage Area (NHA):
  - Skerries Island NHA (site code), c. 18.8km to the north-east
- Potential Natural Heritage Areas (pNHAs):
  - Baldoyle Bay pNHA (site code 000199), c. 720m to the north-east
  - Sluice River Marsh pNHA (site code 001763), c. 1.9km to the north
  - North Dublin Bay pNHA (site code 000206), c. 2.1km to the south-east
  - Howth Head pNHA (site code 000202), c. 5.2km to the south-east
  - Ireland's Eye pNHA (site code 000203), c. 5.7km to the east
  - Santry Demesne pNHA (site code 000178), c. 5.7km to the west
  - Feltrim Hill pNHA (site code 001208), c. 3.8km to the north-west

- Malahide Estuary pNHA (site code 000205), c. 4.0km to the north-east
- Portraine Shore pNHA (site code 001215), c. 8.5km to the north-east
- Dolphins, Dublin Docks pNHA (site code 000201), c. 7.4km to the south
- South Dublin Bay pNHA (site code 000210), c. 7.0km to the south
- Royal Canal pNHA (site code 002103), c. 8.1km to the south-west
- Grand Canal pNHA (site code 002104), c. 8.4km to the south-west
- Booterstown Marsh (site code 001205), c. 10,6km to the south
- Rogerstown Estuary pNHA (site code 000208), c. 10.7km to the north
- Lambay Island pNHA (site code 000204), c. 12.4km to the north-east
- Liffey Valley pNHA (site code 000128), c. 14.3km to the south-west
- Dalkey Coastal Zone and Killiney Hill pNHA (site code 001206), c. 12.4km to the south-east
- Fitzsimon's Wood pNHA (site code 001753), c. 15.7km to the south-west
- Loughlinstown Woods pNHA (site code 001211), c. 17.5km to the south
- Dingle Glen pNHA (site code 001207), c. 18.0km to the south
- Dodder Valley pNHA (site code 000991), c. 17.2km to the south-west
- Loughshinny Coast pNHA (site code 001211), c. 17.8km to the north-east

The listed NHAs and pNHAs are shown in **Figure 8.3**, below.

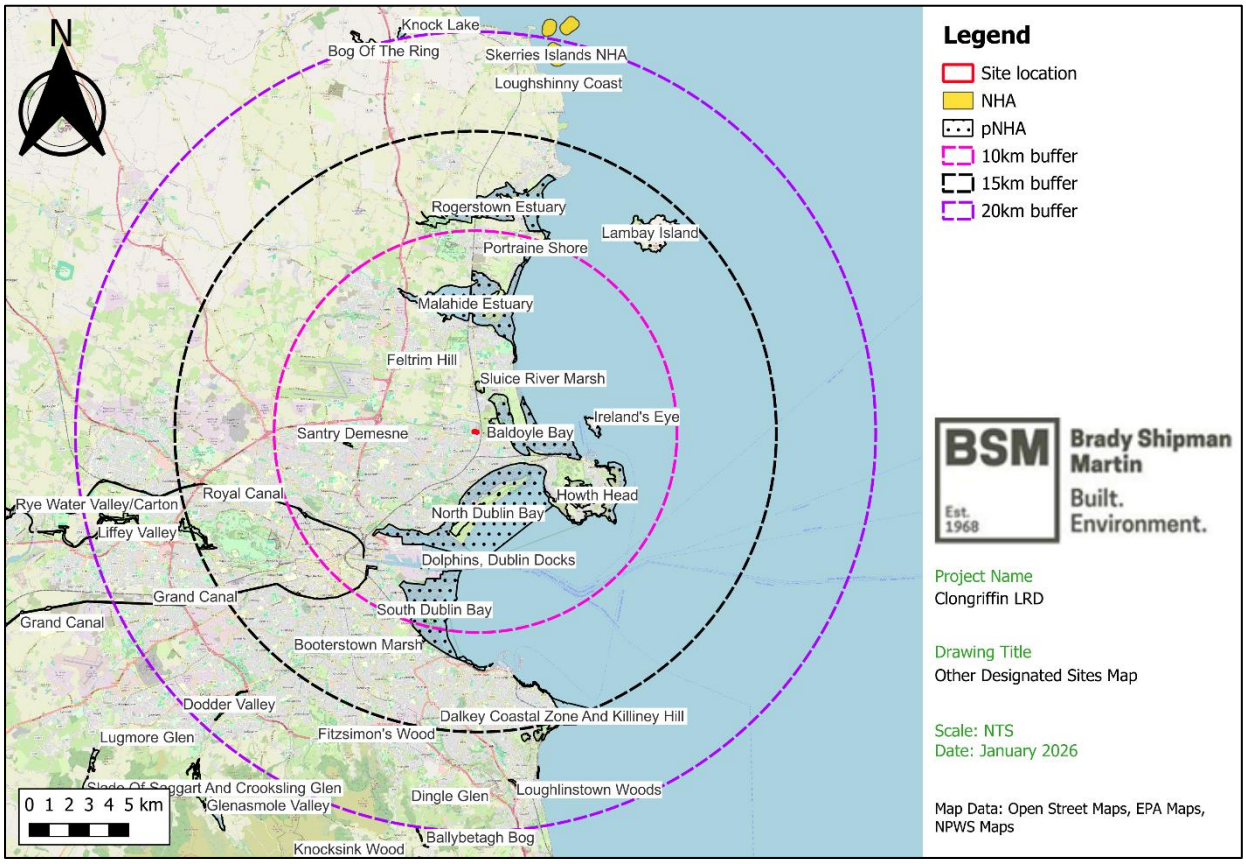



Figure 8.3 Relevant NHA and pNHA Sites (10, 15 and 20km radii are shown for scale).

### 8.4.4 Watercourses

A review of the Environmental Protection Agency (EPA) web-tool indicates that the subject site is located within the Liffey and Dublin Bay catchment (09), Mayne_SC_010 sub-catchment (09_17) and the MAYNE_010 river sub-basin. The Mayne River (IE_EA_09M030500), flow c. 300m to the north of

proposed development site in a west to east direction and discharges into the Baldoyle Estuary, c. 1.2km downstream.

The Mayne River has a 'Poor' River Waterbody WFD Status 2019-2024 and is 'at risk' of failing to achieve Water Framework Directive (WFD) Objectives by 2027. The Baldoyle Estuary has a 'Moderate' Transitional Waterbody WFD Status 2019-2024 and the risk status is currently under 'review'.

According to GSI (2026), the bedrock aquifer underlying the site as a Locally Important Aquifer (LI), i.e. Bedrock which is Moderately Productive only in Local Zones as presented in **Figure 10.6** of chapter 10 of the EIAR. The potential for local vertical or horizontal migration within this type of aquifer is moderate depending on the area but may not have extensive regional connectivity. As such the aquifer is not a significant pathway for off-site migration.

### 8.4.5 Rare and Protected Plant Species

The NPWS and NBDC databases were consulted with regard to rare species[18] and species protected under the *Flora Protection Order* (2022). According to the NBDC database, there are two known records of rare or protected plant species within the 2km grid square (O24F) that covers the site, meadow barley (*Hordeum secalinum*, recorded in 1991) and corn marigold (*Glebionis segetum*, recorded in 2017). No rare or protected species were recorded during any of the site visits undertaken (see Section 8.3.2).

The most ecologically valuable habitats are the dry grasslands that cover approximately one third of the site area. These grasslands have moderately high species diversity and include one species of local rarity, cowslip (*Primula veris*), see Section 8.4.7.

### 8.4.6 Invasive Alien Plant Species

No species listed on the Third Schedule of the *European Union (Birds and Natural Habitats) Regulations 2011-2021* (hereafter referred to as the *Birds and Habitats Regulations*)[19], such as giant hogweed (*Heracleum mantegazzianum*), Japanese knotweed (*Reynoutria japonica*), Himalayan balsam (*Impatiens glandulifera*) or three-cornered leek (*Allium triquetrum*) have been recorded on the site. Non-native butterfly bush (*Buddleja davidii*) was recorded on site during the surveys carried out in 2025. Sea buckthorn (*Hippophae rhamnoides*), a species that is listed on the Third Schedule of the Habitats Regulations, is known from areas close by to the east, but is not present within the subject site.

### 8.4.7 Habitats within the Subject Site

The habitats present on the proposed development site are shown in **Figure 8.4** and described in detail in the following section.

[18] Curtis & McGough (1988)

[19] SI No. 477 of 2011 and subsequent amendments

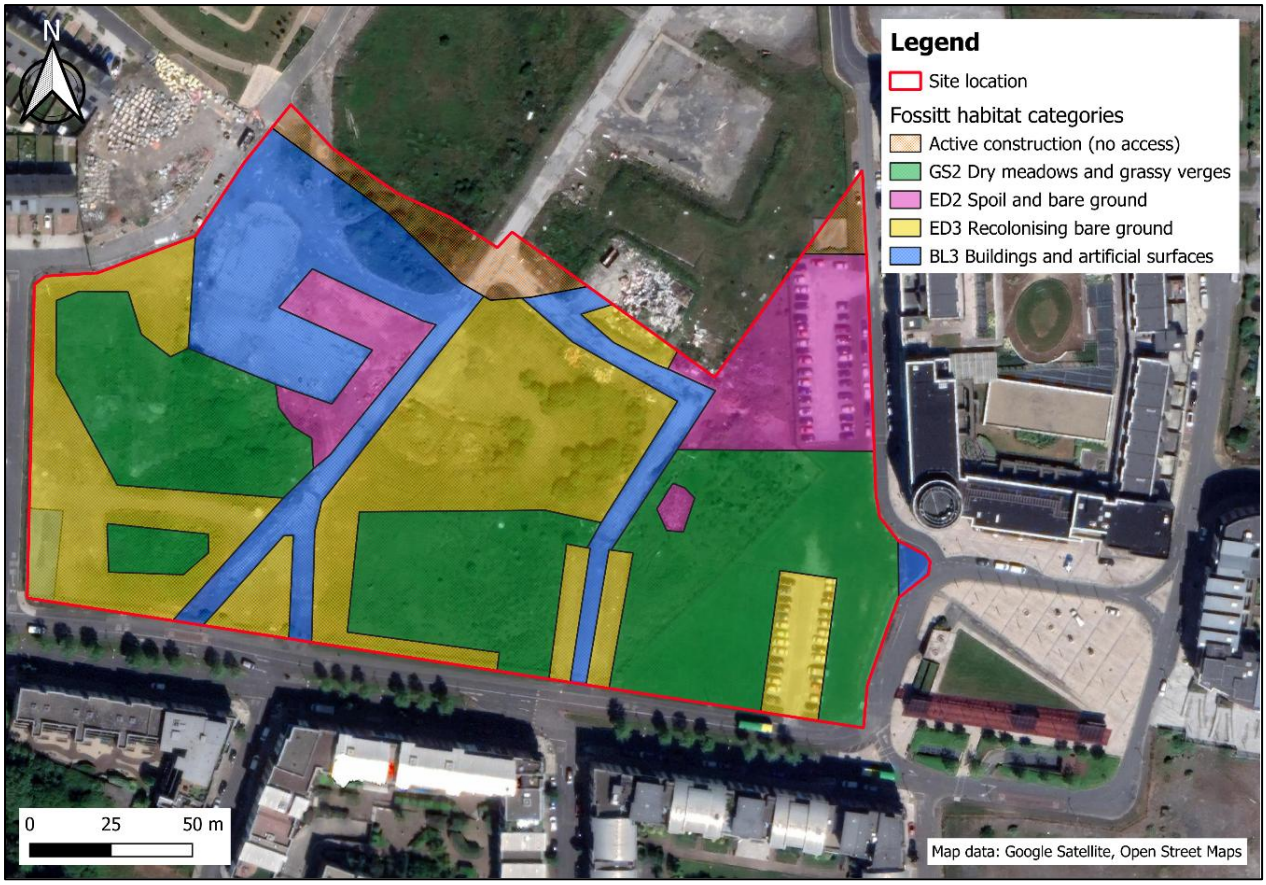



Figure 8.4 Habitat map of the proposed development site, according to Fossitt (2000). Site boundary red line is indicative only, for full details refer to the accompanying documentation.

### Dry meadows and grassy verges (Fossitt habitat code GS2)

This habitat covers approx. one third of the subject site, predominantly in the southern section. This grassland has developed over a number of years due to agricultural abandonment, where ecological succession has created a moderately species-rich habitat. The grassland is dominated by species such as bird's-foot trefoil (*Lotus corniculatus*), red clover (*Trifolium pratense*), ribwort plantain (*Plantago lanceolata*), vetch (*Vicia* sp.) and creeping cinquefoil (*Potentilla reptans*). Additionally, locally rare cowslip was identified onsite. This habitat is considered to be of **Local Importance (higher value)** as defined by the ecological resource valuations presented in the National Roads Authority/Transport Infrastructure Ireland Guidelines for Assessment of Ecological Impacts of National Road Schemes (NRA/TII, 2009 (Rev. 2)).



Figure 8.5 Dry meadows and grassy verges (GS2) habitat onsite at Clongriffin.

### Recolonising bare ground (ED3)

This habitat occurs in a large section in the middle of the site, and along the edges of the grasslands. This habitat covers approximately one third of the site area and contains common, ruderal species. If left alone it can be assumed that these areas would eventually develop into dry grassland. This habitat is considered to be of **Local Importance (lower value)** as defined by the ecological resource valuations presented in the National Roads Authority/Transport Infrastructure Ireland Guidelines for Assessment of Ecological Impacts of National Road Schemes (NRA/TII, 2009 (Rev. 2)).



Figure 8.6 Recolonising bare ground (ED3) onsite at Clongriffin.

### Spoil and bare ground (ED2) & Buildings and artificial surfaces (BL3)

These two habitats cumulatively cover approximately one third of the site area. The largest section of bare ground is utilised as a car park, and there are patches of old asphalt scattered throughout the northern half of the proposed development site, most of which is being weathered into ED2 habitat. This habitat is of **negligible importance**.



Figure 8.7 Spoil and bare ground (ED2, left) & Buildings and artificial surfaces (BL3, right) habitats onsite at Clongriffin.

## 8.4.8 Fauna

### 8.4.8.1 Bats

All Irish bat species are fully protected under the Wildlife Act (1976) and subsequent amendments, and under the EU Habitats Directive, via the European Communities (Birds and Natural Habitats) Regulations, 2011, as amended.

The proposed development site at Clongriffin was surveyed for bats in July 2025. The survey included dusk and dawn surveys, a bat activity survey, and a passive bat activity survey using a static monitor. The survey included the use of a Songmeter Mini Bat detector and handheld broad spectrum bat detectors (Elekon Batlogger M2, Pulsar Helion 2 XP50 thermal imager, and Pixfra ARCA613 thermal imager), high intensity torches and lamps and mobile phones for all surveyors.

The surveys confirm that there is no bat roosting activity on the site, and the bat activity during emergence/bat detector surveys undertaken recorded very low bat activity at the site.

- Overall, given the habitats present, the site is of **Local Importance (lower value)** for commuting and foraging bats. It has no ecological value for roosting bats (no bat roosts are present within the site boundary).

#### 8.4.8.2 Wintering Birds

Between 4 February 2025 and 11 February 2026, twelve day-time visits were made to the subject site. Visits took place at different times of day, but most were started in the morning. The visits were for a duration of no more than one hour each, as this was sufficient to adequately appraise the site.

During each visit the accessible lands were walked slowly. The routes walked focused primarily on areas with pools, wet areas, scrub and meadow where present. All birds detected were recorded on field sheets. Bird species that were heard or seen were identified their activity and approximate locations noted.

Data from the twelve visits were amalgamated and approximate positions for the birds as seen or heard were plotted on aerial photographs. Approximate maximum populations and conservation status were assigned to each species. Both a table of all bird species and a distribution map for red and amber listed bird species encountered on the lands was prepared. All observations took place when weather conditions were suitable for surveying. All species discovered were recorded, and their activity noted. A conservation status was also assigned to each species based on their latest conservation status as indicated in Birds of Conservation Concern in Ireland 4: 2020-2026 (Gilbert *et al*. 2021).

A total of 18 common bird species of Ireland were recorded on the lands. The species encountered on the site are all widespread common birds of Ireland. Most species (11) observed are currently green listed as species of least conservation concern in Ireland. Three red listed species, that is, those of highest conservation concern, were identified. The red listed species were snipe, meadow pipit and grey wagtail.

Four amber listed species (of medium conservation concern) were identified on the lands. Of the four amber listed species two were waterbird species. These were black-headed gull and herring gull. The gulls were seen bathing on the lands in puddles and in flight over the lands. The other two amber listed species were Starling and Linnet. Starlings were seen in small foraging flocks during many visits. Linnets were also found in small numbers during several visits. See Table 8.1.

Table 8.1 Clongriffin Lands, Dublin 13, Winter Bird Survey. Bird Species Identified, Numbers Present, 2025.

| Common Name | BTO Code | Species | Activity | Estimated Maximum Numbers Present |
|---|---|---|---|---|
| Snipe | SN | *Gallinago gallinago* | Foraging | 34 birds flushed |
| Black-headed Gull | BH | *Chroicocephalus ridibundus* | Flying | 2 birds bathing |
| Herring Gull | HG | *Larus argentatus* | Flying | 8 birds bathing |
| Feral Pigeon | FP | *Columba livia* (domest.) | Foraging | Single bird |
| Meadow Pipit | MP | *Anthus pratensis* | Foraging | 2 birds |
| Pied Wagtail | PW | *Moticilla alba* | Foraging | Single bird |
| Grey wagtail | GL | *Moticilla cinerea* | Foraging | Single bird |
| Robin | R. | *Erithacus rubecula* | Singing | Single bird |
| Stonechat | SC | *Saxicola rubicola* | Foraging | Single pair (2 birds) |
| Wren | WR | *Troglodytes troglodytes* | Singing | 2 singing males |
| Blue Tit | BT | *Parus caeruleus* | Foraging | Single birds |
| Magpie | MG | *Pica pica* | Foraging | 2 birds |

| | | | | |
|---|---|---|---|---|
| Jackdaw | JD | *Corvus monedula* | Bathing | 35 birds bathing |
| Rook | RO | *Corvus frugilegus* | Flying | 21 birds bathing |
| Hooded Crow | HC | *Corvus cornix* | Foraging | 2 birds |
| Starling | SG | *Sturnus vulgaris* | Foraging | 25 birds |
| Linnet | LI | *Linaria cannabina* | Foraging | 5 birds |
| Goldfinch | GO | *Carduelis carduelis* | Foraging | 2 birds |

- Overall, given the habitats present and the low numbers of birds recorded, the site is of **Local Importance (lower value)** for winter birds. It is not of importance for over wintering birds (SCI species in European sites).

#### 8.4.8.2.1 Breeding Birds

On 26 May, 10 June and 26 June 2025, day-time visits were made to the subject site. Visits took place in the early morning when birds are most active. The visits were for a duration of between 2 hours and 45 minutes and 2 hours and 15 minutes.

During each visit the accessible lands were walked slowly. The routes walked focused primarily on areas with pools, ditches, wet areas, hedges, scrub, meadow and trees in the vicinity.

Data from the visit were recorded and the approximate positions for the birds as seen or heard were plotted on aerial photographs. Approximate numbers of birds present and their breeding status if any were recorded.

A total of 24 common bird species of Ireland were recorded on the lands. Two species of high conservation concern, seven species of medium conservation concern and a further 15 species which were of least conservation concern were encountered on or over the lands. See **Table 8.2**.

Table 8.2 Clongriffin Lands, Dublin 13, Winter Bird Survey. Bird Species Identified, Numbers Present, 2025.

| Common Name | BTO Code | Species | Activity | Estimated Maximum Numbers Present |
|---|---|---|---|---|
| Buzzard | BZ | *Buteo Buteo* | Non breeding | One bird hunting |
| Kestrel | K. | *Falco tinnunculus* | Non breeding | One bird hunting |
| Herring Gull | HG | *Larus argentatus* | Non breeding | 4 birds bathing |
| Great Black-backed Gull | GB | *Larus marinus* | Non breeding | Single bird fly over |
| Lesser Black-backed Gull | LB | *Larus fuscus* | Non breeding | Single bird fly over |
| Feral Pigeon | FP | *Columba livia (domest.)* | Confirmed | 4-6 birds (fledglings) |
| Skylark | S. | *Alauda arvensis* | Possible | 1 bird singing |
| Meadow Pipit | MP | *Anthus pratensis* | Confirmed | 3-5 birds (fledglings) |
| Pied Wagtail | PW | *Moticilla alba* | Possible | Single bird |
| Dunnock | D. | *Prunella modularis* | Possible | 1 Singing male |
| Robin | R. | *Erithacus rubecula* | Possible | 1 singing male. |
| Blackbird | B. | *Turdus merula* | Possible | 3-4 birds foraging |
| Blackcap | BC | *Sylvia articapilla* | Possible | 1 Singing male |

| Common Name | BTO Code | Species | Activity | Estimated Maximum Numbers Present |
|---|---|---|---|---|
| Wren | WR | *Troglodytes troglodytes* | Possible | 3-4 singing males |
| Blue Tit | BT | *Parus caeruleus* | Possible | 2-3 birds |
| Magpie | MG | *Pica pica* | Confirmed | 4 birds |
| Jackdaw | JD | *Corvus monedula* | Non breeding | 4 birds |
| Hooded Crow | HC | *Corvus cornix* | Non breeding | 4-6 birds |
| Starling | SG | *Sturnus vulgaris* | Possible | 2 juvenile birds |
| House Sparrow | HS | *Passer domesticus* | Non breeding | 2 birds |
| Linnet | LI | *Linaria cannabina* | Confirmed | 4-6 birds (fledglings) |
| Chaffinch | CH | *Fringilla coelebs* | Possible | 1 singing male |
| Goldfinch | GO | *Carduelis carduelis* | Possible | 1 singing male |
| Greenfinch | GR | *Chloris chloris* | Possible | 1 singing male |

- The presence of breeding meadow pipit is of note, however the species is very commonand widespread in north county Dublin. Overall, given the habitats present and the low numbers of birds recorded, the site is of **Local Importance (lower value)** for breeding birds.

#### 8.4.8.3 Large Mammals

Badgers and hares are fully protected under the *Wildlife Act* (1976) and subsequent amendments. No evidence of badgers has been recorded on the proposed development site, and one hare (incidental siting) was observed during a site visit in May 2025. Foxes, which are not protected under wildlife legislation, were seen at the site by the authors on occasion.

Otters are protected under the *Wildlife Act* (1976) and subsequent amendments, and under the *EU Habitats Directive*, via the *European Communities (Birds and Natural Habitats) Regulations*, 2011, as amended. Triturus Environmental Ltd. undertook an otter survey for Fingal County Council from February-May 2024 which covered the River Mayne, to the north of Clongriffin[20]. There were signs of otters recorded in that report as the river approaches the Baldoyle Bay during this survey. The subject site is however entirely unsuitable for use by otter, and there is no pathway to the site for otter from the River Mayne.

- Overall, given the habitats present, the site is of no more than **Local Importance (lower value)** for large mammals.

#### 8.4.8.4 Other Fauna

Amphibians and reptiles are fully protected under the Wildlife Act (1976) and subsequent amendments. There are no areas particularly suitable for amphibians within the Phase 2 lands, and none have been observed during the surveys undertaken at the subject site. Nevertheless, frogs have been recorded in ponds to the north of the subject site by the authors, and even minor wet areas and temporary ponds may be of value for amphibians, in particular during the spring breeding season.

[20] *Brazier, B. & Macklin, R. (2024). Fingal otter (*Lutra lutra*) survey 2024 - rivers. Report prepared by Triturus Environmental Ltd. for Fingal County Council. February 2025.*

Similarly, no evidence of common lizard has been recorded. However, it is possible that lizards may occur within the site, although the area of suitable habitat (such as exposed rock or heathland) is negligible.

The site was assessed for the presence of butterflies and for the suitability of the habitats for butterfly abundance and diversity. No evidence of Ireland's only protected insect, the marsh fritillary butterfly, or its food plant (devil's bit scabious (*Succisa pratensis*)) was recorded on the subject site.

- Overall, given the habitats present, the site is of no more than **Local Importance (lower value)** for other fauna.

### 8.4.9 Overall Evaluation of the proposed development Site

The site of the proposed development is not under any wildlife or conservation designation. Furthermore, no rare, threatened or legally protected plant species, as listed in the *Irish Red Data Book 1 – Vascular Plants (Curtis & McGough, 1988)*, the *Flora Protection Order*, *2022* or the *EU Habitats Directive*, are known to occur within the site and none were recorded during the site visits. The most ecologically valuable habitats are the dry grasslands that cover approximately one third of the site area. These grasslands have moderately high species diversity and include one species of local rarity (cowslip).

There is no habitat on the site suitable for use, even on a very occasional basis, by any overwintering birds, such as light-bellied Brent goose, or any other protected bird species listed as a Special Conservation Interest (SCI) in any European site within the Zone of Influence. Three red-listed bird species were noted, however, despite their red-listed status the birds are common in the wider area.

The site has no value for roosting bats, nor for otters (these species are protected under Article 12 of the Habitats Directive and are known from the River Mayne corridor to the north). It also has no value for other protected mammals such as badger or hedgehog, or for amphibians or reptiles, or rare or protected plants and the habitats present are not suitable for such species. There was one protected mammal, the Irish hare, recorded on site in May 2025. The habitat is sub-optimal for the species and will not sustain a population of the species permanently.

None of the habitats or features present on the site are Qualifying Interests/Special Conservation Interests in any European site within the Zone of Influence and none of these Qualifying Interests/Special Conservation Interests are present on the site. No evidence of any habitats or species with links to European sites was recorded during either the field surveys or desk study undertaken and no 'reservoir' type habitats (habitats which have the potential to support Qualifying Interest/Special Conservation Interest species in any European site) are present.

Due to the species diversity of the grasslands present, the overall site is of **Local importance (higher value)**, as defined by the ecological resource valuations presented in the National Roads Authority/Transport Infrastructure Ireland Guidelines for Assessment of Ecological Impacts of National Road Schemes (NRA/TII, 2009 (Rev. 2)). The Key Ecological receptors on the site comprise the dry grasslands that cover approximately one third of the site. The site is not of value as an *ex-situ* feeding site for SCI species associated with the coastal European sites.

## 8.5 Predicted Impacts of the proposed development

### 8.5.1 Construction Phase

#### 8.5.1.1 Designated Conservation Areas

The potential for any impacts on European designated sites (sites designated for nature conservation under the EU Habitats and Birds Directives) has been assessed separately, and a stand-alone report (Appropriate Assessment Screening Report), compiled in consultation with the wider design team including the project engineers, has been prepared for submission as part of the overall planning application and is submitted under separate cover.

Based on the studies undertaken and the features of the proposed development, the AA Screening process concluded that none of the habitats and species listed as qualifying interests or special conservation interests in any European site designation will be affected by the proposed development and full AA, including the preparation of a Natura Impact Statement (NIS), is not required. The following paragraphs are extracted from the AA Screening report conclusions:

> *"In view of best scientific knowledge this report concludes that the proposed Large-scale Residential Development at Clongriffin (Phase 2), individually or in combination with another plan or project, will not have a significant effect on any European sites. This conclusion was reached without considering or taking into account mitigation measures or measures intended to avoid or reduce any impact on European sites.*
>
> *It is considered that this report provides sufficient relevant information to allow the Competent Authority (Dublin City Council) to carry out an AA Screening under Section 177(U) of the Planning Acts and reach a determination, under Article 6 of the Habitats Directive, that the proposed development will not have any likely significant effects on European sites in light of their conservation objectives."*

Similarly, there is no direct or indirect pathway between the proposed development site and any pNHA not already designated as a European site, and therefore no impacts on any pNHA will occur.

#### 8.5.1.2 Habitats, Flora and Fauna

The proposed development will result in the removal of some existing habitats of Local Importance (Lower Value) and Local Importance (Higher Value).

In the absence of mitigation, the loss of dry grassland and associated habitats is considered to be a **direct, permanent, moderate (significant) negative impact at a local level**. However, appropriate landscape planting (refer to the Landscape Design Statement), including the planting of semi-mature trees, as well as long-term biodiversity-focused landscape management will be undertaken within the development.

Where deemed feasible and appropriate, the development shall strive to maximise the inclusion of on-street biodiversity such as street trees. A simple palette of trees is proposed in the Landscape Architecture Design Report (TPHC, 2026) that aims to maximise contribution to sitewide biodiversity while limiting management requirements. The landscape design will also adopt a variety of site-wide planting material to offer environmental interest, visual screening, and sustainable drainage opportunities.

Reduced vegetation will also lead to reduced insect abundance. This will reduce foraging opportunities for bats.

In the absence of mitigation, this will be a **direct, permanent, slight negative impact at the local level**.

There will be a reduction in vegetation cover through the removal of the dry grassland. This grassland offers habitat for ground nesting birds. In the absence of clear protocols for the protection of birds and their nests, there is potential for direct impacts on nesting birds and/or mortality of birds arising from the proposed development, should vegetation clearance take place during the bird nesting season, without accompanying bird-nesting surveys.

In the absence of mitigation, this will be a **direct, permanent, slight negative impact at the local level**.

Reduced vegetation due to the removal of the dry grassland will also lead to reduced insect abundance. This will reduce foraging opportunities for bats.

In the absence of mitigation, this will be a **direct, permanent, slight negative impact at the local level**.

In the absence of mitigation (including the lighting design (by EDC), the comprehensive landscape planting and the long-term habitat management proposed), the proposed development would cause a **direct, long-term, moderate (significant) negative impact at the local level** on biodiversity. However, the landscaping proposed (refer to the Landscape Architecture Design Report, prepared by TPHC and submitted as part of this application under separate cover) will ultimately lead to the introduction of new habitat (feeding and nesting) for birds and (foraging) bats.

No significant impacts on otters, badgers or any other large mammals within the site are expected as a result of the proposed development. Further, there will be no impacts on amphibians, reptiles, lepidoptera (butterflies and moths) or any other species groups as a result of the proposed development.

The implementation of biosecurity measures will ensure that no invasive alien plant species will be introduced, either deliberately or inadvertently, to the site.

No significant impacts on wintering birds are expected as a result of the proposed development. As confirmed in the AA Screening Report (submitted as part of this application under separate cover) and **Appendix 8.2**, no Brent geese (or other SCI species) utilise the site.

#### 8.5.1.3 Dust and Other Emissions

There is a potential risk to flora and fauna arising from dust deposition, which in extreme cases can inhibit photosynthesis in plants and can increase turbidity in watercourses. As set out in the chapter on Air Quality (see Section 11.3.3.1) construction dust tends to be deposited within 250 m of a construction site, with the majority of the deposition occurring within the first 50 m.

- Therefore, in the absence of adequate management and (best practice) mitigation measures, the construction phase of the development could have a **direct, short-term, slight-negative impact at the local level** on ambient air quality as a result of dust generation.

## 8.5.2 Operational Phase

### 8.5.2.1 Designated Conservation Areas

The potential for any impacts on European designated sites (sites designated for nature conservation under the EU Habitats and Birds Directives) has been assessed separately, and a stand-alone report (Appropriate Assessment Screening Report), compiled in consultation with the wider design team including the project engineers, has been prepared for submission as part of the overall planning application and is submitted under separate cover.

Based on the studies undertaken and the features of the proposed development, the AA Screening process concluded that none of the habitats and species listed as qualifying interests or special conservation interests in any European site designation will be affected by the proposed development and full AA, including the preparation of a Natura Impact Statement (NIS), is not required.

### 8.5.2.2 Habitats, Flora and Fauna

As noted in Section 8.5.1, the proposed development will involve the removal of the existing habitats and their replacement with residential development, open space, landscaping and infrastructure.

The proposed development site is of no importance as a feeding site for the bird species (the Special Conservation Interests) associated with Baldoyle Bay SPA (or any other European site). However, the vegetation offers some habitat of local importance for the birds present on the site.

The loss of existing vegetation from the site may affect small numbers of commuting bats, by removing cover. It may also affect feeding for bats by reducing the habitat for their invertebrate prey.

Having regard to Specific Planning Policy Requirement SPPR3 of the Urban Development and Building Height Guidelines for Planning Authorities (December 2018), no issues arise in relation to any ecological receptors, for example via the disruption of flight lines for birds, or disruption to commuting or foraging bats.

- Given the nature, scale and duration of the operational phase for the proposed development, there is the potential for **direct, permanent, negative impacts at the local level that are not significant** on the local fauna due to change of land use.

### 8.5.2.3 Impacts of Lighting from the proposed development

Increased lighting and increased human activity have the potential to impact on bat feeding and commuting behaviour. There are no bat roosts within the site and therefore illumination will only affect commuting and feeding bats.

- Poorly designed lighting has the potential to be a **permanent, negative impacts at the local level that are not significant**.

### 8.5.2.4 Discharges to Surface Water from the proposed development

As detailed in the Engineering Services Report from CS Consulting (2026), the local surface water drainage network was designed and constructed under the masterplan parent permission (Reg. Ref. 0132/02). These local surface water sewers remain under private ownership. All runoff collected by this network drains to the Clongriffin attenuation pond, which is located adjacent to the Mayne River, at the northern boundary of the masterplan area.

In the immediate vicinity of the subject development site, the local surface water drainage network includes surface water sewers along the existing extents of Belltree Avenue, Lake Street, and Park Street, as well as along the intended future alignment of these streets as yet incomplete sections.

As outlined in the Surface Water Management Plan (CS, 2026) it is proposed to increase the permissible discharge rate from the existing pond to the river from 249 l/s to 268 l/s, based on the HR Wallingford Greenfield Runoff Rate Estimation Tool, as presented in the Appendix B of the Engineering Services report.

Runoff from the building sites and plots shall be managed at source, limited to a rate of 4.6l/s/ha in accordance with QBAR. All new building plots shall be designed to attenuate runoff from a 1-in-100-Year storm event, with an additional 20% allowance for Climate Change.

Green roofs shall be incorporated in line with DCC policy standards, while blue roofs shall be implemented at podium level to provide source attenuation at a rate of 4.6 l/s/ha. Localised SuDS features will be introduced within individual plots to facilitate interception, treatment, and storage of runoff from parking areas, pavements, and internal roads. Refer to CS Consulting drawings No L106-CSC-XX-XX-DR-C-0104 and L106-CCSC-XX-XX-DR-C-0121 for details on developments proposed surface water drainage.

Additional SuDS elements shall be integrated into new roads and pavement areas to provide interception storage. Roads and pavements located outside the individual building plots will discharge directly into the existing stormwater network, which will subsequently outfall into the existing pond. Refer to CS Consulting drawings No L106-CSC-XX-XX-DR-C-0104 for details on developments proposed surface water drainage.

The above proposal has based on the principles that the existing pond size and outfall has been agreed and is sized for the 1 in 100-year return period for the existing developed lands. The new development sites will utilise the existing storm network and provide attenuation for the undeveloped lands to cater for the 1 in 100-year return period plus 20% Climate Change.

Based on the adopted attenuation storage strategy the proposed development shall include the following proposed Sustainable Drainage Systems (SuDS) measures. The proposed Sustainable Drainage Systems (SuDS) measures will be designed in accordance with the requirements of Dublin City Council and the Dublin City Development Plan objectives, to provide on-site first stage interception of surface water run-off, improving its overall quality prior to ultimate discharge.

- Blue Roof
  - It is proposed to provide blue roofs at podium level in Zone 7, 8 and 9. These shall retain and attenuate rainfall at source prior to out falling to the public network. (in accordance with Technical Summary of Dublin City Council Green and Blue Roof Guide (2021). The Blue Roofs at podium level shall have a total volume of 1697m3 as per the specialist design calculations.
- Green roofs
  - Extensive green roofs will be provided on the proposed buildings' flat roof areas. During typical low-intensity rainfall events, these will collect and retain rainwater until it subsequently evaporates. This will reduce the volumes of rainwater discharging to the public sewer network, as well as mitigating peaks in run-off and reducing the potential for contaminants to be washed from the roof, decreasing the development's impact on the receiving environment. Green roofs

also have secondary environmental benefits, providing a temperature control effect by absorbing less solar radiation and improving air quality by trapping airborne particulate matter. Appendix 11 to the *Dublin City Development Plan 2022-2028* requires that new developments with flat or gently sloped roof areas of more than 100m2 meet the following green roof coverage requirements as a percentage of total roof area; these minimum roof coverage requirements will have to be designed into each sector / tile / individual planning application: 70% extensive green roof coverage, or 50% intensive green roof coverage. It is proposed that 70% of the overall roof area shall be made up of green roof.

- Permeable paving
  - On street car parking bays are to be finished with a block-constructed permeable paving surface that shall allow rainwater to percolate through the pavement, through layers of grit and coarse aggregate, and into strata below. A perforated filter drain shall via overflow connections to the adjacent surface water sewers. Permeable paving is also to be used for footpaths and other paved areas at podium level on both buildings. Direct infiltration to ground is not possible at these locations but the permeable paving shall provide first stage interception treatment and a degree of stormwater attenuation prior to its discharge to the surface water drainage network.
- Tree pits and bio-retention areas
  - Tree pits and other bio-retention areas are integrated into the landscape design, primarily along the development's street frontages. Surface water runoff from footpaths and road carriageways shall be directed to these SuDS facilities, which allow direct infiltration to ground via layers of engineered topsoil and voided stone.
- Rain Gardens and planter boxes
  - Rain gardens and/or planter boxes shall be provided at podium level, at the outlets from downpipes that capture runoff from higher level terraced areas. These shall likewise provide first stage interception treatment and a degree of stormwater attenuation prior to its discharge to the surface water drainage network. The final locations and details of these SuDS facilities shall be determined as part of the development's final landscape design.

In summary, the local surface water drainage network was designed and constructed within the Clongriffin masterplan area under the parent permission (Reg. Ref. 0132/02). All runoff collected by this network drains to the Clongriffin attenuation pond, which is located adjacent to the Mayne River, at the northern boundary of the masterplan area.

Among the policies and objectives of the Dublin City Development Plan 2022-2028[21] are several that seek to maximise the value of existing green infrastructure such as river corridors.

A review of the proposed site drainage and potential links to the River Mayne (and other watercourses) was undertaken in conjunction with the project engineers[22].

[21] https://www.dublincity.ie/residential/planning/strategic-planning/dublin-city-development-plan/development-plan-2022-2028

[22] Refer to the Engineering Services Report prepared by CS Consulting (2026) and submitted as part of this application under separate cover.

Operational impacts related to surface water (or ground water) management, in the context of biodiversity, as a result of the proposed development, **will not be significant**.

A Site-Specific Flood Risk Assessment (SSFRA) has been prepared by CS Consulting (2026) and submitted under separate cover as part of this application, in accordance with the OPW publication *The Planning System and Flood Risk Assessment Guidelines for Planning Authorities*. The SSFRA confirmed that the proposed development site is within Flood Zone C and, as such, there is negligible flood risk associated with the proposed development, and negligible flood risk to surrounding areas arising from the proposed development.

Operational impacts related to flooding, in the context of biodiversity, as a result of the proposed development, **will not be significant.**

#### 8.5.2.5 Discharges to Foul Sewer from the proposed development

There is no 'direct' pathway for foul sewage to any receiving water body. There is however an 'indirect pathway' through the public sewer which ultimately discharges to the Irish Water Wastewater Treatment Plant (WwTP) at Ringsend prior to discharge to Dublin Bay post treatment. However, as the WwTP is required to operate in compliance with licence requirements, there is no potential for water quality exceeding Significant Impact (SI) threshold concentrations to be exceeded at the Dublin Bay.

As detailed in the Engineering Services Report (CS Consulting, 2026), a local foul drainage network was designed and constructed under the masterplan parent permission (Reg. Ref. 0132/02) for the wider Clongriffin masterplan area. These local foul sewers remain under private ownership and are not shown on Uisce Éireann records. All foul effluent collected by this network drains to the Clongriffin wastewater pumping station (WwPS) that was constructed under the masterplan parent permission but has since been transferred to Uisce Éireann's control. A short foul rising main (also in Uisce Éireann ownership) conveys the pumped effluent to the Uisce Éireann trunk foul sewer. To serve the development lands it is proposed to extend and connect to this existing infrastructure.

A Confirmation of Feasibility and a Statement of Design Acceptance has been issued by Uisce Éireann (CDS25001826) and have been included at Appendix B of the Engineering Services Report, prepared by CS Consulting.

As detailed in the Engineering Services Report (CS Consulting, 2026), a local foul drainage network was designed and constructed under the masterplan parent permission (DCC Reg. Ref. 0132/02) for the wider Clongriffin masterplan area. These local foul sewers remain under private ownership and are not shown on Uisce Éireann records. All foul effluent collected by this network drains to the Clongriffin wastewater pumping station (WwPS) that was constructed under the masterplan parent permission but has since been transferred to Uisce Éireann's control. A short foul rising main (also in Uisce Éireann ownership) conveys the pumped effluent to the Uisce Éireann trunk foul sewer. To serve the development lands it is proposed to extend and connect to this existing infrastructure. It will be directed to the Irish Water Wastewater Treatment Plant (WwTP) at Ringsend for treatment prior to discharge to Dublin Bay.

According to the information contained in Uisce Eireann's 2023[23] Annual Environmental Report (AER), Ringsend WWTP has adequate operational capacity to accommodate the additional flows generated by the proposed development.

Upgrading works have now been completed, and the plant has a capacity of 2.4 million (PE), adequate to meet the increased demand of the wider Dublin area. Following treatment, the final effluent from Ringsend WWTP is discharged into Liffey Estuary Lower transitional waterbody, which outfalls into Dublin Bay Coastal Waterbody.

Operational impacts related to foul water management, in the context of biodiversity, as a result of the proposed development, **will not be significant.**

## 8.6 Mitigation Measures

### 8.6.1 Construction Phase

#### 8.6.1.1 Incorporated Design Mitigation

The proposed development incorporates a comprehensive landscape design, with biodiversity-focussed planting (refer to **Chapter 14** (Landscape & Visual) and the Landscape Architecture Design Report, prepared by TPHC and submitted as part of this application under separate cover). The planting and long-term management proposed in the Landscape Design Statement will enhance the biodiversity resource on the proposed development site by creating new, pollinator-friendly habitats.

#### 8.6.1.2 Designated Conservation Areas

No designated conservation areas will be impacted in any way by the proposed development, and no mitigation measures are required in this regard. Refer to the AA Screening Report that accompanies the planning application for full details in relation to European designated sites.

#### 8.6.1.3 Habitats

As set out in the Landscape Architecture Design Report, prepared by TPHC and submitted as part of this application under separate cover, a significant amount of new planting has been incorporated into the landscape design, and the planting has been designed with a view to maximising the new biodiversity resource at the proposed development site. The proposed planting/landscaping strategy includes a mix of appropriate species, incorporating species that will attract feeding invertebrates, including moths, butterflies and bees. It takes account of the All-Ireland Pollinator Plan 2021 – 2025[24].

The proposed planting schedule as set out in the Landscape Architecture Design Report contains no invasive species and none will be introduced, either deliberately or inadvertently, to the proposed development site. Biosecurity measures will be included in the final CMP by the appointed contractor.

[23] This is the latest published report (https://www.water.ie/sites/default/files/2025-02/D0034-01_2023_AER.pdf). Since its publication the major expansion and upgrade of Ringsend WwTP has been completed.
[24] NBDC (2021)

#### 8.6.1.4 Fauna

##### 8.6.1.4.1 Nesting Birds

Where feasible and practicable, the clearance of scrub and other vegetation that may be suitable for use by nesting birds will be undertaken outside the bird nesting season (avoiding the period 1 March to 31 August). Should the construction programme require vegetation clearance between March and August, bird nesting surveys will be undertaken by suitably qualified ecologists. If no active nests are recorded, vegetation clearance will take place within 24 hours. In the event that active nests are observed, an appropriately sized buffer zone (up to 5 m radius around the nest) will be maintained around the nest until such time as all the eggs have hatched and the birds have fledged – a period that may be three weeks from the date of the survey. Once it is confirmed that the birds have fledged and no further nests have been built or occupied, vegetation clearance may take place immediately.

##### 8.6.1.4.2 Otters and Other Large Mammals

There will be no impacts on otters or other large mammals and no mitigation is required.

##### 8.6.1.4.3 Bats

No bat roosts have been recorded at the proposed development site, and it will not be necessary to apply for a derogation licence under Regulation 54 or 55 of the *European Communities (Birds and Natural Habitats) Regulations 2011, as amended*. There are no suitable structures (natural or manmade) available for use by roosting bats within the subject site.

##### 8.6.1.4.4 Installation of Bat and Bird Boxes

Notwithstanding the non-existent roosting potential of the site, it is proposed to install bat (and bird) boxes both within the proposed development. The reason for the installation of habitat boxes is not to provide replacement roosts/nesting; rather, it is to augment the overall ecological value of the site. This will contribute to maximising the ecological value of the proposed development.

To that end a number of bat and bird boxes will be erected, with advice from the Project Ecologist, in appropriate areas. The boxes proposed are as follows (this list is subject to revision based on the availability of suitable boxes in the future):

- Bat and bird boxes proposed:
  - 24 no. Schwegler 1MF combined bat and swift boxes or similar (to be located within the facades of four of the taller buildings proposed).
  - 6 no. assorted wooden or woodcrete bird boxes, suitable for use by robins, blue tits and tree creepers.
  - 6 no. insect hotels, to be distributed through the landscaped areas, as advised by the project ecologist during the construction phase.

The installation of boxes that can accommodate swifts will increase the available nesting potential of the proposed development site for this species, which has not been recorded at the subject site, and

which has undergone significant decline in recent years[25], and has now been placed on the red list of BoCCI[26].

No badger setts will be in any way affected by the proposed development, and no mitigation measures will be required for the protection of badgers. Nevertheless, a watching brief will be maintained by the project ecologist throughout the construction phase, in the event that badgers should establish a territory at the site.

Any ponds/wet areas found (although there are none on the site at present) will be inspected by a suitably experienced ecologist prior to works being undertaken. Should any frog spawn or tadpoles be discovered, a licence to remove frog spawn may be required from NPWS.

#### 8.6.1.5 Water Quality, Dust and Other Emissions

The surface water mitigation measures proposed in **Chapter 10** (Hydrology), prepared by AWN Consulting and in the Surface Water Management Plan and Outline Construction Management Plan, prepared by CS Consulting (all submitted as part of this application under separate cover), will ensure that no sediment contamination, contaminated run-off or untreated wastewater will enter any on-site surface water drains and, in particular, the River Mayne as a result of the construction of the proposed development. Refer also to the Appropriate Assessment Screening report.

The measures set out in **Chapter 11** (Air Quality) of this EIAR will be implemented to ensure that no air-related impacts arise on biodiversity. No further mitigation measures, in the context of biodiversity, are required.

### 8.6.2 Operational Phase

The lighting for the proposed development has been designed (by EDC, the project lighting consultants) in accordance with the following guidelines:

- Bat Mitigation Guidelines for Ireland – V2 (IWN no. 134)[27]
- Bats and Lighting – Guidance Notes for Planners, Engineers, Architects and Developers (Bat Conservation Ireland, 2010)[28]
- Bats and Artificial Lighting at Night, Institute of Lighting Professionals, 2023[29]
- Guidance Notes for the Reduction of Obtrusive Light GN01-21 (Institute of Lighting Professionals, 2021)[30]
- Dark Sky Ireland's Environmentally Friendly Lighting Guide[31]
- Guidelines for consideration of bats in lighting projects (Eurobats Publication Series No 8, 2018)[32]

The proposed lighting will have the following characteristics:

[25] Swift Conservation Ireland
[26] Gilbert *et al*. (2021)
[27] https://www.npws.ie/sites/default/files/publications/pdf/IWM134.pdf
[28] https://www.batconservationireland.org/wp-content/uploads/2013/09/BCIrelandGuidelines_Lighting.pdf
[29] https://theilp.org.uk/publication/guidance-note-8-bats-and-artificial-lighting/
[30] https://theilp.org.uk/publication/guidance-note-1-for-the-reduction-of-obtrusive-light-2021/
[31] https://www.darksky.ie/lighting-documents/#guidelines
[32] https://www.eurobats.org/sites/default/files/documents/publications/publication_series/WEB_DIN_A4_EUROBATS_08_ENGL_NVK_28022019.pdf

- The minimum level of lighting will be provided within the developed areas, within the lux level criteria required by Dublin City Council.
- No flood lighting will be provided within the proposed development, and all light fittings will be LED and are designed to shine downwards and will avoid sky glow and light spill.
- Lighting will be directed onto the working areas only – and away from retained woodland areas, which will be retained as dark areas, within the requirements of Dublin City Council.

There will be no impacts on foul water treatment capacity at the Ringsend WwTP as a result of the proposed development. No mitigation measures are required – see Section 8.5.2.5.

There will be no impacts related to surface water, including the River Mayne, as a result of the proposed development. The proposed development is designed in accordance with the principles of SuDS as embodied in the recommendations of the Greater Dublin Strategic Drainage Study (GDSDS), which addresses the issue of sustainability by requiring designs to comply with a set of drainage criteria which aim to minimize the impact of urbanization, by replicating the run-off characteristics of the greenfield site. The criteria provide a consistent approach to addressing the increase in both rate and volume of run-off, as well as ensuring the environment is protected from any pollution from roads and buildings. No corresponding mitigation measures are required. The proposed surface water design is also in line with the following standards:

- The Greater Dublin Strategic Drainage Study (GDSDS), Volume 2
- The Greater Dublin Regional Code of Practice for Drainage Works
- British Standard BS EN 752:2008 (Drains and Sewer Systems Outside Buildings)
- Part H of the Building Regulations (Building Drainage).
- Nature based solutions to the management of rainwater and surface water runoff in urban areas by the Department of Housing Local Government and Heritage
- Dublin City Council Sustainable Drainage Design & Evaluation Guide 2021
- Dublin City Council Green & Blue Roof Guide 2021 by DCC

No mitigation is proposed for the operational phase of the proposed development, once the measures required during the construction phase are implemented.

## 8.7 Residual Impacts

### 8.7.1 Construction Phase

With the implementation of proposed mitigation measures in place for the protection of surface water and air quality, the residual impact of the construction phase in this regard is assessed to be **direct, short-term, imperceptible** and **neutral**.

### 8.7.2 Operational Phase

Overall, although the proposed development may have negative impacts on biodiversity at the local level, these impacts will be fully mitigated over time by the implementation of the proposed biodiversity-focussed landscape design.

There will be a limited loss of foraging habitat within the site and a loss of nesting areas for birds. Vegetation will establish over time, and these losses will be reduced considerably.

There is the potential for slightly less bat activity within the area where the cover is reduced by vegetation removal and lighting has increased. Bats will avail of bat boxes or other modifications within the site to roost over a period of time once the construction phase activity ceases.

The residual impact of the proposed development in this regard is assessed to be **direct, permanent, not significant** and **negative at the local level**.

There will be no long-term impact on the River Mayne and its associated habitats and, therefore, there will be no likely significant effects.

## 8.8 Monitoring

### 8.8.1 Construction Phase

A suitably experienced Project Ecologist (Ecological Clerk of Works) will be appointed for the duration of the construction phase and regular monitoring of all related works will take place to ensure the correct and full implementation of all mitigation measures. The Project Ecologist will ensure that all construction works take place in accordance with the Outline Construction Management Plan, the Surface Water Management Plan, and the mitigation measures set out in this EIAR.

As noted in Section 8.6.1.4, should vegetation clearance be required during the bird nesting season, this work will take place only after the Project Ecologist has undertaken a survey to ensure that no active bird nests or recently fledged birds are present. Similarly, no evidence of roosting bats was recorded on the site during any of the comprehensive bat surveys, while this will be verified by the project ecologist prior to commencement of works, there are no features on the site suitable for us by roosting bats. This is not likely to change.

### 8.8.2 Operational Phase

No long-term ecological monitoring is required, other than post-construction monitoring of the bat and bird boxes installed. The bat and bird boxes installed on the site will be checked annually for a period of two years post-completion of the works by the appointed project ecologist, to ensure that they continue to be accessible to these species.

On completion of construction, the lighting installed will be reviewed by the Project Ecologist and a bat specialist, to ensure that it is operating according to the approved specifications.

## 8.9 Reinstatement

The majority of the site to be removed and replaced with the various elements of the proposed development is of no more than Local Importance (Lower or Higher Value). As set out in the Landscape Architecture Design Report, prepared by TPHC and submitted under separate cover, new habitats will be provided, including new trees and shrubs as well as formal planting, with biodiversity-focused SuDS measures and wildflower meadows.

The long-term management of the site will incorporate best practice measures to maintain the high level of biodiversity at the site.

Given the comprehensive mitigation and landscape design proposed, no other ecological reinstatement is required.

## 8.10 Interactions

At the proposed development site, the main interactions of importance to biodiversity relate to Land, Soils, Geology & Hydrogeology (Chapter 9), Hydrology (Chapter 10), and Landscape & Visual (Chapter 14). The mitigation measures for the proposed development have been designed to minimise the potential impact that the demolition, construction and operational phases may have on the receiving environment, including, in particular, the River Mayne.

As noted in Chapter 11 (Air Quality), dust generation can occur during extended dry weather periods due to construction traffic along haul routes and construction activities such as excavations and infilling works. Dust emissions can coat vegetation leading to a reduction in the photosynthesising ability as well as other effects. There are no designated ecological sites within 250 m of the proposed development site area. Significant dust impacts are not predicted beyond this distance. Dust mitigation measures will be implemented on site as set out in Section.

The landscape design for the proposed development takes into account the requirements to maximise the benefits to biodiversity, both locally and within the wider landscape. The landscape scheme (refer to Chapter 14 and the Landscape Architecture Design Report, prepared by TPHC and submitted as part of this application under separate cover) proposes significant ecologically sensitive planting to provide for potentially diverse habitats.

As noted in Chapter 21 (Interactions) the potential significant impacts of biodiversity have been considered within the relevant discipline, and mitigation measures outlined, where required. With mitigation measures in place, no significant residual negative impacts are predicted.

## 8.11 Cumulative Impacts

A description of relevant developments within the area which have a potential to produce in-combination environmental impacts with the proposed development during the construction and operational phase are listed in Chapter 22 of this EIAR.

### 8.11.1 Construction Phase

Each of the plans and projects under review in Chapter 22 have been required to take nature conservation into account, and an iterative approach to the preparation of each plan and project has been undertaken, with a view to coordinating the plans and projects for maximum overall benefit and minimum impact. Each has been separately subject to stringent appraisal, both for their potential impacts on European sites and their Qualifying Interests / Special Conservation Interests as well as on non-European sites and ecological receptors. In each case it has been reasonably concluded, based on the best available scientific evidence, that there will be no significant effects on designated sites, habitats, species or water quality, either alone or in-combination with other plans or projects.

The Dublin City Development Plan 2022-2028 has a series of objectives intended to protect and enhance the natural environment. For example, the Development Plan includes policies for the protection of the county's flood plains, to prevent development in flood plains not satisfying the appropriate justification test and to require the use of sustainable drainage systems (SuDS) to minimise and limit the extent of hard surfacing and paving in order to reduce the potential impact of existing and predicted flooding risks. The objectives of the Development Plan have themselves been subject to Appropriate Assessment, which has concluded that their implementation would not adversely affect the integrity of European sites. The proposed development at Clongriffin, along with other

developments in the vicinity will have to incorporate SuDS measures to protect surface water quality and hence, cumulative impacts on biodiversity are considered to be neutral and not significant.

### 8.11.2 Operational Phase

The proposed development will result in the removal of existing habitats and their replacement with a new residential development and associated (significant, biodiversity-focussed) landscaping. All developments proposed in the wider area, including within the Fingal County Council Administrative area (to the north of the River Mayne), will be required to demonstrate a commitment to minimising biodiversity loss.

The implementation of mitigation and monitoring measures as part of the construction of all relevant developments will ensure there will be minimal cumulative potential for impacts on biodiversity during the operational phase of the proposed development.

## 8.12 'Do-Nothing' Impact

As noted in Section 8.4, the proposed development site is of local ecological importance, comprising as it does a moderately diverse grassland. Should the site remain undeveloped, and the current uses continue, no significant changes to the biodiversity value of the site can be expected.

The site is zoned *Z14: Strategic Development and Regeneration Areas (SDRAs)* under the Dublin City Development Plan (2022 – 2028) (with the objective "*To seek the social, economic and physical development and/or regeneration of an area with mixed-use, of which residential would be the predominant use.*") and it is likely that in the absence of this subject proposal, a development of a similar nature would be progressed on the site that accords with national policy for appropriate development on such a site. Should the site be re-developed at a later stage, it is reasonable to expect that any potential impacts would be similar to those predicted to arise as a result of the proposed development.

## 8.13 Difficulties Encountered

This Biodiversity chapter is based on ecological surveys undertaken over several years by Brady Shipman Martin and other specialist ecologists.

No difficulties were encountered in compiling this chapter of the EIAR. All surveys were undertaken to an appropriate level given the nature of the site and the proposed development. The timeframe for the project facilitated the undertaking of surveys during all seasons.

## 8.14 Conclusion

Overall, although the proposed development is likely to have negative effects on biodiversity at the site level that are moderate and therefore significant, at the local scale, these impacts will be fully mitigated over time to be rendered not significant or imperceptible.

There will be a loss of feeding habitat internally within the site for bats and birds and a loss of nesting habitat for birds as a result of the proposed development. However, following mitigation this loss is not significant. Any long-term impact upon bats or on biodiversity receptors in general within the site will not be significant. There will be no loss of bat roosting sites as a result of the proposed development.

The landscape design proposed, which includes the provision of significant replacement and new planting, as well as ecologically sensitive management of the retained woodland resource, will ensure that vegetation will establish over time and the losses will be reduced considerably.

There will be no long-term impact on watercourses as a result of the proposed development.

In summary there will be no long-term residual impacts on biodiversity or on ecological receptors, and therefore no significant effects, either within or in the vicinity of the proposed development site or associated with any site designated for nature conservation as a result of the proposed development.

## 8.15 References


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# 9 Land, Soils, Geology & Hydrogeology

## 9.1 Introduction

This chapter of the EIAR was prepared to assess the potential significant effects of the proposed development for a Large-Scale Residential Development located at Clongriffin, Co, Dublin. It evaluates the likely significant effects, if any, which the proposed development will have on land, soils and geology.

This chapter contains necessary information as defined in the Environmental Protection Agency (EPA) Guidelines on the Information to be contained in Environmental Impact Assessment Reports' (EPA, 2022). Reference is made to hydrogeology, but this aspect is covered in more detail in Chapter 10 (Hydrology and Hydrogeology).

The chapter initially provides a description of the receiving environment of the site and the potential impacts of the development. When assessing the potential impacts, this assessment considers the significance of the environmental attributes, and the predicted scale, and duration of the likely effects.

The chapter also outlines the proposed mitigation measures that will reduce or eliminate the identified potential impacts and define the residual effects of the Proposed Overall Development (the effect after the implementation of mitigation measures).

This chapter should be read in conjunction with Chapter 10 (Hydrology and Hydrogeology).

It should be read in conjunction with Chapter 5 for the EIAR which does into further detail with regards to the site description.

### 9.1.1 Expertise & Qualifications

This chapter of the EIAR has been prepared by Marcelo Allende and Ana Keeley of AWN Consulting. Marcelo Allende (BSc, BEng) is a Principal Environmental Consultant (Hydrologist) with AWN Consulting with over 20 years of experience in water resources technical studies, conceptual and numerical hydrological/hydrogeological modelling and environmental consultancy. Marcelo holds a degree in Water Resource Civil Engineering (BEng, Hons) from the University of Chile and a Bachelor of Science in Engineering (BSc, Hons). He has worked on a wide of range of projects including multi-aspect environmental investigations, geo-environmental impact assessments, surface and groundwater resource management, hydrological and hydrogeological conceptual and numerical modelling, strategic and site specific flood risk assessments (Stage 1, 2 and 3), Due Diligence reporting, baselines studies, soils, surface water and groundwater monitoring and field sampling programmes on a variety of brownfield and greenfield sites throughout Ireland as well as overseas in Chile, Argentina, Peru and Panama. He also has detailed knowledge of environmental guidance, legislation, regulations & standards and expertise in GIS (expert level) and MATTE studies at COMAH establishments. He is currently a member of the International Association of Hydrogeologists (IAH, Irish Group) and a member of Engineers Ireland (MIEI).

Ana Keeley is an Environmental Consultant with AWN Consulting with ongoing roles within the water department. Ana has a BSc in GeoScience from Trinity College Dublin. Ana has worked on a range of projects including environmental investigations, environmental impact assessment reports, hydrological risk assessments and ArcGIS mapping. Ana is a member of the International Association of Hydrogeologists (Irish Group).

## 9.2 Assessment Methodology

### 9.2.1 Criteria for Rating of Effects

The section establishes the criteria and guidance used to rate the significance of the potential impacts of the proposed development project on the land, soil and geological aspects of the site and surrounding area.

This chapter is prepared in line with the 'Guidelines on the Information to be contained in Environmental Impact Assessment Reports' (EPA, 2022) and due consideration is also given to the guidelines provided by the Institute of Geologists of Ireland (IGI) in the document entitled 'Guidelines for the Preparation of Soils, Geology and Hydrogeology Chapters of Environmental Impact Statements' (IGI 2013).

The document entitled 'Guidelines on Procedures for Assessment and Treatment of Geology, Hydrology and Hydrogeology for National Road Schemes' by the Transport Infrastructure Ireland (TII) formerly National Roads Authority (NRA) (TII, 2009) is referenced where the methodology for assessment of impact is appropriate. Furthermore, in line with the TII Guidelines, an assessment of the attribute importance has been undertaken in order to provide a basis for the assessment of impact provided. The attribute importance considers the potential as well as the existing use of the surface water features as a water resource (i.e., water supply, fisheries and other uses) as well as ecological habitat requirements. The TII criteria for rating the soil and geology related attributes are presented in Appendix 9.1.

The quality, significance, and duration of the potential impacts, residual effects, and cumulative effects are described using standard EIA descriptive terminology (EPA, 2022) that is set out in Chapter 1 of this EIAR.

The principal attributes (and effects) to be assessed include the following:

- Geological heritage sites within the vicinity of/ within the perimeter of the proposed development site.
- Landfills, industrial sites in the vicinity of the site and the potential risk of encountering contaminated ground.
- The quality, drainage characteristics and range of agricultural use(s) of subsoil around the site.
- Quarries or mines in the vicinity and the potential implications (if any) for existing activities and extractable reserves.
- The extent of topsoil and subsoil cover and the potential use of this material on site as well as any requirement to remove it off-site as waste for disposal (D) or recovery (R) options.

#### 9.2.1.1 Relevant Legislation & Guidance

The baseline study and impact assessment have will be out in accordance with the following key guidance and established best practice:

- Environmental Protection Agency (EPA) Advice notes on current practice in the preparation of Environmental Impact Statement (EPA, 2003) and Guidelines on the Information to be contained in Environmental Impact Statements (EPA, 2022).
- TII/National Roads Authority Guidelines on Procedures for Assessment and Treatment of Geology, Hydrology and Hydrogeology for National Road Schemes (TII/formerly NRA, 2009).
- Transport Infrastructure Ireland - Road Drainage and Water Environment (TII, 2015).

- Institute of Geologists Ireland (IGI) -Geology in Environmental Impact Statements, a guide (IGI, 2002) and Guidelines for the Preparation of Soils, Geology and Hydrogeology Chapters of Environmental Impact Statements (IGI, 2013).
- The Planning System and Flood Risk Management, Guidelines for Planning Authorities (Department of the Environment, Heritage and Local Government (DoEHLG) and the Office of Public Works (OPW).

Land soil and geology resource management in Ireland is dealt with in the following key pieces of legislation and guidelines:

- Institute of Geologists Ireland (IGI) -Geology in Environmental Impact Statements, a guide (IGI, 2002) and Guidelines for the Preparation of Soils, Geology and Hydrogeology Chapters of Environmental Impact Statements (IGI, 2013).
- Waste Management Acts 1996 as amended.
- Environment Agency (EA), Land contamination: risk assessment (EA 2020).
- BS 10175:2011 + A2:2017 Investigation of potentially contaminated sites. Code of practice (British Standards Institute 2017).
- CIRIA C552 Contaminated Land Risk Assessment: A Guide to Good Practice (CIRIA 2001).
- TII/National Roads Authority Guidelines on Procedures for Assessment and Treatment of Geology, Hydrology and Hydrogeology for National Road Schemes (TII/formerly NRA, 2009).
- Transport Infrastructure Ireland, The Management of Waste from National Road Construction Projects (TII 2017).
- Environmental Protection Agency, Guidance on the Management of Contaminated Land and Groundwater at EPA Licensed Sites (EPA 2013).
- Local Authority planning guidance as applicable.
- Consolidated EIA Directive 2011/92/EU and 2014/52/EU.

#### 9.2.1.2 Sources of Information

Desk-based hydrological information in the vicinity of the site was obtained through accessing databases and other archives where available. Data was sourced from the following:

- Latest EPA Envision water quality monitoring data for watercourses in the area.
- Geological Survey of Ireland (GSI) - on-line mapping, Geo-hazard Database, Geological Heritage Sites & Sites of Special Scientific Interest, Bedrock Memoirs and 1:100,000 mapping.
- River Basin Management Plan for Ireland 2022-2027 (Department of Housing, Planning and Local Government, 2018).
- Water Action Plan 2024 - A River Basin Management Plan for Ireland, (Department of Housing Local Government & Heritage, Sept 2024).
- The Planning System and Flood Risk Management, Guidelines for Planning Authorities (Department of the Environment, Heritage and Local Government (DoEHLG) and the Office of Public Works (OPW, 2009).
- Office of Public Works (OPW) flood mapping data (www.floodmaps.ie).
- Relevant Eastern Catchment Flood Risk Assessment and Management (CFRAM) Flood Reports.
- National Parks and Wildlife Services (NPWS) – Protected Site Register.
- The Dublin City Development Plan 2022-2028 - Strategic Flood Risk Assessment (SFRA, 2023-2029).

Site specific data was derived from the following sources:

- Engineering Services Report (CS Consulting -2026)
- Surface Water Management Plan (CS Consulting -2026)
- Site Specific Flood Risk Assessment (CS Consulting -2026)
- Outline Construction Management Plan (CS Consulting -2026)
- Clongriffin Wider Lands Masterplan Framework (Henry J Lyons -2026)

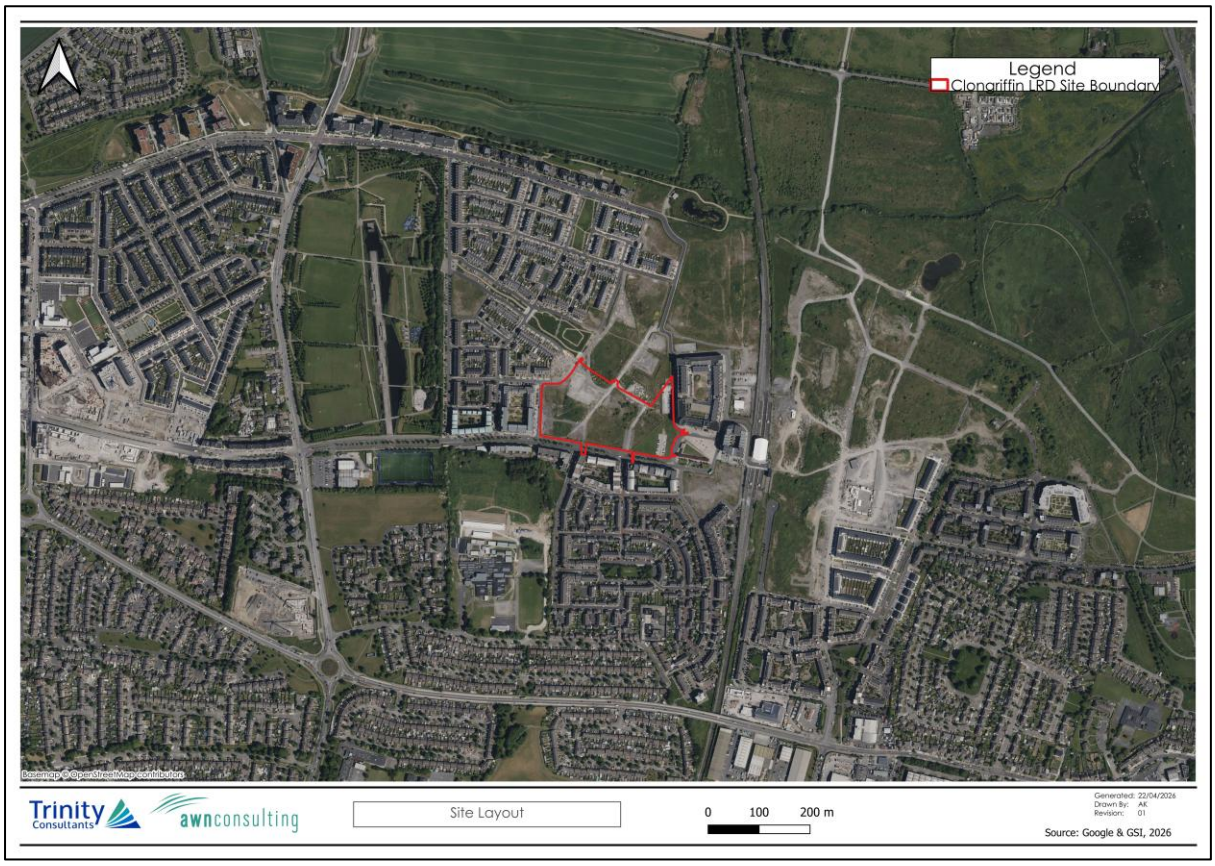
## 9.3 Baseline Environment

### 9.3.1 Site Description

The proposed development site is located at Clongriffin, north of Donaghmede in Dublin 13, Co. Dublin and covers an area of approximately 3.42 hectares (8.45 acres). Situated c. 15 km northeast of Dublin City Centre, the site lies within the community of Clongriffin and represents one of the principal undeveloped land parcels in the area. It is bounded to the north by the undeveloped greenfield lands, to the east by the Dublin-Belfast Railway line. Directly south of Main Street and to the west residential estates.

The topography of the site is relatively uniform, the site moderately slopes from the south to north; levels of approximately 8.0 m AOD to the south and 6.0 m AOD to the north. The site at present is a greenfield site unoccupied by any structures or buildings, as shown in **Figure 9.1** below.

Figure 9.1 Site Layout (GSI, 2026)



### 9.3.2 Existing Land Use and Site History

The site is currently unoccupied and contains no buildings or structures. As part of the preparation of this EIAR chapter, historical Ordnance Survey mapping (www.tailte.ie) was reviewed to establish the historical development of the site and its surroundings.

The 1830s six-inch Ordnance Survey maps indicate that the site was undeveloped at that time and was primarily used for agricultural uses. Much of the surrounding road network had not yet been developed, and the proposed site boundary encompassed several smaller, subdivided land parcels.

As illustrated in **Figures 9.2**, **9.3** and **9.4** below, the lands within the proposed site boundary have remained largely undeveloped and mainly used for agricultural purposes. From 2000 to 2005, development activity began to emerge within the wider area. During this period, the site transitioned from active agricultural land to land clearance associated with adjoining developments. **Figure 9.4** also displays the development of Main Street at the southern boundary of the study area, which has been identified as an access point to the development site.

Figure 9.2 Imagery Black and White Map 1995 (GSI, 2026)

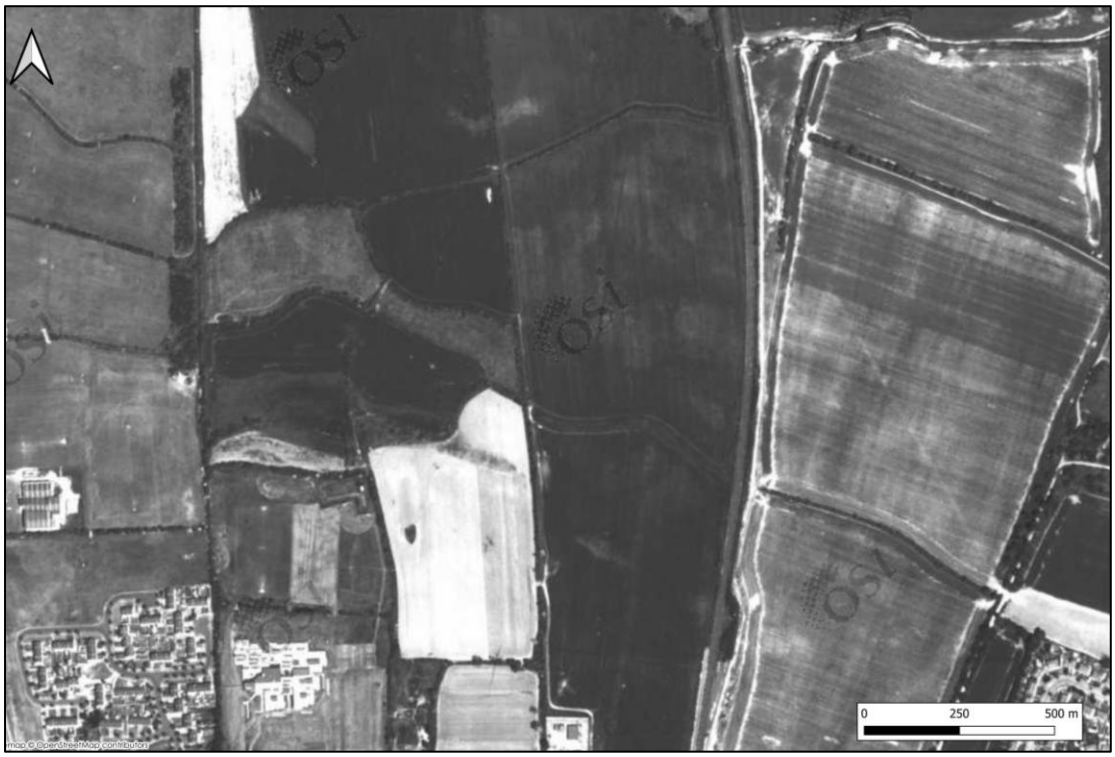


Figure 9.3 Imagery Colour Map 1996-2000 (GSI, 2026)




Figure 9.4 Imagery Colour Map 1996-2000 (GSI, 2026)




### 9.3.3 Surrounding Land Use

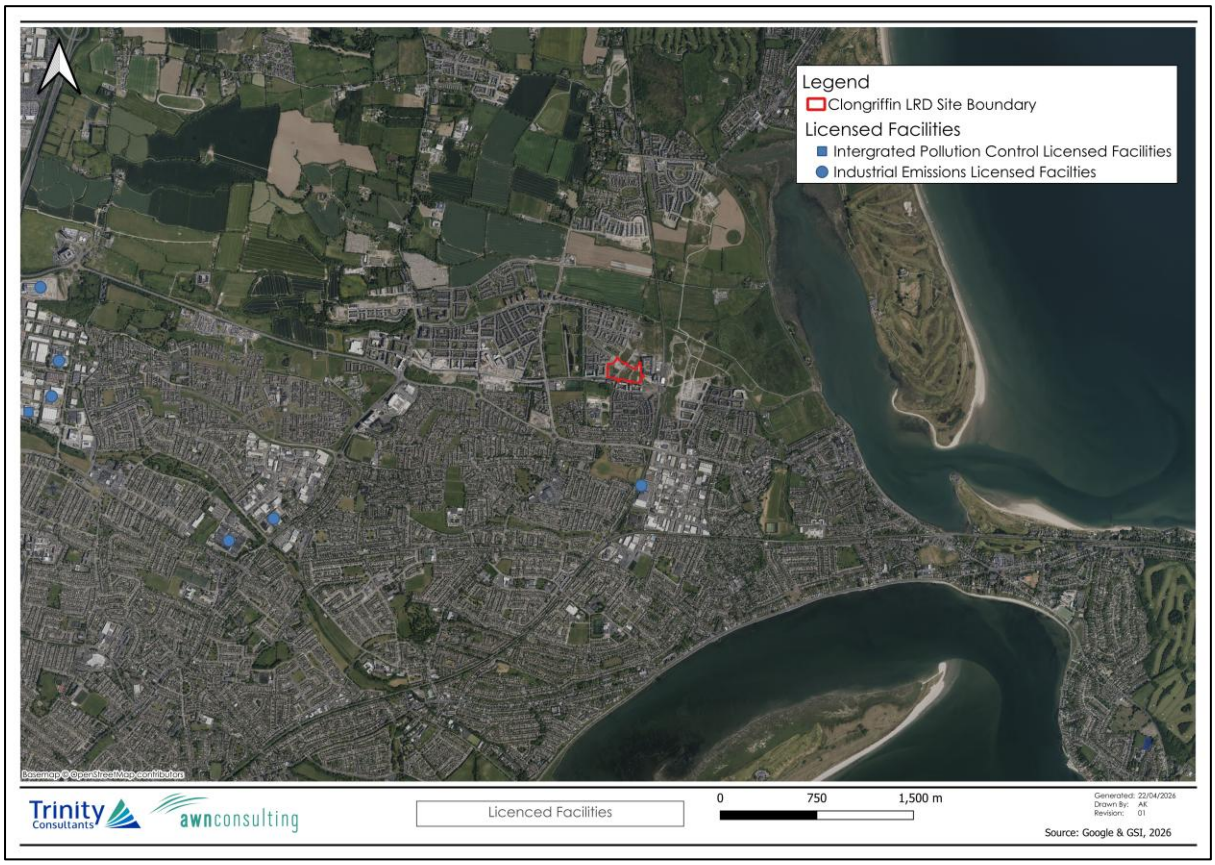
There are no licenced facilities within the site boundary or adjacent to the proposed development. Table 9.1 below shows the closest Industrial Emissions or Integrated Pollution Control (IE/IPC) facilities to the proposed development according to the EPA (2026) within a 3 km radius of the proposed development.

Newport Synthesis Ltd. is the nearest of these facilities, located c. 0.7 km south from the proposed development as shown in **Figure 9.5**. There is no hydrological connectivity between this site and proposed development.

Table 9.1 EPA Licenced facilities nearby to the proposed development site (EPA, 2026)

| Registration number | Name | Issue Date | Category | License type | Distance (km) |
|---|---|---|---|---|---|
| P0097 | Newport Synthesis Ltd. | 27/01/1997 | Industry | IEL | 0.7 |
| P0071 | Reheis Inc | 04/04/2002 | Industry | IEL | 1.0 |
| P0248 | Crown Paints Ireland Ltd | 08/06/1997 | Industry | IEL | 2.8 |
| P0809 | Mondelez Ireland Production Limited | 27/09/2007 | Industry | IEL | 3.0 |

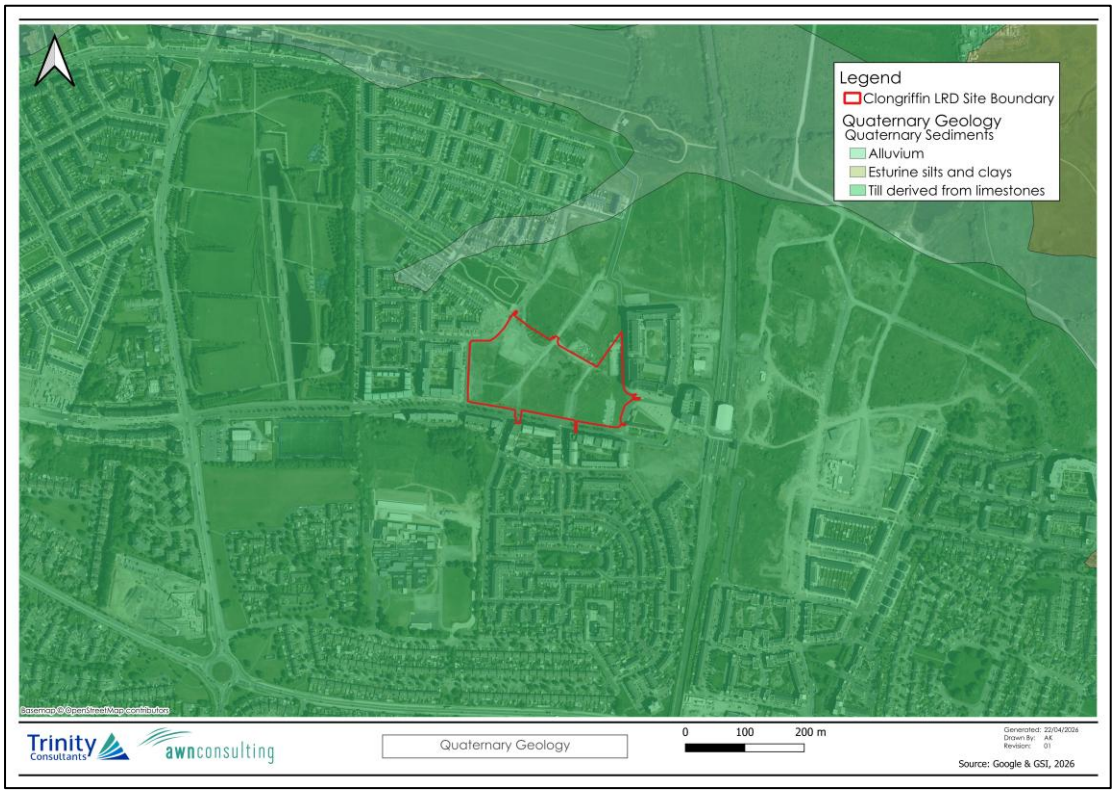
Figure 9.5 EPA Licenced Facilities in proximity of the site (GSI, 2026)




## 9.3.4 Quaternary Geology

According to GSI (2026), quaternary sediments in the site indicates the principal subsoil type in the area comprises of low-permeability cohesive deposits (till derived from limestones) (refer to **Figure 9.6**).

Figure 9.6 Quaternary Geology (GSI, 2026)




### 9.3.4.1 Site Investigation

A ground investigation and subsoils assessment of Phase 2 (proposed development site) and Phase 3 lands were undertaken by Ground Investigation Ireland (GII) in July and August 2025. The purpose of the works was to characterise subsurface conditions as well as assess the site in terms of historical use through a range of investigative techniques carried out in accordance with the project specifications.

A total of 38 trial pits were excavated to a maximum depth of 4.00m below ground level (BGL), 4 soakaways, 7 Rotary Core Boreholes to a maximum depth of 20.00m BGL, Cable Percussion boreholes to a maximum depth of 10.30m BGL and 5 Groundwater monitoring wells their locations illustrated in **Figure 9.7**. The ground conditions encountered generally comprised the following sequence of strata:

- Topsoil: Present in all exploratory holes, with a maximum thickness of 0.2m BGL.
- Made Ground: Encountered beneath the topsoil extending to depths between 0.20m and 1.10m BGL. These deposits were generally described as sandy, clayey Gravel.
- Cohesive Deposits: Found at an average depth of 2.0m BGL. These were typically described as sandy and gravelly.
- Granular Deposits: Only recorded to be present at locations TP10, BH04, BH06, BH11 and BH15.
- Bedrock: Found at an average depth of 12.0m BGL. Identified as a strong thinly bedded limestone

Trial pits were excavated until progress was halted by obstructions. These obstructions are considered to be associated with tightly compacted cohesive deposits containing boulders, rather than underlying bedrock.

Groundwater ingress was not encountered in the majority of trial pits, however; minor water seepage was encountered at depths of approximately 3.0m BGL. Soakaway tests indicated very slow infiltration

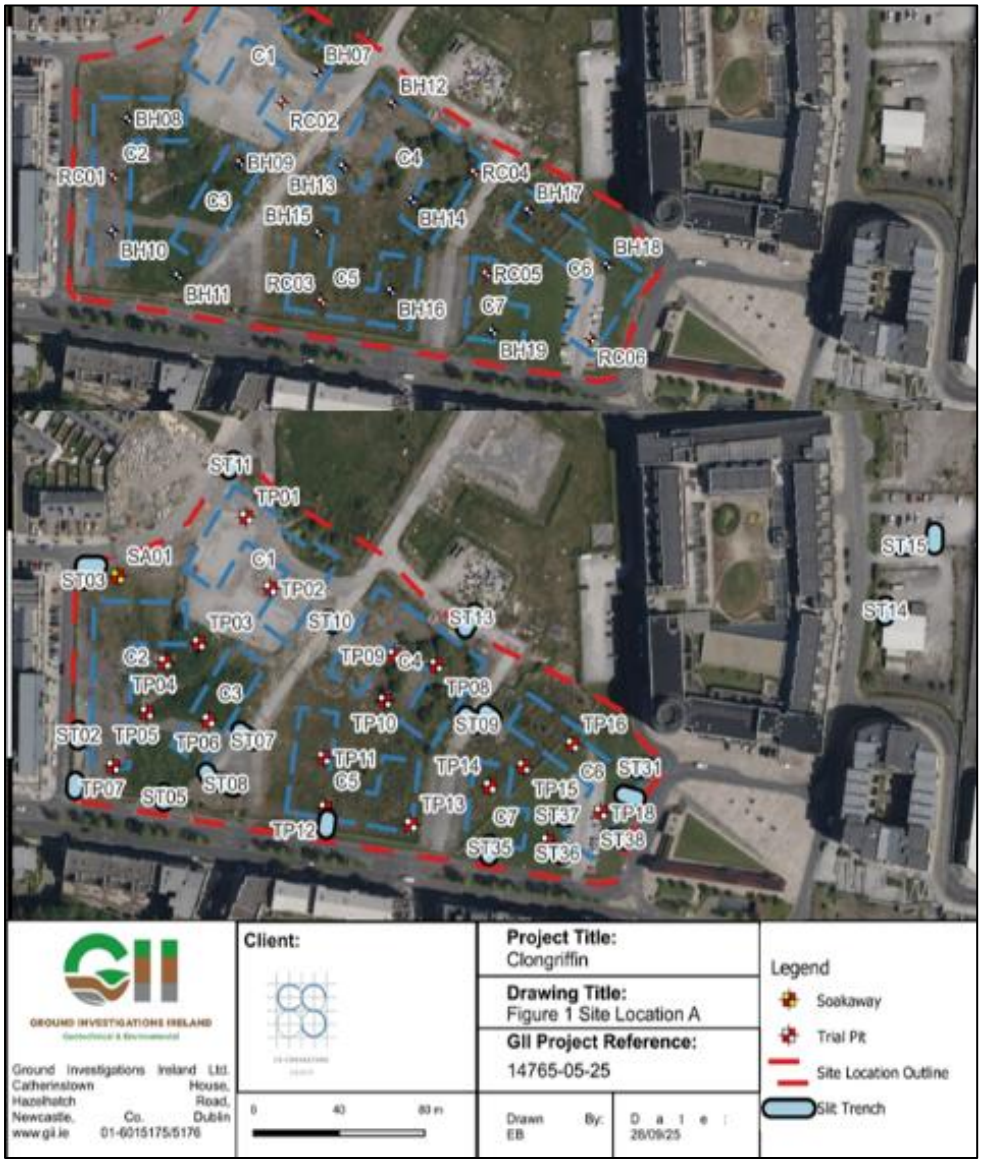
rates, preventing calculation of a reliable soil infiltration rate ('f'). Consequently, these locations are considered unsuitable for soakaway design and construction.

The findings of the investigation are consistent with the Geological Survey Ireland (GSI) groundwater vulnerability rating of 'Low'. Thick glacial till deposits were encountered to depths of up to approximately 12.0 m BGL prior to encountering bedrock, providing natural protection to the underlying Dublin GWB. Localised granular deposits were recorded in some boreholes; however, these were limited in extent. Although granular deposits were recorded in some boreholes, these were encountered only at the base of the logs, immediately prior to termination due to casing refusal or obstruction, and may represent highly weathered bedrock rather than true overlying granular strata.

While groundwater ingress was noted at some trial pits, it is not expected to pose a concern for shallow foundation excavations.

The Rotary boreholes recovered very strong to strong thinly bedded Limestone. This was the expected bedrock type of the Malahide Formation, which is noted on the Geological Survey of Ireland's geological mapping of the site (GSI, 2026).

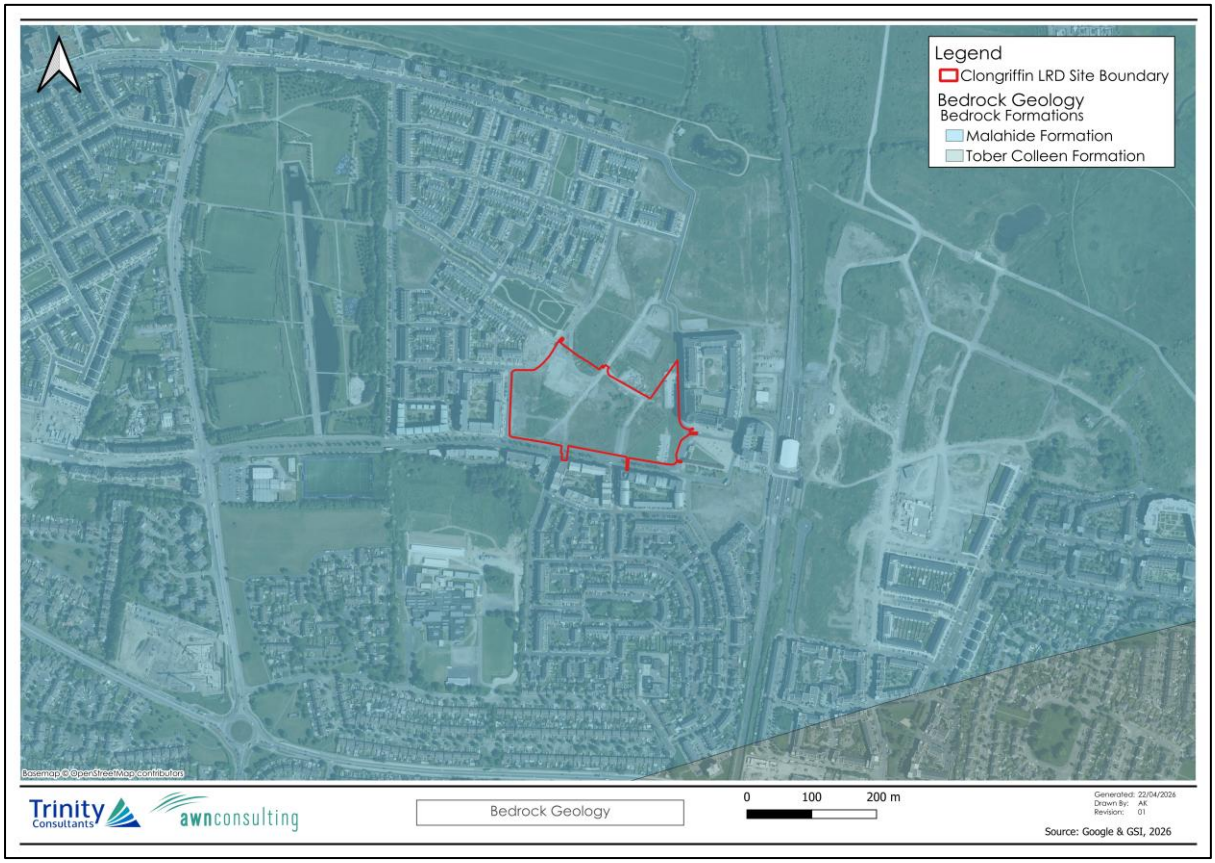
Figure 9.7 Exploratory Hole Locations (GII, 2025)



### 9.3.5 Bedrock Geology

The Geological Survey of Ireland (GSI, 2026) identifies the bedrock underlying the proposed site and its surrounding area as comprising of the Malahide Formation (Code: CDMALH), part of the Dublin Basin's Lower Carboniferous (Dinantian) succession, consists mainly of pale-grey, poorly bedded limestone—often forming mud mounds or reef-like structures—with occasional internal dolomitisation and thin shale interbeds (see **Figure 9.8** below).

Figure 9.8 Bedrock Geology (GSI, 2026)




### 9.3.6 Geological Heritage Sites

According to the Geological Survey of Ireland (GSI, 2026) the proposed site development does not lie within or is in close proximity to any Geological Heritage Sites. The nearest site is North Bull Island (Site Code: DC007) located c. 2.1km south of the site.

### 9.3.7 Economic Geology

The GSI (2026) mineral database was consulted to determine whether there were any mineral sites in close proximity to the study area. There were 7 mineral sites identified within a 5 km radius of the proposed site development shown in **Figure 9.9**. The location and description of these mineral localities in relation to the site are presented in **Table 9.2** below.

Figure 9.9: Mineral Localities within 5km of the site (GSI, 2026)




Table 9.2: Mineral Localities within 5km of the site (GSI, 2026)

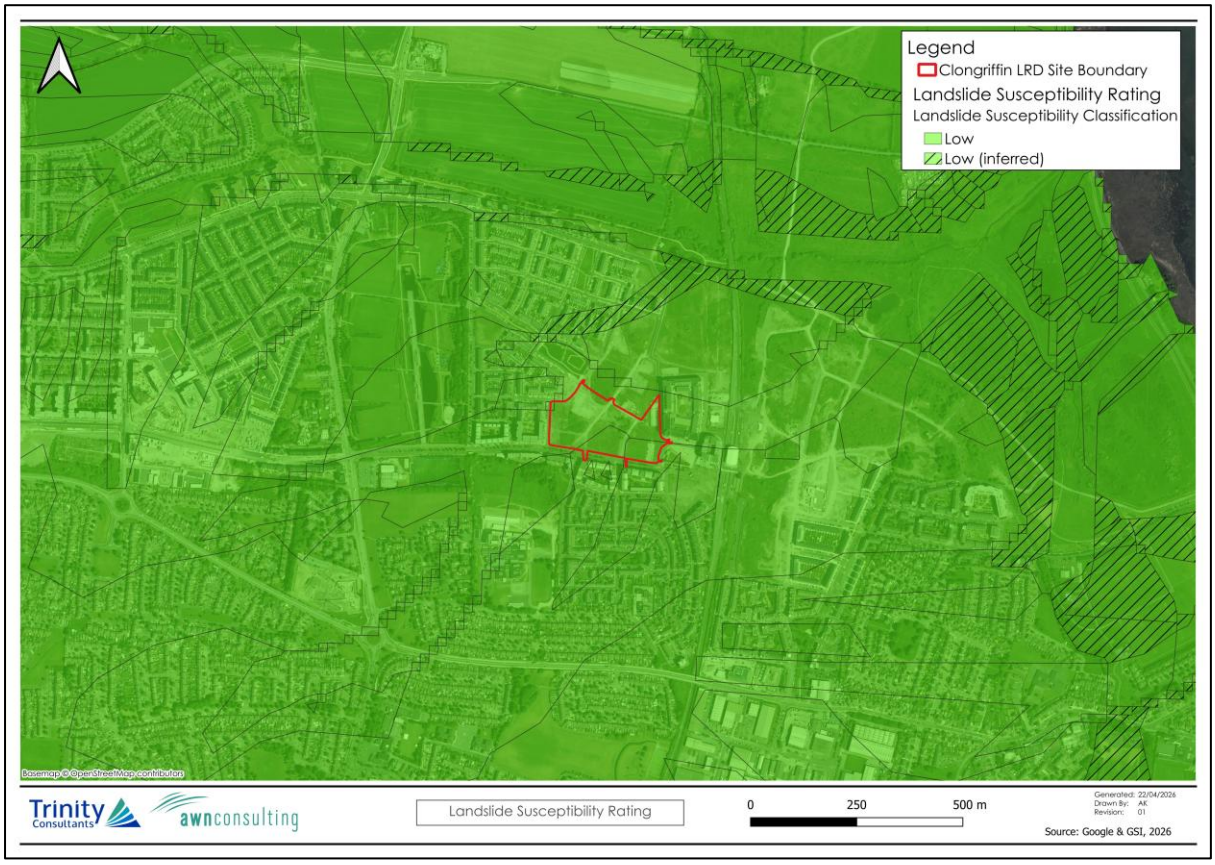
| Mineral Location Ref | Mineral Type | Key Mineral | Description | Comments | Location | County |
|---|---|---|---|---|---|---|
| 5312 | Mn | Manganese | Metallic | Location of manganese works at Sutton quarry noted | SUTTON SOUTH | Dublin |
| 3257 | CLBR | Clay & Brick | Non-Metallic | Clay associated with manganese lode, contains pebbles and other impurities | SUTTON SOUTH | Dublin |
| 3258 | CLBR | Clay & Brick | Non-Metallic | Site of brick works that supplied good class red bricks | PORTMARNOCK | Dublin |
| 3259 | CLBR | Clay & Brick | Non-Metallic | Brick field noted on old 6-inch map | BEECHWOOD | Dublin |
| 5306 | DO | Dolomite, (dolostone) | Non-metallic | Dolomite noted here on old GSI 6 in. map. | ROBSWALLS | Dublin |
| 5307 | CU | Copper | Metallic | Lode containing copper once worked for lead and silver noted on old GSI 6 in. map. | ROBSWALLS | Dublin |
| 3031 | LS | Limestone | Non-Metallic | Large active quarry in Carb. reef lst, producing a full range of aggregates and concrete blocks. Scale >500,000tp | FELTRIM | Dublin |

### 9.3.8 Geohazard

Much of the Earth's surface is covered by unconsolidated sediments which can be especially prone to instability. Water often plays a key role in lubricating slope failure. Instability is often significantly increased by man's activities in building houses, roads, drainage and agricultural changes. Landslides, mud flows, bog bursts (in Ireland) and debris flows are a result. In general, Ireland suffers few landslides. Landslides are more common in unconsolidated material than in bedrock, and where the sea constantly erodes the material at the base of a cliff landslides and falls lead to recession of the cliffs. Landslides have also occurred in Ireland in recent years in upland peat areas due to disturbance of peat associated with construction activities.

Based on the GSI spatial map viewer, the landslide susceptibility classification within the site boundary ranges from 'Low' as shown in **Figure 9.10** (GSI, 2026). Due to the local topography and the underlying strata, there is a negligible risk of a landslide event occurring at the site. There are no active volcanoes in Ireland so there is no risk from volcanic activity.

Figure 9.10 Landslide Susceptibility (GSI, 2026)




### 9.3.9 Rating of Site Importance of the Geological Feature

Based on the NRA/TII methodology, the criteria for rating the importance of geological features, the importance of the bedrock and soil features at this site is rated as 'Low' Importance (refer to Appendix 9.1). This is based on the assessment that the attribute has a low quality, significance or value on a local scale.

## 9.4 Characteristics of the proposed development

The purpose of this section is to provide an overview of the key relevant details of the construction phase and operational phase of the proposed development. The information presented in this section is informed by the project design, but it is not a complete description of the proposed development. Therefore, it should be read in conjunction with the full development package. For a more comprehensive understanding of the proposed development, please refer to Chapter 5 (Description of the proposed development) of the EIA Report. Chapter 5 provides a detailed overview of the lifecycle of the project, including reference to the architectural and civil engineering, drawings, plans, reports, and other relevant document in order to define the proposed development.

As outlined below the activities required for the construction phase of the proposed development represents the greatest risk of potential impact on the soil and geological environment. These activities primarily pertain to the site preparation / enabling works, excavation, and infilling activities required to facilitate construction of the proposed development.

### 9.4.1 Construction Phase

#### 9.4.1.1 Accidental Spills, Leaks and Discharged

There is potential for pollutants associated with construction activity, such as hydrocarbons, oils, and other contaminants, to impact the site. If a spill occurs, contaminated water and collected surface water run-off from construction areas can pose a short-term risk to the underlying subsoil and rock if the contaminated water is allowed to percolate to the aquifer unmitigated which could contribute to localized contamination.

#### 9.4.1.2 Site Levelling and Excavations

The proposed development requires soil and stones to be excavated to facilitate construction of, and the installation of, underground services. The project engineers CS Consulting Engineers have estimated that c. 1,550 m3 of material will need to be excavated to do so. It is currently envisaged there will be limited options for reuse onsite, and therefore all the excavated material will be removed from the site. This will be taken for appropriate offsite reuse, recovery, recycling and / or disposal.

To facilitate the construction of the ground floor, excavation will be required to a depth of approximately 1 m below ground level.

#### 9.4.1.3 Storage of Hazardous Materials

During the construction phase there will be a requirement for the temporary storage of fuels. Liquid materials i.e., fuel storage will be located within temporary bunded areas, doubled skinned tanks or bunded containers (all bunds will conform to standard bunding specifications - BS8007-1987) to prevent spillage.

9.4.1.4 **Construction activities will necessitate storage of cement and concrete materials, temporary oils, and fuels on site. Small localised accidental releases of contaminating substances including hydrocarbons have the potential to occur from construction traffic and vehicles operating on site. There is limited potential for leaks or spills of petroleum hydrocarbons during the construction of the development. Unmitigated leaks or spills may lead to contamination of soil and/or groundwater. Soils that are contaminated by petroleum hydrocarbons can affect soil health.Import/Export of Materials**

There will be a requirement for deliveries of imported engineering fill (sands and gravels), and other construction materials including, steel structure, concrete, cladding, ducting and piping. Construction materials will be brought to site via road.

A 'Just in Time' delivery system will operate to minimise storage of materials. Construction materials will be transported in clean vehicles. Lorries/trucks will be properly enclosed or covered during transportation of friable construction materials to prevent the escape of material along public roadways. Where possible it is proposed to source general construction materials from the local area to minimise transportation distances.

Soil requiring offsite removal will be removed from site regularly to ensure there is minimal need for stockpiling. Surplus topsoil, subsoil, and stones material will be transported off site and disposed of at a fully authorised soil recovery site. It is predicted that c. 1,550 m3 of excavated material will be removed from the site.

### 9.4.2 Operational Phase

The proposed development will result in the increase in hardstanding area. This provides protection to the underlying soil and geological environment and also the regional aquifer but also reduces local recharge in this area of the aquifer. The aquifer is classified as a 'Locally Important Aquifer (LI)- Bedrock which is Generally Unproductive in Local Zones' area of aquifer is relatively unproductive and will have no significant change in the natural hydrogeological regime (refer to Chapter 10). The operational stage of the development will not involve further disturbance to the topsoil, subsoils and geology of the area. Increase in hardstand could have a local effect on the land, soils and geology.

It should be noted that there is no requirement for bulk fuels or diesel storage will be required. Therefore, there will be no requirements for mitigations for land soil or geology post construction phase of the development.

## 9.5 Predicted Impacts of the proposed development

An analysis of the potential effects of the proposed development on the land, soils and geological environment during the construction and operational phases are outlined below. Due to the inter-relationship between land, soils, and geology; and hydrology and hydrogeology the following impacts discussed will be considered applicable to both Chapter 9 (Land, Soils and Geology) and 10 (Hydrology and Hydrogeology) of this EIA Report. Mitigation measures included in the design of this project to address these potential impacts are presented in Section 9.6.

### 9.5.1 Do-Nothing Impact

In the event that the proposed development does not proceed (the "do-nothing" scenario), the lands would remain in their current condition and continue to be used in accordance with the existing land use. No construction, operational, or decommissioning activities would occur. As a result, there would

be no positive or negative environmental impacts arising from the proposed development, as it would not be implemented.

However, as the site is zoned for residential development under the relevant planning framework. It is therefore likely that, in the absence of the proposed development, an alternative residential development of a similar nature could be developed on the site in accordance with local planning policies. As such, the potential environmental effects associated with the future development of the lands would be expected to be broadly similar to those described in the following sections.

### 9.5.2 Construction Phase

#### 9.5.2.1 Potential Impacts on Land, Soil and Geology

Soil requiring removal offsite will be removed regularly to ensure there is minimal need for stockpiling. Some of the material will be re-used on site for backfill. Any surplus material will be transported off site and disposed of at a fully authorised soil recovery site. It is predicted that c. 1,550 m3 of soil will be excavated and transported off site.

As stated above, the excavation of topsoil and subsoil will be required for levelling of the site. Local removal and reinstatement (including infilling) of soil within the development area will increase the aquifer vulnerability and subsoil exposition during construction prior to paving and installation of stormwater drainage and services. Capping of significant areas of the site by hardstand/building following construction and installation of drainage will minimize the potential for contamination of the soil and geological environment beneath the site.

In the absence of mitigation measures the potential impacts during the construction phase on land, soils and geology are **negative, significant and short-term.**

#### 9.5.2.2 Potential Impacts on Human Health and Population

A reduction in soil quality via unmitigated pollutants entering the soil has the potential to lead to negative impacts on human health and populations. Hydrocarbons and petroleum products for example have a risk for humans by inhaling the fumes / dust from contaminated soil. Depending on the type of contaminant and the level of exposure, soil contamination can have serious health implications. No hazardous waste has been identified within the vicinity of the proposed development or its surrounding areas.

Given the historical and current use of the land—primarily agricultural—it is unlikely that hazardous waste or soil contamination is present within the site or surrounding areas.

In the absence of mitigation measures the potential impacts during the construction phase on human health and population are **negative, significant and short-term**.

### 9.5.3 Operational Phase

#### 9.5.3.1 Potential Impacts on Land, Soil and Geology

There will be no requirement for excavation of topsoil, subsoil and near-surface rock head during the operational phase. The majority of the site will be capped by hardstand/building during construction and installation of drainage will minimize the potential for contamination of the aquifer beneath the site during the operational phase.

There will be no requirements for mitigations against increased run-off and sediment loading post construction phase of the development. Therefore, on this basis in the absence of mitigation measures the potential impacts during the operational phase on land, soils and geology due to the potential for contamination of soils are **neutral, imperceptible and long term**.

#### 9.5.3.2 Potential Impacts on Human Health and Population

There is no sensitive economic, or historical geology at the site. During the operational phase of the proposed development there is no potential for impact on human health and populations due to changes in land, soil, and geology.

Therefore, on this basis in the absence of mitigation measures the potential impacts during the operational phase on human health and populations due to the potential for contamination of soils are **neutral, imperceptible and long term.**

## 9.6 Mitigation Measures

### 9.6.1 Construction Phase

In order to reduce impacts on the land, soils and geological environment, a number of mitigation measures will be adopted as part of the construction works on site. The measures will address the main activities of potential impact which include:

- Control of soil excavation and export from site;
- Sources of fill and aggregates for the proposed development;
- Fuel and chemical handling, transport and storage; and
- Control of water during construction.

#### 9.6.1.1 Outline Construction Management Plan

The main purpose of an Outline Construction Environmental Management Plan (OCMP) is to provide a mechanism for implementation of the various mitigation and monitoring measures which are described in the EIAR. The OCMP demonstrates the applicant's commitment to implementing the proposed development in such a way as to avoid or minimise the potential environmental effects arising from construction activities. All personnel will be required to understand and implement the requirements of the plan.

An OCMP has been prepared by CS Consulting for the proposed development. Construction works and the proposed mitigation measures outlined in the OCMP are informed by best practice guidance on the prevention of pollution during development projects including but not limited to:

- Construction Industry Research and Information Association (CIRIA), Control of Water Pollution from Construction Sites, Guidance for Consultants and Contractors (C532);
- Guidelines on Protection of Fisheries During Construction Works in and Adjacent to Waters (2016);
- Construction Industry Research and Information Association (CIRIA) Environmental Good Practice on Site (4th edition), (C741);
- Enterprise Ireland Best Practice Guide, Oil Storage Guidelines (BPGCS005);
- Requirements for the Protection of Fisheries Habitat during Construction and Development Works at River Sites (Eastern Regional Fisheries Board);
- Central Fisheries Board Channels and Challenges – The enhancement of Salmonid Rivers;

- CIRIA C532 Control of Water Pollution from Construction Sites Guidance for Consultants and Contractors;
- CIRIA C648 Control of Water Pollution from Constructional Sites;
- Guidelines for the Crossing of Watercourses during the Construction of National Road Schemes (NRA 2008); and
- Inland Fisheries Ireland (IFI) – A Guideline on Planning for Watercourses in the Urban Environment.

The OCMP will be implemented and adhered to by the construction contractor and will be overseen and updated as required if site conditions change by the Project Manager, Environmental Manager, Resource Manager and Ecological Clerk of Works, where relevant. All personnel working on the Site will be trained in the implementation of the procedures.

The OCMP sets out the proposed procedures and operations to be utilised on the proposed construction site. All mitigation measures outlined here, and within the OCMP will be implemented during the construction phase, as well as any additional measures required pursuant to consent conditions which may be imposed.

During the project planning phase, a comprehensive emergency response plan will be developed by the construction contractor. This plan will outline a well-defined procedure for effectively managing emergencies as they arise. Furthermore, it's imperative to disseminate this emergency protocol to all site personnel during the site induction process. This plan will include for events such as:

- Pollution incidents: These may involve spillages, the malfunction of temporary structures, embankment collapse, acts of vandalism, fires, and other related events.
- Extreme weather occurrences: Events such as heavy rainfall, flooding, are important factors to consider due to their potential impact on the construction process.
- The construction contractor will be required to implement emergency response procedures that align with industry best practice guidance. All personnel working on the site will be informed of the emergency procedures in place.

#### 9.6.1.2 Soil Excavation, Removal and Infill

There will be soil and stones excavated to facilitate construction of foundations and the installation of underground services. The project engineers have estimated that c. 1,550 m3 of material will need to be excavated.

Material that is exported from site, if not correctly managed or handled, could impact negatively on human beings (onsite and offsite) as well as soil environments. All excavated materials will be visually assessed by suitably qualified persons for signs of possible contamination such as staining or strong odours. Should any unusual staining or odour be noticed, samples of this soil will be analysed for the presence of potential contaminants to ensure that historical pollution of the soil has not occurred. It is predicted that c. 1,500 m3 of soil will be excavated and transported off site.

Contractors should prepare and adhere to a method statement indicating the extent of the areas likely to be affected and demonstrating that this is the minimum disturbance necessary to achieve the required works.

Stockpiles have the potential to cause negative impacts on air and water quality. The effects of soil stripping and stockpiling will be mitigated through the implementation of an appropriate earthworks handling protocol during construction.

Dust suppression measures (e.g. damping down during dry periods), vehicle wheel washes, road sweeping, and general housekeeping will ensure that the surrounding environment are free of nuisance dust and dirt on roads.

#### 9.6.1.3 Sources of Engineering Fill and Aggregates

All imported fill and aggregate that may be required for the proposed development will be sourced from reputable suppliers. All suppliers will be vetted for:

- Aggregate compliance certificates/declarations of conformity for the classes of material specified for the proposed development;
- Environmental Management status; and
- Regulatory and Legal Compliance status of the Company

#### 9.6.1.4 Cement/Concrete Works

Where feasible all ready-mixed concrete will be brought to site by truck. A suitable risk assessment for wet concreting will be completed prior to works being carried out which will include measures to prevent discharge of alkaline wastewaters or contaminated storm water to the underlying subsoil.

No wash-down or wash-out of ready-mix concrete vehicles during the construction works will be carried out at the site within any riparian or buffer zone. Wash-outs will only be allowed to take place in designated areas with an impervious surface where all wash water is contained and removed from site by road tanker or discharged to foul sewer subject to agreement with Uisce Éireann (Irish Water).

The construction contractor will be required to implement emergency response procedures, and these will be in line with industry guidance. Relevant personnel working on the site will be suitably trained in the implementation of the procedures.

#### 9.6.1.5 Fuel and Chemical Handling

The following mitigation measures will be taken at the construction stage in order to prevent any spillages to ground of fuels and prevent any resulting soil and/or water quality impacts:

- Designation of a bunded refuelling areas on the site if refuelling cannot be undertaken off site.
- Provision of spill kit facilities across the site.
- Where mobile fuel bowsers are used, the following measures will be taken:
    - Any flexible pipe, tap or valve will be fitted with a lock and will be secured when not in use;
    - The pump or valve will be fitted with a lock and will be secured when not in use;
    - All bowsers to carry a spill kit and relevant operatives must have spill response training;
    - Portable generators or similar fuel containing equipment will be placed on suitable drip trays.

In the case of drummed fuel or other potentially polluting substances which may be used during construction the following measures will be adopted:

- Secure storage of all containers that contain potential polluting substances in a dedicated internally bunded chemical storage cabinet unit or inside a concrete bunded area.
- Clear labelling of containers so that appropriate remedial measures can be taken in the event of a spillage.
- All drums to be quality approved and manufactured to a recognised standard.
- If drums are to be moved around the site, they will be secured and on spill pallets; and

- Drums to be loaded and unloaded by competent and trained personnel using appropriate equipment.

In addition to the measures above, all excavated materials will be visually assessed by suitably qualified persons for signs of possible contamination such as staining or strong odours. Should any unusual staining or odour be noticed, samples of this soil will be analysed for the presence of potential contaminants to ensure that historical pollution of the soil has not occurred. Should it be determined that any of the soil excavated is contaminated, this will be segregated and appropriately disposed of by a suitably permitted/licensed waste disposal contractor.

Refuelling of construction vehicles and the addition of hydraulic oils or lubricants to vehicles will take place in designated bunded refuelling areas, which will be away from surface water gulleys or drains. In the event of a machine requiring refuelling outside of this area, fuel will be transported in a mobile double skinned tank. An adequate supply of spill kits and hydrocarbon adsorbent packs will be stored in this area. All relevant personnel will be fully trained in the use of this equipment. Guidelines such as "Control of Water Pollution from Construction Sites, Guidance for Consultants and Contractors" (CIRIA 532, 2001) will be complied with.

The construction contractor will be required to implement emergency response procedures, and these will be in line with industry guidance. All personnel working on the Site will be suitably trained in the implementation of the procedures.

#### 9.6.1.6 Environmental Procedures

There will be comprehensive emergency response procedures and standard operating procedures to respond to chemical spillage all types. All employees will be provided with such equipment, information, training and supervision as is necessary to implement the emergency response procedures and standard operating procedures.

### 9.6.2 Operational Phase

#### 9.6.2.1 Emergency Response Procedures

During the operational phase, there should be comprehensive emergency response procedures and standard operating procedures specifically addressing fuel spillage resulting from vehicle leakages. All employees should be provided with appropriate personal protective equipment, spill containment materials, and training in the safe and effective management of vehicle fuel leaks. This includes clear instructions for immediate containment, reporting, and cleanup, as well as measures to prevent contamination of soil, surface water, and groundwater. Employees should receive regular supervision, guidance, and refresher training to ensure the emergency response procedures and standard operating procedures are effectively implemented in the event of vehicle-related fuel spillage.

#### 9.6.2.2 Fuel Storage

During the operational phase, spill kit facilities should be provided, and all operatives must be trained in their correct use, to effectively manage any leaks from vehicle fuel storage. Emergency response procedures and standard operating procedures should be established to ensure that fuel leakages from vehicles are contained and cleaned up, thereby minimizing the risk of contamination to soil, surface water, and groundwater. Regular training, supervision, and refresher sessions should be conducted to

ensure that operatives are fully capable of implementing these measures and maintaining environmental protection standards throughout the operational phase.

#### 9.6.2.3 Increase in Hard Stand

A significant proportion of the development area will be covered in hardstand. This provides protection to the underlying soil and aquifer but also reduces local recharge in this area of the aquifer.

The proposed incorporation of hardstand areas and SuDS design measures may slightly reduce local groundwater recharge and increase runoff if not properly managed, potentially causing flooding and affecting downstream environments. However, the overall impact on the groundwater regime is expected to be insignificant due to the site's small area relative to the total aquifer, and construction will avoid areas with localized flooding to mitigate flood risks.

To mitigate these risks, the design of the development and its drainage infrastructure will ensure that runoff rates are restricted to those of greenfield conditions. The development will incorporate SuDS and an attenuation system, with a design that up to and including the 100-year plus climate change allowance and discharge surface water to the downstream network at an appropriately determined rate. The proposed surface water management strategy aims to prevent surcharging during a 1 in 2-year storm events up to and including the 1 in 100 years plus allowance for climate change.

Furthermore, there are no proposed surface water or groundwater abstractions, eliminating potential impacts on the quantity of surface water or groundwater resources.

## 9.7 Residual Impacts

### 9.7.1 Construction Phase

#### 9.7.1.1 Land, Soils and Geology

The implementation of the mitigation measures detailed in Section 9.6, will ensure that the potential impacts on land, soils and geology during the construction phase are adequately mitigated. The residual effect on the soils and bedrock during the construction phase is considered to be **neutral, imperceptible and short-term.**

Following the TII criteria (refer to Appendix 9.1) for rating the magnitude and significance of impacts on the soils and geological related attributes, the magnitude of impact is considered negligible.

#### 9.7.1.2 Human Health and Populations

The implementation of the mitigation measures detailed in Section 9.6, will ensure that the potential impacts on human health and populations during the construction phase are adequately mitigated. The residual effect on the human health and population during the construction phase is considered to be **neutral, imperceptible and short-term.**

### 9.7.2 Operational Phase

#### 9.7.2.1 Land, Soils and Geology

The implementation of the mitigation measures detailed in section 9.6, will ensure that the potential impacts on land, soils and geology once the proposed development is constructed and operational are

adequately mitigated. The residual effect on the soils and geology during the operational phase is considered to be **neutral, imperceptible and long-term**.

Following the TII criteria (refer to Appendix 9.1) for rating the magnitude and significance of impacts on the soils and geological related attributes, the magnitude of impact is considered negligible.

#### 9.7.2.2 Human Health and Population

The implementation of the mitigation measures detailed in Section 9.6, will ensure that the potential impacts on human health and populations once the proposed development is constructed and operational are adequately mitigated. The residual effect on human health and populations during the operational phase is considered to be **neutral, imperceptible and long-term**.

## 9.8 Monitoring

### 9.8.1 Construction Phase

During construction phase the following monitoring measures will be considered. Monitoring will be undertaken in accordance with planning conditions and undertaken by the contractor in compliance with the project OCMP.

Contractors will carry out regular inspections to confirm compliance with the OCMP. Daily inspections by contractors will address potential environmental impacts including dust, litter, waste management and general housekeeping.

### 9.8.2 Operational Phase

No future monitoring is proposed for the proposed development due to the low hazard potential at the site.

## 9.9 Reinstatement

### 9.9.1 Construction Phase

In the event of temporary disturbance associated with the proposed development during construction, all affected areas would be reinstated upon completion of works. Reinstatement would be carried out in accordance with best practice and relevant planning conditions, returning the site to an appropriate condition consistent with the proposed end use.

Given the nature of the proposed development and the implementation of standard construction management measures, no significant environmental impacts associated with reinstatement are predicted.

### 9.9.2 Operational Phase

During the operational phase of the proposed development, no reinstatement works are required, as no ongoing ground disturbance or temporary works would occur. The site would be maintained in accordance with the operational management procedures and the approved development layout.

Accordingly, no environmental impacts associated with reinstatement during the operational phase are predicted, and the operational use of the site would not result in any alteration to baseline environmental conditions.

## 9.10 Interactions

During the construction and operational phase, potential interactions between environmental factors have been considered, particularly in relation to site clearance, excavation works, soil handling, and the off-site transport of excavated materials. These activities have the potential to interact with a number of other environmental receptors mentioned below.

### 9.10.1 Traffic and Transportation

#### 9.10.1.1 Construction Phase

Excavation and earthworks associated with the proposed development will involve the removal, temporary storage and reuse or off-site removal of soils and subsoils. Where surplus materials require off-site transport to licensed or authorised facilities, this will generate construction traffic movements which may interact with the receiving road network. These measures are assessed within the Traffic and Transportation Chapter 17 of the EIAR. The interaction is considered to **be neutral, imperceptible, and short-term.**

#### 9.10.1.2 Operational Phase

There are no interactions identified between Land, Soils & Geology with Traffic and Transportation during the operational phase.

### 9.10.2 Human Health and Population

#### 9.10.2.1 Construction Phase

A reduction in soil quality via unmitigated pollutants entering the soil has the potential to lead to negative impacts on human health and populations. Exposure to contaminated soils and potential gases during the construction phase may give rise to health impacts. However, mitigation measures during the construction phase of the proposed development will ensure that dust generation is minimised and the effect on Human Health will be **neutral, imperceptible, and short-term**.

#### 9.10.2.2 Operational Phase

There are no interactions identified between Land, Soils & Geology with Human Health and Population during the operational phase.

### 9.10.3 Biodiversity

#### 9.10.3.1 Construction Phase

During the construction phase, in the absence of standard mitigation measures to control the construction activities there is potential for silt laden material or pollution to enter nearby surface waterbodies (and impact on local biodiversity and European sites downstream from the works). Furthermore, dust emissions from exposed earthworks have the potential to settle on plants causing impacts to local ecology.

Thereby, taking into account the mitigation measures outlined in Section 9.6, there still remains a residual negative interaction between Land, Soils & Geology with Biodiversity during the construction phase. The interaction is considered to be **negative, imperceptible, and short-term.**

#### 9.10.3.2 Operational Phase

The proposed work is expected to have no significant impact on the local designated areas and their conservation objectives. The interaction is considered to be **neutral, imperceptible, and long-term.**

### 9.10.4 Air Quality

#### 9.10.4.1 Construction Phase

Excavation works and the movement of soils may also give rise to the temporary generation of dust and particulate matter, particularly during dry or windy conditions. Mitigation measures implemented during the demolition and construction phases will ensure that the deposition of dust is minimised. With the appropriate mitigation measures to prevent fugitive dust emissions, it is predicted that there will be no significant interactions between air quality and land, soils and hydrogeology. The interaction is considered to be **neutral, imperceptible, and short-term.**

#### 9.10.4.2 Operational Phase

There are no interactions identified between Land, Soils & Geology with Air Quality & Climate during the operational phase.

### 9.10.5 Hydrology and Hydrogeology

#### 9.10.5.1 Construction Phase

Earthworks also have the potential to interact with hydrological and hydrogeological receptors through the disturbance of soils and subsoils and the potential mobilisation of sediments into nearby watercourses which would interact negatively on surface or groundwater quality. Standard construction management practices, including the implementation of surface water management measures and sediment control, will be employed to minimise the risk of sediment-laden runoff entering nearby watercourses. Further mitigation measures are set out in the Hydrology and Hydrogeology Chapter 10 of the EIAR. The interaction is considered to be **neutral, imperceptible and short-term.**

#### 9.10.5.2 Operational Phase

The operational phase of the proposed development has the potential to interact negatively on surface water or groundwater quality via the proposed surface water network. The proposed operation phase mitigation outlined in Chapter 10 – Hydrology and Hydrogeology of the EIAR, means that the proposed development will not result in significant negative impact on surface water quality in the local area. The interaction is considered to be **neutral, imperceptible and long-term.**

### 9.10.6 Material Assets – Waste

#### 9.10.6.1 Construction Phase

During the construction phase, excavated soil (c. 1,550 m3) will be generated from the excavations required to facilitate site levelling, construction of new foundations and installations of site services.

The material that will be taken off-site will be sent for reuse or recovery, where practical, with disposal as a last resort. Adherence to the mitigation measures in Chapter 18 (Material Assets- Waste), Chapter 5 (Land, Soils and Geology) and the requirements of the RWMP (Appendix 18.1), will ensure the effect is **neutral, imperceptible and long-term.**

#### 9.10.6.2 Operational Phase

There are no potentially significant interactions identified between Land, Soils & Geology and Material Assets- Waste during the operational phase.

## 9.11 Indirect and/or Secondary Impacts

Indirect or secondary impacts are effects that are not a direct result of the proposed development but occur as a consequence of a primary impact.

No indirect or secondary impacts are predicted during the construction, operational, or decommissioning phases of the development.

## 9.12 Cumulative Impacts

### 9.12.1 Construction Phase

In relation to the potential for cumulative impacts on land, soils and geology during the construction phases, the construction works which would have potential cumulative impacts are as follows:

- Surface water run-off during the construction phase may contain increased silt levels or become polluted from construction activities. Run-off containing large amounts of silt can cause damage to surface water systems and receiving watercourses.
- Stockpiled material will be stored on hardstand away from surface water drains, and gullies will be protected during works to ensure there is no discharge of silt-laden water into the surrounding surface water drainage system.
- Contamination of local water sources from accidental spillage and leakage from construction traffic and construction materials is possible unless project-specific measures are put in place for each development and complied with.

An overall review of the permitted and proposed developments in the vicinity of the site is set out in Chapter 22 of this EIA Report has been undertaken to identify any substantial projects that are concurrent with the construction phase of the proposed development that may result in cumulative effects in respect of land, soils and geology.

No significant cumulative impacts are predicted to arise during the construction phase. The proposed development would not result in cumulative effects when considered in combination with other developments in the area.

### 9.12.2 Operational Phase

During the operational phase, the proposed development would operate in accordance with the approved design and management measures. Based on the findings of the individual environmental assessments and consideration of other existing and reasonably foreseeable developments, no cumulative impacts are predicted.

## 9.13 Difficulties Encountered

There were no difficulties encountered during the writing of this EIAR chapter.

## 9.14 References

- CIRIA (2005). Environmental Good Practice on Site (C650).

- CIRIA (2007). CIRIA 697: The SUDS Manual.
- Enterprise Ireland (n.d.). Best Practice Guide BPGCS005: Oil Storage Guidelines.
- EPA (2026). Guidelines on the Information to be Contained in Environmental Impact Assessment Reports.
- EPA (2026). EPA Maps.
- GSI (2026). GSI Map Viewer.
- Institute of Geologists of Ireland (2013). Guidelines for the Preparation of Soils, Geology and Hydrogeology Chapters of Environmental Impact Statements.
- NPWS (2026). Designations Viewer.
- NRA (2009). Guidelines on Procedures for Assessment and Treatment of Geology, Hydrology and Hydrogeology for National Road Schemes.
- OPW (2026). Flood Maps.
- OPW (2009). The Planning System and Flood Risk Management: Guidelines for Planning Authorities.
- Institute of Geologists of Ireland (2013). Guidelines for the Preparation of Soils, Geology and Hydrogeology Chapters of Environmental Impact Statements.
- Teagasc (2026). Teagasc Map Viewer.
- National Roads Authority (NRA) (2009). Guidelines on Procedures for the Assessment and Treatment of Geology, Hydrology and Hydrogeology for National Road Schemes.
- Dublin GWB: Summary of Initial Characteristics (2004)

# 10 Hydrology

## 10.1 Introduction

This chapter of the EIAR was prepared to assess the potential significant effects of the proposed development for a Large-Scale Residential Development located at Clongriffin, Co, Dublin. It evaluates the likely significant effects, if any, which the proposed development will have on hydrology (surface water) and hydrogeology (groundwater).

This chapter contains necessary information as defined in the Environmental Protection Agency (EPA) Guidelines on the Information to be contained in Environmental Impact Assessment Reports' (EPA, 2022). Reference is made to geology, but this aspect is covered in more detail in Chapter 9 (Land, Soils and Geology).

The chapter initially provides a description of the receiving environment of the site and the potential impacts of the development. When assessing the potential impacts, this assessment considers the significance of the environmental attributes, and the predicted scale, and duration of the likely effects. The chapter also outlines the proposed mitigation and monitoring measures that will reduce or eliminate the identified potential impacts of the Proposed Overall Development (the effect after the implementation of mitigation measures).

This chapter should be read in conjunction with Chapter 9 (Land, Soils and Geology) and Chapter 8 (Biodiversity).

It also should be read in conjunction with Chapter 5 for the EIAR which goes into further detail with regards to the site description.

### 10.1.1 Expertise & Qualifications

This chapter of the EIAR has been prepared by Marcelo Allende and Ana Keeley of AWN Consulting. Marcelo Allende (BSc, BEng) is a Principal Environmental Consultant (Hydrologist) with AWN Consulting with over 20 years of experience in water resources technical studies, conceptual and numerical hydrological/hydrogeological modelling and environmental consultancy. Marcelo holds a degree in Water Resource Civil Engineering (BEng, Hons) from the University of Chile and a Bachelor of Science in Engineering (BSc, Hons). He has worked on a wide of range of projects including multi-aspect environmental investigations, geo-environmental impact assessments, surface and groundwater resource management, hydrological and hydrogeological conceptual and numerical modelling, strategic and site specific flood risk assessments (Stage 1,2 and 3), Due Diligence reporting, baselines studies, soils, surface water and groundwater monitoring and field sampling programmes on a variety of brownfield and greenfield sites throughout Ireland as well as overseas in Chile, Argentina, Peru and Panama. He also has detailed knowledge of environmental guidance, legislation, regulations & standards and expertise in GIS (expert level) and MATTE studies at COMAH establishments. He is currently a member of the International Association of Hydrogeologists (IAH, Irish Group) and a member of Engineers Ireland (MIEI).

Ana Keeley is an Environmental Consultant with AWN Consulting with ongoing roles within the water department. Ana has a BSc in GeoScience from Trinity College Dublin. Ana has worked on a range of projects including environmental investigations, environmental impact assessment reports,

hydrological risk assessments and ArcGIS mapping. Ana is a member of the International Association of Hydrogeologists (Irish Group).

## 10.2 Assessment Methodology

### 10.2.1 Criteria for Rating of Effects

The section establishes the criteria, and guidance used to rate the significance of the potential impacts of the proposed development on the hydrological and hydrogeological aspects of the site and surrounding area.

The document entitled 'Guidelines on Procedures for Assessment and Treatment of Geology, Hydrology and Hydrogeology for National Road Schemes' by the Transport Infrastructure Ireland (TII, 2009, previously NRA) is referenced where the methodology for assessment of impact is appropriate.

Furthermore, in line with this TII Guidelines, an assessment of the attribute importance has been undertaken in order to provide a basis for the assessment of impact provided. The attribute importance considers the potential as well as the existing use of the surface water features as a water resource (i.e., water supply, fisheries and other uses) as well as ecological habitat requirements. The TII criteria for rating the hydrological and hydrogeological related attributes are presented in Appendix 10.1 of this EIAR.

The quality, significance, and duration of the potential impacts, residual effects, and cumulative effects are described using standard EIA descriptive terminology set out in Chapter 1 of this EIAR.

The principal attributes (and effects) to be assessed include the following:

- Water Framework Directive (WFD) Status and potential for increased risk of deterioration of this status due to the activities of the site.
- River and aquifer water quality in the vicinity of the site (where available).
- Surface, transitional and coastal watercourses near the site and potential impact on surface water quality arising from proposed development related works including any discharge of surface water run-off.
- Localised flooding (potential increase or reduction) and floodplains including benefitting lands and drainage districts (if any).
- Surface water features within the area of the site.
- High-yielding water supply springs/ wells in the vicinity of the site to within a 2km radius and the potential for increased risk presented by the proposed development.
- Classification (regionally important, locally important etc) and extent of aquifers underlying the site perimeter area and increased risks presented to them by the proposed development e.g. removal of subsoil cover, removal of aquifer (in whole or part), drawdown in water levels, alteration in established flow regimes, change in groundwater quality.
- Natural hydrogeological/ karst features in the area and potential for increased risk presented by the activities at the site; and
- Groundwater-fed ecosystems and the increased risk presented by operations both spatially and temporarily.

### 10.2.2 Water Framework Directive (WFD) Status

Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy; commonly known as the Water Framework Directive (WFD) establishes a framework for community action in the field of water policy.

The WFD requires 'Good Water Status' for all European waters to be achieved through a system of river basin management planning and extensive monitoring by 2015 or, at the least, by 2027. 'Good status' means both 'Good Ecological Status' and 'Good Chemical Status'. In 2009 the first River Basin Management Plan (RBMP) 2009-2015 was published. The second cycle river basin management plan was carried out between 2018-2021 with the previous management districts now merged into one Ireland River Basin District (Ireland RBD). The third cycle river basin management plan namely, The Water Action Plan 2025 - A River Basin Management Plan for Ireland, (Department of Housing Local Government & Heritage, Sept 2024) is currently in place.

During the development of this Plan, a prioritisation exercise was undertaken by the local authorities, the EPA and other stakeholders to identify those water bodies that require immediate action within this plan cycle to 2021. During the catchment characterisation, the EPA identified those water bodies either 'At Risk' of not achieving their objectives or 'Under Review'. The outcome of this prioritisation process was the selection of 190 Areas for Action across the 5 Local Authority regions. Within these 190 areas, a total of 726 water bodies were selected for initial actions during this RBMP cycle. There are 832 water bodies identified as being 'At Risk' of not achieving their environmental objectives under this Plan that have not been included in the Areas for Action. For most of these water bodies, targeted actions will be undertaken in The Water Action Plan 2025. The Water Action Plan 2025 has been reviewed in the context of ensuring mitigation measures comply with current and expected future measures required to be implemented for protection of water body status within the context of the proposed development.

### 10.2.3 Relevant Legislation & Guidance

As outlined in Chapter 3 the information provided complies with all relevant EU and Irish legislation and includes consideration of the objectives as outlined in the Dublin City Development Plan 2022-2028. Relevant legislation includes:

- EPA Guidelines on the Information to be contained in Environmental Impact Assessment Reports (2022).
- Guidelines on Procedures for Assessment and Treatment of Geology, Hydrology and Hydrogeology for National Road Schemes (TII, 2009, previously NRA). The TII criteria for rating the hydrogeological and hydrological related attributes are presented in Appendix 10.1 of this EIAR.
- Water Framework Directive 2000/60/EC.

The strategies and objectives of the WFD in Ireland have influenced a range of national legislation, regulations and guidelines. These include the following:

- European Communities (Water Policy) Regulations, 2003 (S.I. No. 722 of 2003).
- European Communities (Drinking Water) Regulations 2023 (S.I. 99 of 2023).
- European Communities Environmental Objectives (Surface Waters); Regulations, 2009 (S.I. No. 272 of 2009 as amended SI No. 77 of 2019).
- European Communities Environmental Objectives (Groundwater) Regulations, 2010 (S.I. No. 9 of 2010 S.I. No. 366 of 2016).

- European Communities (Good Agricultural Practice for Protection of Waters) Regulations, 2022.
- European Communities (Technical Specifications for the Chemical Analysis and Monitoring of Water Status) Regulations, 2011 (S.I. No. 489 of 2011).
- Statutory Instrument (SI) No. 293 of 1988 European Communities (Quality of Salmonid Waters) Regulations 1988.
- Local Government (Water Pollution) Acts 1977-2007.
- (European Communities Environmental Objectives (Groundwater) Regulations (S.I. 9 of 2010 and amendments) and European Communities Environmental Objectives (Surface Water) Regulations (S.I. 272 of 2009 and amendments).
- Water Services Guidelines for Planning Authorities Draft (Department of Housing, Planning and Local Government, 2018).
- Requirements for the Protection of Fisheries Habitat during Construction and Development Works at River Sites (Eastern Regional Fisheries Board).
- Central Fisheries Board Channels and Challenges – The enhancement of Salmonid Rivers.
- CIRIA C532 Control of Water Pollution from Construction Sites Guidance for Consultants and Contractors.
- CIRIA C648 Control of Water Pollution from Constructional Sites.
- Guidelines for the Crossing of Watercourses during the Construction of National Road Schemes (NRA 2008); and
- Inland Fisheries Ireland (IFI) – A Guideline on Planning for Watercourses in the Urban Environment.

### 10.2.4 Sources of Information

Desk-based hydrological information in the vicinity of the site was obtained through accessing databases and other archives where available. Data was sourced from the following:

- Latest EPA Envision water quality monitoring data for watercourses in the area.
- Geological Survey of Ireland (GSI) - on-line mapping, Geo-hazard Database, Geological Heritage Sites & Sites of Special Scientific Interest, Bedrock Memoirs and 1:100,000 mapping.
- River Basin Management Plan for Ireland 2022-2027 (Department of Housing, Planning and Local Government, 2018).
- Water Action Plan 2024 - A River Basin Management Plan for Ireland, (Department of Housing Local Government & Heritage, Sept 2024).
- The Planning System and Flood Risk Management, Guidelines for Planning Authorities (Department of the Environment, Heritage and Local Government (DoEHLG) and the Office of Public Works (OPW, 2009).
- Office of Public Works (OPW) flood mapping data (www.floodmaps.ie).
- Relevant Eastern Catchment Flood Risk Assessment and Management (CFRAM) Flood Reports.
- National Parks and Wildlife Services (NPWS) – Protected Site Register.
- Dublin City Development Plan 2022-2028 – Strategic Flood Risk Assessment (SFRA, 2023-2029).

Site specific data was derived from the following sources:

- CS Consulting Engineering Service Report (2026)
- CS Consulting Surface Water Management Plan (2026)
- CS Consulting Outline Construction Management Plan (2026)
- Clongriffin Wider Lands Masterplan Framework Henry J Lyons (2026)
- Dublin GWB: Summary of Initial Characteristics (GSI, 2004)

- Uisce Eireann 2024 Annual Environmental Report- Ringsend D0034-02 (2025)

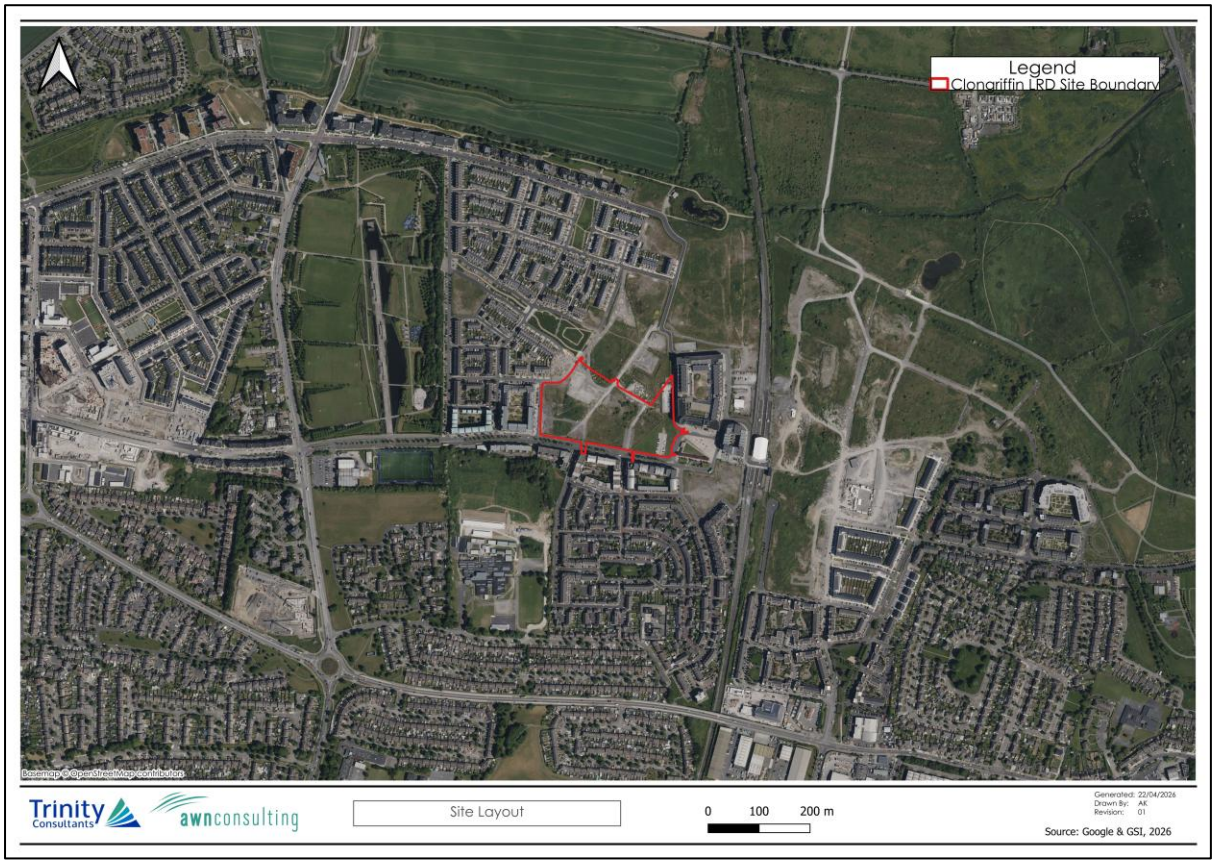
## 10.3 Baseline Environment

### 10.3.1 Site Description

The proposed development site is located at Clongriffin, located north of Donaghmede in Dublin 13 Co. Dublin, and covers an area of approximately 3.42 hectares (8.45 acres). Situated c. 15 km northeast of Dublin City Centre, the site lies within the community of Clongriffin and represents one of the principal undeveloped land parcels in the area. It is bounded to the north by undeveloped land, while to the east by the Dublin-Belfast Railway line. Directly south of Main Street and to the west residential estates.

The topography of the site is relatively uniform, the site moderately slopes from the south to north; levels of approximately 8m AOD to the south and 6m AOD to the north. The site at present is a greenfield site unoccupied by any structures or buildings, as shown in **Figure 10.1** below.

Figure 10.1 Site Layout




### 10.3.2 Hydrology

#### 10.3.2.1 Hydrological Environment

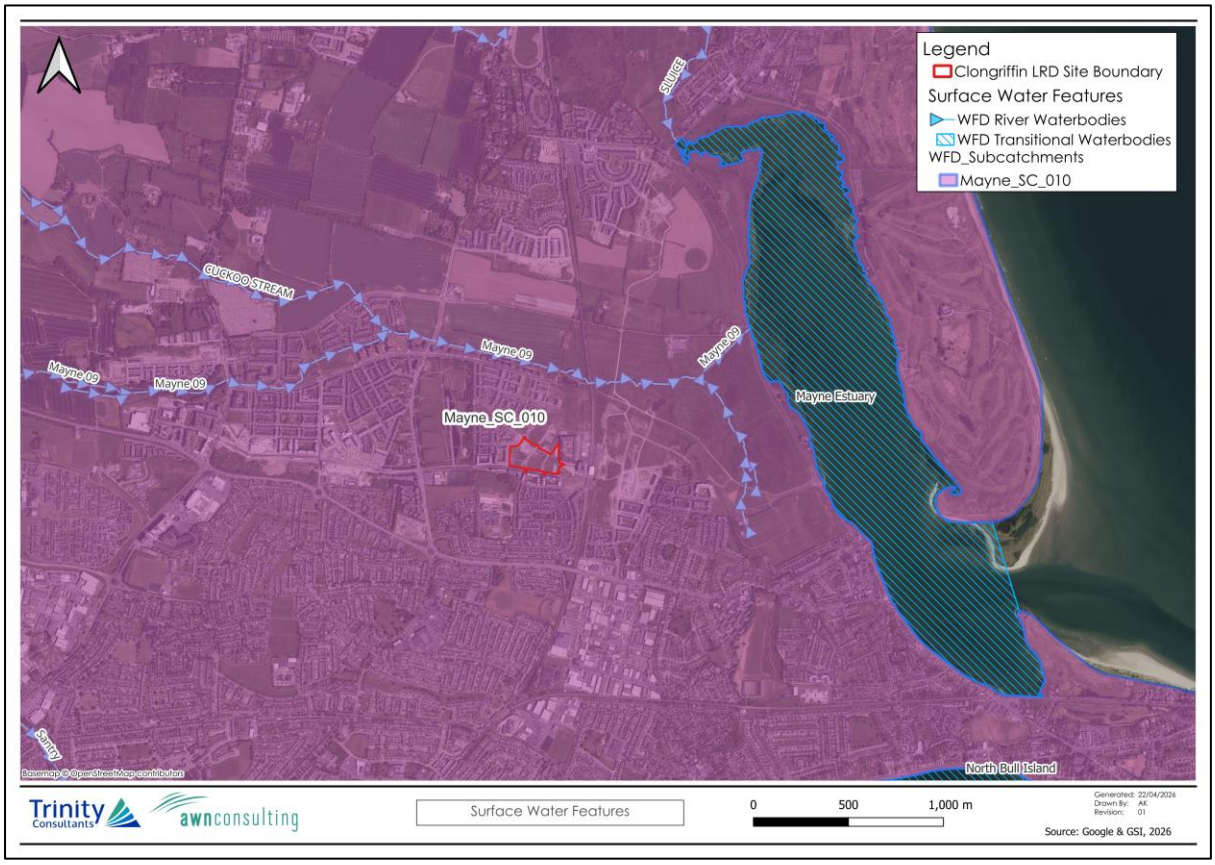
The proposed development site is situated within the Irish River Network (Liffey and Dublin Bay), corresponding to Hydrometric Area No. 9. The Mayne River Water Framework Directive (WFD) Sub-Catchment (Mayne_SC_010, Sub-Catchment ID: 09_17) represents the principal surface water feature within the local hydrological context.

The Mayne River (European Code: IE_EA_09M030500) originates to the south of Dublin Airport, within the townlands of Collinstown and Ballystruan, in Fingal County. The river system comprises two

headwater streams that flow in an easterly direction, running parallel before converging at Balgriffin Park, Dublin. From this confluence, the Mayne River continues eastward, passing c. 200 metres north of the proposed development site. According to the Hydrotool river flow estimates, the Mayne River has a Q95 of 0.05 m3/s (i.e., flow that is exceeded 95% of the time) and a Q50 of 0.172 $m^3$/s under naturalised conditions (Hydrotool node 09_1505; EPA, 2026).

No surface water bodies identified by the Environmental Protection Agency (EPA) are located within the boundaries of the proposed development site. Downstream, the Mayne River discharges into the Mayne Estuary Transitional Waterbody (European Code: IE_EA_080_0100), which subsequently flows into the Irish Sea within the Dublin Bay area (Hydrometric Area 09).

Figure 10.2 Surface Water Features




### 10.3.2.2 Surface Water Quality

Surface water quality is monitored periodically by the EPA at various regional locations along with principal and other smaller watercourses. The EPA assess the water quality of rivers and streams across Ireland using a biological assessment method, which is regarded as a representative indicator of the status of such waters and reflects the overall trend in conditions of the watercourse. The biological indicators range from Q5 - Q1. Level Q5 denotes a watercourse with good water quality and high community diversity, whereas Level Q1 denotes very low community diversity and bad water quality (refer to Table 10.1 below). In relation to the proposed development site, there is one (active) surface waterbody EPA monitoring stations within the Mayne River.

- Hole-in-the-Wall Rd Br (Station ID: RS09M030500)

The most recent water quality status recorded by the EPA (2022) at this monitoring station (EPA Code: RS09M030500) is classified as Q3 Poor, which denotes moderately polluted waterbody. This value is based primarily on the relative proportions of pollution tolerant fauna, with evidence of enrichment still present at a river site.

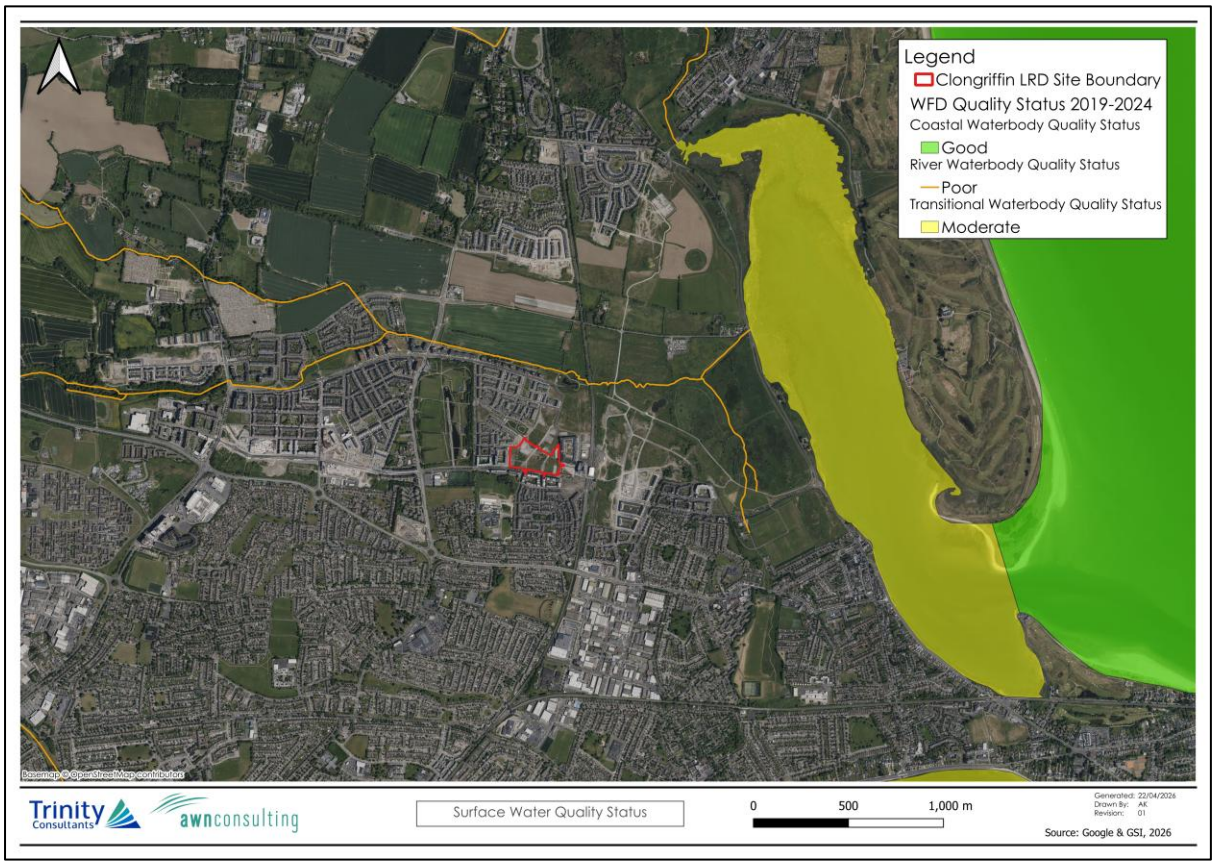
### Table 10.1 Summary of Surface Water Quality Levels

| Q Value | WFD Status | Pollution Status | Condition |
|---|---|---|---|
| Q5, Q4-5 | High | Unpolluted | Satisfactory |
| Q4 | Good | Unpolluted | Satisfactory |
| Q3-4 | Moderate | Slightly polluted | Unsatisfactory |
| Q3, Q2-3 | Poor | Moderately polluted | Unsatisfactory |
| Q2, Q1-2 | Bad | Seriously polluted | Unsatisfactory |

The EPA also classified water bodies in accordance with the WFD water quality status. Rivers, lakes, estuaries and coastal waters can be awarded one of five statuses: High, Good, Moderate, Poor, Bad. Groundwater has just two statuses – Good and Poor.

According to EPA (2026), the Mayne River has a WFD status (2019-2024) of 'Poor' as shown in **Figure 10.3** and a WFD risk score of 'Not achieving Good Status' by 2027. This 'Poor' status assigned to the Mayne River is due to its poor biological (invertebrate) status or potential. The Mayne Estuary Transitional Waterbody has a risk score of 'Moderate' and is under 'Review' for its risk score. This moderate score is due to its moderate Ecological Status.

### Figure 10.3 Surface Water Quality Status (2019-2024)



#### 10.3.2.3 Bathing Water and Recreational Waterbodies

The local environment also includes areas of natural resources that relate to populations and human health that may be impacted by the proposed development, this includes economic resources, recreational and bathing waters, and drinking water resources.

A review of Environmental Sensitivity Mapping online maps that includes the Register of Protected Areas (RPA) under the Water Framework Directive (WFD) has shown that there are no Recreational Waters, Bathing Waterbodies, or Surface Water Drinking RPA, within the proposed development or located near the Mayne Riverbody, or Mayne Transitional Waterbody.

The nearest Recreational Waters, Bathing Waterbodies, or Surface Water Drinking RPA to the proposed development is Portmarnock, Velvet Strand Beach (Bathing Waters ID: IEEABWC070_0000_0200) located c. 1km northeast.

#### 10.3.2.4 Water Supplies

A review of the Environmental Protection Agency (EPA) online mapping, which includes the Register of Protected Areas (RPA) established under the Water Framework Directive (WFD), indicates that there are no Nutrient Sensitive Area within the proposed development. The nearest Nutrient Sensitive Area is the Tolka Estuary (EPA Code: IE_EA_090_0200) as an Urban Waste Water Treatment Directive Sensitive Area located 3.4 km south. These areas are designated in accordance with the Urban Wastewater Treatment (UWWT) Directive (91/271/EEC) and relevant national legislation, including S.I. 254/2001, S.I. 440/2004, and S.I. 48/2010. In this context, the identified waterbody is used to define the extent of the nutrient-sensitive designation.

#### 10.3.2.5 Existing Water and Wastewater Utilities

A review of the Environmental Protection Agency (EPA) online mapping, which includes the Register of Protected Areas (RPA) established under the Water Framework Directive (WFD), indicates that there are no Nutrient Sensitive Area within the proposed development. The nearest Nutrient Sensitive Area is the Tolka Estuary (EPA Code: IE_EA_090_0200) as an Urban Waste Water Treatment Directive Sensitive Area located 3.4 km south. These areas are designated in accordance with the Urban Wastewater Treatment (UWWT) Directive (91/271/EEC) and relevant national legislation, including S.I. 254/2001, S.I. 440/2004, and S.I. 48/2010. In this context, the identified waterbody is used to define the extent of the nutrient-sensitive designation.

#### 10.3.2.6 Surface Water Abstraction

There are no known reported abstractions from surface water in the vicinity of the proposed development (GSI, 2026).

#### 10.3.2.7 Drainage and Flood Risk Assessment

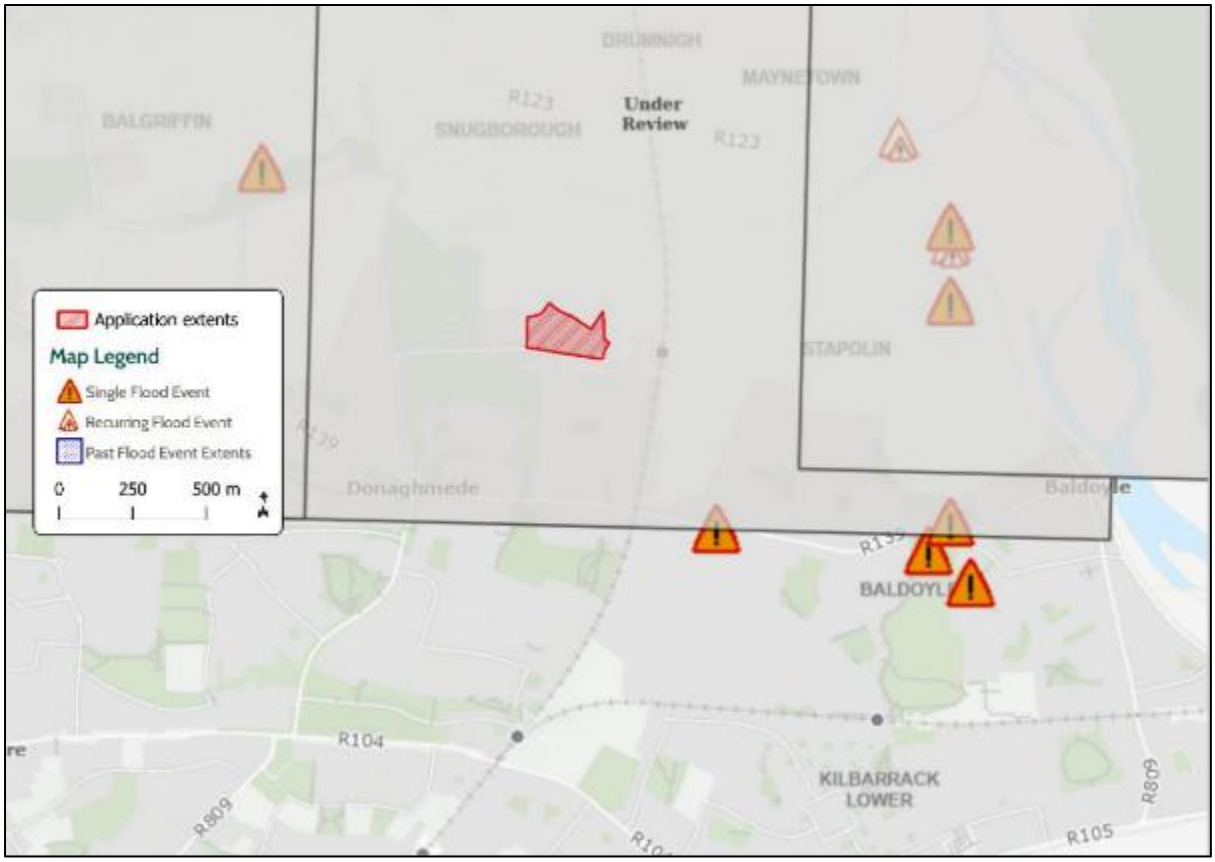
The EU Floods Directive (2007/60/EC) required Member States to undertake a national preliminary flood risk assessment by 2011 to identify areas where significant flood risk exists or might be considered likely to occur. Members States were also required to prepare catchment-based Flood Risk Management Plans by 2018 that will set out flood risk management objectives, actions and measures. The OPW in co-operation with various Local Authorities produced a number of PFRAs which aimed to map out current and possible future flood risk areas and develop risk assessment plans. As part of the

CFRAM programme provisional flood maps had been produced by the OPW which have been used in this assessment.

The OPW (CFRAM) maps are currently under review (Accessed: 16/01/2026) within the Clongriffin area. According to the OPW records, there are no past flood events have been recorded within the immediate vicinity of the proposed development site. However, two locations of historic flooding have been documented in the surrounding area. The closest recorded event occurred at Mayne Balgriffin Park, approximately 0.7 km east of the site, in June 1993. A second location of recurring flood events was identified at Grange Road Donaghmede, situated about 0.6 k m south of the site, where flooding was reported in 1982.

A fluvial flood study undertaken by CS Consulting Engineers as part of the Site-Specific Flood Risk Assessment (SSFRA) for Clongriffin Wider Lands assessed the potential flood risk associated with the Mayne River and Baldoyle Estuary. The study included a hydrological analysis of the stream under 1-in-100 year and 1-in-1000 year flood events, along with two climate change scenarios (Mid-Range and High-End Future Scenarios). The results indicated that much of the site lies outside the 0.1% Annual Exceedance Probability (AEP) flood extent (1-in-1000 year event), even when accounting for climate change. On this basis, the site is classified as being within Flood Zone C, where the likelihood of fluvial flooding is considered to be low.

Figure 10.4 OPW Mapping of Past Flood Events (CS Consulting, 2025)




### 10.3.3 Rating of Importance of Hydrological Attributes

Based on the TII methodology (2009) (See Appendix 10.1) the importance of the hydrological features at this site is rated as 'Low' importance based on the assessment that the attribute has a low-quality

significance or value on a local scale, based on the fact that it is not an area of water supply, within a flood zone or an amenity area.

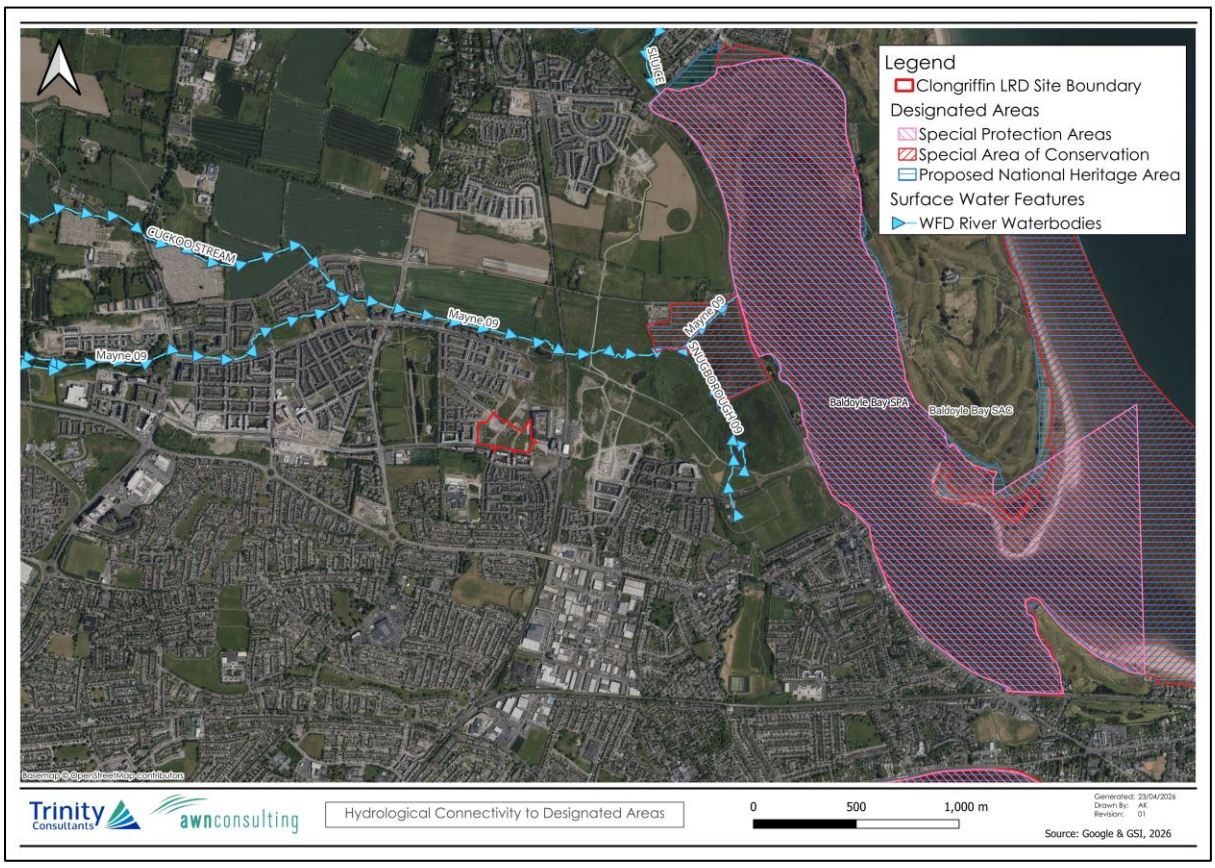
### 10.3.4 Designated Areas

The NPWS (2026) on-line database have been reviewed to determine the location of areas of conservation within the proposed development site, and there are no Special Protected Areas (SPA) established under the EU Birds Directive (79/409/EEC), or Special Areas of Conservation (SAC) established under the Habitats Directive within the boundary of the proposed development site. Furthermore, there are no Natural Heritage Areas (NHA), or proposed Natural Heritage Areas (pNHA) established under the Wildlife Acts, 1976 and 2000 (as amended) within the boundary of the proposed development site. The European sites and pNHA in closest proximity to the proposed development are as follows:

- Baldoyle Bay SAC (Site Code 000199) c. 0.8 km east.
- Baldoyle Bay SPA (Site Code 004016) c. 0.8 km east.
- Baldoyle Bay pNHA (Site Code 000199) c. 0.8 km east.
- North-West Irish Sea SPA (Site Code 004236) c. 2.7 km east.

According to NPWS (2026), there are no NPWS protected areas in the immediate vicinity of the proposed development site. The nearest Natura 2000 Site is Baldoyle Bay SAC/SPA/NHA located c. 0.8km east of the proposed development as shown in **Figure 10.5**. The development site has a hydrological connection with this SAC/SPA as the Mayne River, drains into the Mayne Estuary Transitional Waterbody (EPA Code: IE_EA_080_0100).

Figure 10.5 Hydrological Connectivity to Designated Sites



## 10.3.5 Hydrogeology

### 10.3.5.1 Aquifer Classification

The GSI has devised a system for classifying the bedrock aquifers in Ireland. The aquifer classification for bedrock depends on a number of parameters including, the area extent of the aquifer (km2), well yield (m3/d), specific capacity (m3/d/m) and groundwater transmissivity (mm3/d). There are three main classifications: regionally important, locally important and poor aquifers. Where an aquifer has been classified as regionally important, it is further subdivided according to the main groundwater flow regime within it. This sub-division includes regionally important fissured aquifers (Rf) and regionally important karstified aquifers (Rk). Locally important aquifers are sub-divided into those that are generally moderately productive (Lm) and those that are generally moderately productive only in local zones (Ll). Similarly, poor aquifers are classed as either generally unproductive except for local zones (Pl) or generally unproductive (Pu).

The GSI (2026) classifies the principal aquifer types in Ireland as:

*Bedrock Aquifer*

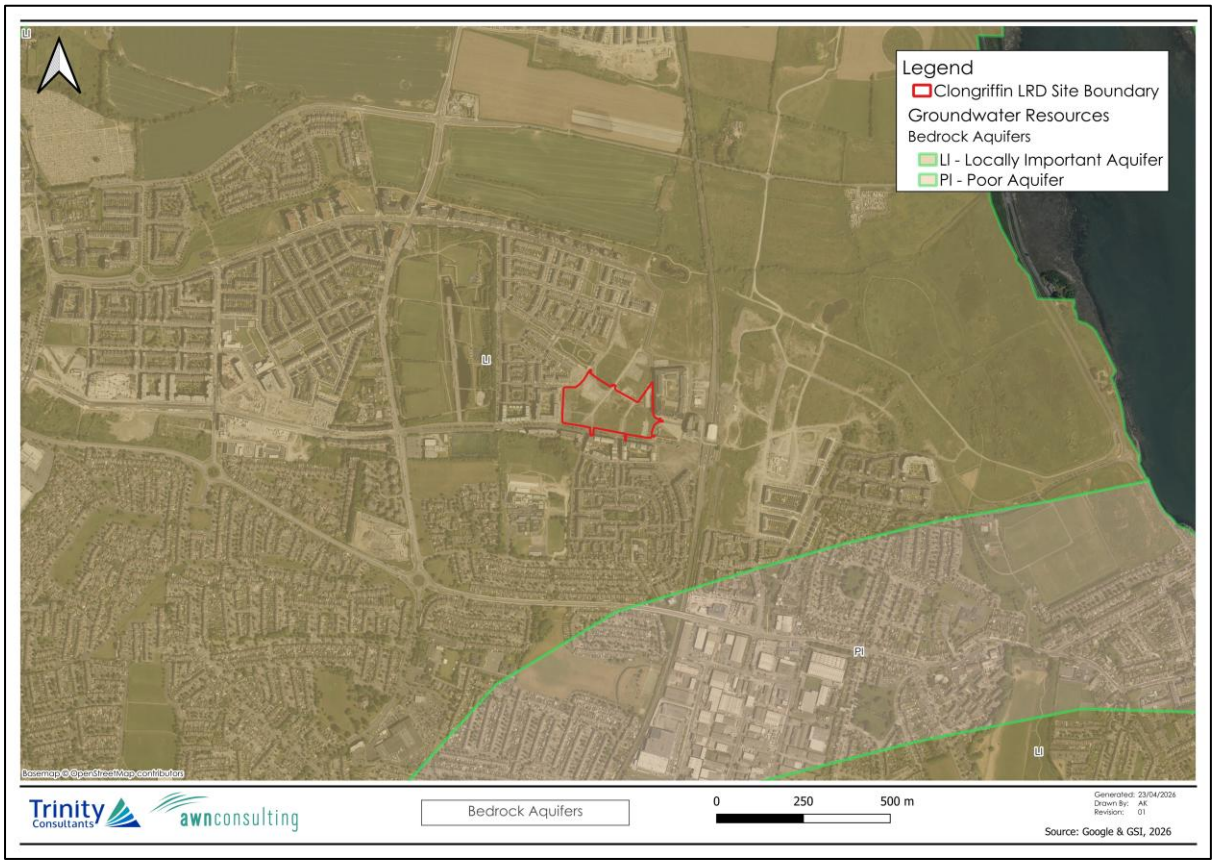
- Rkc – Regionally Important Aquifer – Karstified (conduit).
- Rkd – Regionally Important Aquifer – Karstified (diffuse).
- RK – Regionally Important Aquifer – Karstified.
- Rf – Regionally Important Aquifer – Fissured bedrock.
- Lm – Locally Important Aquifer – Bedrock which is Generally Moderately Productive.
- Lk – Locally Important Aquifer – Karstified.
- Ll – Locally Important Aquifer – Bedrock which is Moderately Productive only in Local Zones.
- Pl – Poor Aquifer – Bedrock which is Generally Unproductive except for Local Zones.
- PU – Poor Aquifer – Bedrock which is Generally Unproductive.

*Gravel Aquifer*

- Lg - Locally Important Aquifer - Sand & Gravel
- Rg - Regionally Important Aquifer - Sand & Gravel

According to GSI (2026), the bedrock aquifer underlying the site as a Locally Important Aquifer (Ll), i.e. Bedrock which is Moderately Productive only in Local Zones as presented in **Figure 10.6** The potential for local vertical or horizontal migration within this type of aquifer is moderate depending on the area but may not have extensive regional connectivity. As such the aquifer is not a significant pathway for off-site migration.

Figure 10.6 Aquifer Classification




The site is underlaid by Dublin GWB (Code: IE_EA_G_008) which has been investigated by the GSI. With regards to the Dublin GWB is underlain primarily by a sequence of limestone bedrock formations, dominated by Dinantian Lower Impure Limestones, Dinantian Pure Bedded Limestones and Dinantian Upper Impure Limestones. These carbonate lithologies typically exhibit moderate to high transmissivity where extensive fracturing and karstification have developed, but transmissivity is lower in areas where the limestones are less fractured or are overlain by significant subsoil deposits. Overburden in the form of glacial tills is common across the region and generally has low permeability, restricting vertical infiltration in places and influencing groundwater recharge rates. Localised sand and gravel deposits, where present, enhance permeability and act as important conduits for groundwater flow.

In terms of hydrogeological properties, transmissivity within the Dublin Groundwater Body varies spatially, but in North County Dublin it is generally considered moderate, reflecting the fractured and bedded nature of the underlying limestone. Groundwater movement within this setting is primarily controlled by structural features such as joints and bedding planes, which facilitate lateral flow, while vertical movement is more limited where thick glacial tills are present. Recharge to the groundwater body occurs through a combination of direct rainfall infiltration, preferential flow through higher-permeability subsoils, and localized inputs from losing streams. The recharge potential is therefore moderate, constrained in places by low-permeability overburden but enhanced where sand and gravel sequences occur.

Groundwater movement is generally in an eastward direction towards the coast, with connectivity evident between the limestone aquifer units and local surface water features, including streams such as the Mayne River and ultimately the Baldoyle Estuary. The degree of connectivity varies depending on local subsoil thickness and bedrock structure, but overall, the Dublin Groundwater Body

demonstrates good hydraulic continuity. Within the North County Dublin area, this connectivity supports interactions between surface water and groundwater, with groundwater contributing to baseflow in nearby streams and transitional waters (GSI, 2004).

#### 10.3.5.2 Aquifer Vulnerability

Aquifer vulnerability is a term used to represent the intrinsic geological and hydrogeological characteristics that determine the ease with which groundwater may be contaminated generally by human activities. Due to the nature of the flow of groundwater through bedrock in Ireland, which is almost completely through fissures/ fractures, the main feature that protects groundwater from potential contamination, and therefore the most important feature in the protection of groundwater, is the subsoil (which can consist solely of or of mixtures of peat, sand, gravel, glacial till, clays or silts).

Groundwater vulnerability is an indication of how easily the aquifer can become contaminated by human activity. It is dependent on the thickness and permeability of the overlying soils and depth to the water table. For example, a bedrock aquifer with minimal thickness of overburden or with a thin layer of permeable overburden will be more vulnerable to contamination than a bedrock aquifer which has a thick layer of low permeability overburden. Extreme groundwater vulnerability is also associated with karst landforms as these are a direct pathway for water and contaminants to enter the aquifer from the surface.

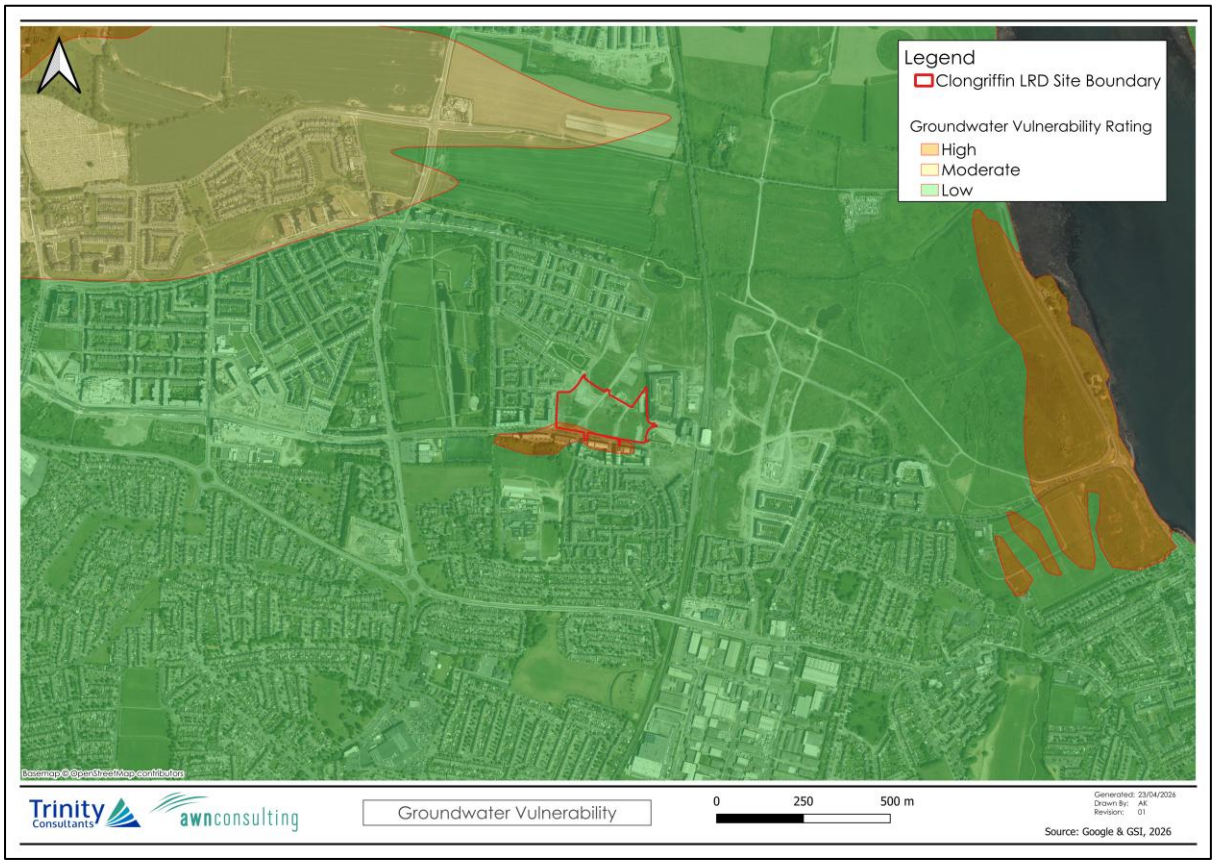
According to GSI regional mapping, the groundwater vulnerability rating for the majority of the proposed development is classified as Low Vulnerability. Groundwater here has natural characteristics that mean it has lower vulnerability to contamination by human activities as shown in **Figure 10.7** (GSI, 2026). There is a small portion located just at the southern portion of the site, where it meets Maine street which is classified as High Vulnerability. Groundwater here has natural characteristics that make it highly vulnerable to contamination by human activities. Aquifer vulnerability classifications are primarily based on the permeability and thickness of subsoils. Refer to **Table 10.2** below.

Table 10.2 Aquifer Vulnerability Classification

| Vulnerability Rating | Hydrogeological Conditions | | | | |
|---|---|---|---|---|---|
| | Subsoil Permeability (Type) and Thickness | | | Unsaturated Zone | Karst Features |
| | High permeability (sand/gravel) | Moderate permeability (e.g. Sandy subsoil) | Low permeability (e.g. Clayey subsoil, clay, peat) | (Sand/gravel aquifers only) | (<30 m radius) |
| **Extreme (E)** | 0 - 3.0m | 0 - 3.0m | 0 - 3.0m | 0 - 3.0m | - |
| **High (H)** | >3.0m | 3.0 - 10.0m | 3.0 - 5.0m | >3.0m | N/A |
| **Moderate (M)** | N/A | >10.0m | 5.0 - 10.0m | N/A | N/A |
| **Low (L)** | N/A | N/A | >10.0m | N/A | N/A |

Notes: (1) N/A = not applicable.
(2) Precise permeability values cannot be given at present.
(3) Release point of contaminants is assumed to be 1-2 m below ground surface.

Figure 10.7 Groundwater Vulnerability Rating




This classification is consistent with ground investigation and subsoil assessment undertaken by Ground Investigation Ireland (GII) in July and August 2025. The ground conditions encountered bedrock at an average depth of 12.0m BGL, which is representative of a 'Low' groundwater vulnerability (refer to Chapter 9, Section 9.3.4.1 for further details).

### 10.3.5.3 Groundwater Wells

A search of the GSI groundwater well database was conducted to identify registered wells in the vicinity of the proposed development. It should be noted that not all wells are registered in Ireland.

There are no. 3 registered wells within 2km radius of the development site (**Table 10.3**), also presented in **Figure 10.8**. The closest well is located c. 141m north of the proposed development site and the following uses are reported.

Table 10.3 Registered Wells

| GIS Reference | Accuracy (m) | Reported Use | Depth (m) | Reported Yield ($m^3$/day) | Yield Class |
|---|---|---|---|---|---|
| IE_GSI_GW_Well_8134 | 100 | Industrial | 52.7 | 196 | Good |
| IE_GSI_GW_Well_7751 | 500 | Industrial | 16.5 | N/A | N/A |
| IE_GSI_GW_Well_7750 | 500 | Industrial | 15 | N/A | N/A |

Figure 10.8 Groundwater Wells




### 10.3.5.4 Groundwater Quality

The Water Framework Directive (WFD) 2000/60/EC was adopted in 2000 as a single piece of legislation covering rivers, lakes, groundwater, transitional (estuarine) and coastal waters. In addition to protecting said waters, its objectives include the attainment of 'Good Status' in water bodies that are of lesser status at present and retaining 'Good Status' or better where such status exists at present. The EPA co-ordinates the activities of the River Basin Districts, local authorities and state agencies in implementing the Directive, and operates a groundwater quality monitoring programme undertaking surveys and studies across the Republic of Ireland.

Presently, both groundwater bodies in the region of the site (Dublin GWB - European Code: IE_EA_G_008) for which the site is in, has a WFD status of "Good" (WFD Period: 2019-2024) and a WFD risk score (3rd Cycle) currently under "Review" (**Figure 10.9**).

Figure 10.9 WFD Quality Status Groundwater Bodies




### 10.3.5.5 Groundwater Dependent Terrestrial Eco-Systems

Groundwater-dependent terrestrial ecosystems (GWDTEs) are defined as habitats/species that are dependent on groundwater to maintain the environmental supporting conditions required to sustain that habitat and/or species (EPA, 2008). Groundwater may provide either a direct input, such as in turloughs, fens and petrifying springs or, alternatively, the groundwater may have an indirect influence in maintaining high and stable water levels within the habitat, such as with raised bogs. Groundwater bodies are subject to a range of pressures which can result in significant damage to GWDTEs depending on the susceptibility of the pathway and the sensitivity of the receptor.

The are no identified GWDTE's in the vicinity of the proposed development.

### 10.3.5.6 Rating of Site Importance of the Hydrogeological Features

Based on the TII methodology (2009) (See Appendix 10.1) the importance of the hydrogeological features at this site is rated as 'Low' importance based on the assessment that the attribute has a low-quality significance or value on a local scale, based on the fact that the bedrock aquifer underlying the site as a Locally Important Aquifer, there are no recorded Public Supply Source Protection Area or Group Scheme Preliminary Source Protection Areas in the vicinity of the proposed development site.

## 10.3.6 Conceptual Site Model

A conceptual site model (CSM) has been developed in order to identify any likely Source-Pathway-Receptor linkages relating to the site and the proposed development. The GSI presently classifies the aquifer underlying the majority of the proposed development site with 'Low' (L) vulnerability. There is

a small portion located just at the southern portion of the site, where it meets Maine street which is classified as 'High' (H) Vulnerability.

The bedrock aquifer underlying the proposed development site, according to the GSI (www.gsi.ie/mapping) National Draft Bedrock Aquifer Map, is classified as a "Locally important Aquifer" (LI). This aquifer is moderately productive only in local zones and capable of supplying locally important supplies (e.g., smaller public water supplies, group schemes).

The GSI vulnerability classification is consistent with data obtained from the site investigation carried out by Ground Investigations Ireland (GII) in July and August 2025. The natural ground conditions are dominated by Cohesive Deposits and bedrock was not encountered until depth of 12.0m BGL providing natural protection to the underlying GWB. Therefore, the hydrogeological pathway from the site is restricted and any risk of migration is Low to negligible due to these conditions.

The site has no direct hydrological pathway or connection to any of the European sites listed in Section 10.3.4 above, all of which are located downgradient of the site. Any potential hydrological linkage would be indirect and would occur via the local stormwater drainage network, which discharges to the Mayne River and subsequently to the Mayne Estuary (European Site Code: IE_EA_080_0100). Surface water discharges from the site would undergo dilution and mixing within the Mayne River prior to reaching the Mayne Estuary.

There are no recorded Public Supply Source Protection Area or Group Scheme Preliminary Source Protection Areas in the vicinity of the proposed development site. The nearest Group Scheme Preliminary Source Protection area is Kiltale, located c. 34km northwest of the proposed development site. The nearest Public Supply Source Protection area is Dunboyne PWS (IE_GSI_SPA_202) located c. 20km west of the proposed development site. Neither of these areas share a hydrological or hydrogeological connection to the site and are located within separate Sub-Catchments i.e. Boyne_SC_090 (Sub-Catchment ID: 07_19) and Tolka_SC_010 (Sub-Catchment ID: 09_10), respectively.

## 10.4 Characteristics of the proposed development

The purpose of this section is to provide an overview of the key relevant details of the construction phase and operational phase of the proposed development. The information presented in this section is informed by the project design, but it is not a complete description of the proposed development. Therefore, it should be read in conjunction with the full development package. For a more comprehensive understanding of the proposed development, please refer to Chapter 5 'Description of the proposed development' of the EIA Report. Chapter 5 provides a detailed overview of the lifecycle of the project, including reference to the architectural and civil engineering, drawings, plans, reports, and other relevant document in order to define the proposed development.

### 10.4.1 Construction Impacts

The activities required for the construction phase of the proposed development represent the greatest risks of potential impact on the hydrological and hydrogeological environment. These activities primarily pertain to the site preparation, excavation and infilling activities required to facilitate construction of the proposed development.

#### 10.4.1.1 Site Levelling and Excavations

Removal of topsoil and subsoil cover across localised areas of the proposed development site will be undertaken during excavation. The proposed development requires soil and stones to be excavated to facilitate construction of foundations and the installation of underground services; the project engineers CS Consulting Engineers have estimated that c. 1,550 m3 of material will need to be excavated to do so. It is currently envisaged that any excavated site material suitable for reuse will be redistributed throughout to maximise use and minimise import and export requirements. However, any excavated material that does not get reused will be removed from the site. This will be taken for appropriate offsite reuse, recovery, recycling and / or disposal.

As outlined above, it is estimated that approximately 1,500m³ of material will be excavated and subsequently removed and transported off-site. While this activity may temporarily increase the vulnerability of the underlying aquifer, it is important to note that, as referenced in Section 10.3.11, the Geological Survey Ireland (GSI) has classified the vulnerability of the area encompassing the proposed development site as 'Low Vulnerability' (L). This classification reflects pre-development conditions, prior to the installation of paving, stormwater drainage infrastructure, and associated services.

Local minor dewatering may be required during excavation works and groundworks (depending on the time of year development works are carried out). However, there is no potential for change in groundwater levels as a result of local changes in the groundwater regime at the site due to the limited extent of dewatering activities and the natural recharge capacity of the underlying "Locally Important Aquifer", which allows for the maintenance of groundwater levels at a local scale. This ensures that the aquifer's integrity and functionality remain unaffected by any temporary dewatering measures.

#### 10.4.1.2 Storage of Soils/Aggregates

An Outline Construction Management Plan (OCMP) has been prepared by CS Consulting for the proposed development. The employment of good construction management practices and full adherence to a OCMP will minimise the risk of pollution of soil, storm water run-off, or groundwater. Such practices include the proper storage of spoil / loose materials on site, such as excavated materials to be used for landscaping purposes; Aggregate materials such as sands and gravels will be stored in clearly marked receptacles in a secure compound area within the contractors' compound on site.

Temporary storage of spoil will be managed to prevent accidental release of dust emissions and uncontrolled surface water run-off which may contain sediment and solid matter. Any excavated material temporarily stockpiled onsite for re-use during reinstatement will be managed to prevent accidental release of dust and uncontrolled surface water run-off which may contain sediment etc.

#### 10.4.1.3 Storage of Hazardous Materials

Temporary storage of fuel will be required on site for construction traffic. Liquid materials i.e., fuel storage will be located within the site compound in temporary designated bunded areas, doubled skinned tanks or bunded containers (all bunds will conform to standard bunding specifications - BS8007-1987) to prevent spillage.

Construction activities will necessitate storage of cement and concrete materials, temporary oils, and fuels on site. Small localised accidental releases of contaminating substances including hydrocarbons have the potential to occur from construction traffic and vehicles operating on site.

#### 10.4.1.4 Import/Export of Materials

There will be a requirement for deliveries and refuelling of imported engineering fill (sands and gravels), and other construction materials include steel structure, concrete, cladding, ducting and piping. Construction materials will be brought to site by road. Refuelling will be completed in accordance with the best standard practice refuelling procedure. To support the construction of proposed roads, car parks, and buildings, additional fill material may need to be imported.

A 'Just in Time' delivery system will operate to minimise storage of materials. Construction materials will be transported in clean vehicles. Lorries/trucks will be properly enclosed or covered during transportation of friable construction materials and spoil to prevent the escape material along the public roadway. Where possible it is proposed to source general construction materials from the local area to minimise transportation distances.

Soil requiring removal offsite will be removed from site regularly to ensure there is minimal need for stockpiling. Some of the topsoil removed will be re-used on site for backfill. Any surplus topsoil, subsoil and bedrock material will be transported off site and disposed of at a fully authorised soil recovery site or licenced landfill based on the waste soil classification.

#### 10.4.1.5 Collection and Disposal of Collected Water (Rainfall Run-off and Perched Groundwater)

The development site will be excavated to a depth of approximately 1 m below present ground level and pumping out of standing water may be necessary. Localised perched groundwater within the cohesive deposits/ weathered bedrock, or pooling surface water during and after heavy rainfall events is expected. Dewatering (removing of perched groundwater) is necessary to create a dry working environment and prevent water from seeping into the excavation and flooding the construction site. If dewatering is necessary, it will occur via suitably installed dewatering wells/sumps containing pumps to abstract groundwater and surface water (rainfall landing on the site).

During construction water will discharge to the existing drainage network that flows to the northern boundary of the site adjacent to the Mayne River at the Clongriffin attenuation pond. Where required, a wastewater discharge licence will be applied for to manage surface water on site during the construction phase. This shall permit the discharge of trade effluent arising from groundwater/surface water ingress on the construction site. In case of any exceedances of discharge permit conditions, water will be disposed of to a licenced facility. The treatment and monitoring of this water prior to disposal will occur outside the construction site in a regional facility north of the site.

### 10.4.2 Operational Impacts

The proposed development characteristics which relate to the hydrological and hydrogeological environment during operation are summarised below.

#### 10.4.2.1 Surface Water Infrastructure

To ensure appropriate water quality treatment, a range of Sustainable Drainage System (SuDS) measures will be implemented across the site. These will include blue roof, green roofs, permeable paving, tree pits and other bio-retention areas, rain gardens and/or planter boxes and detention basins to limit the outflow from the site to green field runoff rates. Filtration units will be installed on both the inlet and outlet pipework associated with the two detention basins to serve as a final stage of treatment, reducing levels of total suspended solids, hydrocarbons, and heavy metals in the surface water runoff.

The treated surface water will ultimately discharge to the surface water drainage network located to the north of the site, in compliance with sustainable drainage and water quality standards. For further technical details regarding the design, specification, and operation of the SuDS measures, reference should be made to the Surface Water Management Plan Report prepared by CS Consulting Engineers.

#### 10.4.2.2 Wastewater Infrastructure

Wastewater from the facility is to by collected by the proposed local foul drainage network is designed and constructed under the masterplan parent permission (Reg. Ref. 0132/02). Wastewater from the development will be collected by this network of drains and will flow to the Clongriffin Wastewater Pumping Station (WwPS), before being finally treated at Ringsend WasteWater Treatment Plant (WWTP) (D0034-02) for full Treatment. According to Uisce Eireann's 2023 Annual Environmental Report (AER), Ringsend WWTP currently has adequate operational capacity to accommodate the additional flows generated by the proposed development. Following treatment, the final effluent from Ringsend WWTP is discharged into Liffey Estuary Lower transitional waterbody, which outfalls into Dublin Bay Coastal Waterbody.

The plant at Ringsend is currently in the process of being upgraded to a PE of 2.4 million to meet the increased demand of the wider Dublin area. The most recent Annual Environmental Report (AER 2023) shows it is currently operating for a PE peak loading of 2.36 million while originally designed for 1.64 million but currently increased up to 2.1million since 2023. However, the current maximum hydraulic load (804,220 m3/day) is less than the peak hydraulic capacity as constructed (959,040 m3/day) i.e., prior to any upgrade works.

In addition, the most recent wastewater treatment capacity register of Uisce Éireann states (as for July 2025) that the Ringsend WWTP would have capacity available. Uisce Éireann completed construction of the infrastructure to treat the wastewater for a population equivalent of 2.1million at the end of 2023, which is the current organic capacity. When all the proposed works are complete, the Ringsend Wastewater Treatment Plant will be able to treat wastewater for up to 2.4 million population equivalent.

#### 10.4.2.3 Water Supply

It is understood that the water supply to the proposed development will be provided via the 560Ømm diameter North Fringe trunk watermain runs along Marrsfield Avenue. A local network of distribution watermains 100Ømm and 150Ømm in diameter connects to the North Fringe trunk watermain and serves the Clongriffin masterplan lands north of Main Street. A secondary connection to this network is also provided from the 350Ømm diameter Hole in the Wall Road trunk watermain.

Figure 10.10 Existing local water supply network (CS Consulting, 2025)




## 10.5 Predicted Impacts of the proposed development

### 10.5.1 Do-Nothing Impact

In the event that the proposed development does not proceed (the "do-nothing" scenario), the lands would remain in their current condition and continue to be used in accordance with the existing land use. No construction, operational, or decommissioning activities would occur. As a result, there would be no positive or negative environmental impacts arising from the proposed development, as it would not be implemented.

The do-nothing scenario would therefore result in neutral effects on the proposed development lands, with no alteration to the current environmental, physical, or land-use characteristics of the site.

### 10.5.2 Construction Phase

#### 10.5.2.1 Potential Impacts on Surface Water and Groundwater Quality

There is potential for run-off water to become contaminated with pollutants released during construction activity. If not mitigated, contaminated water can pose a temporary risk to the Mayne River which discharges to the Mayne Estuary Transitional Waterbody, and ultimately discharge to the Irish Sea Dublin and is underlying 'Locally Important Aquifer' i.e. Dublin groundwater bodies (GWB). During construction of the development, the potential of contamination is associated with the following sources:

- Suspended solids (muddy water with increased turbidity (measure of the degree to which the water loses its transparency due to the presence of suspended particulates)) – arising from excavation and ground disturbance.

- Excavations/ top and sub soil stripping- Increase sediment run off (erosion during rainfall periods), Pollutant mobilisation (heavy metal runoff).
- Loss of vegetation.
- Cement/concrete (increase turbidity and pH) – arising from construction materials.
- Hydrocarbons and other construction chemicals (ecotoxic) – accidental spillages from construction plant or onsite storage.
- Wastewater (nutrient and microbial rich) – arising from accidental discharge from on-site toilets and washrooms. Construction phase sewerage will be contained in a tank and taken by tanker off site for disposal at a licensed waste management facility.

Concreting works also present a potential risk to water quality, as concrete materials may be discharged onto exposed surfaces and subsequently percolate to the underlying groundwater. Concrete, and in particular its cement component, is highly alkaline and could adversely affect groundwater quality if uncontrolled releases occur. In addition, there is a risk of accidental spillages or leaks of stored materials such as fuels, oils and paints, which could negatively impact on-site surface waters, downstream water bodies, and the underlying groundwater.

No impacts are anticipated from wastewater discharges on the hydrological or hydrogeological environment, as all wastewater will be appropriately managed and discharged in accordance with relevant standards.

In the absence of mitigation measures, the potential impacts arising during the construction phase on surface water quality and groundwater quality are assessed as negative, slight and short-term.

#### 10.5.2.2 Potential Impacts on Surface Water and Groundwater Flow and Quality

Surface water runoff during the construction phase may contain increased silt levels or become polluted from construction activities. Runoff containing large amounts of silt can cause damage to surface water systems and receiving watercourses. Silt water can arise from dewatering excavations, exposed ground, stockpiles and access roads.

The gradual introduction of impermeable surfaces and the compaction of soils associated with land clearance and earthworks will reduce natural infiltration capacity across the site and increase the rate and volume of direct surface run-off. This may result in increased sediment loading and a greater potential for scouring impacts on local drainage features and watercourses, as well as downstream effects, if not adequately mitigated. Increased run-off rates and volumes may also place pressure on local drainage infrastructure.

No surface water or groundwater abstractions are proposed as part of the proposed development and, therefore, no impacts on the existing surface water or groundwater regime are anticipated.

In addition, no permanent diversions of watercourses or other waterbodies are proposed.

In the absence of mitigation measures the potential impacts during the construction phase on surface water and groundwater quantity and flow are negative, slight and short term.

#### 10.5.2.3 Potential Impacts on Designated Areas

As mentioned in the Conceptual Site Model above (Section 10.3.6) the hydrogeological pathway from the site is restricted due to the natural ground conditions are dominated by Cohesive Deposits and deep bedrock, providing natural protection to the underlying GWB.

The site would have an indirect hydrological connection to Designated Areas downstream through local drainage albeit via a lengthy distance / pathway and a significant dilution factor downstream in the Mayne River and Mayne Estuary.

In the absence of mitigation, rainfall run-off generated during the construction phase may contain elevated levels of silt and other pollutants arising from construction activities. Increased concentrations of suspended solids in run-off could lead to a higher suspended sediment load, resulting in increased turbidity. Elevated turbidity can affect local infiltration capacity and downstream effects on drainage infrastructure and receiving watercourses.

However, should any silt-laden stormwater from construction or hydrocarbon-contaminated water from a construction vehicle leak/tank leak manage to enter into the drainage system, the suspended solids will naturally settle within the network and receiving waters. In the event of a worst case hydrocarbon leak this would be diluted to background levels (established as surface water quality objectives as outlined in S.I. No. 272 of 2009, S.I. No. 386 of 2015 and S.I. No. 77 of 2019) by the time the stormwater waters reaches the nearest Natura 2000 Sites (Baldoyle Bay SAC/SPA, c. 0.8 km downgradient); it would undergo dilution and mixing within the Mayne River, in addition to attenuation processes occurring along the drainage pathway prior to discharge to the Mayne Estuary.

Any discharged surface waters would undergo dilution and mixing within the Mayne River, together with attenuation processes along the drainage pathway prior to reaching the Mayne Estuary. Consequently, there is no potential for changes to water-dependent habitat requirements arising from the proposed development.

#### 10.5.2.4 Potential Impacts on Water Framework Directive Status

There is a potential of accidental discharges during the construction phase (as outlined in Section 10.5.2.2). Such events, if they were to occur, would be temporary and short-lived in nature. They are not anticipated to result in long-term impacts on the status of the Mayne River or the Mayne Estuary Transitional Waterbody, nor on the Dublin groundwater bodies (GWB), as a comprehensive suite of pollution prevention and design measures will be implemented to protect the hydrological and hydrogeological environment.

In addition, any discharged surface waters would undergo dilution and mixing within the Mayne River, together with attenuation processes along the drainage pathway prior to reaching the Mayne Estuary. Consequently, there is no potential for changes to water-dependent habitat requirements arising from the proposed development.

Accordingly, the proposed development will not cause any significant deterioration in water quality status, will not prevent the attainment of Water Framework Directive (WFD) objectives, and will not compromise the potential to achieve the objectives set out in the third cycle River Basin Management Plan (2022–2027), Water Action Plan 2025 – A River Basin Management Plan for Ireland. A Water Framework Directive Assessment has been completed, and further detail on WFD status is provided in Appendix 10.2.

In the absence of mitigation measures the potential impacts during the construction phase on the Water Framework Directive (WFD) status due to changes to the hydrological environment are neutral, imperceptible, and short-term.

## 10.5.3 Operational Phase

### 10.5.3.1 Potential Impacts on Surface Water and Groundwater Quality

As stated in Section 10.5.2.2 above, there is an indirect hydrological connection, to the Mayne River and Maybe Estuary Transitional Waterbody during the construction and operational phase. During the operational phase, surface water run-off from roads, car parking areas and other hardstanding surfaces may contain low levels of contaminants, primarily hydrocarbons associated with vehicular traffic.

The potential for hydrocarbon release is considered to be low, with a worst-case scenario limited to an individual vehicle fuel or oil leak (70 litres approximately). A comprehensive suite of SuDS measures will be implemented across the site to manage surface water run-off and enhance water quality during the operational phase. These measures will include on-site attenuation infrastructure designed to provide treatment of run-off and improve the quality of surface water prior to discharge.

During the operational phase, surface water run-off is expected to primarily interact with the stormwater drainage system rather than directly impacting the receiving water bodies, namely the Mayne River, the Mayne Estuary Transitional Waterbody and the underlying Dublin GWB, due to the proposed hardstanding areas and engineered drainage infrastructure.

The surface water drainage strategy provides for the proposed development to be served by an integrated SuDS network and comprising a combination of treatment and attenuation measures. Surface water flows from the proposed development will be directed to the Clongriffin attenuation system located adjacent to the Mayne River to the north of the masterplan area. In addition to on-site treatment, discharged surface waters will undergo dilution and mixing within the Mayne River prior to reaching the Mayne Estuary.

The foul water drainage strategy for the proposed development comprises a gravity-driven system connecting to the existing foul sewer network serving the wider development area, which drains to the Clongriffin Wastewater Pumping Station. From there, wastewater will be conveyed via the public foul sewer network to Ringsend Wastewater Treatment Plant (WWTP) (D0034-02), where it will undergo full treatment prior to discharge to the Liffey Estuary Lower Transitional Waterbody. According to the 2023 Annual Environmental Report (AER), Ringsend WWTP has sufficient operational capacity to accommodate the additional wastewater flows generated by the proposed development.

In the absence of mitigation measures (or design measures) the potential impacts during the operational phase on surface water and groundwater quality are negative, significant and short term.

### 10.5.3.2 Potential Impacts on Surface Water and Groundwater Flow and Quality

The proposed incorporation of hardstand area and the use of SuDS design measures will have a minor effect on local recharge to ground and has the potential to result in increased run-off from the site if not adequately mitigated.

However, the impact on the overall groundwater regime will be significant considering the site area is underlying “Locally Important’’ Aquifer (LI), which may impact groundwater levels.

An increase in surface water runoff can have an adverse effect on the hydrological regime of downstream environments via flooding and inundation to downstream properties.

As described in Section 10.3.7 above, there are no recorded past flood events within the proposed site development. The closest recorded event occurred at Mayne Balgriffin Park approximately 0.7 km southeast of the site. There is a low flood risk associated with the proposed development site.

The design of the proposed development and associated drainage infrastructure will ensure that surface water run-off rates are restricted to greenfield run-off rates. The development incorporates a range of Sustainable Drainage System (SuDS) measures and on-site attenuation infrastructure. The drainage design provides for a 1-in-100-year rainfall event, including an appropriate allowance for climate change, with surface water discharged to the downstream network at a controlled and appropriately determined rate. Following discharge, surface waters will undergo dilution and mixing within the Mayne River, together with natural attenuation processes along the drainage pathway, prior to reaching the Mayne Estuary.

No surface water or groundwater abstractions are proposed as part of the proposed development and, therefore, no impacts on the quantity of surface water or groundwater are anticipated.

The proposed measures ensures that the proposed development will not be impacted by predicted flood events.

In the absence of mitigation measures (or design measures) the potential impacts during the operational phase on surface water and groundwater flow and quantity are negative, slight, and short-term.

#### 10.5.3.3 Waste Water Discharge

As stated in Section 10.4.2.2 above, all foul water generated on the proposed development will be collected by a network of drains and will flow to the Clongriffin Wastewater Pumping Station. The wastewater would then be conveyed to Ringsend Wastewater Treatment Plant (WWTP) (D0034-02) for full treatment. Following treatment, the final effluent from Ringsend WWTP is discharged into the Liffey Estuary Lower transitional waterbody, which outfalls into Dublin Bay Coastal Waterbody. According to its 2023 Annual Environmental Report (AER), Ringsend WWTP currently has adequate operational capacity to accommodate the additional flows generated by the proposed development. The plant at Ringsend is currently in the process of being upgraded to a PE of 2.4 million to meet the increased demand of the wider Dublin area. The most recent Annual Environmental Report (AER 2023) shows it is currently operating for a PE peak loading of 2.36 million while originally designed for 1.64 million but currently increased up to 2.1million since 2023. However, the current maximum hydraulic load (804,220 m3/day) is less than the peak hydraulic capacity as constructed (959,040 m3/day) i.e., prior to any upgrade works.

In addition, the most recent wastewater treatment capacity register of Uisce Éireann states (as for July 2025) that the Ringsend WWTP would have capacity available. Uisce Éireann completed construction of the infrastructure to treat the wastewater for a population equivalent of 2.1million at the end of 2023, which is the current organic capacity. When all the proposed works are complete by the end of 2025, the Ringsend Wastewater Treatment Plant will be able to treat wastewater for up to 2.4 million population equivalent.

UÉ is also continuing working on the remaining project elements to deliver the capacity for a population equivalent of 2.4 million by the end of 2025.

Therefore, no potential impacts are anticipated on the Mayne River, Mayne Estuary Transitional Waterbody and Dublin groundwater body (GWB) underlying the site. The potential impacts on Natura 2000 sites located downstream of the proposed development site are further explained in Chapter 8 (Biodiversity).

On the basis of the design and characteristics of the proposed development, in the absence of mitigation measures (or design measures) the potential impacts during the operational phase on the foul water network, North Bull Island Transitional Waterbody, Dublin Bay Coastal Waterbody and Dublin groundwater body (GWB) from the proposed foul water drainage are negative, significant and short-term.

#### 10.5.3.4 Potential Impacts on Designated Areas

During operational phase, the potential for hydrocarbon release is considered to be low, with a worst-case scenario limited to an individual vehicle fuel or oil leak. A comprehensive suite of SuDS measures will be implemented across the site to manage surface water run-off and enhance water quality during the operational phase. These measures will include on-site attenuation infrastructure designed to provide treatment of run-off and improve the quality of surface water prior to discharge.

During the operational phase, surface water run-off is expected to primarily interact with the stormwater drainage system rather than directly impacting the receiving water bodies, namely the Mayne River, the Mayne Estuary Transitional Waterbody and the underlying Dublin GWB, due to the proposed hardstanding areas and engineered drainage infrastructure.

The surface water drainage strategy provides for the proposed development to be served by an integrated SuDS network and comprising a combination of treatment and attenuation measures. Surface water flows from the proposed development will be directed to the Clongriffin attenuation system located adjacent to the Mayne River to the north of the masterplan area. In addition to on-site treatment, discharged surface waters will undergo dilution and mixing within the Mayne River prior to reaching the Mayne Estuary.

Any discharged surface waters would undergo dilution and mixing within the Mayne River, together with attenuation processes along the drainage pathway prior to reaching the Mayne Estuary by the time the stormwater waters reach the nearest Natura 2000 Sites (Baldoyle Bay SAC/SPA, c. 0.8 km downgradient). Consequently, there is no potential for changes to Designated Areas and their water-dependent habitats requirements arising from the proposed development.

## 10.6 Mitigation Measures

### 10.6.1 Construction Phase

#### 10.6.1.1 Outline Construction Management Plan

The OCMP outlines and explains the construction techniques and methodologies which will be implemented during construction of the proposed development.

Construction works and the proposed mitigation measures are informed by best practice guidance on the prevention of pollution during development projects including but not limited to:

- Construction Industry Research and Information Association (CIRIA), Control of Water Pollution from Construction Sites, Guidance for Consultants and Contractors (C532);

- Guidelines on Protection of Fisheries During Construction Works in and Adjacent to Waters (2016);
- Construction Industry Research and Information Association (CIRIA) Environmental Good Practice on Site (4th edition), (C741);
- Enterprise Ireland Best Practice Guide, Oil Storage Guidelines (BPGCS005).
- Requirements for the Protection of Fisheries Habitat during Construction and Development Works at River Sites (Eastern Regional Fisheries Board);
- Central Fisheries Board Channels and Challenges – The enhancement of Salmonid Rivers;
- CIRIA C532 Control of Water Pollution from Construction Sites Guidance for Consultants and Contractors;
- CIRIA C648 Control of Water Pollution from Constructional Sites;
- Guidelines for the Crossing of Watercourses during the Construction of National Road Schemes (NRA 2008); and
- Inland Fisheries Ireland (IFI) – A Guideline on Planning for Watercourses in the Urban Environment.

The OCMP sets out the proposed procedures and operations to be utilised on the proposed construction site to protect water quality. The OCMP will be implemented and adhered to by the construction contractor and will be overseen and updated as required if site conditions change by the Project Manager, Environmental Manager and Ecological Clerk of Works where relevant. All personnel working on the site will be trained in the implementation of the procedures. All relevant personnel will be fully trained in the use of this equipment. Guidelines such as "Control of Water Pollution from Construction Sites, Guidance for Consultants and Contractors" (CIRIA 532, 2001) will be complied with.

All mitigation measures outlined here, and within the OCMP will be implemented during the construction phase, as well as any additional measures required pursuant to planning conditions which may be imposed.

#### 10.6.1.2 Suspended Solids

As there is potential for run-off to indirectly discharge to a watercourse (Mayne River, Mayne Estuary Transitional Waterbody and eventually Irish Sea), in order to manage the potential impact associated with sediment and sediment runoff the following mitigation measures will be implemented during the construction phase.

- During earthworks and excavation works care will be taken to ensure that exposed soil surfaces are stable to minimise erosion. All exposed soil surfaces will be within the excavation site which limits the potential for any offsite impacts.
- Silt reduction measures on site will include a combination of silt traps and hydrobrakes measures.
- Any hard surface site roads will be swept to remove mud and aggregate materials from their surface while any unsurfaced roads shall be restricted to essential site traffic only.
- Aggregate materials such as sands and gravels will be stored in clearly marked receptacles within a secure compound area to prevent contamination.
- Movement of material will be minimised to reduce the degradation of soil structure and generation of dust.
- Excavations will remain open for as little time as possible before the placement of fill. This will help to minimise the potential for water ingress into excavations.

Weather conditions will be considered when planning construction activities to minimise the risk of run-off from the site.

#### 10.6.1.3 Cement/Concrete Works

Where feasible all ready-mixed concrete will be brought to site by truck. A suitable risk assessment for wet concreting will be completed prior to works being carried out which will include measures to prevent discharge of alkaline wastewaters or contaminated storm water to the underlying subsoil and aquifer.

Wash-outs will only be allowed to take place in designated areas with an impervious surface where all wash water is contained and removed from site by road tanker.

The construction contractor will be required to implement emergency response procedures, and these will be in line with industry guidance. Relevant personnel working on the site will be suitably trained in the implementation of the procedures.

#### 10.6.1.4 Hydrocarbons and Other Construction Chemicals

The following mitigation measures will be implemented during the construction phase in order to prevent any spillages to ground of fuels and other construction chemicals on any resulting to surface water (and groundwater) systems:

- Designation of bunded refuelling areas on the site;
- Provision of spill kit facilities across the site;
- Where mobile fuel bowsers are used, the following measures will be taken:
    - Any flexible pipe, tap or valve will be fitted with a lock and will be secured when not in use;
    - The pump or valve will be fitted with a lock and will be secured when not in use;
    - All bowsers to carry a spill kit and relevant operatives must have spill response training;
    - Portable generators or similar fuel containing equipment will be placed on suitable drip trays.

In the case of drummed fuel or other potentially polluting substances which may be used during the construction phase, the following measures will be adopted:

- Secure storage of all containers that contain potential polluting substances in a dedicated internally bunded chemical storage cabinet unit or inside a concrete bunded area;
- Oil and fuel storage tanks shall be stored in designated areas, and these areas shall be stored within temporary bunded areas, doubled skinned tanks or bunded containers to a volume of 110% of the capacity of the largest tank/container. Drainage from the bunded area(s) shall be diverted for collection and safe disposal.
- Clear labelling of containers so that appropriate remedial measures can be taken in the event of a spillage;
- All drums to be quality approved and manufactured to a recognised standard;
- If drums are to be moved around the site, they will be secured and on spill pallets; and
- Drums will be loaded and unloaded by competent and trained personnel using appropriate equipment.

In addition to the measures above, all excavated materials will be visually assessed by suitably qualified persons for signs of possible contamination such as staining or strong odours. Should any unusual staining or odour be noticed, samples of this soil will be analysed for the presence of potential contaminants to ensure that historical pollution of the soil has not occurred. Should it be determined that any of the soil excavated is contaminated, this will be segregated and appropriately disposed of by a suitably permitted/licensed waste disposal contractor.

Refuelling of construction vehicles and the addition of hydraulic oils or lubricants to vehicles will take place in designated bunded refuelling areas, which will be away from surface water gulleys or drains. In the event of a machine requiring refuelling outside of this area, fuel will be transported in a mobile double skinned tank. An adequate supply of spill kits and hydrocarbon adsorbent packs will be stored in this area. All relevant personnel will be fully trained in the use of this equipment. Guidelines such as "Control of Water Pollution from Construction Sites, Guidance for Consultants and Contractors" (CIRIA 532, 2001) will be complied with.

The construction contractor will be required to implement emergency response procedures, and these will be in line with industry guidance. All personnel working on the site will be suitably trained in the implementation of the procedures.

#### 10.6.1.5 Wastewater Management

Foul wastewater arising from the site will be managed and controlled for the duration of the construction works.

Foul water from the offices and welfare facilities on the site will be collected in portable sanitary facilities and disposed of appropriately by licenced contractor.

The construction contractor will implement emergency response procedures, and these will be in line with industry guidance. All personnel working on the site will be suitably trained in the implementation of the procedures.

#### 10.6.1.6 Surface Water and Ground Flow and Quantity

Surface water discharge from the site will be managed and controlled for the duration of the construction works until the surface water drainage system of the proposed development is complete.

The construction contractor will be required to manage suspended solids during the construction phase, and only treated construction water will be permitted to discharge to the established stormwater network. Surface water management measures will be implemented to prevent pollution and degradation of receiving waters and habitats arising from chemical spills or run-off containing elevated levels of suspended solids. These measures will be designed and implemented in accordance with relevant guidelines and best practice, including Control of Water Pollution from Construction Sites – Guidance for Consultants and Contractors (CIRIA C532, 2001).

Following discharge to the downstream drainage network, surface waters will undergo dilution and mixing within the Mayne River, together with natural attenuation processes along the drainage pathway, prior to reaching the Mayne Estuary, thereby further reducing the potential for residual impacts on downstream receiving waters.

### 10.6.2 Operational Phase

#### 10.6.2.1 Surface Water and Groundwater Quality

The design has taken account of the potential impacts of the development on surface water quality; measures have been incorporated in the design to mitigate these potential impacts.

The proposed surface water management design establishes an indirect hydrological connection to the Mayne River, located north of the site, during the operational phase.

To mitigate potential contamination from surface water runoff, which may originate from roads and hardstanding areas, a sustainable drainage system (SuDS) will be implemented. This system is designed to minimize the risk of contaminants, such as hydrocarbons, entering the stormwater drainage network and subsequently impacting surface water bodies like the Mayne River, which discharges to the Mayne Estuary Transitional Waterbody, and ultimately discharge to the Irish Sea, as well as the Dublin GWB underlying the site.

The surface water drainage strategy integrates a range of SuDS measures, including attenuation ponds, green and blue roofs, permeable paving and filter drains. These measures will effectively manage surface water flows by directing run-off to attenuation and infiltration systems to maximise storage and treatment potential. Flow control devices will be installed downstream of attenuation pond outlet pipes to regulate discharge rates and ensure controlled release of treated surface water to the receiving environment. Following discharge, surface waters will undergo dilution and mixing within the Mayne River, together with natural attenuation processes along the drainage pathway, prior to reaching the Mayne Estuary.

Refer to the Engineering Report, prepared by CS Consulting Engineers submitted separately as part of the planning application for further information on the proposed storm water management and design.

#### 10.6.2.2 Surface water and Groundwater Flow and Quantity

As identified in Chapter 9, the proposed incorporation of hardstand areas and SuDS design measures may slightly reduce local groundwater recharge and increase runoff if not properly managed, potentially causing flooding and affecting downstream environments. However, the overall impact on the groundwater regime is expected to be insignificant due to the site's small area relative to the total aquifer, and construction will avoid areas with localized flooding to mitigate flood risks.

To mitigate these risks, the design of the development and its drainage infrastructure will ensure that runoff rates are restricted to those of greenfield conditions. The development will incorporate SuDS and an attenuation system, with a design that up to and including the 100-year plus climate change allowance and discharge surface water to the downstream network at an appropriately determined rate. The proposed surface water management strategy aims to prevent surcharging during a 1 in 2-year storm events up to and including the 1 in 100 years plus allowance for climate change.

Furthermore, there are no proposed surface water or groundwater abstractions, eliminating potential impacts on the quantity of surface water or groundwater resources.

## 10.7 Residual Impacts

### 10.7.1 Construction Phase

#### 10.7.1.1 Surface water and Groundwater Quality

The implementation of the mitigation and monitoring measures detailed in Section 10.6 and 10.8, will ensure that the potential impacts on surface water and groundwater quality during the construction phase are adequately mitigated. There will be no change to overall flow and quality within the hydrological and hydrogeological regime as a result of construction.

The residual effect on surface water and groundwater quality during the construction phase is considered to be neutral, imperceptible and short-term.

#### 10.7.1.2 Surface Water and Groundwater Flow and Quantity

The implementation of the mitigation and monitoring measures detailed in Section 10.6 and 10.8, will ensure that the potential impacts on surface water and groundwater flow and quantity during the construction phase are adequately mitigated. There will be no change to overall flow and quality within the hydrological and hydrogeological regime as a result of construction.

The residual effect on surface water and groundwater flow and quantity during the construction phase is considered to be neutral, imperceptible and short-term.

### 10.7.2 Operational Phase

#### 10.7.2.1 Surface Water and Groundwater Quality

The implementation of the mitigation and monitoring measures detailed in Section 10.6 and 10.8, will ensure that the potential impacts on surface water and groundwater quality once the proposed development is constructed and operational are adequately mitigated.

The residual effect on surface water quality during the operational phase is considered to be neutral, imperceptible and short-term.

#### 10.7.2.2 Surface Water and Groundwater Flow and Quantity

The implementation of the mitigation and monitoring measures detailed in Section 10.6 and 10.8, will ensure that the potential impacts on surface water and groundwater flow and quantity once the proposed development is constructed and operational are adequately mitigated.

The residual effect on surface water and groundwater flow and quantity during the operational phase is considered to be neutral, imperceptible and short-term.

## 10.8 Monitoring

### 10.8.1 Construction Phase

During construction phase the following monitoring measures will be considered. Monitoring will be undertaken in accordance with planning conditions and undertaken by the contractor in compliance with the project OCMP.

Contractors will carry out regular inspections to confirm compliance with the OCMP. Daily inspections by contractors will address potential environmental impacts including dust, litter, waste management and general housekeeping.

Weekly checks will be carried out to ensure surface water drains are not blocked by silt, or other items.

Regular inspection of surface water run-off and sediments controls (e.g., silt traps). Inspection and maintenance of the silt control measures during construction phase is crucial to ensuring that they work as intended.

### 10.8.2 Operational Phase

No future surface water monitoring is proposed for the proposed development due to the low hazard potential at the site.

Hydrocarbon interceptors will be maintained and cleaned out in accordance with the manufacturer's instructions.

Maintenance of the surface water drainage system as per normal urban developments is recommended to minimise any accidental discharges to surface water.

## 10.9 Reinstatement

### 10.9.1 Construction Phase

In the event of temporary disturbance associated with the proposed development during construction, all affected areas would be reinstated upon completion of works. Reinstatement would be carried out in accordance with best practice and relevant planning conditions, returning the site to an appropriate condition consistent with the proposed end use.

Given the nature of the proposed development and the implementation of standard construction management measures, no significant environmental impacts associated with reinstatement are predicted.

### 10.9.2 Operational Phase

During the operational phase of the proposed development, no reinstatement works are required, as no ongoing ground disturbance or temporary works would occur. The site would be maintained in accordance with the operational management procedures and the approved development layout.

Accordingly, no environmental impacts associated with reinstatement during the operational phase are predicted, and the operational use of the site would not result in any alteration to baseline environmental conditions.

## 10.10 Interactions

This section discusses interactions between this chapter and other specialist environmental topics considered in this EIAR.

### 10.10.1 Land, Soils and Geology

#### 10.10.1.1 Construction Phase

The construction phase of the proposed development has the potential to result in increased sediment runoff, due to excavation works. This has the potential to interact on surface or groundwater water quality. The proposed construction phase mitigation outlined in Section 10.9, means that the proposed development will not result in significant negative impact on groundwater water quality in the local area. Surface water runoff can also have an effect on soil quality in the area, with chemicals or suspended solids having an effect on soil fertility and contamination.

Taking into account the design and mitigation measures set out in this chapter (Hydrology and Hydrogeology) & Chapter 9 (Land, Soils and Geology) of this EIA Report, means that the proposed development will not result in significant negative impact on the Hydrology and Hydrogeology in the local area. The interaction is considered to be **neutral, imperceptible and short-term**.

#### 10.10.1.2 Operational Phase

Taking into account the design and mitigation measures set out in this chapter (Hydrology and Hydrogeology) & Chapter 9 (Land, Soils and Geology) of this EIA Report. There are no potentially

significant interactions identified between Land, Soils and, Hydrogeology and Hydrology during the operational phase.

### 10.10.2 Biodiversity

#### 10.10.2.1 Construction Phase

Dust emissions have the potential to settle on plants causing impacts to local ecology. Mitigation measures during the construction phase of the proposed development will ensure that dust generation is minimised.

Taking into consideration the discharge of surface and foul water to the combined sewer network and the mitigation measures outlined in Section 10.9 the impact on biodiversity should be minimal.

Taking into account the design and mitigation measures set out in this chapter (Hydrology and Hydrogeology) and Chapter 8 (Biodiversity) of this EIA Report, the interaction between Hydrology & Hydrogeology and Biodiversity is considered to be **neutral, imperceptible, and short-term.**

#### 10.10.2.2 Operational Phase

The proposed development design includes hardstand cover across the site and the proposed surface water drainage system for this development has been designed SUDS. It is proposed to use a SUDS approach to stormwater management throughout the site where possible. The overall strategy aims to provide an effective system to mitigate the adverse effects of urban stormwater runoff on the environment by reducing runoff rates, volumes and frequency, reducing pollutant concentrations in stormwater. The design of the attenuation storage system has been carried out for the 1 in 100-year event with a 20% allowance for climate change.

There is no discharge to ground proposed as part of the surface water drainage strategy. Surface water will discharge to the existing ditches that run into the Mayne River located north of the site. Foul water will be discharged to the proposed foul sewer system which will eventually be treated at Ringsend WWTP.

Taking into account the design and mitigation measures set out in Section 10.9 of this EIA Report, the interaction between Hydrology & Hydrogeology and Biodiversity during the operational phase is considered to be **neutral, imperceptible, and long-term**.

### 10.10.3 Waste

#### 10.10.3.1 Construction Phase

During the construction phase, excavated soil (c. 1,550 m3) will be generated from the excavations required to facilitate site levelling, construction of new foundations and installations of site services.

The material that will be taken off-site will be sent for reuse or recovery, where practical, with disposal as a last resort. Adherence to the mitigation measures in Chapter 19 (Material Assets Waste Management), Chapter 10 (Hydrology and Hydrogeology) and the requirements of the RWMP (**Appendix 19.1**), will ensure the effect is **neutral, imperceptible and long-term**.

#### 10.10.3.2 Operational Phase

There are no potentially significant interactions identified between Waste and Hydrology during the operational phase.

### 10.10.4 Air Quality & Climate

#### 10.10.4.1 Construction Phase

Construction phase activities such as site clearance, excavation works, movement of construction traffic, and stockpiling of materials have the potential to result in interactions between air quality and hydrology, primarily through the generation of dust which may deposit in nearby surface waters.

The implementation of appropriate mitigation measures during the construction phase will ensure that dust generation and subsequent deposition are minimised. With these measures in place to control fugitive dust emissions, it is predicted that there will be no significant adverse interactions between air quality and hydrology. The resulting interaction is therefore characterised as **neutral**, **imperceptible**, **and short-term**.

#### 10.10.4.2 Operational Phase

There are no potentially significant interactions identified between hydrology and air quality and climate during the operational phase.

## 10.11 Indirect and/or Secondary Impacts

Indirect or secondary impacts are effects that are not a direct result of the proposed development but occur as a consequence of a primary impact.

No indirect or secondary impacts are predicted during the construction, operational, or decommissioning phases of the development.

## 10.12 Cumulative Impacts

### 10.12.1 Construction Phase

No significant cumulative impacts are predicted to arise during the construction phase. The proposed development would not result in cumulative effects when considered in combination with other developments in the area.

### 10.12.2 Operational Phase

During the operational phase, the proposed development would operate in accordance with the approved design and management measures. Based on the findings of the individual environmental assessments and consideration of other existing and reasonably foreseeable developments, no cumulative impacts are predicted.

## 10.13 Difficulties Encountered

There were no difficulties encountered during the writing of this EIAR chapter.

## 10.14 References

- Environmental Protection Agency (EPA) – website mapping and database information. Envision water quality monitoring data for watercourses in the area;
- Geological Survey of Ireland (GSI) - on-line mapping, Geo-hazard Database, Geological Heritage Sites & Sites of Special Scientific Interest, Bedrock Memoirs and 1: 100,000 mapping;
- River Basin Management Plan for Ireland 2018-2021.

- Water Action Plan 2025 - A River Basin Management Plan for Ireland, (Department of Housing Local Government & Heritage, Sept 2024).
- The Planning System and Flood Risk Management, Guidelines for Planning Authorities (Department of the Environment, Heritage and Local Government (DoEHLG) and the Office of Public Works (OPW));
- Office of Public Works (OPW) flood mapping data (www.floodmaps.ie)
- Control of Water Pollution from Construction Sites, Guidance for Consultants and Contractors' (CIRIA 532, 2001); and
- National Parks and Wildlife Services (NPWS) – Protected Site Register.
- Hydrometric data (www.floodinfo.ie/map/floodmaps/), OPW CFRAM Flood Risk Mapping, www.epa.ie/hydron

# 11 Air Quality

## 11.1 Introduction

This chapter assesses the likely air quality impacts associated with the proposed Large scale Residential Development (LRD), located at lands at Clongriffin, Dublin 13. This report assesses the baseline air quality conditions at the site and evaluates the potential effects of the proposed development's construction and operation. Where required, appropriate mitigation measures to limit any identified likely significant adverse impacts to air quality are recommended.

A full description of the development is available in Chapter 5. This chapter should be read in conjunction with Chapter 18 Traffic & Transportation submitted with the planning application.

## 11.2 Expertise and Qualifications

This chapter was prepared by Tanmay Gojamgunde. Tanmay is an Environmental Consultant in the Air Quality & Climate section of AWN Consulting, a Trinity Consultants Company. He has over 1 year of experience in air quality and holds both a MSc in Air Pollution Management and Control from the University of Birmingham and BTech in Environmental Engineering. As part of the MSc, he worked on 'The Impact of bus-fleet electrification on air quality in Birmingham' utilising advanced dispersion modelling tools and emission inventory toolkit. Prior to joining AWN, Tanmay contributed to several key environmental projects in India, including Delhi's first air quality monitoring program (R ASMAN), air quality and traffic planning assessments with IIT Kanpur, and an Environmental Impact Assessment Report (EIAR) for an industrial district in Kanpur. He also specialises in conducting air dispersion modelling assessments of emissions, emission inventories, R programming and knowledge extending to broader aspects of environmental engineering. He has prepared air quality and climate impact assessments as part of EIARs for several residential developments some of which include Ennis LRD (Planning Application Ref. 17495), Cherrywood M1 Phase 2A LRD (Planning Application Ref DZ22A/0017), Maglin LRD (Planning Application Ref. LRD 2544222). He has also prepared air dispersion modelling assessments of emissions as part of EPA Industrial Emissions Licences.

This chapter was reviewed by Ciara Nolan. Ciara is a Principal Environmental Consultant in the Air Quality & Climate section of AWN Consulting. She holds a BSc in Energy Systems Engineering from University College Dublin and has also completed an MSc in Applied Environmental Science at UCD. She is a Member of the Institute of Air Quality Management (MIAQM) and the Institution of Environmental Sciences (MIEnvSc). She has over 9 years of experience in undertaking air quality and climate assessments. She has prepared air quality and climate impact assessments as part of EIARs for residential developments including Woodbrook, Shankill (Planning Application Ref. ABP30584419), Ballygossan Park, Skerries (Planning Application Ref. LRD0010/S3), SHD Ratoath (Planning Application Ref. SH305196), SHD Rathmullen, Drogheda (Planning Application Ref. SH305552), commercial and industrial developments by Dublin Airport Authority, Abbvie, Mountpark, Pfizer, Takeda, as well as renewable energy developments such as Crockahenny Windfarm, Upperchurch Windfarm, Knocknamona Windfarm and Keerglen Windfarm. She also specialises in conducting air dispersion modelling assessments of emissions from data centres, energy centres and the chemical industry as part of EPA Industrial Emissions Licences for Echelon DC, AWS, Takeda, MSD and Regeneron. She has undertaken air quality and climate impact assessments for transportation schemes, primarily regional and national road schemes, from constraints, through to route selection and EIAR stage.

### 11.2.1 Aspects Relevant to this Assessment

During the construction phase, construction dust emissions have the potential to impact air quality. Dust emissions will primarily occur as a result of site preparation works, earthworks and the movement of trucks on site and exiting the site. There is also the potential for engine emissions from site vehicles and machinery to impact air quality. Construction phase impacts will be short-term in duration.

During the operational phase, engine emissions from vehicles accessing the site have the potential to impact air quality through the release of nitrogen dioxide ($NO_2$) and particulate matter (as $PM_{10}$ and $PM_{2.5}$). Operational phase impacts will be long-term in duration.

## 11.3 Method

### 11.3.1 Relevant Legislation & Guidance

The principal guidance and best practice documents used to inform the assessment of potential impacts on air quality are summarised below.

- Guidance on the Assessment of Dust from Demolition and Construction v2.2 (Institute of Air Quality Management [IAQM] (hereafter referred to as the IAQM guidance) (IAQM, 2024);
- A Guide To The Assessment Of Air Quality Impacts On Designated Nature Conservation Sites (Version 1.1) (IAQM, 2020); and
- PE-ENV-01106: Air Quality Assessment of Specified Infrastructure Projects (hereafter referred to as the TII guidance) (Transport Infrastructure Ireland [TII], 2025).

In addition to specific air quality guidance documents, the following guidelines were considered and consulted in the preparation of this chapter:

- Guidelines on the Information to be Contained in Environmental Impact Assessment Reports (hereafter referred to as the Environmental Protection Agency (EPA) Guidelines) (EPA, 2022);
- Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment (Department of Housing, Planning & Local Government, 2018); and
- Environmental Impact Assessment (EIA) Directive Guidance on the Preparation of the Environmental Impact Assessment Report (European Commission, 2017).

### 11.3.2 Criteria for Rating of Impacts

#### 11.3.2.1 Ambient Air Quality Standards

National and European statutory bodies, the Department of the Environment, Heritage and Local Government in Ireland and the European Parliament and Council of the European Union, have set limit values in ambient air for a range of air pollutants to reduce the risk to health from poor air quality. These limit values or "*Air Quality Standards*" are health or environmental-based levels for which additional factors may be considered. For example, natural background levels, environmental conditions and socio-economic factors may all play a part in the limit value which is set.

Air quality significance criteria are assessed on the basis of compliance with the appropriate standards or limit values. The applicable standards in Ireland are set out in *Directive (EU) 2024/2881 of the European Parliament and of the Council of 23 October 2024 on ambient air quality and cleaner air for Europe (recast)*. This directive supersedes *EU Directive 2008/50/EC of the European Parliament and of the Council of 21 May 2008 on ambient air quality and cleaner air for Europe (CAFE Directive)*. It sets out new air quality standards for pollutants to be reached by 2030 which are more closely aligned with

the World Health Organisation (WHO) air quality guidelines and also includes limit values applicable until 2030.

The Ambient Air Quality Standards Regulations 2022 (S.I. 739 of 2022) (the Air Quality Standards Regulations 2022) further transposed the CAFE Directive and revoked the Air Quality Standards Regulations 2011, as amended. With the adoption of Directive (EU) 2024/2881, Ireland must similarly transpose this directive into national law, i.e. update the Air Quality Standards Regulations, before December 2026.

The ambient air quality limit values for pollutants are set out in Annex I of Directive (EU) 2024/2881. Table 1 of Annex I in Directive (EU) 2024/2881 sets out the updated air quality limit values for pollutants to be achieved by 1 January 2030, which are more closely aligned with the WHO air quality guidelines. Table 2 of Annex I in Directive (EU) 2024/2881 sets out the limit values for air pollutants which are to be achieved by 11 December 2026 and are also applicable up to 2030. The limit values in Table 2 of Annex I are the same as the limits set under Directive 2008/50/EC and the Air Quality Standards Regulations 2022.

The ambient air quality standards applicable for nitrogen dioxide ($NO_2$) and particulate matter (as $PM_{10}$ and $PM_{2.5}$) are outlined in (Error! Reference source not found.). Error! Reference source not found. outlines the limit values pre-2030 and post-2030 for the specified pollutants.

### Table 11.1 Ambient Air Quality Limit Values

| Pollutant | Directive (EU) 2024/2881 Annex I Table 2 | | Directive (EU) 2024/2881 Annex I Table 1 | |
|---|---|---|---|---|
| | Limit Type | Limit Value (to be attained by 2026 and applicable until 2030) | Limit Type | Limit Value (to be attained by 2030) |
| Nitrogen Dioxide ($NO_2$) | Hourly limit for protection of human health - not to be exceeded more than 18 times/year | 200 µg/m$^3$ | Hourly limit for protection of human health - not to be exceeded more than 3 times/year | 200 µg/m$^3$ |
| | N/A | N/A | 24-hour limit for protection of human health - not to be exceeded more than 18 times/year | 50 µg/m$^3$ |
| | Annual limit for protection of human health | 40 µg/m$^3$ | Annual limit for protection of human health | 20 µg/m$^3$ |
| Particulate Matter (as $PM_{10}$) | 24-hour limit for protection of human health - not to be exceeded more than 35 times/year | 50 µg/m$^3$ | 24-hour limit for protection of human health - not to be exceeded more than 18 times/year | 45 µg/m$^3$ |
| | Annual limit for protection of human health | 40 µg/m$^3$ | Annual limit for protection of human health | 20 µg/m$^3$ |
| Particulate Matter (as $PM_{2.5}$) | N/A | N/A | 24-hour limit for protection of human health - not to be exceeded more than 18 times/year | 25 µg/m$^3$ |
| | Annual limit for protection of human health | 25 µg/m$^3$ | Annual limit for protection of human health | 10 µg/m$^3$ |

#### 11.3.2.2 WHO Air Quality Guidelines & Clean Air Strategy

In April 2023, the Government of Ireland published the Clean Air Strategy for Ireland (Government of Ireland, 2023), which provides a high-level strategic policy framework needed to reduce air pollution. The strategy commits Ireland to achieving the 2021 WHO Air Quality Guidelines Interim Target 3 (IT3) by 2026, the IT4 targets by 2030 and the final targets by 2040 (Error! Reference source not found.). The strategy notes that a significant number of EPA monitoring stations observed air pollution levels in 2021 above the WHO targets; 80% of these stations would fail to meet the final $PM_{2.5}$ target of 5 µg/m$^3$. The strategy also acknowledges that "meeting the WHO targets will be challenging and will require legislative and societal change, especially with regard to both $PM_{2.5}$ and $NO_2$".

Annex II of Directive (EU) 2024/2881 gives assessment thresholds which align with the clean air strategy final 2040 WHO targets. Directive (EU) 2024/2881 states that "*Member States shall endeavour to achieve and preserve the best ambient air quality and a high level of protection of human health and the environment, with the aim of achieving a zero-pollution objective as referred to in Article 1(1), in line with WHO recommendations, and below the assessment thresholds laid down in Annex II*."

These assessment thresholds relate to monitoring of ambient air quality by Member States, where "*exceedances of the assessment thresholds specified in Annex II shall be determined on the basis of concentrations during the previous 5 years where sufficient data are available. An assessment threshold shall be deemed to have been exceeded if it has been exceeded during at least 3 separate years out of those previous 5 years*."

Table 11.2 WHO Air Quality Guidelines 2021

| Pollutant | Limit Type | IT3 (2026) | IT4 (2030) | Final Target (2040) |
|---|---|---|---|---|
| $NO_2$ | 24-hour limit for protection of human health | - | - | 25 µg/m$^3$ |
| | Annual limit for protection of human health | 20 µg/m$^3$ | - | 10 µg/m$^3$ |
| PM (as $PM_{10}$) | 24-hour limit for protection of human health | 75 µg/m$^3$ | 50 µg/m$^3$ | 45 µg/m$^3$ |
| | Annual limit for protection of human health | 30 µg/m$^3$ | 20 µg/m$^3$ | 15 µg/m$^3$ |
| PM (as $PM_{2.5}$) | 24-hour limit for protection of human health | 37.5 µg/m$^3$ | 25 µg/m$^3$ | 15 µg/m$^3$ |
| | Annual limit for protection of human health | 15 µg/m$^3$ | 10 µg/m$^3$ | 5 µg/m$^3$ |

The applicable air quality limit values for the purposes of this assessment are those set out in Error! Reference source not found.. The pre-2030 limit values in Table 2 of Annex I of Directive (EU) 2024/2881 are applicable for the construction phase and Opening Year 2028 for the proposed development. The post-2030 limit values stipulated in Table 1 of Annex I of Directive (EU) 2024/2881 are applicable for the Design Year 2043 for the proposed development.

#### 11.3.2.3 Dust Deposition Guidelines

The concern from a health perspective is focused on particles of dust that are less than 10 microns ($PM_{10}$) and less than 2.5 microns ($PM_{2.5}$). The EU ambient air quality standards outlined in Error! Reference source not found. have set ambient air quality limit values for $PM_{10}$ and $PM_{2.5}$.

With regards to larger dust particles that can give rise to nuisance dust, there are no statutory guidelines regarding the maximum dust deposition levels that may be generated during the construction phase of a development in Ireland. Furthermore, no specific criteria have been stipulated for nuisance dust in respect of this development.

With regard to dust deposition, the German TA-Luft standard for dust deposition (non-hazardous dust) (German VDI, 2002) sets a maximum permissible emission level for dust deposition of 350 mg/m$^2$/day averaged over a one-year period at any receptors outside the site boundary. The TA-Luft standard has been applied for the purpose of this assessment based on recommendations from the EPA in Ireland in the document titled Environmental Management Guidelines - Environmental Management in the Extractive Industry (Non-Scheduled Minerals) (EPA, 2006). The document recommends that the TA-Luft limit of 350 mg/m$^2$/day be applied to the site boundary of quarries. This limit value can be implemented with regard to dust impacts from construction of the proposed development.

#### 11.3.2.4 Air Quality & traffic Significance Criteria

The Transport Infrastructure Ireland (TII) guidance document Air Quality Assessment of Specified Infrastructure Projects – PE-ENV-01106 (TII, 2025a) details a methodology for determining air quality impact significance criteria for road schemes which can be applied to any project that causes a change in traffic. The degree of impact is determined based on the percentage change in pollutant concentrations relative to the Do-Nothing scenario. The TII significance criteria are outlined in Table 4.9 of *Air Quality Assessment of Specified Infrastructure Projects* – PE-ENV-01106 (TII, 2025a) and reproduced in **Table 11.3** below. These criteria have been adopted for the proposed development to predict the impact of $NO_2$, $PM_{10}$ and $PM_{2.5}$ emissions as a result of the proposed development.

Table 11.3 Air Quality & Traffic Significance Criteria

| Long-term average concentration at receptor in assessment year | % Change in concentration relative to Air Quality Limit Value (AQLV) | | | |
|---|---|---|---|---|
| | 1% | 2-5% | 6-10% | >10% |
| 75% or less of AQLV | Neutral | Neutral | Slight | Moderate |
| 76 – 94% of AQLV | Neutral | Slight | Moderate | Moderate |
| 95 – 102% of AQLV | Slight | Moderate | Moderate | Substantial |
| 103 – 109% of AQLV | Moderate | Moderate | Substantial | Substantial |
| 110% or more of AQLV | Moderate | Substantial | Substantial | Substantial |

Source: Air Quality Assessment of Specified Infrastructure Projects – PE-ENV-01106 (TII, 2025a))

As per **Table 11.3** a neutral effect is one where a change in concentration at a receptor is:

- 5% or less where the Opening Year, without the proposed development, annual mean concentration is 75% or less of the standard; or
- 1% or less where the Opening Year, without the proposed development, annual mean concentration is 94% or less of the standard.

Where an effect does not meet the criteria for neutral, as described above, the effect can either be positive or negative. The TII guidance (TII, 2025a) states that "*the evaluation of significance of effects for the operational phase should be undertaken for the Opening Year only as the Design Year is likely to show lower total pollutant concentrations and changes in concentration*" (TII, 2025a).

Non-significant effects (i.e. of local importance only) are '*neutral*' or '*slight*' changes in concentrations while significant effects can be changes in pollutant concentrations that are either 'moderate' or

'*substantial*'. However, the TII guidance (TII, 2025a) states that these must be considered in the context of the project and 'moderate' or 'substantial' increases are not necessarily always significant effects.

The impact descriptors in **Table 11.3** are used to describe the impact at each modelled receptor location, and the significance of the impacts is then determined, aligning with the terminology in the EPA guidelines (EPA, 2022). Whilst it may be determined that there are '*slight*', '*moderate*' or '*substantial*' impacts at one or more receptors, an overall judgement should be made of whether the proposed development is '*significant*' or '*not significant*' in terms of air quality. Factors to consider when determining the overall significance of a proposed development are provided in Table 4.10 of the TII guidance (TII, 2025a).

### 11.3.3 Construction Phase

#### 11.3.3.1 Construction Dust Assessment

The Institute of Air Quality Management in the UK (IAQM) guidance document *'Guidance on the Assessment of Dust from Demolition and Construction'* (IAQM, 2024) outlines an assessment method for predicting the impact of dust emissions from construction activities based on the scale and nature of the works and the sensitivity of the area to dust impacts. The IAQM methodology has been applied to the construction phase of this development to predict the likely risk of dust impacts in the absence of mitigation measures and to determine the level of site-specific mitigation required. The use of UK guidance is recommended by Transport Infrastructure Ireland in their guidance document *Air Quality Assessment of Specified Infrastructure Projects – PE-ENV-01106* (TII, 2025a).

The major dust generating activities are divided into four types within the IAQM guidance (IAQM, 2024) to reflect their different potential impacts. These are:

- Demolition;
- Earthworks;
- Construction; and
- Trackout (transport of dust and dirt from the construction site onto the public road network).

The magnitude of each of the four categories is divided into Large, Medium or Small scale depending on the nature of the activities involved. The criteria for determining the category for the works involved are outlined in **Table 11.4**, these are based on the IAQM guidance (IAQM, 2024). The magnitude of each activity is combined with the overall sensitivity of the area to determine the risk of dust impacts from site activities. This allows the level of site-specific mitigation to be determined.

Table 11.4 IAQM Criteria to Determine Dust Emissions Magnitude

| Dust Emission Magnitude | | |
|---|---|---|
| **Small** | **Medium** | **Large** |
| **Demolition** | | |
| ▪ Total building volume <12,000 $m^3$<br>▪ Construction material with low potential for dust release (e.g. metal cladding or timber)<br>▪ Demolition activities <6 m above ground<br>▪ Demolition during wetter months | ▪ Total building volume 12,000 - 75,000 $m^3$<br>▪ Potentially dusty construction material<br>▪ Demolition activities 6 – 12 m above ground level | ▪ Total building volume >75,000 $m^3$<br>▪ Potentially dusty construction material (e.g. concrete)<br>▪ On-site crushing and screening<br>▪ Demolition activities >12 m above ground level |
| **Earthworks** | | |
| ▪ Total site area <18,000 $m^2$<br>▪ Soil type with large grain size (e.g. sand)<br>▪ <5 heavy earth moving vehicles active at any one time<br>▪ Formation of bunds <3 m in height<br>▪ Earthworks during wetter months | ▪ Total site area 18,000 $m^2$ - 110,000 $m^2$<br>▪ Moderately dusty soil type (e.g. silt)<br>▪ 5 – 10 heavy earth moving vehicles active at any one time<br>▪ Formation of bunds 3–6 m in height | ▪ Total site area >110,000 $m^2$<br>▪ Potentially dusty soil type (e.g. clay, which will be prone to suspension when dry due to small particle size)<br>▪ >10 heavy earth moving vehicles active at any one time<br>▪ Formation of bunds >6 m in height |
| **Construction** | | |
| ▪ Total building volume <12,000 $m^3$<br>▪ Construction material with low potential for dust release (e.g. metal cladding or timber) | ▪ Total building volume 12,000 - 75,000 $m^3$<br>▪ Potentially dusty construction material (e.g. concrete)<br>▪ On-site concrete batching | ▪ Total building volume >75,000 $m^3$<br>▪ On-site concrete batching<br>▪ Sandblasting |
| **Trackout (Truck Movements)** | | |
| ▪ <20 HDV (>3.5 t) outward movements in any one day<br>▪ Surface material with low potential for dust release<br>▪ Unpaved road length <50 m | ▪ 20 – 50 HDV (>3.5 t) outward movements in any one day<br>▪ Moderately dusty surface material (e.g. high clay content)<br>▪ Unpaved road length 50 – 100 m | ▪ >50 HDV (>3.5 t) outward movements in any one day<br>▪ Potentially dusty surface material (e.g. high clay content)<br>▪ Unpaved road length >100 m |

The sensitivity of the area must then be assessed as outlined below. Both receptor sensitivity and proximity to proposed works areas are taken into consideration. For the purposes of this assessment, high sensitivity receptors are regarded as residential properties where people are likely to spend the majority of their time. Commercial properties and places of work are regarded as medium sensitivity while low sensitivity receptors are places where people are present for short periods or do not expect a high level of amenity.

Dust emissions also have the potential to impact sensitive ecology. Dust can affect vegetation through chemical means such as chemical changes like increased acidity in soils or watercourses. Physical affects include reduced photosynthesis, respiration and transpiration through smothering. These changes are likely to occur only as a result of long-term demolition and construction works adjacent to a sensitive habitat. Often impacts will be reversible once the works are completed, and dust emissions cease. High sensitivity ecological receptors are those with international or national designation (SPAs, SACs, NHAs) and where the designated feature is dust-sensitive. Effects to ecology can occur up to 50m from the source. **Table** 11.5 outlines the criteria for determining the sensitivity of the area to dust soiling and dust-related human health effects and dust-related ecological effects. as per the IAQM guidance (IAQM, 2024).

Table 11.5 Criteria for Determining the Sensitivity of the Area

| **Sensitivity of the Area to Dust Soiling Effects on People and Property** | | | | | | |
|---|---|---|---|---|---|---|
| **Receptor Sensitivity** | **Number of Receptors** | | **Distance from Source (m)** | | | |
| | | | **<20** | **<50** | **<100** | **<250** |
| High | >100 | | High | High | Medium | Low |
| | 10 - 100 | | High | Medium | Low | Low |
| | 1 - 10 | | Medium | Low | Low | Low |
| Medium | >1 | | Medium | Low | Low | Low |
| Low | >1 | | Low | Low | Low | Low |
| **Sensitivity of the Area to Dust-Related Human Health Impacts** | | | | | | |
| **Receptor Sensitivity** | **Annual Mean $PM_{10}$ Concentration** | **Number of Receptors** | **Distance from Source (m)** | | | |
| | | | **<20** | **<50** | **<100** | **<250** |
| High | < 24 µg/ $m^3$ | >100 | Medium | Low | Low | Low |
| | | 10 - 100 | Low | Low | Low | Low |
| | | 1 - 10 | Low | Low | Low | Low |
| Medium | < 24 µg/ $m^3$ | >10 | Low | Low | Low | Low |
| | | 1 - 10 | Low | Low | Low | Low |
| Low | < 24 µg/ $m^3$ | >1 | Low | Low | Low | Low |
| **Sensitivity of the Area to Dust-Related Ecological Impacts** | | | | | | |
| **Receptor Sensitivity** | | | **Distance from Source (m)** | | | |
| | | | **<20** | | **<50** | |
| High | | | High | | Medium | |
| Medium | | | Medium | | Low | |
| Low | | | Low | | Low | |

Once the dust emission magnitude has been determined the next step, according to the IAQM guidance (IAQM, 2024), is to establish the level of risk by combining the magnitude with the overall sensitivity of the area to dust soiling and human health effects. The level of risk associated with each activity is determined using the criteria in **Table 11.6**.

Table 11.6 IAQM Criteria to Determine Risk of Dust Impacts

| Sensitivity of Area | Dust Emission Magnitude | | |
|---|---|---|---|
| | Large | Medium | Small |
| **Demolition** | | | |
| High | High risk | Medium risk | Medium risk |
| Medium | High risk | Medium risk | Low risk |
| Low | Medium risk | Low risk | Negligible |
| **Earthworks** | | | |
| High | High risk | Medium risk | Low risk |
| Medium | Medium risk | Medium risk | Low risk |
| Low | Low risk | Low risk | Negligible |
| **Construction** | | | |
| High | High risk | Medium risk | Low risk |
| Medium | Medium risk | Medium risk | Low risk |
| Low | Low risk | Low risk | Negligible |
| **Trackout** | | | |
| High | High risk | Medium risk | Low risk |
| Medium | Medium risk | Medium risk | Low risk |
| Low | Low risk | Low risk | Negligible |

#### 11.3.3.2 Construction Phase Traffic Assessment

Construction phase traffic also has the potential to impact air quality. The *TII guidance Air Quality Assessment of Specified Infrastructure Projects – PE-ENV-01106* (TII, 2025a), states that road links meeting one or more of the following criteria can be defined as being 'affected' by a proposed development and should be included in the local air quality assessment. While the guidance is specific to infrastructure projects, the approach can be applied to any development that causes a change in traffic.

- Annual average daily traffic (AADT) changes by 1,000 or more.
- Heavy duty vehicle (HDV) AADT changes by 200 or more;
- Daily average speed change by 10 kph or more;
- Peak hour speed change by 20 kph or more;
- A change in road alignment by 5m or greater.

Cronin & Sutton Consulting Engineers (CS Consulting) have prepared a Traffic and Transport Impact Assessment for the proposed development enclosed separately and have prepared Chapter **Error! Reference source not found.** Traffic & Transportation of this EIAR. As per Chapter 19, it has been determined by CS Consulting that the construction stage traffic will not increase by 1,000 AADT, or 200 HDV AADT. Additionally, the proposed development will not result in speed changes or changes in road alignment. Therefore, the traffic does not meet the above scoping criteria. A detailed air quality assessment of construction stage traffic emissions has been scoped out from any further assessment as there is no potential for significant impacts to air quality.

### 11.3.4 Operational Phase

#### 11.3.4.1 Operational Phase Traffic Assessment

Operational phase traffic has the potential to impact local air quality as a result of increased vehicle movements associated with the proposed development. The TII scoping criteria detailed in Section **Error! Reference source not found.** were used to determine if any road links are affected by the proposed development and require inclusion in a detailed air dispersion modelling assessment. CS Consulting has prepared a Traffic and Transport Impact Assessment for the proposed development enclosed separately and have prepared Chapter **Error! Reference source not found.** (Traffic & Transportation). The proposed development will result in a greater than 1000 AADT increase on a small number of road links in the vicinity of the proposed development site. As a result, an assessment of traffic related emissions was conducted. Additionally, traffic associated with other cumulative developments in the vicinity of the proposed development was included in the figures supplied to ensure a full cumulative assessment was conducted. See Traffic and Transport Assessment and Chapter **Error! Reference source not found.** (Traffic & Transportation) for further details.

The impact of traffic emissions on air quality is assessed for both human and ecological receptors within 200 m of impacted roads as per the TII PE-ENV-01106 guidance (TII, 2025a).

The impact to air quality as a result of changes in traffic is assessed at sensitive human receptors in the vicinity of affected roads. These are discussed in further detail within Section **Error! Reference source not found.** and shown graphically in **Figure 11.3**.

The TII guidance (2025) states that modelling should be conducted for $NO_2$, $PM_{10}$ and $PM_{2.5}$ for the Base, Opening and Design Years for both the Do Minimum (Do Nothing – i.e. assuming the proposed development is not in place) and Do Something (with the proposed development in place) scenarios. Modelling of operational $NO_2$, $PM_{10}$ and $PM_{2.5}$ concentrations has been conducted for the Do Nothing and Do Something scenarios using the TII Road Emissions Model (REM) online calculator tool (TII, 2025b).

The following inputs are required for the REM tool: receptor locations, light duty vehicle (LDV) annual average daily traffic movements (AADT), heavy duty vehicles (HDV) AADT (HDV AADT), annual average traffic speeds, road link lengths, road type, project county location and pollutant background concentrations. The Default fleet mix option was selected which includes the following assumptions for fleet composition:

- Cars - Climate Action Plan (CAP), this is based on defined objectives to increase adoption of alternative technologies to reduce emissions with increased electrification.
- LDV - Business as Usual (High Ambition), this is based on a review of market capacity for different technologies within each category. This is broken down further into “high ambition” in the LGV fleet, where the distinction is the rate of adoption of low emissions technologies based on available and emerging technologies, adjusted to recognise the unique conditions, constraints and opportunities in the Irish market.
- HDVs - EU target projections for HGVs, this represents interim targets for emissions from sales of new HGVs.

The TII REM uses county-based Irish fleet composition for different road types, for different European emission standards from pre-Euro to Euro 6/VI with scaling factors to reflect improvements in fuel

quality, retrofitting, and technology conversions. The TII REM also includes emission factors for $PM_{10}$ emissions associated with brake and tyre wear (TII, 2025b).

Using this input data the model predicts the road traffic contribution to ambient ground level concentrations at the identified sensitive receptors using generic meteorological data. The predicted road contributions are then added to the existing background concentrations to give the predicted ambient concentrations. The ambient concentrations are then compared with the relevant ambient air quality standards to assess the compliance of the proposed development with these ambient air quality standards.

The TII guidance (2025a) also states that impacts to sensitive ecology due to traffic emissions should be considered. Consideration should be given to designated sites within 2km of the proposed development. However, a detailed assessment is only required at a local level, where there is a designated site within 200m of impacted road links. The TII guidance (TII, 2025a) notes that only sites that are sensitive to nitrogen and acid deposition need to be included in the assessment. It is not necessary to include sites, for example that have been designated as a geological feature or water course. There are no designated ecological sites within 200m of the site or impacted road links and therefore no assessment was required as there is no potential for significant impacts to the designated sites due to changes in air quality.

#### 11.3.4.1.1 Traffic Data used in Modelling Assessment

Traffic flow information is detailed in Error! Reference source not found. as obtained from CS Consulting for the purposes of this assessment. Data for the Do Nothing and Do Something scenarios for the Opening Year 2028 and Design Year 2043 were provided. The traffic data included traffic associated with the development site and other cumulative sites as relevant (see Chapter **Error! Reference source not found.** Traffic & Transportation for further details).

The modelling assessment has been undertaken for road links that were within 200 m of receptors. Background concentrations have been included as per Section **Error! Reference source not found.** of this chapter based on available EPA background monitoring data (EPA, 2025).

Background concentrations have been included as per Section **Error! Reference source not found.** of this chapter based on available EPA background monitoring data (EPA, 2025).

Table 11.7 Traffic Data used in Operational Phase Air Quality Assessment

| Road Name | Speed (kph) | Base Year | Opening Year | | Design Year | |
|---|---|---|---|---|---|---|
| | | | Do Nothing | Do Something | Do Nothing | Do Something |
| | | LDV AADT (HDV AADT) | LDV AADT (HDV AADT) | LDV AADT (HDV AADT) | LDV AADT (HDV AADT) | LDV AADT (HDV AADT) |
| Main Street (between Friar Street and Park Avenue) (Link 1) | 30 | 5406 (345) | 5506 (351) | 5774 (369) | 6880 (439) | 9019 (576) |
| Main Street (between Park Avenue and Hole in the Wall Road) (Link 2) | 30 | 7152 (298) | 8498 (354) | 8768 (365) | 10193 (425) | 12377 (516) |
| Clarehall Avenue (between Belmayne Avenue and Malahide Road) (Link 3) | 60 | 30727 (2151) | 30092 (2265) | 30241 (2276) | 37156 (2797) | 38498 (2898) |
| Main Street (between Belmayne Avenue and Malahide Road) (Link 4) | 60 | 27950 (1956) | 27426 (2064) | 27576 (2076) | 33742 (2540) | 35083 (2641) |
| Malahide Road (between Main Street and Belmayne) (Link 5) | 50 | 17101 (684) | 18000 (750) | 18221 (759) | 21683 (903) | 23867 (994) |

## 11.4 Baseline Environment

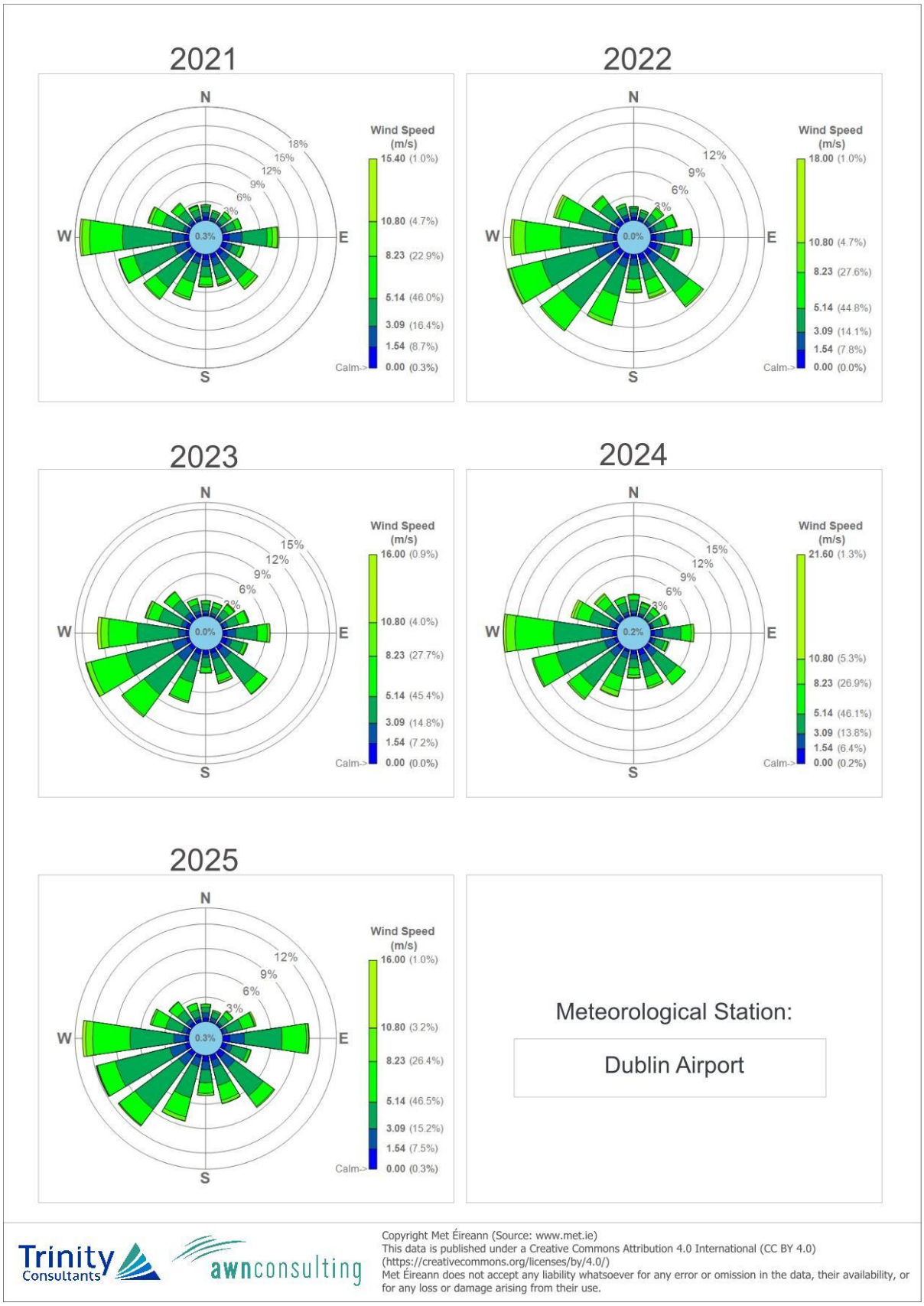
### 11.4.1 Meteorological Data

A key factor in assessing temporal and spatial variations in air quality is the prevailing meteorological conditions. Depending on wind speed and direction, individual receptors may experience very significant variations in pollutant levels under the same source strength (i.e. traffic levels) (WHO, 2006). Wind is of key importance in dispersing air pollutants and for ground level sources, such as traffic emissions, pollutant concentrations are generally inversely related to wind speed. Thus, concentrations of pollutants derived from traffic sources will generally be greatest under very calm conditions and low wind speeds when the movement of air is restricted. In relation to $PM_{10}$, the situation is more complex due to the range of sources of this pollutant. Smaller particles (less than $PM_{2.5}$) from traffic sources will be dispersed more rapidly at higher wind speeds. However, fugitive emissions of coarse particles ($PM_{2.5}$ - $PM_{10}$) will actually increase at higher wind speeds. Thus, measured levels of $PM_{10}$ will be a non-linear function of wind speed.

The nearest representative weather station collating detailed weather records is Dublin Airport meteorological station, which is located approximately 6.1 km west of the site. Dublin Airport met data has been examined to identify the prevailing wind direction and average wind speeds over a five-year period (see Error! Reference source not found.)( Met Éireann, 2026). For data collated during five

representative years (2021 – 2025), the predominant wind direction is westerly to south-westerly with a mean wind speed of 5.3 m/s over the 30-year period of 1991 – 2020 (Met Éireann, 2025).

Figure 11.1 Wind Roses for Dublin Airport Meteorological Station



### 11.4.2 Baseline Air Quality

Air quality monitoring programs have been undertaken in recent years by the EPA. The most recent annual report on air quality in Ireland is '*Air Quality In Ireland 2024*' (EPA, 2025). The EPA website details the range and scope of monitoring undertaken throughout Ireland and provides both monitoring data and the results of previous air quality assessments.

As part of the implementation of the Air Quality Standards Regulations 2022 (S.I. No. 739 of 2022), as amended, four air quality zones have been defined in Ireland for air quality management and assessment purposes (EPA, 2025). Dublin is defined as Zone A and Cork as Zone B. Zone C is composed of 23 towns with a population of greater than 15,000. The remainder of the country, which represents rural Ireland but also includes all towns with a population of less than 15,000, is defined as Zone D.

In terms of air monitoring and assessment, the proposed development site is within Zone A (EPA, 2025).

The long-term monitoring data has been used to determine background concentrations for the key pollutants in the region of the proposed development. The background concentration accounts for all non-traffic derived emissions (e.g. natural sources, industry, home heating etc.). The use of publicly available long-term datasets is recommended by TII in their PE-ENV-0016 guidance (TII, 2025a). This use of long-term data sets is preferred over on-site baseline air monitoring surveys as it gives a better indication of long-term trends in air quality. The use of long-term monitoring data from the EPA is considered appropriate for determining the background air quality in the area of the proposed development.

Continuous monitoring by the EPA is carried out at a number of monitoring stations within Zone A; these include urban background sites, roadside (traffic) sites and suburban background sites. It is necessary to select monitoring stations that are representative of the site location. Not all monitoring stations are considered suitable for determining background pollutant concentrations and must be reviewed on a case-by-case basis to determine the most appropriate EPA monitoring sites for the current assessment.

The EPA, on their website (EPA, 2025), state that background sites generally represent overall area-wide exposure more closely than roadside sites. Roadside monitoring sites are heavily influenced by traffic emissions and are not considered representative of area-wide pollutant levels.

The full suite of EPA Zone A monitoring locations were reviewed. These included urban traffic, suburban traffic and suburban background locations. Suburban background was determined to be the most representative background for the area of the proposed development. Influences from traffic emissions will be captured within the traffic modelling assessment and therefore, suburban background concentrations give the best indication of other, non-traffic derived sources of pollutants.

#### 11.4.2.1 $NO_2$

Long-term $NO_2$ monitoring was carried out at the Zone A suburban background locations in Ballyfermot, Dun Laoghaire, Swords and Tallaght, Co. Dublin for the period 2020 – 2024 (**Table 11.8**) (EPA, 2025). Long-term average concentrations are significantly below the annual average limit of 40 µg/m$^3$. Average results range from 10 – 16 µg/m$^3$. The overall annual average concentration for this 5-year

period is 13 µg/m$^3$. Additionally, there were no exceedances of the hourly limit value of 200 µg/m$^3$. Based on the above information a conservative estimate of the current background $NO_2$ concentration for the region of the proposed development is 13 µg/m$^3$.

Table 11.8 Baseline Air Quality - Nitrogen Dioxide ($NO_2$)

| Station | Averaging Period | Year | | | | |
|---|---|---|---|---|---|---|
| | | 2020 | 2021 | 2022 | 2023 | 2024 |
| Ballyfermot (Suburban Background) | Annual Mean $NO_2$ (µg/m$^3$) | 12 | 13 | 13 | 13 | 12 |
| | 1-hr Mean > 200 µg/m$^3$ (days) | 0 | 0 | 0 | 0 | 0 |
| Dun Laoghaire (Suburban Background) | Annual Mean $NO_2$ (µg/m$^3$) | 13 | 16 | 16 | 13 | 11 |
| | 1-hr Mean > 200 µg/m$^3$ (days) | 0 | 0 | 0 | 0 | 0 |
| Swords (Suburban Background) | Annual Mean $NO_2$ (µg/m$^3$) | 11 | 11 | 12 | 10 | 10 |
| | 1-hr Mean > 200 µg/m$^3$ (days) | 0 | 0 | 0 | 0 | 0 |
| Tallaght (Suburban Background) | Annual Mean $NO_2$ (µg/m$^3$) | 14 | 13 | 14 | 14 | 12 |
| | 1-hr Mean > 200 µg/m$^3$ (days) | 0 | 0 | 0 | 0 | 0 |

#### 11.4.2.2 $PM_{10}$

Continuous $PM_{10}$ monitoring was carried out at the Zone A suburban background locations in Ballyfermot, Dun Laoghaire, Tallaght, St Anne's Park, Marino, Finglas and Phoenix Park which are considered representative of the area of the proposed development for the period 2020 – 2024 (EPA, 2025) . Annual average $PM_{10}$ concentrations across the sites ranged from 9 – 14 µg/ m$^3$ over the 2020 – 2024 period (**Table 11.9**). The overall annual average concentration for this 5-year period is 12 µg/ m$^3$. There were at most 3 exceedances of the daily limit of 50 µg/m$^3$ in 2022 (at Marino). However, 35 exceedances are permitted per year (EPA, 2025). Based on the EPA data, a conservative estimate of the current background $PM_{10}$ concentration in the region of the proposed development is 12 µg/m$^3$.

Table 11.9 Baseline Air Quality - $PM_{10}$

| Station | Averaging Period | Year | | | | |
|---|---|---|---|---|---|---|
| | | 2020 | 2021 | 2022 | 2023 | 2024 |
| Ballyfermot (Suburban Background) | Annual Mean $PM_{10}$ (µg/m$^3$) | 12 | 12 | 13 | 11 | 11 |
| | 24-hr Mean > 50 µg/m$^3$ (days) | 2 | 0 | 1 | 0 | 0 |
| Dún Laoghaire (Suburban Background) | Annual Mean $PM_{10}$ (µg/m$^3$) | 12 | 11 | 12 | 12 | 12 |
| | 24-hr Mean > 50 µg/m$^3$ (days) | 0 | 0 | 1 | 0 | 1 |
| Finglas (Suburban Background) | Annual Mean $PM_{10}$ (µg/m$^3$) | 12 | 12 | 12 | 12 | 12 |
| | 24-hr Mean > 50 µg/m$^3$ (days) | 0 | 0 | 1 | 0 | 0 |
| Marino (Suburban Background) | Annual Mean $PM_{10}$ (µg/m$^3$) | 13 | 12 | 14 | 12 | 12 |
| | 24-hr Mean > 50 µg/m$^3$ (days) | 0 | 0 | 3 | 0 | 0 |
| Phoenix Park (Suburban Background) | Annual Mean $PM_{10}$ (µg/m$^3$) | 10 | 10 | 11 | 9 | 10 |
| | 24-hr Mean > 50 µg/m$^3$ (days) | 0 | 0 | 0 | 0 | 0 |
| St. Anne's Park (Suburban Background) | Annual Mean $PM_{10}$ (µg/m$^3$) | 11 | 11 | 13 | 11 | 11 |
| | 24-hr Mean > 50 µg/m$^3$ (days) | 0 | 0 | 1 | 0 | 0 |
| Tallaght (Suburban Background) | Annual Mean $PM_{10}$ (µg/m$^3$) | 10 | 10 | 11 | 11 | 10 |
| | 24-hr Mean > 50 µg/m$^3$ (days) | 1 | 0 | 1 | 1 | 0 |

#### 11.4.2.3 $PM_{2.5}$

Average $PM_{2.5}$ levels in suburban background locations in Ballyfermot, Dun Laoghaire, St Anne's Park, Marino, Finglas and Phoenix Park over the period 2020 - 2024 ranged from 6 - 9 µg/m$^3$ (EPA, 2025). The overall annual average concentration for this 5-year period is 7 µg/m$^3$ (**Table 11.10)**. Based on this information, an estimate of the background $PM_{2.5}$ concentration in the region of the proposed development is 7 µg/m$^3$.

Table 11.10 Baseline Air Quality - $PM_{2.5}$

| Station | Averaging Period | Year | | | | |
|---|---|---|---|---|---|---|
| | | 2020 | 2021 | 2022 | 2023 | 2024 |
| Ballyfermot (Suburban Background) | Annual Mean $PM_{2.5}$ (µg/m$^3$) | 8 | 8 | 8 | 7 | 7 |
| Dún Laoghaire (Suburban Background) | Annual Mean $PM_{2.5}$ (µg/m$^3$) | 8 | 8 | 8 | 7 | 7 |
| Finglas (Suburban Background) | Annual Mean $PM_{2.5}$ (µg/m$^3$) | 7 | 8 | 7 | 7 | 7 |
| Marino (Suburban Background) | Annual Mean $PM_{2.5}$ (µg/m$^3$) | 8 | 8 | 9 | 7 | 8 |
| Phoenix Park (Suburban Background) | Annual Mean $PM_{2.5}$ (µg/m$^3$) | 7 | 6 | 6 | 6 | 7 |
| St. Anne's Park (Suburban Background) | Annual Mean $PM_{2.5}$ (µg/m$^3$) | 7 | 7 | 8 | 7 | 6 |

#### 11.4.2.4 Summary

Based on the above information the air quality in the Zone A suburban Dublin area is generally good, with concentrations of the key pollutants generally well below the current relevant limit values set out in Table 2 of Annex I of Directive (EU) 2024/2881. The current pollutant concentrations at these monitoring sites are also in compliance with the 2030 limit values set out in Directive (EU) 2024/2881 and the clean air strategy.

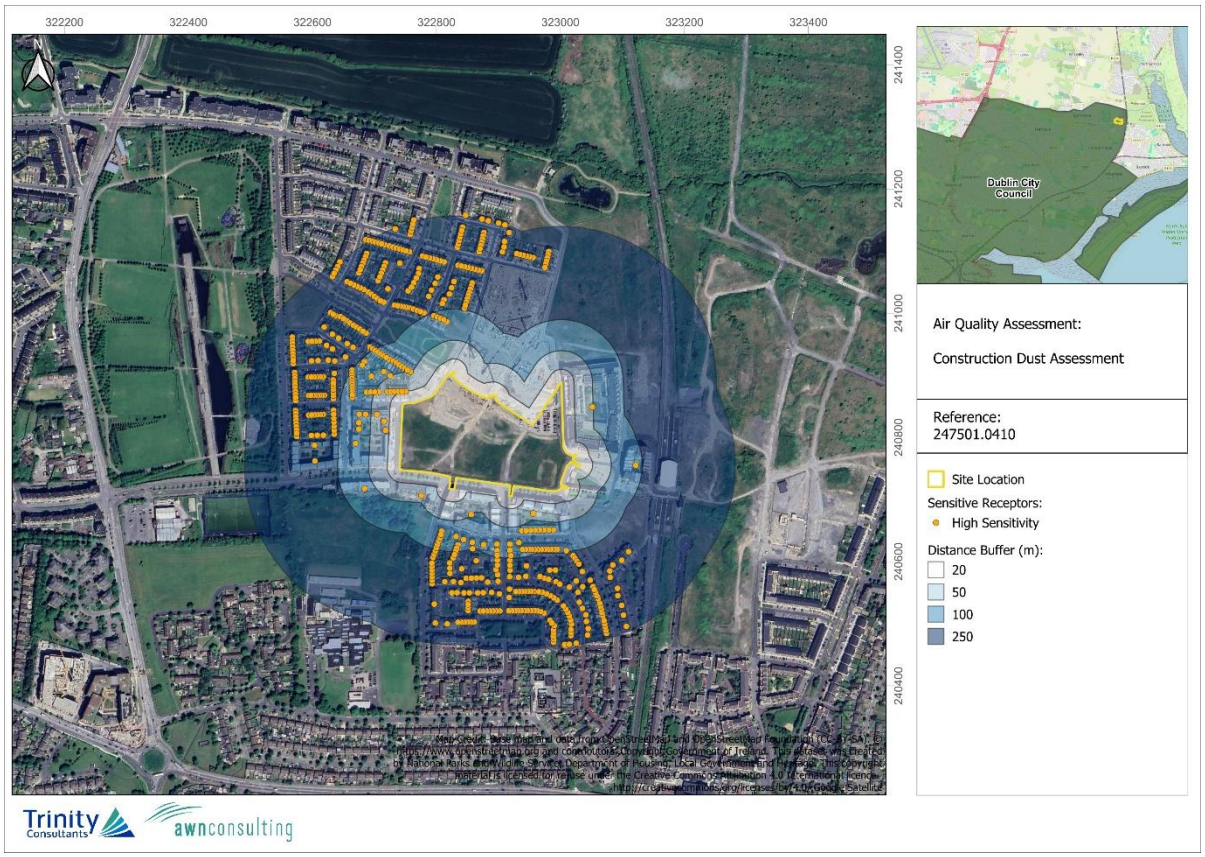
### 11.4.3 Sensitivity of the Receiving Environment

#### 11.4.3.1 Construction Phase

The impact to air quality from construction phase activities is assessed at sensitive receptors within 250 m of the development boundary. In terms of receptor sensitivity to dust soiling, there are a number of highly sensitive residential properties within 100 m of the proposed development boundary (see Error! Reference source not found.). There are 1-10 high sensitivity residential properties within 20m of the site boundary, and there are a further 10-100 within 50 m and 10-100 properties within 100 m and >100 properties within 250m of the site boundary.

There are no sensitive ecological receptors that meet the assessment criteria, outlined in **Table 11.5**, within the study area and there is no potential for impacts to sensitive ecology from construction dust emissions and no further assessment is required (Error! Reference source not found.**)**.

Figure 11.2 Sensitive Receptors within 250m of Site




### 11.4.3.2 Operational Phase

The impact to air quality due to changes in traffic is assessed at sensitive receptors in the vicinity of affected roads. The TII guidance (TII, 2025a) states that a proportionate number of representative receptors, which are located in areas which will experience the highest concentrations or largest impacts from the proposed development traffic, are to be included in the modelling. The TII criteria state that receptors within 200 m of impacted road links should be assessed; roads which are greater than 200 m from receptors will not impact pollutant concentrations at that receptor (TII, 2025a). The TII guidance (TII, 2025a) defines sensitive receptor locations for the purposes of modelling annual mean pollutant concentrations as: residential housing, schools, hospitals, care homes and short term-accommodation such as hotels, i.e. locations where members of the public are likely to be regularly present for 24 hours. A total of 5 no. high sensitivity residential receptor receptors, R1 - R5, were included in the modelling assessment (see **Figure** 11.3).

Figure 11.3 Location of Sensitive Receptors used in Operational Phase Air Quality Assessment




## 11.5 Predicted Impacts of the proposed development

### 11.5.1 Do-Nothing Impact

In the Do-Nothing scenario, ambient air quality at the site will remain as per the baseline and will change in accordance with trends within the wider area (including influences from potential new developments in the surrounding area, changes in road traffic, etc).

The Do-Nothing scenario associated with the operational phase of the development is assessed within Section **Error! Reference source not found.**, concentrations of the key pollutants in future years are predicted to be in compliance with the relevant air quality limit values.

### 11.5.2 Construction Phase

#### 11.5.2.1 Construction Dust Assessment

The greatest potential impact on air quality during the construction phase of the proposed development is from construction dust emissions and the potential for nuisance dust. While construction dust tends to be deposited within 250 m of a construction site, the majority of the deposition occurs within the first 50 m (IAQM, 2024). The extent of any dust generation depends on the nature of the dust (soils, peat, sands, gravels, silts etc.) and the nature of the construction activity. In addition, the potential for dust dispersion and deposition depends on local meteorological factors such as rainfall, wind speed and wind direction. A review of Dublin Airport meteorological indicates that the prevailing wind direction is westerly to south-westerly and wind speeds are generally moderate in nature (Section **Error! Reference source not found.**). In addition, dust generation is considered negligible on days where rainfall is greater than 0.2 mm. A review of historical 30-year average data for

Dublin Airport indicates that on average 200 days per year have rainfall over 0.2 mm (Met Éireann, 2025). Therefore, it can be determined that over 54% of the time dust generation will be reduced.

To determine the level of dust mitigation required during the proposed works, the potential dust emission magnitude for each dust generating activity needs to be taken into account, in conjunction with the previously established sensitivity of the area (Section 11.4.3). The major dust generating activities are divided into four types within the IAQM (IAQM, 2024) guidance to reflect their different potential impacts. These are: demolition, earthworks, construction and trackout (movement of heavy vehicles).

#### 11.5.2.2 Determining the Potential Dust Emission Magnitude

The magnitude of the works under each category can be classified as either small, medium or large depending on the scale of the works involved. The magnitude of each activity (**Table 11.11**) has been determined below for the proposed development using the criteria in **Table** 11.4.

**Table 11.11 Potential Dust Emissions Magnitude**

| Activity | Dust Emission Magnitude | Justification |
|---|---|---|
| Demolition | n/a | No buildings to be demolished |
| Earthworks | Medium | Total site area is between 18,000 and 110,000 $m^2$ |
| Construction | Large | More than 75,000 $m^3$ of building to be constructed |
| Trackout | Medium | Approximately 40 outward vehicles (HGV) movements per day from construction site activities |

#### 11.5.2.3 Determining the Sensitivity of the Area

The magnitude of the works under each category can be classified as either small, medium or large depending on the scale of the works involved. The magnitude of each activity (**Table 11.11**) has been determined below for the proposed development using the criteria in **Table** 11.4.

**Table 11.12 Potential Dust Emissions Magnitude**

| Activity | Dust Emission Magnitude | Justification |
|---|---|---|
| Demolition | n/a | No buildings to be demolished |
| Earthworks | Medium | Total site area is between 18,000 and 110,000 $m^2$ |
| Construction | Large | More than 75,000 $m^3$ of building to be constructed |
| Trackout | Medium | Approximately 40 outward vehicles (HGV) movements per day from construction site activities |

#### 11.5.2.4 Determining the Risk of Dust Impacts

As detailed in **Table 11.6**, The predicted dust emission magnitude has been combined with the defined sensitivity of the area to determine the risk of impacts during the construction phase, prior to mitigation. Table 11.13 below provides a summary of the risk of dust impacts for the proposed development.

There is at most a medium risk of dust soiling impacts, and a low risk of dust-related human health impacts associated with the proposed works. Without mitigation in place, construction dust will have a ***short-term direct, localised, negative,*** and ***slight*** impact on air quality, which has the potential to be significant. Best practice dust mitigation measures associated with medium-risk works will be implemented to ensure there are no significant impacts at nearby sensitive receptors (see Section 11.6.1).

Table 11.13 Risk of Dust Impacts used to Define Site-Specific Mitigation

| Potential Impact | Sensitivity of the Surrounding Area | | | |
|---|---|---|---|---|
| | Demolition | Earthworks | Construction | Trackout |
| Dust Soiling | n/a | Medium Risk | Medium Risk | Medium Risk |
| Human Health | n/a | Low Risk | Low Risk | Low Risk |

#### 11.5.2.5

There is also the potential for traffic emissions to impact air quality with respect to human health in the short-term over the construction phase, particularly, due to the increase in HGVs accessing the site. The construction stage traffic has been reviewed, and a detailed air quality assessment has been scoped out as none of the road links impacted by the proposed development satisfy the TII assessment criteria in Section **Error! Reference source not found.**.

Therefore, it can be determined that the construction stage traffic will have an ***neutral, short-term*** and ***not significant*** impact on air quality.

### 11.5.3 Operational Phase

#### 11.5.3.1 Operational Phase Traffic Assessment

The potential impact of the proposed development has been assessed by modelling emissions from the traffic generated due to the development. The traffic data has included specific cumulative developments within the area to provide for a worst-case assessment and to assess potential cumulative impacts (see Transport Assessment and Chapter **Error! Reference source not found.** Traffic & Transportation, both prepared by CS Consulting for further details).

The traffic data includes the Do Nothing (DN) scenario and Do Something (DS) scenario. The impact of $NO_2$, $PM_{10}$ and $PM_{2.5}$ emissions for the Opening and Design Years was predicted at the nearest sensitive receptors to the impacted road links. This assessment allows the significance of the development, with respect to both relative and absolute impacts, to be determined.

The TII guidance PE-ENV-01106 (TII, 2025a) details a methodology for determining air quality impact significance criteria for TII road schemes and infrastructure projects. However, this significance criteria can be applied to any development that causes a change in traffic. The degree of impact is determined based on both the absolute and relative impact of the proposed development. Results are compared against the 'Do Nothing' scenario, which assumes that the proposed development is not in place in future years, to determine the degree of impact.

Traffic related air emissions have the potential to impact air quality which can affect human health. The following details the results of the air dispersion modelling assessment of traffic emissions to determine the impact to human health. The predicted pollutant concentrations have been compared against the

ambient air quality limit values set out in Error! Reference source not found.. The current limit values set out in Table 2 of Annex I of Directive (EU) 2024/2881 are applicable to the Opening Year 2028 and the limit values set out in Table 1 of Annex I of Directive (EU) 2024/2881 are applicable to the Design Year 2043 as the assessment year is post-2030.

*$NO_2$*

The results of the $NO_2$ modelling are shown in  All increases are considered 'neutral' as per the TII criteria in Table 11.3.

Table 11.14 In the Opening Year 2028, predicted annual mean concentrations of $NO_2$ are in compliance with the annual mean limit value of 40 µg/m$^3$ reaching at most 37% of the limit. In addition, the TII guidance (2025a) states that the hourly limit value for $NO_2$ of 200 µg/m$^3$ is unlikely to be exceeded at roadside locations unless the annual mean is above 60 µg/m$^3$. As predicted $NO_2$ concentrations are significantly below 60 µg/m$^3$ ( All increases are considered 'neutral' as per the TII criteria in Table 11.3.

Table 11.14), it can be concluded that the short-term $NO_2$ limit value will be complied with at all receptor locations. Some increases in $NO_2$ concentrations are predicted at the worst-case receptor assessed in the Opening Year when compared with the Do-Nothing scenario (see  All increases are considered 'neutral' as per the TII criteria in Table 11.3.

Table 11.14). Concentrations are predicted to increase by at most 0.03 µg/m$^3$ at receptor R1. When comparing the change in concentration with the air quality limit value, it results in a maximum change of 0.07% at receptor R1. All increases are considered 'neutral' as per the TII criteria in Table 11.3.

In the Design Year 2043, predicted annual mean $NO_2$ concentrations are in compliance of the limit value of 20 µg/m$^3$ reaching at most 66% of the limit. The proposed development will result in a 'neutral' change in $NO_2$ concentrations according to the TII significance criteria in Table 11.3, with concentrations increasing by at most 0.03 µg/m$^3$ a result of the proposed development (at receptor R1, see  All increases are considered 'neutral' as per the TII criteria in Table 11.3.

Table 11.14). When comparing the change in concentration with the air quality limit value, it results in a maximum change of 0.15% at receptor R1. All increases are considered 'neutral' as per the TII criteria in Table 11.3.

Table 11.14 Predicted Annual Mean $NO_2$ Concentrations (µg/m$^3$)

| Receptor | Impact Opening Year | | | | | | |
|---|---|---|---|---|---|---|---|
| | DN | % of AQLV | DS | % of AQLV | DS-DN | % Change of AQLV | Description |
| R1 | 13.7 | 34% | 13.7 | 34% | 0.03 | 0.07% | Neutral |
| R2 | 13.2 | 33% | 13.2 | 33% | 0.00 | 0.00% | Neutral |
| R3 | 14.9 | 37% | 14.9 | 37% | 0.01 | 0.02% | Neutral |
| R4 | 14.7 | 37% | 14.7 | 37% | 0.00 | 0.00% | Neutral |
| R5 | 14.9 | 37% | 14.9 | 37% | 0.01 | 0.02% | Neutral |
| Receptor | Impact Design Year | | | | | | |
| | DN | % of AQLV | DS | % of AQLV | DS-DN | % Change of AQLV | Description |

| Receptor | Impact Opening Year | | | | | | |
|---|---|---|---|---|---|---|---|
| | DN | % of AQLV | DS | % of AQLV | DS-DN | % Change of AQLV | Description |
| R1 | 13.1 | 65% | 13.1 | 66% | 0.03 | 0.15% | Neutral |
| R2 | 13.0 | 65% | 13.0 | 65% | 0.00 | 0.00% | Neutral |
| R3 | 13.2 | 66% | 13.2 | 66% | 0.00 | 0.00% | Neutral |
| R4 | 13.2 | 66% | 13.2 | 66% | 0.00 | 0.00% | Neutral |
| R5 | 13.2 | 66% | 13.2 | 66% | 0.00 | 0.00% | Neutral |

*$PM_{10}$*

The results of the $PM_{10}$ modelling can be seen in **Table 11.15** for the Opening Year 2028 and Design Year 2043.

In the Opening Year 2028, annual mean $PM_{10}$ concentrations are in compliance with the annual mean limit value of 40 µg/m$^3$ reaching at most 39% of the limit. In the Design Year 2043 annual mean $PM_{10}$ concentrations are also in compliance with the annual mean limit value of 20 µg/m$^3$ reaching at most 78% of the limit. In addition, the proposed development will not result in any days of exceedance of the daily $PM_{10}$ limit value (**Error! Reference source not found.**) in both the opening and design years.

The changes in $PM_{10}$ concentrations as a result of the proposed development can be assessed relative to the 'Do Nothing' (DN) levels. In the Opening Year 2028 annual $PM_{10}$ concentrations will increase by at most 0.06 µg/m$^3$ at receptor R1, this is a 0.15% increase when compared with the annual mean limit value of 40 µg/m$^3$. This is considered a 'neutral' impact as per the TII criteria in **Table 11.3**. All increases at receptors are considered 'neutral' as per the TII criteria in **Table 11.3**.

In the Design Year 2043 the proposed development will result in a maximum increase of 0.38 µg/m$^3$ at receptor R1, which is a 1.90% increase when compared with the annual mean limit of 20 µg/m$^3$. The changes in concentrations in the Design Year are considered 'neutral' based on the TII criteria in **Table 11.3.**

Table 11.15 Predicted Annual Mean $PM_{10}$ Concentrations (µg/m$^3$)

| Receptor | Impact Opening Year | | | | | | |
|---|---|---|---|---|---|---|---|
| | DN | % of AQLV | DS | % of AQLV | DS-DN | % Change of AQLV | Description |
| R1 | 13.1 | 33% | 13.2 | 33% | 0.06 | 0.15% | Neutral |
| R2 | 12.3 | 31% | 12.3 | 31% | 0.01 | 0.02% | Neutral |
| R3 | 15.6 | 39% | 15.6 | 39% | 0.01 | 0.02% | Neutral |
| R4 | 15.3 | 38% | 15.3 | 38% | 0.00 | 0.00% | Neutral |
| R5 | 15.6 | 39% | 15.6 | 39% | 0.01 | 0.02% | Neutral |
| Receptor | Impact Design Year | | | | | | |
| | DN | % of AQLV | DS | % of AQLV | DS-DN | % Change of AQLV | Description |

| Receptor | Impact Opening Year | | | | | | |
|---|---|---|---|---|---|---|---|
| | DN | % of AQLV | DS | % of AQLV | DS-DN | % Change of AQLV | Description |
| R1 | 13.2 | 66% | 13.6 | 68% | 0.38 | 1.90% | Neutral |
| R2 | 12.3 | 61% | 12.3 | 62% | 0.05 | 0.25% | Neutral |
| R3 | 15.6 | 78% | 15.7 | 78% | 0.06 | 0.30% | Neutral |
| R4 | 15.3 | 76% | 15.3 | 77% | 0.06 | 0.30% | Neutral |
| R5 | 15.5 | 78% | 15.6 | 78% | 0.13 | 0.65% | Neutral |

*$PM_{2.5}$*

In relation to changes in $PM_{2.5}$ concentrations as a result of the proposed development, the results of the assessment can be seen in Table 11.16 for the modelled Opening Year 2028 and Design Year 2043.

In the Opening Year 2028, predicted annual mean concentrations of $PM_{2.5}$ are in compliance with the annual mean limit value of 25 µg/m$^3$ reaching at most 36% of the limit. There is predicted to be an increase in $PM_{2.5}$ concentrations at the worst-case receptor assessed in the Opening Year when compared with the Do-Nothing scenario (see Table 11.16). Concentrations are predicted to increase by at most 0.03 µg/m$^3$ at receptor R1. When comparing the change in concentration with the air quality limit value, it results in a maximum change of 0.12% at receptor R1. This is considered a 'neutral' impact as per the TII criteria in Table 11.3. All increases at modelled receptor are considered 'neutral' as per the TII criteria in Table 11.3.

In the Design Year 2043, predicted annual mean $PM_{2.5}$ concentrations are in compliance with the limit value of 10 µg/m$^3$ at the assessed receptors. Concentrations reach at most 90% of the annual mean limit value. The proposed development will result in a 'Neutral' to 'Slight adverse' increases in $PM_{2.5}$ concentrations according to the TII significance criteria Table 11.3, with concentrations increasing by at most 0.21 µg/m$^3$ as a result of the proposed development (at receptor R1, see Table 11.16), which is an increase of 2.1% when compared with the annual mean limit value of 10 µg/m$^3$ for $PM_{2.5}$.

Table 11.16 Predicted Annual Mean $PM_{2.5}$ Concentrations (µg/m$^3$)

| Receptor | Impact Opening Year | | | | | | |
|---|---|---|---|---|---|---|---|
| | DN | % of AQLV | DS | % of AQLV | DS-DN | % Change of AQLV | Description |
| R1 | 7.6 | 30% | 7.6 | 30% | 0.03 | 0.12% | Neutral |
| R2 | 7.1 | 29% | 7.1 | 29% | 0.00 | 0.00% | Neutral |
| R3 | 9.0 | 36% | 9.0 | 36% | 0.01 | 0.04% | Neutral |
| R4 | 8.8 | 35% | 8.8 | 35% | 0.01 | 0.04% | Neutral |
| R5 | 8.9 | 36% | 8.9 | 36% | 0.01 | 0.04% | Neutral |
| Receptor | Impact Design Year | | | | | | |
| | DN | % of AQLV | DS | % of AQLV | DS-DN | % Change of AQLV | Description |

| Receptor | Impact Opening Year | | | | | | |
|---|---|---|---|---|---|---|---|
| | DN | % of AQLV | DS | % of AQLV | DS-DN | % Change of AQLV | Description |
| R1 | 7.7 | 77% | 7.9 | 79% | 0.21 | 2.10% | Slight Adverse |
| R2 | 7.1 | 71% | 7.2 | 72% | 0.03 | 0.30% | Neutral |
| R3 | 9.0 | 90% | 9.0 | 90% | 0.03 | 0.30% | Neutral |
| R4 | 8.8 | 88% | 8.8 | 88% | 0.03 | 0.30% | Neutral |
| R5 | 8.9 | 89% | 9.0 | 90% | 0.08 | 0.80% | Neutral |

*Significance of Predicted Changes in $NO_2$, $PM_{10}$ and $PM_{2.5}$ Concentrations*

As outlined in Section **Error! Reference source not found.**, the TII guidance (2025) states that the significance of effects should be assessed based on the opening year only. Non-significant effects are 'neutral' or 'slight' changes in concentrations while significant effects can be changes in pollutant concentrations that are either 'moderate' or 'substantial'. However, the TII guidance (2025) states that these must be considered in the context of the project and 'moderate' or 'substantial' increases are not necessarily always significant effects.

In relation to $NO_2$, $PM_{10}$ and $PM_{2.5}$ the predicted changes in concentrations are 'neutral' or 'slight adverse' at the worst-case receptors assessed. Therefore, according to the TII criteria as outlined in Section **Error! Reference source not found.**, the impact is not significant.

For the purposes of this assessment, it has been assumed that the current estimated background pollutant concentrations are applicable for both the opening and design years, with no decreases in future background concentrations allowed for. There will be some decreases in background concentrations in future years, however at present there is no guidance-based methodology available for estimating future year background concentrations and therefore, as a conservative approach, the current estimated background concentrations have been applied to future years.

Due to the large uncertainty in future improvements in fleet composition and emissions, such as projected changes to vehicle registration and electric vehicle uptake, the future year emission rates utilised by the REM do not account for the full implementation of these measures. Predicted design year concentrations are therefore currently overly conservative as future emissions improvements are not fully taken into account, as well as no improvement in background concentrations being assumed.

As a result, the opening year predicted concentrations are the most appropriate for determining the significance of effects as per Section **Error! Reference source not found.**.

It can be concluded that the impact of traffic emissions on air quality and human health during the operational phase is ***long-term, direct, localised, negative*** and ***not significant*** in EIA terms.

The measures set out in the *Clean Air Strategy for Ireland* (Government of Ireland, 2023) aim to work towards solutions to ensure that air pollution concentrations are reduced in order to comply with the future changes in limit values. Ireland will need to continue to implement and develop measures to ensure continuing improvements in air quality in future years in order to meet the objectives of the *Clean Air Strategy for Ireland* (Government of Ireland, 2023) and to ensure the ambient air quality limit values set out in Directive (EU) 2024/2881 are achieved. The estimated background concentrations used in the assessment are the largest contribution to predicted pollutant concentrations, rather than

pollutant contributions associated with the proposed development. Strategies to improve air quality at a national level in future years will contribute to reducing background concentrations and therefore it is envisioned that air quality will improve in the future.

## 11.6 Mitigation Measures

### 11.6.1 Construction Phase

Based on the assessment results in Section 11.5.2.4, mitigation associated with a medium risk of construction dust impacts is required. Mitigation measures for medium-risk sites as recommended by IAQM construction dust guidance are detailed in Table 11.17.

Table 11.17 Construction Phase Dust Mitigation Measures

| Category | Mitigation Measures |
|---|---|
| Communications | • Develop and implement a stakeholder communications plan that includes community engagement before work commences on site.<br>• Display the name and contact details of person(s) accountable for air quality and dust issues on the site boundary. This may be the environment manager/engineer or the site manager.<br>• Display the head or regional office contact information. |
| Site Management | • Record all dust and air quality complaints, identify cause(s), take appropriate measures to reduce emissions in a timely manner, and record the measures taken.<br>• Make the complaints log available to the local authority when asked.<br>• Record any exceptional incidents that cause dust and/or air emissions, either on- or offsite, and the action taken to resolve the situation in the log book. |
| Preparing and Maintaining the Site | • Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible.<br>• Erect solid screens or barriers around dusty activities or the site boundary that are at least as high as any stockpiles on site.<br>• Fully enclose site or specific operations where there is a high potential for dust production and the site is actives for an extensive period<br>• Avoid site runoff of water or mud.<br>• Keep site fencing, barriers and scaffolding clean using wet methods.<br>• Remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on site. If they are being re-used on-site cover as described below.<br>• Cover, seed or fence stockpiles to prevent wind whipping. |
| Operating vehicle/machinery and sustainable travel | • Ensure all vehicles switch off engines when stationary – no idling vehicles.<br>• Avoid the use of diesel- or petrol-powered generators and use mains electricity or battery powered equipment where practicable.<br>• Impose and signpost a maximum-speed-limit of 20 kmph on surfaced and 15 kmph on unsurfaced haul roads and work areas (if long haul routes are required these speeds may be increased with suitable additional control measures provided, subject to the approval of the nominated undertaker and with the agreement of the local authority, where appropriate)<br>• Produce a Construction Logistics Plan to manage the sustainable delivery of goods and materials.<br>• Implement a Travel Plan that supports and encourages sustainable travel (public transport, cycling, walking, and car-sharing) |
| Operations | • Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction, e.g. suitable local exhaust ventilation systems |

| Category | Mitigation Measures |
|---|---|
| | • Ensure an adequate water supply on the site for effective dust/particulate matter suppression/mitigation, using non-potable water where possible and appropriate<br>• Use enclosed chutes and conveyors and covered skips.<br>• Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate.<br>• Ensure equipment is readily available on site to clean any dry spillages and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods. |
| Waste management | • Bonfires and burning of waste materials are legally prohibited. |
| Measures Specific to Earthworks | • Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable<br>• Use Hessian, mulches or trackifiers where it is not possible to re-vegetate or cover with topsoil, as soon as is practicable.<br>• Only remove the cover in small areas during work and not all at once. |
| Measures Specific to Construction | • Avoid scabbling (roughening of concrete surfaces) if possible.<br>• Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out, unless this is required for a particular process, in which case ensure that appropriate additional control measures are in place.<br>• Ensure bulk cement and other fine powder materials are delivered in enclosed tankers and stored in silos with suitable emission control systems to prevent escape of material and overfilling during delivery.<br>• For smaller supplies of fine powder materials, ensure bags are sealed after use and stored appropriately to prevent dust. |
| Measures Specific to Trackout | • Use water-assisted dust sweeper(s) on the access and local roads, to remove, as necessary, any material tracked out of the site. This may require the sweeper being continuously in use.<br>• Avoid dry sweeping of large areas.<br>• Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport.<br>• Inspect on-site haul routes for integrity and instigate necessary repairs to the surface as soon as reasonably practicable.<br>• Record all inspections of haul routes and any subsequent action in a site logbook.<br>• Install hard surfaced haul routes, which are regularly damped down with fixed or mobile sprinkler systems, or mobile water bowsers and regularly cleaned.<br>• Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable).<br>• Ensure there is an adequate area of hard surfaced road between the wheel wash facility and the site exit, wherever site size and layout permit.<br>• Access gates to be located at least 10 m from receptors where possible. |

### 11.6.2 Operational Phase

No site-specific mitigation measures are proposed for the operational phase as impacts are predicted to be not significant.

## 11.7 Residual Impacts

### 11.7.1 Construction Phase

#### 11.7.1.1 Air Quality

To minimise dust emissions during construction, a series of mitigation measures have been prepared as outlined in Section **Error! Reference source not found.**. Provided the dust minimisation measures are adhered to, the predicted residual air quality impacts during the construction phase are ***short-term, direct, negative, localised*** and ***not significant***.

#### 11.7.1.2 Human Health

Best practice mitigation measures are proposed for the construction phase of the proposed development, which will focus on the proactive control of dust and other air pollutants, to minimise generation of emissions at source. The mitigation measures that will be put in place during construction will ensure that the impact complies with all EU ambient air quality legislative limit values, which are based on the protection of human health (Error! Reference source not found.). Therefore, the predicted residual, dust-related, human health impact of the construction phase of the proposed development is ***short-term, direct, negative, localised*** and ***not significant***.

### 11.7.2 Operational Phase

#### 11.7.2.1 Air Quality

Air dispersion modelling of operational traffic emissions associated with the proposed development was carried out using the TII REM tool. The modelling assessment determined that the change in emissions of $NO_2$, $PM_{10}$ and $PM_{2.5}$ at nearby sensitive receptors as a result of the proposed development will be 'neutral' in line with the TII assessment criteria (**Table 11.3**). Therefore, the operational phase impact to air quality is ***long-term, direct, localised, negative*** and ***not significan***t.

#### 11.7.2.2 Human Health

Air dispersion modelling of operational traffic emissions associated with the proposed development was carried out using the TII REM tool. The modelling assessment determined that the change in emissions of $NO_2$, $PM_{10}$ and $PM_{2.5}$ at nearby sensitive receptors as a result of the proposed development will be 'neutral' in line with the TII assessment criteria (**Table 11.3**). Therefore, the operational phase impact to air quality is ***long-term, direct, localised, negative*** and ***not significan***t.

## 11.8 Monitoring

### 11.8.1 Construction Phase

The following monitoring measures are proposed to ensure the dust mitigation measures are working satisfactorily:

- Undertake daily on-site and off-site inspections, where receptors (including roads) are nearby, to monitor dust, record inspection results in the site inspection log. This should include regular dust soiling checks of surfaces such as street furniture, cars and windowsills within 100 m of site boundary, with cleaning to be provided if necessary.

- Increase the frequency of site inspections by the person accountable for air quality and dust issues on site when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions.
- Monitoring of construction dust deposition along the site boundary to nearby sensitive receptors during the construction phase of the proposed development is recommended to ensure mitigation measures are working satisfactorily. This can be carried out using the Bergerhoff method in accordance with the requirements of the German Standard VDI 2119. The Bergerhoff Gauge consists of a collecting vessel and a stand with a protecting gauge. The collecting vessel is secured to the stand with the opening of the collecting vessel located approximately 2m above ground level. The TA Luft limit value is 350 mg/m$^2$/day during the monitoring period of 30 days (+/- 2 days). Monitoring shall ensure that the dust mitigation measures are working satisfactorily as construction works progress.

### 11.8.2 Operational Phase

There is no monitoring recommended for the operational phase of the proposed development as impacts to air quality are predicted to be not significant.

## 11.9 Reinstatement

There is no reinstatement relevant to air quality.

## 11.10 Interactions

### 11.10.1 Air Quality and Population & Human Health

#### 11.10.1.1 Construction Phase

Air quality does not have a significant number of interactions with other topics. The most significant interactions are between Population and Human Health and Air Quality. An adverse air quality impact during the construction phase can cause health and dust nuisance issues. There is a low risk of dust-related human health impacts during the construction phase of the proposed development. Best practice mitigation measures will be implemented during the construction phase to ensure that the impact of the proposed development complies with all ambient air quality legislative limits. Therefore, the predicted impact is ***direct, short-term, negative, localised*** and ***not significant*** with respect to Population and Human Health during the construction phase.

#### 11.10.1.2 Operational Phase

Vehicles accessing the site will emit pollutants which may impact Air Quality and Human Health. However, the increased number of vehicles associated with the proposed development will not cause a significant change in air pollutant emissions in the locality. It has been assessed that emissions will be in compliance with the ambient air quality standards which are set for the protection of human health. Impacts will be ***long-term, localised, direct, negative*** and ***not significant***.

### 11.10.2 Air Quality and Climate

Air Quality and Climate have interactions as the emissions from the burning of fossil fuels during the construction and operational phases generate both air quality and climate impacts. There is no impact on climate due to air quality. However, the sources of impacts on air quality and climate are strongly linked.

### 11.10.3 Air Quality and Land & Soils

#### 11.10.3.1 Construction Phase

Construction phase activities such as land clearing, excavations, stockpiling of materials etc. have the potential for interactions between Air Quality and Land & Soils in the form of dust emissions. With the appropriate mitigation measures to prevent fugitive dust emissions, it is predicted that there will be no significant interactions between air quality and land and soils during the construction phase.

#### 11.10.3.2 Operational Phase

There are no potentially significant interactions identified between Air Quality, and Land & Soils during the operational phase.

### 11.10.4 Air Quality and Biodiversity

#### 11.10.4.1 Construction Phase

Dust generation can occur during extended dry weather periods due to construction traffic along haul routes and construction activities such as excavations and infilling works. Dust emissions can coat vegetation leading to a reduction in the photosynthesising ability as well as other effects. There are no designated ecological sites within 250 m of the proposed development site area. Significant dust impacts are not predicted beyond this distance. Dust mitigation measures will be implemented on site as set out in Section **Error! Reference source not found.**. With the implementation of these mitigation measures dust emissions will be minimised and no significant impacts between air quality and biodiversity are predicted.

#### 11.10.4.2 Operational Phase

There are no potentially significant interactions identified between Air Quality, and Biodiversity during the operational phase.

### 11.10.5 Air Quality and Material Assets – Traffic & Transport

#### 11.10.5.1 Construction Phase

Interactions between Air Quality and Traffic can be significant. With increased traffic movements and reduced engine efficiency, i.e. due to congestion, the emissions of vehicles increase. The impacts of the proposed development on air quality are assessed by reviewing the change in annual average daily traffic on roads close to the site. In this assessment, the impact of the interactions between Traffic and Air Quality are linked but there is no potential for significant impacts from traffic on air quality. The effects are considered to be ***direct, short-term, neutral, localised*** and ***not significant*** during the construction phase.

#### 11.10.5.2 Operational Phase

The impact of the interactions between Traffic and Air Quality are considered to be ***long-term, direct, neutral*** and ***not significant*** during the operational phase.

## 11.11 Indirect and/or Secondary Impacts

Indirect and secondary impacts with respect to air quality which are not a direct result of the project can be considered to have no potential for significant impacts and therefore are scoped out.

## 11.12 Cumulative Impacts

### 11.12.1 Construction Phase

According to the IAQM guidance (2024) should the construction phase of the proposed development coincide with the construction phase of any other developments within 500m then there is the potential for cumulative construction dust related impacts to nearby sensitive receptors.

A review of the Chapter 22 Cumulative Impacts and recent planning permissions for the area was conducted, and it was found that there were a number of relevant sites for which cumulative impacts may occur should their construction phase and that of the proposed development overlap.

These include the following developments (planning reference):

- Newbrook Nursing Homes ULC , Nursing Home along Park Terrace South and Park Row, Dublin 13 (ABP-309209-21, 2852/20)
- Portmarnock Bridge Pumping Station, Strand Road & Station Road, Maynetown & Burrow (townlands), Portmarnock, Co Dublin,(Fingal County Council App Ref. F21A/0389)
- Residential development of 550 no. units (Fingal County Council F16A/0412);

There is the potential for cumulative construction dust impacts should the construction phases overlap with that of the proposed development, however, provided the mitigation measures outlined in Section **Error! Reference source not found.**, are implemented throughout the construction phase of the proposed development significant cumulative dust impacts are not predicted. Impacts are predicted to be ***direct, short-term, negative, localised*** and ***not significant***.

### 11.12.2 Operational Phase

Air dispersion modelling of operational traffic emissions associated with the proposed development and cumulative developments in the wider area was carried out using the TII REM tool. The modelling assessment determined that the change in emissions of $NO_2$, $PM_{10}$ and $PM_{2.5}$ at nearby sensitive receptors as a result of the proposed development in combination with cumulative developments will be imperceptible. Therefore, the operational phase impact to air quality is ***long-term, direct, negative,*** and ***not significant***.

## 11.13 Difficulties Encountered

There were no difficulties encountered when compiling this assessment.

## 11.14 References


- BRE (2003) Controlling Particles, Vapours & Noise Pollution from Construction Sites
- Environmental Protection Agency (2006) Environmental Management Guidelines - Environmental Management in the Extractive Industry (Non-Scheduled Minerals)
- Environmental Protection Agency (2022) Guidelines on the Information to be Contained in Environmental Impact Assessment Reports
- Environmental Protection Agency (2025) Air Quality in Ireland 2024 (& previous annual reports 2020-2023)
- German VDI (2002) Technical Guidelines on Air Quality Control – TA Luft
- Government of Ireland (2023) Clean Air Strategy for Ireland

- Institute of Air Quality Management (IAQM) (2020) A Guide To The Assessment Of Air Quality Impacts On Designated Nature Conservation Sites (Version 1.1)
- Institute of Air Quality Management (IAQM) (2024) Guidance on the Assessment of Dust from Demolition and Construction (Version 2.2)
- Met Éireann (2025) Ireland's 30-year Climate Averages
- Met Éireann (2026) Met Éireann website: https://www.met.ie/
- Transport Infrastructure Ireland (2025a) Air Quality Assessment of Specified Infrastructure Projects – PE-ENV-01106
- Transport Infrastructure Ireland (2025b) TII Road Emissions Model (REM): Model Development Report – GE-ENV-01107
- World Health Organisation (2021) Air Quality Guidelines (and previous Air Quality Guideline Reports 1999 & 2000 & 2006)

# 12 Climate

## 12.1 Introduction

This chapter assesses the likely climate change impacts associated with the proposed development, which includes no. 3 residential blocks accommodating 711 apartments and commercial/retail space. It also includes a separate creche building.

The climate assessment is divided into to two distinct sections:

- The Greenhouse Gas Emissions Assessment (GHGA) – Quantifies the greenhouse gas (GHG) emissions from a project over its lifetime. The assessment compares these emissions to relevant carbon budgets, targets and policy to contextualise magnitude.
- The Climate Change Risk Assessment (CCRA) – Identifies the impact of a changing climate on a project and receiving environment. The assessment considers a project's vulnerability to climate change and identifies adaptation measures to increase project resilience. This section of the climate chapter should be read in conjunction with the Climate Risk and Vulnerability Assessment (CRVA), submitted as part of the Planning Application, which can be found in Appendix 12.1.

### 12.1.1 Expertise and Qualifications

This chapter was written by Lee Shelton. Lee is a Principal Environmental Consultant in the Air Quality & Climate section of AWN Consulting, a Trinity Consultants Company. Lee is a Chartered Environmentalist with 11 years' experience in environmental assessment and holds a BSc (Hons) in Environmental Protection from Scotland's Rural College through the University of Edinburgh. Lee has a specialism in air quality assessment having worked on a number of projects requiring the quantification of emissions specific to local air quality, a skill transferrable to climate assessment, and undertook early assessments in the history of climate assessment such as those for the Design Manual for Roads and Bridges Stage 2 assessment for the A47 Improvements at Tuddenham and Guyhirn in England and more recently was involved in the Midlands Connect Transport Carbon Quantification in England. One of Lee's more recent air quality assessment projects is the Grangemouth Air Quality Assessment in support of the revocation of the Grangemouth Air Quality Management Area in Falkirk, Scotland, which involved the quantification of pollutant emissions from multiple industrial sources of numerous types. Lee specialises in air quality dispersion modelling and assessment of emissions, odour and accidental releases, emission inventories, air quality and odour monitoring and geographical information systems.

This chapter was also written by Sarah Berry. Sarah is a Principal Environmental Consultant in the Air Quality & Climate section of AWN Consulting, a Trinity Consultants Company. Sarah holds a BSc in Physical Geography from the University of Leeds. She has 9 years' experience in climate change and sustainability, with expertise in greenhouse gas permitting, accounting and verification. Her experience includes conducting strategic sector-specific GHG audits across a range of industries (data centres, industrial facilities, hospitals, manufacturing, power stations and airports). She has prepared climate chapters for EIARs for proposed developments across Ireland including large residential developments, windfarms, industrial developments and wastewater treatment works.

## 12.2 Method

### 12.2.1 Legislation, Policy and Guidance

In common with all environmental legislation, in Ireland climate legislation is driven primarily by international agreements or European Directives that are then transcribed into domestic law by the Government of Ireland. This is then interpreted through European and domestic policy instruments that clarify aspects, objectives, targets and requirements described in the legislation.

#### 12.2.1.1 Legislation

The **United Nations Paris Agreement** (United Nations, 2015) treaty binds signatory nations to a commitment to hold global average temperature increase well below 2°C above pre-industrial levels with efforts to limit the increase to 1.5°C below pre-industrial levels. Signatories commit to Nationally Determined Contributions (NDCS) which are self- defined climate pledges made by countries in response to climate change, which also includes the direction of finance. Adaptation to the adverse impacts of climate change and lowering greenhouse gas emissions should be undertaken in an equitable manner so as not to disadvantage populations on lower incomes or those most at risk from climate change.

**Regulation (EU) 2021/1119** of the European Parliament and of the Council of 30 June 2021 establishing the framework for achieving climate neutrality and amending Regulations (EC) No 401/2009 and (EU) 2018/1999 (European Parliament and Council, 2021) follows from the Paris Agreement and writes into EU law the goal set out in the European Green Deal for Europe's economy and society to become climate-neutral by 2050. The law also sets the intermediate target of reducing net greenhouse gas (GHG) emissions by at least 55% by 2030, compared to 1990 levels. These targets are also applied to member states.

**Directive 2014/52/EU** of the European Parliament and of the Council of 16 April 2014 amending Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment (European Parliament and Council, 2014) acknowledges that climate change will play a crucial role in the sustainable development of society. Directive 2014/52/EU requires assessment of the impact of specific types of new development on the climate. There is a requirement for the quantification of greenhouse gases from a development, and an assessment of the risk posed to specific types of new development by the adverse effects of climate change.

The **Climate Action and Low Carbon Development Act 2015** (Government of Ireland, 2015) enables Ireland 'to pursue, and achieve, the transition to a low carbon, climate resilient and environmentally sustainable economy by the end of the year 2050'. This is referred to in the 2015 Act (as amended) as the 'national transition objective'. The 2015 Act (as amended) made provision for a national mitigation plan, and a national adaptation framework. In addition, the 2015 Act (as amended) provided for the establishment of the Climate Change Advisory Council with the function to advise and make recommendations on the preparation of the national mitigation and adaptation plans and compliance with existing climate obligations.

The **Climate Action and Low Carbon Development (Amendment) Act 2021** (Government of Ireland, 2021) provides the framework for Ireland to achieve a climate resilient and climate neutral economy by the end of the year 2050. The Act allows for the setting of carbon budgets and sectoral emissions ceilings to apply to sectors of the economy whilst promoting climate justice and just transition to the

climate resilient and climate neutral economy. Carbon budgets are determined based on the requirements for reductions in GHG described in EU Regulation 2018/842 (European Union, 2018). The Climate Action and Low Carbon Development (Amendment) Act 2021 should be read together with the Climate Action and Low Carbon Development Act 2015, and together are referred to in this report as the "Climate Act".

#### 12.2.1.2 Policy

The **European Green Deal** published by the European Commission in December 2019, provides an action plan which aims for the EU to achieve climate neutrality by 2050. The EU Green Deal highlights a reduction in emissions of 55% in comparison to 1990 levels by 2030 and 90% by 2040. The deal outlines plans for a just and fair transition to a climate neutral society through funding and social investment, carbon pricing, the Emissions Trading Scheme, green industry, the circular economy and stakeholder engagement in the processes at every level.

The **2021 EU Strategy on Adaptation to Climate Change** (European Commission, 2021a) sets out the pathway to prepare for the unavoidable impacts of climate change. The aim is that "by 2050, when we aim to have reached climate neutrality, we will have reinforced adaptive capacity and minimised vulnerability to climate impacts…"

The latest iteration of the Government of Ireland's **Climate Action Plan** (CAP25) (Government of Ireland, 2025a) was published in 2025 updating many of the suggested measures and actions required to achieve carbon budgets and sectoral emissions ceilings from CAP24 (Government of Ireland, 2024a). Both CAP24 and CAP25 should be read together. The plans taken together provide the roadmap for halving Ireland's emissions by 2030 and achieving carbon neutrality by 2050. The CAP25 advances sector-specific measures including decarbonising the residential building sector. This includes the complete phase-out of fossil fuel heating for both new builds and retrofits. CAP25 details the 5-year carbon budget periods, shown in Error! Reference source not found.**1**, and the Sectoral Emissions Ceilings, shown in Error! Reference source not found., as required by the Climate Act.

Table 12.1 5-Year Carbon Budgets 2021 – 2035

| Budget Period | Carbon Budget | Reduction Required |
|---|---|---|
| 2021-2025 | 295 Mt $CO_2e$ | Reduction in emissions of 4.8% per annum for the first budget period. |
| 2026-2030 | 200 Mt $CO_2e$ | Reduction in emissions of 8.3% per annum for the second budget period. |
| 2031-2035 | 151 Mt $CO_2e$ | Reduction in emissions of 3.5% per annum for the third provisional budget. |

Table 12.2 Sectoral Emissions Ceilings 2030

| Sector | Baseline ($MtCO_2e$) | Carbon Budgets ($MtCO_2e$) | | 2030 Emissions ($MtCO_2e$) | Indicative Emissions % Reduction in Final Year of 2025 – 2030 Period (Compared to 2018) |
|---|---|---|---|---|---|
| | 2018 | 2021-2025 | 2026-2030 | | |
| Electricity | 10 | 40 | 20 | 3 | 75 |
| Transport | 12 | 54 | 37 | 6 | 50 |
| Built Environment – Residential | 7 | 29 | 23 | 4 | 40 |
| Built Environment – Commercial | 2 | 7 | 5 | 1 | 45 |
| Industry | 7 | 30 | 24 | 4 | 35 |
| Agriculture | 23 | 106 | 96 | 17.25 | 25 |
| Other (F-gases, waste, petroleum refining) | 2 | 9 | 8 | 1 | 50 |
| Land Use, Land-use Change and Forestry (LULUCF) | 5 | Reflecting the continued volatility for LULUCF baseline emissions to 2030 and beyond, a new approach aligned with the EU LULUCF Regulation has been adopted. | | | |
| Total | 68 | | | | |
| Unallocated Savings | - | - | 26 | -5.25 | - |
| Legally Binding Carbon Budgets and 2030 Emission Reduction Targets | - | 295 | 200 | - | 51 |

The **Long-Term Strategy on Greenhouse Gas Emissions Reductions** (Government of Ireland, 2023) provides the indicative pathways beyond 2030 on how Ireland will transition towards carbon neutrality by 2050. The strategy is intended to bridge the gap between the short-term objectives of the Climate Action Plans and the longer-term objectives of EU Climate Law and Ireland's National Climate Objective.

The **National Planning Framework** (First Revision) (Government of Ireland, 2025b) specifies policies relevant for the proposed development:

- National Policy Objective 69: Reduce our carbon footprint by integrating climate action into the planning system in support of national targets for climate policy mitigation and adaptation objectives, as well as targets for greenhouse gas emissions reductions as expressed in the most recently adopted carbon budgets.

- National Policy Objective 70: Promote renewable energy use and generation at appropriate locations within the built and natural environment to meet national objectives towards achieving a climate neutral economy by 2050.
- National Policy Objective 78: Promote sustainable development by ensuring flooding and flood risk management informs place-making by avoiding inappropriate development in areas at risk of flooding that do not pass the Justification Test, in accordance with the Guidelines on the Planning System and Flood Risk Management, and taking account of the potential impacts of climate change on flooding and flood risk, in line with national policy regarding climate adaptation.

#### 12.2.1.3 Climate Change Vulnerability Policy

The **Second National Adaptation Framework** (NAF) (Government of Ireland, 2024b) outlines a comprehensive, whole-of-government and whole-of-society approach to climate adaptation. Its core objective is to enhance Ireland's resilience to a wide range of climate risks, including extreme weather events, flooding, drought, biodiversity loss, sea level rise, and rising temperatures. The NAF sets out the roles of the Taoiseach, Government and non-governmental organisations, incorporates an evidence base for climate change and incorporates sectoral and local requirements and indicators for adaptation planning.

In relation to the built environment, the NAF states in Chapter 3, "deepening of adaptation considerations in the planning and building standards processes is considered the most appropriate way of increasing the resilience of the built environment". Within the NAF it mentions that there is a risk of damage to buildings and structures from severe weather events such as high winds and intense rainfall. New development should accommodate predicted future climate change impacts without requiring major redesign or redevelopment in the future, which may be costly and inefficient. This will require facilitating innovative building design, new materials and standards (to accommodate hotter summers while withstanding changes in precipitation patterns and more intense storms for example).

The **National Climate Change Risk Assessment** (NCCRA) (Environmental Protection Agency, 2025) was required as part of the 2021 CAP. The NCCRA approached the risk assessment through:

- **Hazard** - the potential occurrence of a natural or human-induced physical event or trend or physical impact that may cause loss of life, injury, or other health impacts, as well as damage and loss to property, infrastructure, livelihoods, service provision, ecosystems, and environmental resources
- **Exposure** - the presence of people, livelihoods, species or ecosystems, environmental functions, services, and resources, infrastructure, or economic, social, or cultural assets in places and settings that could be adversely affected
- **Sensitivity** - refers to the degree to which a system or asset is affected by climate hazards. It reflects how vulnerable something is to changes such as temperature extremes, flooding, or drought, based on its physical, functional, or ecological characteristics
- **Vulnerability** - the propensity or predisposition to be adversely affected. Vulnerability encompasses a variety of concepts including sensitivity
- **Risk** - the potential for adverse consequences for human or ecological systems

Compilation of the NCCRA was undertaken using scenarios from the fifth Intergovernmental Panel on Climate Change Assessment Report (AR5). The NCCRA used a high concentration scenario resulting a predicted average global temperature increase of 4.3°C by 2100 (RCP8.5) generally accepted as an

extreme worst-case scenario, and a moderate scenario (RCP4.5) where emissions are predicted to peak by 2040 and then decline resulting in an average global temperature increase of between 2.5°C and 3°C. Both scenarios are considered conservative for Ireland as they assume that emissions targets are not met.

#### 12.2.1.4 Local Policy

In common with national legislation, the Dublin City Council's document Climate Neutral Dublin 2030: Local Authority Climate Action Plan 2024-2029 (Dublin City Council , 2024) aims for Dublin to achieve a 51% reduction in GHG emissions by 2030and to achieve carbon neutrality by 2050. Dublin is participating in the EU Mission for 100 Climate Neutral Smart Cities. It also aims to prepare for the known impacts of climate change whilst achieving this as part of a Just Transition. The city aims to take advantage of its available resources such as green spaces, restoring its rivers, re-use of existing buildings and creating social and circular enterprise. It is aiming for 95% of the population to be within 400 m of its active travel network and is encouraging the 15-minute city concept. Public space is planned to be use to create shade and store water in order to cope with both extremes of heat and precipitation.

#### 12.2.1.5 Guidance

The principal guidance and best practice documents used to inform the assessment of potential impacts on climate are summarised below. In addition to specific climate guidance documents, the following guidelines were considered and consulted in the preparation of this chapter:

- Guidelines on the Information to be Contained in Environmental Impact Assessment Reports (hereafter referred to as the EPA Guidelines) (EPA, 2022)
- Environmental Impact Assessment of Projects – Guidance on the Preparation of the Environmental Impact Assessment Report (hereafter referred to as the EU Guidance) (European Commission, 2017).
- Transport Infrastructure Ireland (TII) PE-ENV-01104: Climate Guidance for National Roads, Light Rail and Rural Cycleways (Offline & Greenways) – Overarching Technical Document (TII, 2022);
- Transport Infrastructure Ireland (TII) GE-ENV-01106: TII Carbon Assessment Tool for Road and Light Rail Projects and User Guidance Document (TII, 2025)
- Institute of Sustainability and Environmental Professionals (ISEP) Environmental Impact Assessment Guide to: Assessing GHG Emissions and Evaluating their Significance (hereafter referred to as the ISEP GHG Guidance) (ISEP, 2022)
- ISEP Environmental Impact Assessment Guide to: Climate Change Resilience and Adaptation (hereafter referred to as the ISEP 2020 EIA Guide) (ISEP, 2020)
- ISEP GHG Management Hierarchy (hereafter referred to as the ISEP 2020 GHG Management Hierarchy) (ISEP, 2020a)
- Carbon Management in Infrastructure and Built Environment - PAS 2080 (BSI, 2026)
- Technical Guidance on the Climate Proofing of Infrastructure in the Period 2021-2027 (European Commission, 2021)
- A Framework for Measuring and Reporting of Climate-Related Physical Risks to Built Assets (UKGBC, 2022)
- Home Performance Index (HPI) Technical Manual V3.0 (IGBC, 2022)

### 12.2.2 Greenhouse Gas Assessment

#### 12.2.2.1 Construction Phase

The GHG assessment accounts for various components relating to the project during different life stages to determine the total impact of the development on climate. The reference study period (i.e. the assumed building life expectancy) for the purposes of the assessment is 60 years. Embodied carbon emissions are attributed to four main categories, taken from BS EN 15978. The categories are:

- Product Stages (Category A1 to A3)
  The carbon emissions generated at this stage arise from extracting the raw materials from the ground, their transport to a point of manufacture and then the primary energy used (and the associated carbon impacts that arise) from transforming the raw materials into construction products.
- Construction (Category A4 to A5)
  These carbon impacts arise from transporting the construction products to site, and their subsequent processing and assembly into the building.
- Use Stage (Category B1 to B7)
  This covers a wide range of sources from the GHG emissions associated with the operation of the building (B1), maintenance (B2), repair (B3), refurbishment (B4) and replacement (B5) of materials, and operational energy use (B6) and water use (B7).
- End of Life Stages (Category C1 to C4)
  The eventual deconstruction and disposal of the existing building at the end of its life takes account of the on-site activities of the demolition contractors. No "credit" is taken for any future carbon benefit associated with the reuse or recycling of a material into new products.

PE-ENV-01104 recommends the calculation of the construction stage embodied carbon using the TII Online Carbon Tool or an appropriate alternative tool. Embodied carbon refers to the sum of the carbon needed to produce a good or service. It incorporates the energy needed in the mining or processing of raw materials, the manufacturing of products and the delivery of these products to site. The purpose of the embodied carbon assessment is to engage the design team in the consideration of embodied carbon at an early stage in the development and mitigate embodied carbon. This engagement aims to ensure carbon savings are made and to assist in aligning the project to Ireland's CAP goal of Net Carbon Zero by 2050.

The TII Online Carbon Tool has been commissioned by TII to assess GHG emissions associated with road or rail projects in Ireland. The TII Carbon Tool uses emission factors from recognised sources including the Civil Engineering Standard Method of Measurement (CESSM) Carbon and Price Book database (CESSM, 2013), which can be applied to a variety of developments, not just road or rail. The tool aligns with PAS 2080.

For the building elements of the proposed development, the OneClick LCA 3D Designer tool was utilised. OneClick LCA is certified to EN 15978, ISO 21931 – 1 & ISO 21929, and data requirements of ISO 14040 & EN 15804, and is LEED, BREEAM and PAS 2080 aligned. It allows users to assess the carbon impact of buildings at various stages of design. The tool includes a detailed product and material list based on Irish materials as well as materials from the UK and Europe. The OneClick LCA 3D Designer option allows for a high-level assessment of the embodied carbon impact of a development at early

design stages when specific detailed design information is not known and is suitable for EIAR stage assessments.

Inputs into the tool include gross floor areas for the building types (apartments), building frame type, number of above ground floors and building size and shape. The tool then makes necessary default assumptions based on these parameters and a typical build-up with the option to refine the default assumptions where project specific information is available. The tool allows for optioneering and optimization of the carbon impact, it highlights the key areas within the building with the highest carbon impact and provides options for lower carbon intensive materials.

The TII Carbon Tool was utilised to estimate the GHG emissions associated with the non-building elements of the proposed development including construction activities, land clearance activities and construction wastes.

Reasonable conservative estimates have been used in this assessment where necessary to provide an estimate of the GHGs associated with the proposed development.

The GHG emissions from the development as a total cannot be compared against one specific sector 2030 carbon budget. The emissions are broken down into different assessment categories, and these must be compared separately to the relevant sectoral emissions budgets, which are detailed in Error! Reference source not found.. The relevant sectoral emissions for the proposed development comparison include the Industry sector, Transport sector, and Waste sector. The predicted emissions for the proposed development are annualised over the assumed 60-year lifespan and then compared to the relevant sector 2030 carbon budgets. Annualising the full carbon emissions over the lifetime of the development allows for appropriate comparison with annual GHG targets.

### 12.2.3 Operational Phase

#### 12.2.3.1 Operational Phase Traffic Emissions

Emissions from road traffic movements associated with the operation of the proposed development have the potential to emit $CO_2$ which impacts climate.

Screening of the movement of road traffic on public roads is undertaken using the criteria described in the TII Guidance Air Quality Assessment of Specified Infrastructure Projects – PE-ENV-01106, considered valid for any development where a change in traffic occurs. An assessment should be undertaken where any of the following criteria are met:

- Annual Average Daily Traffic (AADT) changes by 1,000 vehicles or more
- Heavy Duty Vehicle (HDV) (vehicles greater than 3.5t) AADT flows change by 200 vehicles or more
- Daily average speed changes by 10 kmh or more
- Peak hour speed changes by 20 kmh or more.

Traffic data provided for the assessment includes the cumulative flows from background plus additional flows from confirmed developments and local development plans. This includes the contribution from other phases of the wider development site of which the proposed development is part. Cumulative flows are described in detail within Chapter 15 Material Assets - Transportation. Data is provided for the following scenarios relevant to this assessment:

- Opening year without the development in place (Do-Nothing)
- Opening year with the development in place (Do Something)

- Design year without the development in place (Do-Nothing)
- Design year with the development in place (Do Something)

Emissions from road traffic were calculated using the TII Road Emissions Model (REM) online calculator tool and are provided in terms of $tCO_2e$. The following inputs are required for the REM tool: receptor locations, light duty vehicle (LDV) annual average daily traffic movements (AADT), annual average daily heavy-duty vehicles (HDV AADT), annual average traffic speeds, road link lengths, road type, and project county location. The Default fleet mix option was selected which includes the following assumptions for fleet composition:

- Cars - Climate Action Plan (CAP).The CAP projection assumes that the policies set out in the CAPs up to CAP24 and CAP25 are implemented resulting in increased adoption of electrified vehicles.
- LDV - Business as Usual (High Ambition), this is based on a review of market capacity for different technologies within each category. This is broken down further into "high ambition" in the LDV fleet, where the distinction is the rate of adoption of low emissions technologies based on available and emerging technologies, adjusted to recognise the unique conditions, constraints and opportunities in the Irish market.
- HDV - EU target projections for HDVs, this represents interim targets for emissions from sales of new HGVs.

The Default fleet mix represents a realistic worst-case scenario according to the TII PE-ENV-01106 guidance. The TII REM uses county-based Irish fleet composition for different road types, for different European emission standards from pre-Euro to Euro 6/VI with scaling factors to reflect improvements in fuel quality, retrofitting, and technology conversions. Full details can be found in Chapter 11 Air Quality.

Table 12.3 Traffic Data used in the Operation Phase GHG Assessment

| Road Name | Speed (kph) | Opening Year | | Design Year | |
|---|---|---|---|---|---|
| | | Do Nothing | Do Something | Do Nothing | Do Something |
| | | LDV AADT (HDV AADT) | LDV AADT (HDV AADT) | LDV AADT (HDV AADT) | LDV AADT (HDV AADT) |
| Main St (between Friar St and Park Ave | 30 | 5,506 (351) | 5,744 (369) | 6,880 (439) | 9,019 (576) |
| Main St (between Park Ave and Hole in the Wall Rd) | 30 | 8,498 (354) | 8,768 (365) | 10,193 (425) | 12,377 (516) |
| Clarehall Ave (between Belmayne Ave and Malahide Rd) | 60 | 30,092 (2,265) | 30,241 (2,276) | 37,156 (2,797) | 38,498 (2,898) |

| Road Name | Speed (kph) | Opening Year | | Design Year | |
|---|---|---|---|---|---|
| | | Do Nothing | Do Something | Do Nothing | Do Something |
| | | LDV AADT (HDV AADT) | LDV AADT (HDV AADT) | LDV AADT (HDV AADT) | LDV AADT (HDV AADT) |
| Main St (between Belmayne Ave and Malahide Rd) | 60 | 27,426 (2,064) | 27,576 (2,076) | 33,742 (2,540) | 35,083 (2,641) |
| Malahide Rd (between Main St and Belmayne Ave) | 50 | 18,000 (750) | 18,221 (759) | 21,683 (903) | 23,867 (994) |

#### 12.2.3.2 Operational Phase Energy Use

The EU Guidance on *Integrating Climate Change and Biodiversity into Environmental Impact Assessment* (European Commission, 2013) also states that indirect GHG emissions as a result of a development must be considered, which include emissions associated with energy usage. A Climate Action and Energy Statement was prepared by EDC in relation to the proposed development and is submitted separately as part of the planning application. The report outlines a number of measures which have been incorporated into the overall design of the development directly in relation to operational phase energy use. These measures will have the benefit of reducing the impact to climate where possible during operation.

### 12.2.4 Significance Criteria for the GHG Assessment

The significance of the impacts of GHG emissions on the climate is an area of scientific consensus that is described clearly in the IPCC AR5 reports, and as such all GHG emissions are considered to contribute adversely towards climate change.

In accordance with ISEP and TII guidance, the significance of the impacts of GHG emission resulting from each lifecycle stage of a given project is based on how it contributes to the overall GHG emissions within the sectoral and national carbon budgets and whether that project contributes or not to the CAP25 objective for Ireland to achieve carbon neutrality by 2050, that is that a project contributes to reducing GHG emissions. This process requires an assessment of the unmitigated quantified GHG emissions against the sensitivity of receptors (Ireland's national GHG targets or National Climate Objective) and a degree of professional judgement that takes account of the balance of these factors. Residual impacts are then determined based on the unmitigated impacts combined with a qualification of the potential measures that might mitigate against GHG emissions. Both the ISEP and TII guidance documents are explicit in this concept, however the TII document also highlights the issue of significance in the context of how a project mitigates its GHG emissions.

In order to streamline the process and provide accountability, the criteria outlined in PE-ENV-01104 and reproduced in Error! Reference source not found. (which are based on the 2022 ISEP guidance) are used together with the following two factors:

- The extent to which the trajectory of GHG emissions from the project aligns with Ireland's GHG trajectory to net zero by 2050
- The level of mitigation taking place.

Table 12.4 Significance Criteria for the Greenhouse Gas Assessment

| Effects | Significance Level | Description |
|---|---|---|
| Significant adverse | Major adverse | • The project's GHG impacts are not mitigated;<br>• The project has not complied with do-minimum standards set through regulation, nor provided reductions required by local or national policies; and<br>• No meaningful absolute contribution to Ireland's trajectory towards net zero. |
| | Moderate adverse | • The project's GHG impacts are partially mitigated;<br>• The project has partially complied with do-minimum standards set through regulation, and has not fully complied with local or national policies; and<br>• Falls short of full contribution to Ireland's trajectory towards net zero. |
| Not significant | Minor adverse | • The project's GHG impacts are mitigated through "good practice" measures.<br>• The project has complied with existing and emerging policy requirements; and<br>• Fully in line to achieve Ireland's trajectory towards net zero. |
| | Negligible | • The project's GHG impacts are mitigated beyond design standards.<br>• The project has gone well beyond existing and emerging policy requirements; and<br>• Well "ahead of the curve" for Ireland's trajectory towards net zero. |
| Beneficial | Beneficial | • The project's net GHG impacts are below zero and it causes a reduction in atmosphere GHG concentration.<br>• The project has gone well beyond existing and emerging policy requirements; and<br>• Well "ahead of the curve" for Ireland's trajectory towards net zero, provides a positive climate impact. |

In addition to the criteria detailed in Error! Reference source not found., the ISEP 2022 guidance upon which PE-ENV-01104 is heavily based was updated with supplementary guidance in 2026 to provide clarity on the determination of the significance of impact. It states that where mitigation measures are equivalent to the regulatory minimum, this is not considered sufficient to state that the impacts are not significant. This is particularly relevant in the context of the severity of the climate situation and potential exceedance of the 1.5°C Paris Agreement target as described in Section **Error! Reference source not found.**. In such an instance any mitigation measures should go above and beyond regulatory compliance in order for a project's impacts to be considered not significant. A failure to go beyond the minimum legislative requirements would typically result in a project assessed as presenting a major or moderate, significant adverse effect.

### 12.2.5 Climate Change Risk Assessment

A standalone Climate Risk and Vulnerability Assessment (CRVA) was undertaken to determine climate hazards relevant to the proposed development and establish mitigation and adaptation measures required to reduce the risk to the proposed development, this is presented in Appendix 12.1. The CRVA was used to inform the Climate Change Risk Assessment (CCRA) element of this EIAR.

The CCRA contained within this Climate Chapter presents a high-level assessment of the climate screening element of the CRVA process. For completeness and to align with the requirements of the EIAR according to the EPA, mitigation measures, residual and cumulative risk are also assessed but at a high-level, with further detail available in the CRVA (Appendix 12.1).

#### 12.2.5.1 Climate Screening

To align with the CRVA, the assessment follows the guidance and instruction outlined in the UKGBC Framework and guidance from national (NCCRA, TII) and international (IPCC & ISO 14091:2021) best practice. Below is a brief breakdown of the approach.

**Review of the site and Dublin's historical baseline climate**

- **Current CCRA Baseline** (Section **Error! Reference source not found.**): Review of observed weather data taken from Dublin Airport for the period 1991-2020 and records of extreme weather events. This baseline data is derived from the ECMWF ERA5 data reanalysis and includes observational data from meteorological weather stations across Ireland and Dublin from 1950-2023.

**Analysis of future climate projections**

- **Future CCRA Baseline** (Section **Error! Reference source not found.**): This assessment will provide a site-specific analysis of future climate change using the latest EPA Climate Ireland 'Translate' projections using the latest CIMP5 climate data modelling. Two contrasting climate scenarios will be assessed (RCP4.5 and RCP8.5). The 1.5km resolution of the climate projections allow for a site-specific analysis of future climate change projections

#### 12.2.5.2 Climate Hazard Screening

Following analysis of historical climate events and the baseline climatology, relevant physical climate hazards are screened in or out of the assessment (Section **Error! Reference source not found.**). This is done to identify priority hazards that may result in direct impacts to the proposed development site. The Climate Hazard Screening is based on the most comprehensive list set out in EU Taxonomy Guidance, Appendix A as this report is compliant with the Home Performance Index (see Sections 2.5 and 2.6 of the CRVA in Appendix 12.1). Only hazards which are relevant to the locality of the site are selected for screening, for example typhoons and hurricanes are not relevant to Ireland so have been omitted from the assessment.

Following this analysis, a high-level risk assessment is carried out by determining the consequence of climate hazards to the proposed development assets (i.e. receptors) and their probability of occurring.

The classification of consequence is assessed based on a Severe, Medium, Mild or Minor scale, details of which are set out in the table below:

Table 12.5 Classification of consequence reproduced from UKGBC (2022)

| Classification | Definition | Example |
|---|---|---|
| Severe | ■ Impact to the built asset likely to result in catastrophic damage to buildings/property.<br>■ Built asset has substantial exposure to a potential loss. No or negligible effort to strengthen resilience of built asset. | Extreme winds resulting in total structural failure or foundation damage resulting in instability. |

| Classification | Definition | Example |
|---|---|---|
| | ■ Damage to buildings/structures or services or the environment rendering asset unsafe to occupy.<br>■ Asset is stranded. Demolition and full re-build of asset required or total write off of asset value.<br>■ Business interruption or direct damage resulting in total financial loss.<br>■ Asset becomes uninsurable.<br>■ ££££ | Extreme flooding resulting in total structural failure.<br>Damage to essential infrastructure that is considered uneconomical to repair. |
| Medium | ■ Impact to the built asset likely to result in high levels of damage to buildings/property, substantial re-build or substantial reduction in asset value.<br>■ Built asset has substantial exposure to a potential loss. Limited effort to strengthen resilience of built asset.<br>■ Damage to key buildings/structures/services or the environment rendering asset unsafe to occupy.<br>■ Business interruption or direct damage resulting in substantial financial loss or expenditure to resolve.<br>■ Insurance premiums on asset rises substantially.<br>■ £££ | Extreme winds causing full roof replacement.<br>Extreme flooding resulting in partial (e.g. ground floor) refurbishment.<br>Gas infrastructure damage to built asset. |
| Mild | ■ Impact to the built asset likely to result in low levels of damage to business/property.<br>■ Built asset has some exposure to a potential loss. Efforts have been made to strengthen resilience of built asset.<br>■ Damage to buildings/structures/services rendering limited areas of the building unsafe to occupy or unsafe on a short-term basis.<br>■ Damage to vulnerable buildings/structures/services or the environment.<br>■ Limited business interruption or direct damage resulting in limited financial loss or expenditure to resolve.<br>■ ££ | Extreme winds causing broken windows.<br>Extreme flooding resulting in short-term access issues.<br>Loss of plants in a landscaping scheme. |
| Minor | | |

| Classification | Definition | Example |
|---|---|---|
| | ■ Impact to the built asset likely to result in no or very low levels of damage to business/property.<br>■ Built asset has negligible exposure to a potential loss. Efforts have been made to strengthen resilience of built asset.<br>■ Damage to buildings/structures/services or the environment rendering limited areas of the building unsafe to occupy or unsafe on a very short-term basis.<br>■ Damage to vulnerable buildings/structures services or the environment.<br>■ No or limited business interruption that may result in no or negligible financial loss or expenditure to resolve.<br>■ £ | Extreme winds causing wind-blown debris requiring housekeeping.<br>Extreme flooding resulting in water driven debris requiring housekeeping. |

Once the consequences have been identified, the probability analysis is undertaken. The probability analysis involves determining the level of exposure of each climate hazard at the project location irrespective of the project type. For example, flooding could be a risk if the project location is next to a river in a floodplain. Probability is assigned a level of High likelihood, Likely, Low Likelihood or Unlikely, as per the below:

Table 12.6 Classification of probability, taken from UKGBC (2022)

| Classification | Definition |
|---|---|
| High likelihood | The hazard event appears very likely in the short term and almost inevitable over the long term. |
| Likely | It is probable that an event an event is not inevitable, but possible in the short term and probable over the long term. |
| Low likelihood | Circumstances are under which an event could occur. However, it is by no means certain that even over a longer period such an event would take place and is less likely in the shorter term. |
| Unlikely | Circumstances are such that it is improbable that an event would occur even in the very long term. |

Once the consequence and probability are categorised, a risk analysis is conducted by multiplying the consequence and probability to calculate the risk.

### 12.2.6 Significance Criteria for CCRA

The risk assessment determines the risk of the proposed development to various climate hazards. The risk is determined by combining the consequence and the probability of the proposed development to various climate hazards.

*Risk = Consequence x Probability*

**Table 12.7** details the risk matrix; risks are scored based on PE-ENV-01104 guidance (TII, 2022), as set out below:

Table 12.7 Risk Matrix

| | | Consequence | | | |
|---|---|---|---|---|---|
| | | Severe | Medium | Mild | Minor |
| Probability | High likelihood | Very high risk | High risk | Moderate risk | Moderate/low risk |
| | Likely | High risk | Moderate risk | Moderate/low risk | Low risk |
| | Low likelihood | Moderate risk | Moderate/low risk | Low risk | Very low risk |
| | Unlikely | Moderate/low risk | Low risk | Very low risk | Very low risk |

The UKGBC Framework does not set out significance criteria however the PE-ENV-01104 guidance (TII, 2022) and the EU technical guidance (European Commission, 2021a) contain similar methodologies for assessing vulnerability (risk) by calculating sensitivity (consequence) and exposure (probability). The guidance note states that if all vulnerabilities are ranked as low in a justified manner, no detailed climate risk assessment is needed. Therefore, the impact from climate change on a proposed development can be considered to be not significant. The same theory will be applied here whereby if the risk is ranked as low, in a justified manner, the risk can be considered not significant.

However, where residual medium or high risks exist the assessment may need to be progressed to a detailed climate change risk assessment and further mitigation implemented to reduce risks. The methodology for this detailed assessment is set out in the accompanying CRVA (Appendix 12.1, Section 2.3.3).

## 12.3 Baseline Environment

### 12.3.1 Current GHG Baseline

Finalised data for emissions during 2024 was published in March 2026 (EPA, 2026), therefore data for emissions during 2025 is not expected until mid-2026. The data showed that emissions during 2024 were reduced by 1.9% or 1.1Mt$CO_2$e compared with 2023. In total, 54 Mt$CO_2$e were emitted, excluding Land Use, Land Use Change and Forestry (LULUCF). Recorded GHG were 11% below 2005 levels and 12% below 2018 levels, which is far short of Ireland's EU target for a 42% reduction by 2030 compared to 2005, and the national target of 51% below 2018 levels.

Table 12.8 National GHG Emissions 2021 – 2024

| Sector *Note 1* | Annual Total Emissions for Carbon Budget 1 (Mt $CO_2$e) | | | | Total Budget (Mt $CO_2$e) (2021-2025) | % Budget 2021-2025 Used | Annual % Change 2023-2024 |
|---|---|---|---|---|---|---|---|
| | 2021 | 2022 | 2023 | 2024 | | | |
| Electricity | 9.89 | 9.69 | 7.57 | 6.95 | 40 | 85.26 | -8.26 |
| Transport | 11.09 | 11.76 | 11.79 | 11.78 | 54 | 85.96 | -0.10 |
| Buildings (Residential) | 6.87 | 5.75 | 5.35 | 5.48 | 29 | 80.87 | +2.42 |

| Sector [Note 1] | Annual Total Emissions for Carbon Budget 1 (Mt $CO_2e$) | | | | Total Budget (Mt $CO_2e$) (2021-2025) | % Budget 2021-2025 Used | Annual % Change 2023-2024 |
|---|---|---|---|---|---|---|---|
| | 2021 | 2022 | 2023 | 2024 | | | |
| Buildings (Commercial and Public) | 1.44 | 1.42 | 1.38 | 1.44 | 7 | 81.23 | +4.19 |
| Industry | 7.09 | 6.65 | 6.30 | 6.18 | 30 | 87.40 | -1.88 |
| Agriculture | 21.95 | 21.79 | 20.75 | 20.45 | 106 | 80.14 | -1.47 |
| Other [Note 2] | 1.77 | 1.79 | 1.70 | 1.63 | 9 | 76.74 | -2.73 |
| LULUCF | 4.30 | 3.66 | 3.89 | 2.51 | - | - | - |
| **Total including LULUCF** | **64.41** | **62.52** | **58.74** | **56.44** | **295** | **82.07** | **-3.92** |

*Note 1* Reproduced from latest emissions data from the EPA (EPA, 2026).

*Note 2* Other includes Petroleum refining, F-Gases and Waste (emissions from solid waste disposal on land, solid waste treatment (composting and anaerobic digestion), wastewater treatment, waste incineration and open burning of waste).

### 12.3.2 Future GHG Baseline

The future GHG baseline is considered in relation of the ability of the proposed development to contribute positively or negatively to the ability of Ireland to meet the binding commitment as part of the Climate Act for carbon neutrality by 2050.

The targets for 2030 and 2050 are described in CAP24 and CAP25 as required by the Climate Act. The Act codified the GHG reductions required by EU Regulation 2018/842 amended by EU Regulation 2023/857 put in place to enable European Member States to meet their obligations under the Paris Agreement. The future baseline is determined by Ireland being able to meet its requirements under these regulations.

Ireland's Greenhouse Gas Emissions Projections 2024-2055 (Environmental Protection Agency, 2025) summarises total projected emissions and provides a breakdown of projected emissions per sector under the 'With Existing Measures' and 'With Additional Measures' scenarios. The EPA projections indicate that currently implemented measures (With Existing Measures) will achieve a reduction of 10% on 2005 levels by 2030, significantly short of the 42% reduction target. If measures in the higher ambition (With Additional Measures) scenario are implemented, EPA projections show that Ireland can achieve a reduction of 22% by 2030, still short of the 42% reduction target.

### 12.3.3 Current CCRA Baseline

The region of the proposed development has a temperate, oceanic climate, resulting in mild winters and cool summers. This baseline data is derived from the European Centre for Medium-Range Weather Forecasts (ECMWF) ERA5 data reanalysis (ECMWF, 2023) which includes observed data from local

meteorological weather stations across Ireland from 1950-2023. This data is reanalysed to model a complete picture of Irelands historical climate. This method has been chosen to ensure data can be analysed at the daily level and harmoniously compared with future scenarios. The baseline time-period referred to in this assessment was from 1991-2020 and is specific to the county of Dublin.

### Temperature

June, July and August are the warmest months with average mean temperatures of 13-15°C and maximum mean daily temperatures above 22°C (**Figure 12.1**). There has been a trend of increasing maximum and mean temperatures across Ireland and Dublin during the observed baseline period, with the top twenty hottest days occurring in the last twenty years from 2003-2023.

The maximum daily air temperature was recorded in July 2022 reaching 33°C, which coincided with the 2022 heatwave and Ireland's hottest year on record. There have been three notable high temperature events that have impacted Dublin and the proposed development site across the observed baseline period, including a Yellow High Temperature warning issued by Met Éireann for July 2022 and a heatwave event in August 2022 and August 2025.

December to February are the coldest months with mean temperatures of 5-6°C and minimum mean daily temperatures of -1°C each month. The annual average number of frost days (days <0°C) across the baseline are 12.1 days with several years having notable cold spells and low temperature with snow recorded across the observed baseline period most notable in 2018 during the 'Beast from the East'.

### Precipitation

The Dublin region receives a lower than average volume of rainfall annually across the baseline (average ~800mm) when compared with other regions in Ireland. November is the wettest month on average with 87.6mm of rainfall across the baseline (**Figure 12.1**). The remaining months are also notably high with average precipitation ranging from 72mm in September to 81mm in August. Large winter rainfall often coincides with large low pressure Atlantic systems moving eastwards over the Irish coast across the winter period.

Across the baseline February is the driest month with 61mm and spring the driest season with monthly averages ranging from 62-69mm (**Figure 12.1**). Summer while the warmest months are also markedly wet with monthly average precipitation ranging from 76-81mm. These high averages also correspond with the highest daily averages received during the summer months ranging from 24-26mm. This summer rainfall high is suggestive of summer thunderstorms or convectional rainfall and not associated with Atlantic storm activity.

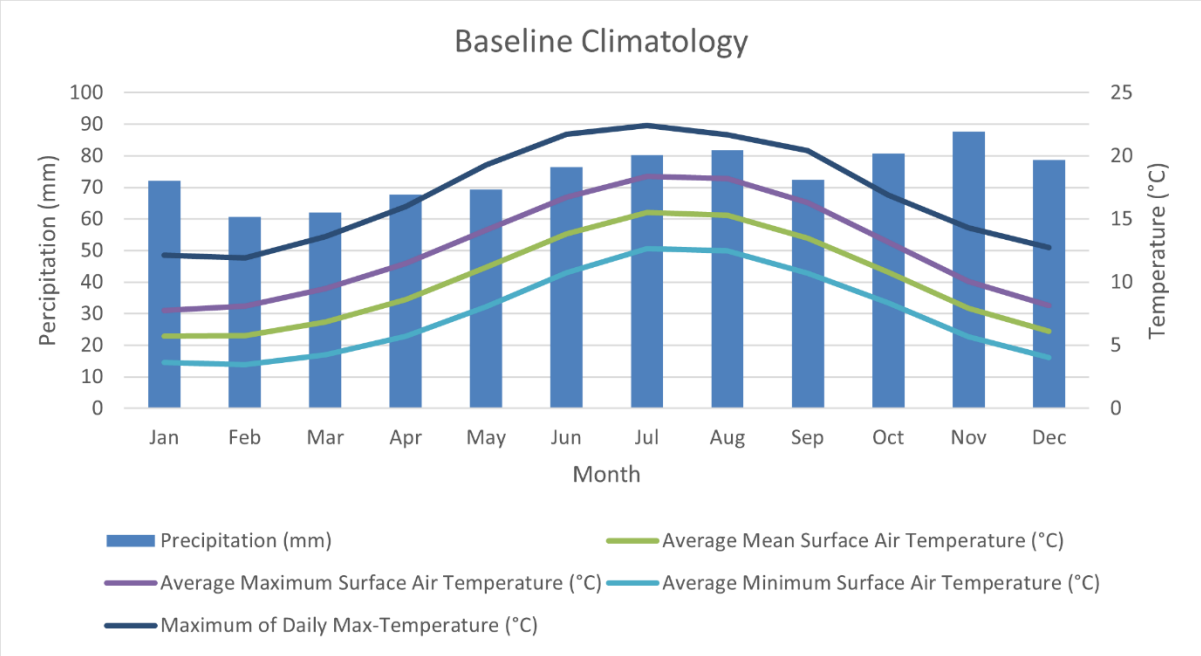



Figure 12.1 Climate Averages for Dublin, Ireland, for the period 1991-2020

**Wind**

At Dublin Airport during the period 1991-2020, the average wind speed was 10.5 knots (19.5kmph), the average windiest month being January at 12.3 knots (22.6 kmph) with the average highest gust of 30.0 knots (55.2 kmph) also occurring in January. Historically, the highest absolute gust of 80.0 knots (147.3 kmph) was recorded in January 2007 during Cyclone Kyrill.

With reference to recent extreme weather events in Ireland, storm Éowyn hit the island in January 2025 and recorded a 10-minute mean wind speed of 142 kmph in Galway, with the highest gust being 184 kmph. Four weather stations broke their highest gust records during this storm and two stations reached hurricane force 12 on the Beaufort scale.

A more detailed analysis of historical climate can be found in the CRVA (Appendix 12.1, Section 3.1).

### 12.3.4 Future CCRA Baseline

The current global climate is in a state of extreme flux. This is illustrated in the latest IPCC AR6 Synthesis Report Summary for Policymakers (IPCC, 2023) using the climate stripes representation pioneered by Professor Ed Hawkins of the University of Reading, reproduced in **Figure 12.2**.

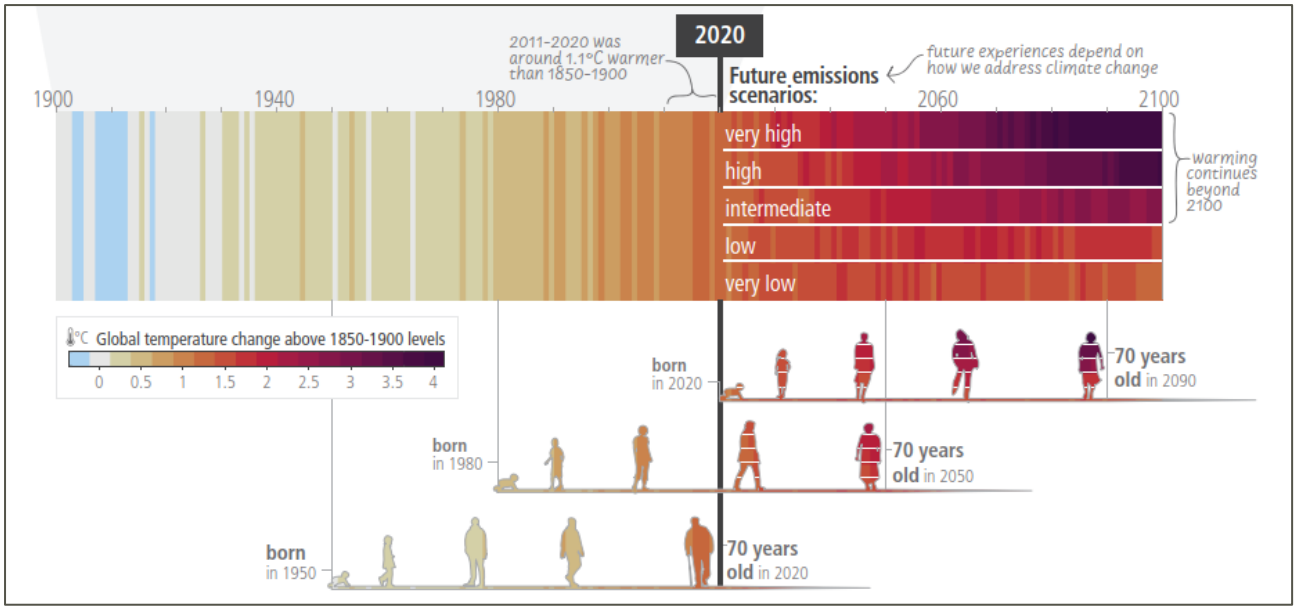



Figure 12.2 Global Climate Change Representation (from IPCC 2023)

Figure 12.2 shows that global average temperatures are already substantially above the 1850-1900 baseline level, and potential increases under future emissions scenarios are also presented. The United Nations reported that 2024 was the first calendar year to exceed the 1.5°C average increase (United Nations, 2026) with an average temperature 1.55° above the 1850-1900 average. Whilst this in itself is not an indication of a definite exceedance of the 1.5°C Paris Agreement commitment, as there will be some natural variation in the coming years, it is a clear indication that the climate is continuing to significantly warm. In addition, the CMIP6 climate model predicts a severe weakening of the Atlantic Meridional Overturning Current (AMOC) due to ocean surface warming and glacial meltwater entering the system from the Greenland ice sheets that is known to be highly influenced by anthropogenic emissions. Normally this current has a stabilising effect on the climate in Ireland, however a weakening or cessation of the ocean current would have profound consequences for Ireland in terms of overall climate stability and the magnitude of temperature extremes. Recent observations have been coupled with prediction models (Portmann et al, 2026) that show AMOC weakening that is far greater than predicted in CMIP6. The implications of such a weakening or cessation of flow within AMOC for the climate in Ireland are predicted to be severely negative.

#### 12.3.4.1 Climate Change Impacts and Projections for Ireland

Ireland is already experiencing increased annual rainfall in the north and west, with more variable patterns in the south and east including the area of the proposed development (EPA, 2021b). Key risks identified by the EPA relevant to Ireland include:

- Increased likelihood of more frequent and intense North Atlantic low-pressure systems bringing high rainfall and high winds.
- More intense rainfall periods which may lead to pluvial flooding and elevated fluvial levels.
- Longer dry spells and increased temperatures could elevate the risk of wildfire.

#### 12.3.4.2 Climate Modelling and Planning

Aligned with international best practice, UKGBC guidance and EU Taxonomy climate reporting assumptions. Two contrasting climate change scenarios 'RCPs' have been selected for this assessment.

- RCP4.5 is a stabilization scenario where radiative forcing reaches about 4.5 W/m² by 2100. It assumes moderate mitigation efforts, with emissions peaking mid-century and then declining. This pathway is projected to limit global warming to roughly 2.4–3 °C by 2100.
- RCP8.5, in contrast, is a high greenhouse gas concentration scenario often considered a "business-as-usual" or worst-case pathway, leading to radiative forcing of about 8.5 W/m² by 2100 and significantly higher projected global warming of roughly 3.2- 5.4°C.

This assessment only considers medium term changes (2041-2070). The full CRVA which can be found in Appendix 12.1 also considers the long-term scenario (2071-2100).

This climate change assessment uses the latest climate change projections standardised and bias corrected for Ireland available through the EPA and the TRANSLATE project (EPA, 2025e).

#### 12.3.4.3 Key Findings from Climate Projections

Key predicted changes in climate based on Table 12.9 include:

- Mean temperatures increasing by 1.6°C by mid-century under an RCP8.5 scenario with daily max temperatures increasing by 2.3°C.
- Minimum temperatures are predicted to increase by 1.6°C resulting in warmer winters.
- Annual precipitation is expected to increase by 8.5%

These predictions are based on Met Éireann TRANSLATE which is based on the CMIP5 model. They therefore do not take account of the findings from the latest CMIP6 model or the latest AMOC observations and predictions.

Table 12.9 Future Climate Projections from Met Éireann TRANSLATE

| Climate Hazard | Indicator | Baseline (1976-2005) | RCP4.5 (2041-2070) | RCP8.5 (2041-2070) |
|---|---|---|---|---|
| Temperature | Mean temp (°C) | 10.2 | 11.3 (+1.1°C) | 11.8 (+1.6°C) |
| | Mean Max temp (°C) | 13.0 | 14.0 (+1°C) | 15 (+1.5°C) |
| | Mean Min temp (°C) | 7.1 | 8.2 (+1.1°C) | 8.7 (+1.6°C) |
| | Average of Daily Max temp (°C) | 24.2 | 26 (+1.8°C) | 26.5 (+2.3°C) |
| Precipitation and Flooding | Annual precipitation (mm) | 708 | 748 (+40) | 768 (+60) |
| | Max 1-day (mm) | 34 | 40 (+6) | 42 (+8) |
| Storms and high winds | Storm Frequency and Average speed | On Average 8 named storms annually with speeds exceeding 100kmph *Note 1* | Winter storm frequency is projected to increase, with a possible extension of the storm season. While the intensity of individual storms cannot be accurately projected, storm wind speeds are likely to remain above 100 km/hr. | |
| | (Descriptive) | | | |
| | Max gust Speed *Note 2* | 80 knots | | |
| | | (147 kmph) | | |
| Wildfire | Qualitative (Descriptive) | Low risk of wildfire in Dublin area | Rising temperatures and prolonged dry spells are projected to elevate wildfire risk. | |
| Drought | Absolute Drought | Rare | Marginal increase | Increased Likelihood |

| Climate Hazard | Indicator | Baseline (1976-2005) | RCP4.5 (2041-2070) | RCP8.5 (2041-2070) |
|---|---|---|---|---|
| | (≥15 days with less than 1mm of rain) | | | |
| Lightning | Qualitative (Descriptive) | Occurring during summer periods | This hazard may modestly increase in the future due to more favourable conditions, such as rising temperatures and extended warm periods beyond the traditional summer season | |
| Note-1: Data from combined Met Éireann, UK Met Office and Dutch Meteorological services. | | | | |
| Note-2: Data from Dublin Airport weather station (~16km from site), 1991-2020 | | | | |

## 12.4 Predicted Impacts of the proposed development

### 12.4.1 Do-Nothing Impact

In the Do-Nothing scenario, the site will remain as per the baseline and will change in accordance with trends within the wider area (including influences from potential new developments in the surrounding area, changes in road traffic, etc).

As the site is zoned for development, it is likely that in the absence of the proposed development a development of a similar nature would occur in the future. Therefore, the predicted greenhouse gas emissions associated with the construction and operation phases are likely to occur regardless of the specific proposed development. Climate change is being driven by broader, long-term global trends in greenhouse gas concentrations, which will continue irrespective of any localised development.

### 12.4.2 Greenhouse Gas Assessment

#### 12.4.2.1 Construction Phase

The results of the GHGA are shown Error! Not a valid bookmark self-reference.. This includes both the outputs from the OneClick LCA tool and the TII Carbon Tool. Construction materials make up the majority of GHG emissions for the proposed development, accounting for approximately 86% of the total construction phase GHG emissions. The second highest contribution comes from material transport at 6%.

It has been calculated that the total construction phase embodied carbon for the proposed development is 37,227 $tCO_2e$ (86% of total GHG emissions) as shown in Error! Not a valid bookmark self-reference..

Table 12.10 Greenhouse Gas Assessment Results

| Stage | GHG Assessment Category | Predicted GHG Emissions ($tCO_2e$) | Predicted GHG Emissions as % of Project Total | Relevant Sector for Carbon Budget Comparison |
|---|---|---|---|---|
| A1-A3 | Materials | 32,183 | 75.1% | Industry |
| A4 | Material Transport | 2,176 | 5.1% | Transport |
| A5 | Clearance and Demolition | 1 | <0.1% | Industry |
| | Excavations | 20 | <0.1% | Industry |
| | Construction worker travel to site | 635 | 1.5% | Transport |

| Stage | GHG Assessment Category | Predicted GHG Emissions ($tCO_2e$) | Predicted GHG Emissions as % of Project Total | Relevant Sector for Carbon Budget Comparison |
|---|---|---|---|---|
| | Construction site waste | 1,720 | 4.0% | Waste |
| | Construction site material waste transport | 492 | 1.1% | Transport |
| B4 - B5 | Maintenance Material | 5,620 | 13.1% | Industry |
| | Operational waste | 0.63 | <0.1% | Transport |
| | Operational waste transport | 6.51 | <0.1% | Waste |
| **Total** | | **42,854** | | |

The results of the GHGA are shown **The results** of the GHGA are shown Error! Not a valid bookmark self-reference.. This includes both the outputs from the OneClick LCA tool and the TII Carbon Tool. Construction materials make up the majority of GHG emissions for the proposed development, accounting for approximately 86% of the total construction phase GHG emissions. The second highest contribution comes from material transport at 6%.
It has been calculated that the total construction phase embodied carbon for the proposed development is 37,227 $tCO_2e$ (86% of total GHG emissions) as shown in Error! Not a valid bookmark self-reference..

. This includes both the outputs from the OneClick LCA tool and the TII Carbon Tool. Construction materials make up the majority of GHG emissions for the proposed development, accounting for approximately 86% of the total construction phase GHG emissions. The second highest contribution comes from material transport at 6%.

It has been calculated that the total construction phase embodied carbon for the proposed development is 37,227 $tCO_2e$ (86% of total GHG emissions) as shown in **The results** of the GHGA are shown Error! Not a valid bookmark self-reference.. This includes both the outputs from the OneClick LCA tool and the TII Carbon Tool. Construction materials make up the majority of GHG emissions for the proposed development, accounting for approximately 86% of the total construction phase GHG emissions. The second highest contribution comes from material transport at 6%.
It has been calculated that the total construction phase embodied carbon for the proposed development is 37,227 $tCO_2e$ (86% of total GHG emissions) as shown in Error! Not a valid bookmark self-reference..

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Table 12.11 Estimated Greenhouse Gas Emissions Relative to Sectoral Budgets and GHG Baseline

| Target/Sectoral Budget ($tCO_2e$) | | Annualised Development GHG Emissions ($tCO_2e$) | | % of Relevant Target/Budget |
|---|---|---|---|---|
| Ireland's 2024 Total GHG Emissions (existing baseline) | 5,764,000 | 714 | Total GHG Emissions | 0.0012% |
| Non-ETS 2030 Target | 27,722,000 | | | 0.0026% |
| 2030 Sectoral Budget (Industry Sector) | 4,000,000 | 630 | Total Industry Emissions | 0.0016% |

| Target/Sectoral Budget ($tCO_2e$) | | Annualised Development GHG Emissions ($tCO_2e$) | | % of Relevant Target/Budget |
|---|---|---|---|---|
| 2030 Sectoral Budget (Transport Sector) | 6,000,000 | 55 | Total Transport Emissions | 0.0009% |
| 2030 Sectoral Budget (Waste Sector) | 1,000,000 | 29 | Total Waste Emissions | 0.0029% |

#### 12.4.2.1.1 GHGA Construction Stage Significance of Effects

With reference to Section **Error! Reference source not found.** the magnitude and significance of effect from GHG emissions resulting from the construction stage has been determined to be of a **direct** impact due the use of material and emissions from plant and equipment, that is **long-term** as a result of the estimated lifetime of the buildings and **negative** due to the emission of GHG to the global climate. Discounting any mitigation measures and the assumption that without mitigation the development would impede the trajectory towards net zero, the impact on the climate is considered to be **moderate adverse** and **significant**.

Referring to the predicted climate impacts in Section **Error! Reference source not found.** any GHG emissions in addition to historic emissions will exacerbate this situation. At this stage in the assessment no assumptions on mitigation measures have been incorporated into the assessment, however the materials used are expected to meet the minimum legal standards described within the Building Regulations. On this basis the emissions resulting from the construction stage of the proposed development would impede progress towards net zero.

### 12.4.2.2 Operational Phase

#### 12.4.2.2.1 Operational Energy Usage

The proposed development has been designed to reduce the impact to climate where possible. A number of measures have been incorporated into the design to ensure the operational phase emissions are minimised. The primary elements with respect to reducing climate impacts and optimising energy usage are summarised in Section 12.5.2 and are based on information provided within the Climate Action and Energy Statement and the energy and Heating Strategy both prepared by EDC in relation to the proposed development.

#### 12.4.2.2.2 Operational Traffic Emissions

The use of fossil fuel powered vehicles by new occupants of the proposed development will result in GHG emissions. Traffic data was provided by CS Consulting and is included in Chapter 15 Material Assets - Transportation. The data include the cumulative flows of the proposed development, committed developments from the surrounding area and background, existing traffic flows.

The predicted transport GHG emissions for 2030 and 2045 shown in **Table 12.12** demonstrate that the operational emissions from transport are a small fraction of the transport sector emission ceiling, and a smaller fraction of the national emission ceiling. The values for the Do Nothing and Do Something scenarios are presented for the opening year and design year along with the difference between the Do Nothing and Do Something scenarios.

Table 12.12 Summary of Transport related Greenhouse Gas Emissions

| Year | Scenario | $CO_2e$ (tonnes/annum) |
|---|---|---|
| 2028 | Do Nothing | 2,527 |
| | Do Something | 2,549 |
| 2043 | Do Nothing | 1,733 |
| | Do Something | 1,840 |
| Increment Change in 2028 | | 22 |
| **National Emission Ceiling 2030 (Tonnes)*** | | **37,869,352** |
| Impact in 2028 (as % of national emissions ceiling) | | 0.0001% |
| **Transport Sector 2030 Emission Ceiling** | | **6,000,000** |
| Impact in 2028 (as % of transport sector emissions ceiling) | | 0.0004% |
| Increment Change in 2043 | | 108 |
| **National Emission Ceiling 2030 (Tonnes)*** | | **27,722,000** |
| Impact in 2043 (as % of national emissions ceiling) | | 0.0004% |
| Impact in 2043 (as % of transport sector emissions ceiling) | | 0.0018% |
| * Target under Commission Implementing Decision (EU) 2020/2126 of 16 December 2020 on setting out the annual emission allocations of the Member States for the period from 2021 to 2030 pursuant to Regulation (EU) 2018/842 of the European Parliament and of the Council. | | |

#### 12.4.2.2.3 GHGA Operational Stage Significance of Effects

With reference to Section **Error! Reference source not found.** and in accordance with the EPA Guidelines (EPA, 2022), the above criteria equates to an impact of GHG emissions during the operational stage of a **direct** impact due to its presence, that is **long-term** as a result of the estimated lifetime of the buildings and **negative** due to the emission of GHGs. Discounting any mitigation measures and the assumption that without mitigation the development would impede the trajectory towards net zero, the impact on the climate is considered to be **moderate adverse** and ***significant***.

### 12.4.3 Climate Change Risk Assessment

#### 12.4.3.1 Climate Change Risk Assessment Screening

Error! Not a valid bookmark self-reference. provides a screening of relevant physical climate hazards as identified in the EU Taxonomy Appendix A. An initial review of EU Taxonomy Appendix A screened out climate hazards which are irrelevant to the specific location, for example avalanches, hurricanes and typhoons. This screening exercise has therefore assessed the key physical climate hazards identified as relevant to the proposed development and design upon review of the baseline climatology and future predicted climate hazards.

Table 12.13 Climate Hazard Screening

| **Climate-related Hazard** | **Hazard Screening Rationale** | **Screening** |
|---|---|---|
| Extreme Heat temperatures | Historical data shows rising temperatures in Ireland, particularly around Dublin. Heat and thermal expansion can damage buildings, materials, and road surfaces, and affect the lifecycle of critical assets while also impact worker's health and safety. Extreme heat should therefore be further considered and screened in. | Screen in |
| Extreme Cold Temperature | Snow and ice events pose significant risks to health, safety, and asset lifecycle. Road access may be disrupted, and low temperatures can affect assets such as workers, and | Screen in |

| Climate-related Hazard | Hazard Screening Rationale | Screening |
|---|---|---|
| | infrastructure. Freeze-thaw cycles may cause cracking in concrete, burst pipes, and deterioration in road and buildings surfaces, requiring snow clearance and ice management. Cold temperatures are therefore screened in. | |
| High precipitation and pluvial flooding | No surface water flood events have been reported on-site, nor have any major incidents been identified for this assessment based on a review of the OPW Flood Maps (2025). A Site-Specific Flood Risk Assessment was carried in 2025 by CS Consulting for the proposed development site. It was determined the majority of the subject site is unlikely to experience significant pluvial flooding. However, the southern portion of the site may be subject to pluvial flooding with depths exceeding approximately 2m. The topology of the site falls to the north therefore the FRA deems there to be no significant risk of pluvial flooding. Nevertheless, flooding remains a critical hazard to key components within the proposed development and has been addressed in this assessment. | Screen in |
| Fluvial flooding | A river runs approximately 450m north of the proposed development. The Site-Specific Flood Risk assessment shows low risk of fluvial flooding for the proposed site. | Screen in |
| Drought | Droughts are rare in Ireland and are categorised as ≥15 consecutive days with <0.2mm of rainfall per day. However, dry spells have occurred in Ireland and across County Dublin. Incidents of prolonged dry spells are unlikely to influence or impact the proposed development | Screen out |
| Wildfire | The area surrounding the site is largely developed and in close proximity to urban centres. The site is located at a reasonable distance from unmonitored land for this assessment to not view wildfire as potential climate hazard for the proposed development. | Screen out |
| High winds and storms | While the site itself isn't significantly elevated, design assets (buildings and structures) may be exposed to adverse wind loads which directly impact site safety and operational efficiency. Dublin has a history of severe wind events, including Storm Éowyn and Storm Darragh (2024), which caused widespread damage across Ireland. These storms often bring heavy rainfall and flood warnings, increasing overall risk. | Screen in |
| Lightning | The proposed development is not elevated nor at significant risk of lighting. | Screen out |
| Landslides and Subsidence | The Geological Society of Ireland (GSI) landslide susceptibility mapping database was reviewed. The area of the proposed development is categorised as Low for landslide susceptibility and has been screened out of this assessment. | Screen out |
| Sea level rise and coastal flooding | Not a coastal location. Approximately 1.5km from the coast. | Screen out |

#### 12.4.3.2 Climate Risk Assessment

The probability and consequence of the development to the screened in climate hazards must first be determined to then determine the risk of the proposed development to climate change. High precipitation and flooding (pluvial), fluvial flooding, extreme heat, extreme cold, and high wind and

storms have been considered as climate hazards in the context of the proposed development based on the above climate hazard screening.

Error! Not a valid bookmark self-reference. details the consequence of climate hazards on the proposed development in accordance with the IGBC Framework based on the nature of the proposed development and irrespective of the location. Once the consequence has been determined, the probability of the climate hazard occurring is determined, this reflects on the possible likelihood of the climate hazard occurring at the project location. This is based on RCP8.5 during the 2041-2070 timeframe. Detailed analysis can be found in the CRVA (Appendix 12.1) which assesses each climate hazard against individual elements of the proposed development e.g. Buildings and Structures and Public Realm across short, medium and long term timeframes and against RCP4.5 and RCP8.5 climate scenarios.

The results of the risk assessment are detailed in Error! Not a valid bookmark self-reference..

Table 12.14 Climate Risk Assessment

| Climate Hazard | Sensitivity | Exposure | Vulnerability |
|---|---|---|---|
| Extreme heat | Mild | Likely | Moderate/ Low risk |
| Extreme cold | Mild | Unlikely | Very Low Risk |
| High precipitation and pluvial flooding | Mild | Likely | Moderate/ Low risk |
| High winds and storms | Medium | Likely | Moderate Risk |
| Fluvial flooding | Unlikely | Minor | Very low risk |

It was concluded that extreme heat and precipitation and flooding posed a moderate/ low risk and high winds and storms posed a moderate risk to the proposed development. As a result, adaptation measures have been proposed in consultation with the relevant design team specialists for the proposed development, the details of these are presented in the CRVA in Appendix 12.1 and in Section Error! Reference source not found. of this chapter.

#### 12.4.3.3 CCRA Significance of Effects

The risk assessment in The probability and consequence of the development to the screened in climate hazards must first be determined to then determine the risk of the proposed development to climate change. High precipitation and flooding (pluvial), fluvial flooding, extreme heat, extreme cold, and high wind and storms have been considered as climate hazards in the context of the proposed development based on the above climate hazard screening.

Error! Not a valid bookmark self-reference. details the consequence of climate hazards on the proposed development in accordance with the IGBC Framework based on the nature of the proposed development and irrespective of the location. Once the consequence has been determined, the probability of the climate hazard occurring is determined, this reflects on the possible likelihood of the climate hazard occurring at the project location. This is based on RCP8.5 during the 2041-2070 timeframe. Detailed analysis can be found in the CRVA (Appendix 12.1) which assesses each climate hazard against individual elements of the proposed development e.g. Buildings and Structures and Public Realm across short, medium and long term timeframes and against RCP4.5 and RCP8.5 climate scenarios.

The results of the risk assessment are detailed in Error! Not a valid bookmark self-reference..

Table 12.14 and Appendix 12.1, demonstrates, in the absence of mitigation, moderate and moderate/ low risk for three climate hazards, extreme hot temperatures, wind and storms and precipitation and pluvial flooding. Therefore, In accordance with the EPA Guidelines (EPA, 2022), the significance of effect of the impacts to the proposed development as a result of climate change are **direct** as climate extremes have a direct physical effect on buildings and infrastructure, **long-term** due to the response times of the climate in relation to changes in anthropogenic emissions, **negative** as climate extremes can cause significant damage to infrastructure, and overall **significant** in EIA terms.

### 12.4.4 Cumulative Assessment

In accordance with guidance from the ISEP (2022 and 2026) and TII (2022) the climate is not constrained by project, regional or national boundaries and therefore the GHG assessment has been presented in the context of the national and sectoral carbon budgets for the whole of Ireland and the ability of the proposed development to assist or impede the national relevant targets. Given the contribution of such targets to the global efforts to reduce the impact of society upon the climate the assessment is considered to be inherently cumulative.

In addition, the traffic data provided for the quantification of operational GHG emissions includes committed developments as far as they can be advised, and as such is considered to be cumulative.

In light of these statements, the pre-mitigation residual cumulative impact of both the construction stage and the operation phase of the proposed development in relation to GHG emissions is considered **direct**, **long-term**, **negative** and **moderate**, and is considered to be **significant**.

## 12.5 Difficulties Encountered

The proposed development is still in the design stage and therefore materials used, construction and operational activities are subject to change. Data assumptions for the GHG assessment are set out in **Table 12.15**. All assumptions follow a conservative approach.

Table 12.15 GHG Assessment Assumptions

| GHG Assessment Category | Elements Considered |
|---|---|
| Materials | All materials from apartments and non- building elements e.g. pavements, roads, carparks etc, |
| Material transport | Data from Outline CEMP for peak hourly HDV flows |
| Clearance and demolition | Area calculated in GIS from Red Line dataset |
| Land use change and vegetation loss | Previous grassland assumed |
| Excavation | General excavation |
| Construction energy | No data provided |
| Construction worker travel to site | Data from Outline CEMP for peak hourly LDV flows |
| Construction waste disposal | Construction waste has been quantified based on the figures in Table 19.1 in Chapter 19 Material Assets - Waste |

| GHG Assessment Category | Elements Considered |
|---|---|
| Construction waste transport | Assumed HGV load of 20 t and 50 km round trip distance to waste facility |
| Construction water | Scoped out in line with ISEP guidance- associated GHG emissions are predicted to be a small proportion of total emissions |
| Operational energy | Assumptions as detailed in Section 12.2.1.2.2 |
| Operational transport | See Operational Traffic Emissions Section 12.4.1.2.2 |
| Operational waste disposal | Operational waste has been quantified based on the figures in Section 19.4.2 in Chapter 19 Material Assets - Waste |
| Operational waste transport | Operational waste has been quantified based on the figures in Section 19.4.2 in Chapter 19 Material Assets - Waste |
| Maintenance | Material maintenance and replacement relies on the assumed values from the OneClick LCA over the typical 60-year building lifespan |
| Landscaping and vegetation | Scoped out in line with ISEP guidance- associated GHG emissions are predicted to be a small proportion of total emissions |
| Operational water | Scoped out in line with ISEP guidance- associated GHG emissions are predicted to be a small proportion of total emissions |

## 12.6 Mitigation Measures

### 12.6.1 GHG Mitigation

#### 12.6.1.1 Construction Phase

Embodied carbon of materials and construction activities will be the primary source of climate impacts during the construction phase. During the construction phase the following best practice measures shall be implemented on site to prevent significant GHG emissions and reduce impacts to climate:

- Prevention of on-site or delivery vehicles from leaving engines idling, even over short periods.
- Ensuring that fossil fuel powered plant and equipment meet European emission standards.
- Ensuring, where practicable, that site vehicles and delivery vehicles meet the required European standards for emissions of road vehicles.
- Ensure all plant, machinery and vehicles are well maintained and inspected regularly by the relevant contractors.
- Specifying electrically powered plant and equipment where practicable and using grid connections for electric power when practicable instead of fossil fuel powered generators.

#### 12.6.1.2 Operational Phase

A number of mitigation measures have been incorporated into the design of the development to reduce the impact on climate wherever possible. A Climate Action and Energy Statement and a Site Energy and Heating Statement were prepared by EDC in relation to the proposed development.

The Climate Action and Energy Statement states that the development will be a Nearly Zero Energy Building (NZEB) in accordance with the 2022 Part L requirements.

The residential units will aim to achieve an A2/A3 rated Building Energy Ratio (BER) in line with the NZEB requirements. The development shall include several energy conservation measures to achieve a high energy rating as outlined in the Climate Action Energy Statement:

- Buildings to be constructed with walls external walls achieving a maximum U-value of 0.18W/m²K for residential properties and 0.21 W/m²K for non-residential buildings
- A thermal bridging factor of 0.15 to be achieved for all buildings assuming Acceptable Construction Details are adhered to
- A design air permeability target of 5 m³/hr/m² @ 50 Pa should be achieved for residential buildings
- Space heating to be undertaken using centralised air to water air source heat pumps (ASHP) with Heating Interface Units (HIU) in each dwelling

A number of sustainable design features have been considered within the design to achieve the sustainability targets of the proposed development. These include:

- The proximity of the development to public transportation networks
- The proximity of the proposed development to active travel networks and car sharing locations
- Installation of infrastructure for electric vehicle (EV) charging for buildings with more than ten car parking spaces to allow for future installation of EV charging points through the installation of ducting or conduits to accommodate future electrical connections for each car parking space
- Water efficiency measures such as low consumption sanitary fittings
- Improved indoor environmental quality through effective insulation and appropriate ventilation

The above measures will assist in optimising the energy consumed by the development and will also have the benefit of reducing the impact to climate during the operational phase of the development.

### 12.6.2 Climate Risk Mitigation

Mitigation and adaptation against the climate hazards are set out in full in the CRVA in Appendix 12.1, Section 3.3.1. To summarise:

#### 12.6.2.1 Extreme Temperatures (Heat & Cold)

Extreme temperatures, both hot and cold, can affect building materials and infrastructure; however, the development has been designed to prevent overheating as outlined in Part L 2022 (Dwellings). Masonry Construction: Brick and blockwork are designed to BS EN 771: Part 1, BS EN 1996 (Eurocode 6: Design of masonry structures), and BS EN 1991: Parts 1-5 (thermal actions) ensuring materials are suitable in extreme temperatures and the design must account for temperature changes, expansion and contraction of materials and the effects of heat on structural behaviour. Movement joints accommodate thermal expansion/contraction per manufacturer recommendations.

Surface temperatures and condensation risk have been assessed per BS 5250 and BS EN 15026 to ensure material durability under varying temperature and humidity conditions. Thermal bridge-free construction detailed in accordance with BS EN ISO 6946, BS EN ISO 10077-1 and BS EN ISO 10077-2. Quality assurance protocols will be implemented throughout construction to verify thermal performance. Building materials have been selected to withstand extreme temperatures in accordance with current standards.

Further, landscaping and public realm design will consider elevated temperatures such as those projected and extreme temperatures ≥30°C will be accommodated by the design through selection of species that will not demand excessive water input. The design also uses self-seeding plants within the landscape design which will naturally regrow if they were impacted due to extreme cold.

To combat overheating within the dwellings, The Climate, Energy and Action Statement written by EDC explains dynamic thermal modelling will be carried out at detailed design stage to analyse selected

worst-case dwellings for overheating risk, and to propose design changes to mitigate that risk, if required.

Utilities are expected to be buried and not exposed, for thermal protection. Substation cooling systems will be designed for RCP4.5 and RCP8.5 scenarios with capacity for future upgrades.

Following the mitigation measures set out above, there is no residual risk from extreme temperatures.

#### 12.6.2.2 High Precipitation and Flooding

Future increases in rainfall due to climate change may elevate the risk of pluvial flooding, particularly if local drainage is overwhelmed or blocked. The Site-Specific Flood Risk Assessment (SSFRA) from 2025 conducted by CS Consulting discussed that the Office of Public Works flooding database has no record of pluvial flooding occurring at the location of the proposed development.

The SSFRA shows the majority of the site is unlikely to experience significant pluvial flooding. However, the southern portion of the site may be subject to pluvial flooding with depths exceeding approximately 2m. In view of the local topography, which is characterised by a general slight fall to the north, the subject site is deemed to be at no significant risk of pluvial flooding. Minimum Finished Floor level is anticipated to be 7.9m at this stage and therefore no further mitigation is required.

In discussions with DCC Drainage Division, it has been discussed that surface water runoff from the proposed development shall be attenuated separate to the existing local surface water drainage network, this shall provide additional resilience and attenuation capacity. Further, the development attenuation volume has been sized to accommodate the 1:100 year rainfall event with an additional 20% allowance to accommodate climate change effects.

Flood tolerant planting has been utilised which increases the resilience of the landscaping. The design also uses self-seeding plants which will naturally regrow if during a significant rainfall/flood they were impacted in the short term.

Blue Roofs will be provided to the development podium areas. These shall be supplemented by SuDS devices such as tree pits, permeable paving and bioretention areas at street level.

Most of the cabling and electrical infrastructure is internal, buried or suitably I.P rated, and the electrical boards will sit on a plinth or contain a base that ensures the busbar/mains supply sits above finished floor level.

As a result of the above measures, high precipitation is a low risk to the proposed development.

#### 12.6.2.3 Extreme Wind

In relation to extreme winds, residential buildings and urban infrastructure are generally impacted by flying debris rather than direct impacts of extreme weather. Within any potential building management plans, scheduled inspections will be included by a building surveyor to confirm no issues or damage related to wind or storms within the building structures including the roof. Where maintenance is deemed required, it will be promptly completed to ensure the building is resilient to future storm events.

Trees will be guyed and anchored in place, so as to ensure safe placement and reducing risk of movement once planted.

A photovoltaic specialist will conduct wind calculations to determine the ballast systems required and determine the need for fixing or anchoring systems to the roof.

As such, post-mitigation, extreme wind is a low risk to the proposed development.

## 12.7 Residual Impacts

The impact to climate due to a proposed development must be assessed as a whole for all phases. The proposed development will result in some impacts to climate through the release of GHGs. TII reference the IESP guidance which states that the crux of assessing significance is "not whether a project emits GHG emissions, nor even the magnitude of GHG emissions alone, but whether it contributes to reducing GHG emissions relative to a comparable baseline consistent with a trajectory towards net zero by 2050".

The level of mitigation described in Section **Error! Reference source not found.** has been taken into account in determining the magnitude and significance of residual impacts. According to the TII significance criteria described in Section **Error! Reference source not found.**, the significance of the GHG emissions during the construction and operational phase is minor adverse. The project complies with the minimum standards required under Part L and has proposed mitigation that will enable the development to assist in the trajectory towards net zero.

The ISEP GHG guidance (ISEP, 2022 & 2026) (which has been embraced by the updated TII Guidance (TII, 2022) in Section 6.7.2) states as follows:

*"A minor adverse not significant impact is described with: A project that is compatible with the budgeted, science based 1.5°C trajectory (in terms of rate of emissions reduction) and which complies with up-to-date policy and 'good practice' reduction measures to achieve that has a minor adverse effect that is not significant. The project may have residual impacts but is doing enough to align with and contribute to the relevant transition scenario. A 'minor adverse' or 'negligible' non-significant effect conclusion does not necessarily refer to the magnitude of GHG emissions being carbon neutral (i.e. zero on balance) but refers to the likelihood of avoiding severe climate change and achieving net zero by 2050. A 'minor adverse' effect or better is a high bar and indicates exemplary performance where a project meets or exceeds measures to achieve net zero earlier than 2050."*

In addition, the supplement to the ISEP 2022 GHG Guidance (ISEP, 2022 & 2026) provides clarification on the use of measures to mitigate climate impacts, stating that where mitigation measures are equivalent to the regulatory minimum, is not considered sufficient to state that the impacts are not significant. This is particularly relevant in the context of the severity of the climate situation and potential exceedance of the 1.5°C Paris Agreement target as described in Section **Error! Reference source not found.**. In such an instance any mitigation measures should go above and beyond regulatory compliance in order for a project's impacts to be considered not significant.

With suggested mitigation measures in place, and in the interest of proportionality, the proposed development aligns with the following GHG significance criteria as per Error! Reference source not found.:

- The project's GHG impacts are mitigated through 'good practice' measures
- The project has complied with existing and emerging policy requirements
- The project is in line with helping Ireland's trajectory towards achieving net zero.

The following statements however should be taken in the context of a global climate system that clearly demonstrates potential indication of having been already compromised.

The construction stage development impact is determined to be ***direct*** due to the nature of emissions of GHG to the atmosphere, ***long-term*** due to the projected lifetime of the development and the lag periods between any emission reductions and measurable changes in climate, ***negative*** as all emissions of GHG are considered to have a negative effect on the climate and ***moderate*** due to the nature of the contribution of the development to Ireland's national and sectoral carbon budgets and that the mitigation measures do not extend beyond regulatory requirements. The suggested mitigation measures do not exceed regulatory requirements therefore the overall impact is considered to be ***significant*** in EIA terms and in accordance with the ISEP guidance.

In relation to climate change risk, it has been assessed that there are no significant risks to the proposed development due to climate change once mitigation measures in Section Error! Reference source not found. have been followed. The residual effect of climate change on the proposed development is considered ***direct*** as climate extremes have a direct physical effect on buildings and infrastructure, ***long-term*** due to the projected lifetime of the development and the response times of the climate in relation to changes in anthropogenic emissions, ***negative*** as climate extremes have been shown to damage or adversely affect infrastructure, and ***not significant*** due to the low vulnerability of the proposed development to the effects of climate change, which overall is considered to be ***not significant*** in EIA terms.

As stated in Section Error! Reference source not found. the climate is not considered to be constrained by project, local or other geographical boundaries, therefore any effect from the proposed development on the climate is considered to be inherently cumulative.

## 12.8 Indirect and/or Secondary Impacts

This assessment has considered the potential for direct, indirect and secondary impacts and it has been determined by the assessment in Section 12.4 that the impacts associated with the proposed development are considered to have a direct effect on climate. There are no indirect or secondary impacts associated with the proposed development with the potential for significant effects on climate.

## 12.9 Monitoring

Monitoring and reporting of the embodied carbon in the construction phase will be conducted. The aim of monitoring will be to seek further ways to minimise climate impacts. Monitoring will include contractual obligations, in line with the most recent Climate Action Plan and sectoral targets, for the successful tenderer to ensure that the proposed development stays in line with updated aims. Commitments to monitor GHG emissions during the construction phase will also be secured through the final Construction Environmental Management Plan (CEMP). Monitoring will include embodied carbon of construction materials, water usage, power and fuel usage, and waste generation (including reuse and recycling rates). Where monitoring shows that the proposed development is not meeting its targets, further mitigation will be put in place.

Monitoring should also include reviewing potential for extreme weather events which may cause damage during construction. Contractors' Environmental Management System (EMS) will include measures to address risks during such events i.e. flooding.

## 12.10 Reinstatement

This is not relevant to the climate assessment.

## 12.11 Interactions

Climate has the potential to interact with a number of other environmental attributes.

### 12.11.1 Land, Soils, Geology and Hydrogeology

The impact of flood risk has been assessed, and the surface water drainage network will be designed to cater for increased rainfall in future years as a result of climate change. The effect of the interactions between climate and land, soils, geology and hydrology are direct, short-term, negative and imperceptible during the construction phase and direct, long-term, negative and imperceptible during the operational phase, which is overall not significant in EIA terms.

### 12.11.2 Air Quality

Air quality and climate have interactions due to the emissions from the burning of fossil fuels during the construction and operational phases generating both air quality and climate impacts. Air quality modelling outputs are utilised within the Climate Chapter. There is no impact on climate due to air quality. However, the sources of impacts on air quality and climate are strongly linked.

### 12.11.3 Traffic and Transportation

During the construction and operational phase, there is the potential for interactions between climate and traffic. Vehicles accessing the site will result in emissions of $CO_2$, a greenhouse gas. The effects of the proposed development on climate are assessed by reviewing the change in annual average daily traffic on roads close to the site. In this assessment, the effects of the interactions between traffic and climate are considered to be direct, short-term, negative and not significant during the construction phase and direct, long-term, negative and not significant during the operational phase.

### 12.11.4 Material Assets – Waste

Waste management measures will be put in place to minimise the amount of waste entering landfill, which has higher associated embodied carbon emissions than other waste management such as recycling. The effect of the interactions between waste and climate are considered to be direct, short-term, negative and not significant during the construction phase and direct, long-term, negative and not significant during the operational phase, which is overall not significant in EIA terms.

## 12.12 Conclusion

This chapter reviewed and analysed the potential and predicted impacts of the proposed development with regards to climate. These impacts have considered both the construction and operational phases of the proposed development. The cumulative impact of the proposed development have also been considered.

With all mitigation measures as set out in this chapter, the overall predicted effect of the operational phase of the proposed development remains significant in relation to GHG emissions and not significant in relation to climate change risk.

Similarly the impact of the construction phase remains significant in relation to GHG emissions and not significant in relation to climate change risk.

## 12.13 Compliance with the Climate Act

Section 15 of the 2015 Act, sets out the duties imposed by certain bodies, including local authorities and *An Coimisiún Pleanála*. This section was amended by the 2021 Act and states:

*"(1) A relevant body shall, in so far as practicable, perform its functions in a manner consistent with—*

*(a) the most recent approved climate action plan,*

*(b) the most recent approved national long term climate action strategy,*

*(c) the most recent approved national adaptation framework and approved sectoral adaptation plans,*

*(d) the furtherance of the national climate objective, and*

*(e) the objective of mitigating greenhouse gas emissions and adapting to the effects of climate change in the State."*

This chapter demonstrates how the proposed development is consistent with the objectives of Section 15 of the 2015 Act (as amended). The EIAR has carried out a greenhouse gas emissions assessment and assessed the proposed development's resilience/adaptation to climate change.

- Greenhouse Gas Emissions Assessment – This assessment considers the proposed development's GHG emissions over its lifetime. The assessment analyses these emissions in the context of the relevant carbon budgets, targets and policies to ensure consistency with the most recent approved climate action plan and the most recent approved national long term climate action strategy, and with measures in furtherance of the national climate objective. This complies with subsections 15 (1) (a), (b), and (d) of the Act.
- Climate Change Vulnerability Assessment – This assessment identifies the impact of a changing climate on the proposed development and receiving environment in the context of the most recent approved national adaptation framework and approved sectoral adaptation plans. The assessment considers the proposed development's vulnerability and adaption to climate change and identifies adaptation measures to increase resilience, as discussed in Section 12.4.3 and Section 12.6.2. This covers sections 15(1)(c) and (e) of the Act.

The above measures pursue the furtherance of the national climate objective and the objective of mitigating greenhouse gas emissions and adapting to the effects of climate change in the State as far as practicable as required by section 15(1)(d) and(e) of the Acts.

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# 13 Noise & Vibration

## 13.1 Introduction

This EIAR Chapter has been prepared by AWN Consulting Ltd. (AWN) to assess the potential noise and vibration effects of the proposed project in the context of current relevant standards and guidance as detailed in relevant sections below.

The development will consist of the construction of a residential development set out in 3 no. blocks (identified as Zones 7, 8 & 9), ranging in height from 5 to 10 storeys, to accommodate 711 no. apartments in addition to cafe/restaurant/retail units, community/cultural spaces, and a standalone creche building.

The 3 no. residential buildings are arranged around podium courtyards accommodating communal amenity spaces for future residents. Zone 7 is a 5 to 7 storey block located on Main St., Friar's St., Park St and the under-construction Market St. containing 280 no. apartments. Zone 8 is a 6 to 8 storey block between Main St. and Market St. containing 263 no. apartments. Zone 9 is a 6 to 10 storey block located on Main St., Station Square and Market St. containing 168 no. units.

Car and cycle parking for both residents and visitors is provided below podium and at surface level throughout the scheme. The proposed development includes all site landscaping works, open space, green roofs, lighting, servicing and utilities, signage, and associated and ancillary works, including site development works above and below ground.

The proposed development sits as part of a Masterplan for a wider Clongriffin landbank which includes the under-construction Blocks 5 & 6 to the north of Market Street.

This chapter includes a description of the receiving ambient noise climate in the vicinity of the subject site and an assessment of the potential noise and vibration impact associated with the proposed project, during both the short-term construction phase and the permanent operational phase, on its surrounding environment. The assessment of direct, indirect and cumulative noise and vibration effects on the surrounding environment have been considered in this chapter.

Mitigation measures are included, where relevant, to ensure the proposed project is constructed and operated in an environmentally sustainable manner in order to ensure minimal impact on the receiving environment.

This chapter has been prepared be Alistair Maclaurin, Senior Acoustic Consultant at AWN Consulting. Alistair has 15 years experience in acoustics and is a Member of the Institute of Acoustics. He has undertaken multiple EIAR assessments across Ireland, including residential, infrastructure and energy projects.

## 13.2 Method

The following methodology has been adopted for the assessment:

- A review of relevant standards and appropriate guidance, typical local authority planning conditions, etc. to identify appropriate noise criteria for the site operations has been undertaken;

- A baseline noise survey has been undertaken at the site. The results of the survey has been used to characterise the surrounding environment, and to set appropriate criteria for the construction and operational phases;
- An assessment of potential noise and vibration impacts associated with the construction and operational phases of the proposed development has been undertaken, this includes prediction of outward noise levels at sensitive receptors, and inward noise impacts on the development itself, as well as cumulative assessments of the phases;
- Mitigation measures to reduce impacts have been specified where required.

### 13.2.1 Construction Phase Criteria

#### 13.2.1.1 Construction Noise at Residential Receptors

There is no published statutory Irish guidance relating to the maximum permissible noise level that may be generated during the construction phase of a project. Local authorities normally control construction activities by imposing limits on the hours of operation and consider noise limits at their discretion.

In the absence of specific noise limits, appropriate criteria relating to permissible construction noise levels for a development of this scale may be found in the British Standard BS 5228 – 1: 2009+A1:2014: *Code of practice for noise and vibration control on construction and open sites – Noise.*

The approach adopted here calls for the designation of a noise sensitive location into a specific category (A, B or C) based on existing ambient noise levels in the absence of construction noise. This then sets a threshold noise value that, if exceeded at this location, indicates a potential significant noise impact is associated with the construction activities, depending on context.

This document sets out guidance on permissible noise levels relative to the existing noise environment.

Table 13.1 sets out the values which, when exceeded, signify a potential significant effect at the facades of residential receptors as recommended by BS 5228 – 1. The appropriate construction noise limits will be identified as part of the detailed EIAR noise and vibration assessment having regard to the baseline noise environment.

Table 13.1 Threshold of Potential Significant Effect at Dwellings

| Assessment category and threshold value period ($L_{Aeq}$) | Threshold value, in decibels (dB) | | |
|---|---|---|---|
| | Category A Note A | Category B Note B | Category C Note C |
| Night-time (23:00 to 07:00hrs) | 45 | 50 | 55 |
| Evenings and weekends Note D | 55 | 60 | 65 |
| Daytime (07:00 – 19:00) and Saturdays (07:00 – 13:00) | 65 | 70 | 75 |

Note A) Category A: threshold values to use when ambient noise levels (when rounded to the nearest 5dB) are less than these values.
Note B) Category B: threshold values to use when ambient noise levels (when rounded to the nearest 5dB) are the same as category A values.
Note C) Category C: threshold values to use when ambient noise levels (when rounded to the nearest 5dB) are higher than category A values.
Note D) 19:00 – 23:00 weekdays, 13:00 – 23:00 Saturdays and 07:00 – 23:00 Sundays.

It should be noted that this assessment method is only valid for residential properties.

#### 13.2.1.2 Construction Noise at Commercial Receptors

BS 5228—1 (BSI 2014) gives several examples of acceptable limits for construction noise, the most simplistic being based upon the exceedance of fixed noise limits. Section E.2 notes

> *"Noise levels, between say 07.00 and 19.00 hours, outside the nearest window of the occupied room closest to the site boundary should not exceed:*
>
> *70 decibels (dBA) in rural, suburban areas away from main road traffic and industrial noise;*
>
> *75 decibels (dBA) in urban areas near main roads in heavy industrial areas".*

These limits are typically applied to non residential sensitive receptors. These values are also useful for comparing calculated construction noise levels against, when reviewing acceptable levels of construction noise in suburban and urban sites. Exceedance of the above Construction Noise Thresholds (CNTs) are deemed to result in a potentially significant effect, depending on the duration and margin above the threshold level.

#### 13.2.1.3 Proposed Noise Thresholds

Taking into account the proposed documents outlined above and making reference to the baseline noise environment monitored around the development site (see section 12.6.1), BS 5228-1 has been used to inform the assessment approach for construction noise.

The following Construction Noise Threshold (CNT) levels are proposed for the construction stage of this development:

- For residential Noise Sensitive Locations (NSLs) in proximity to the main site development works, Category A values are deemed appropriate using the ABC method.
- For commercial premises, given the lower level of sensitivity and taking account of the fixed limits a 75 dB threshold is applied.
- There are no scheduled night-time construction works proposed as part of the proposed development

#### 13.2.1.4 Significance of Construction Noise Levels

In order to assist with interpretation of significance relating a calculated construction noise level (CNL), Table 13.2 includes guidance as to the likely magnitude of impact associated with construction noise, relative to the CNT. This guidance is derived from DMRB: Noise and Vibration (UKHE 2020) and adapted to include the EPA EIAR Guidelines.

Table 13.2 Construction Noise Significance Ratings

| Construction Noise Level per Period | Guidelines for Noise Impact Assessment Significance (DMRB) | EPA EIAR Significance Effects | Determination |
|---|---|---|---|
| Below or equal to baseline noise level | Negligible | Not Significant | Depending on CNT, duration & baseline noise level |
| Above baseline noise level and below or equal to CNT | Minor | Slight to Moderate | |
| Above CNT and below or equal to CNT +5 dB | Moderate | Moderate to Significant | |

| Construction Noise Level per Period | Guidelines for Noise Impact Assessment Significance (DMRB) | EPA EIAR Significance Effects | Determination |
|---|---|---|---|
| Above CNT +5 dB | Major | Significant, to Very Significant | |

#### 13.2.1.5 Construction Traffic Noise

Vehicular movement to and from the construction site for the proposed development will make use of the existing road network. In order to assess the potential impact of additional traffic on the human perception of noise, the following two guidelines are referenced: DMRB Noise and Vibration (UKHA 2020) and the EPA Guidelines (EPA, 2022). For construction traffic, due to the short-term period over which this impact occurs, the magnitude of impacts is assessed against the 'short term' period in accordance with the DMRB Noise and Vibration (UKHA 2020) document.

Table 13.3 Impact associated with long-term change in traffic noise level (DBRM 2020)

| Change in Noise Level (dB LA10) | DMRB Long-Term Term Magnitude | EPA Classification Magnitude of Impact |
|---|---|---|
| < 1.0 | Negligible | Imperceptible to Not significant |
| 1 – 2.9 | Minor | Not Significant to Slight |
| 3 – 4.9 | Moderate | Slight to Moderate |
| 5+ | Major | Significant |

### 13.2.2 Construction Phase Vibration Criteria

Peak particle velocity (PPV) is commonly used to assess the structural response of buildings to vibration.

Reference to the following documents has been made for the purposes of this assessment in order to discuss appropriate PPV limit values:

- British Standard BS7385: 1993: Evaluation and measurement for vibration in buildings Part 2: Guide to damage levels from ground borne vibration, and;
- British Standard BS5228-2: 2009 + A1: 2014: Code of practice for noise and vibration control on construction and open sites – Vibration.

BS5228-2 and BS7385 advise that, for soundly constructed residential property and similar structures that are generally in good repair, a threshold for minor or cosmetic (i.e. non-structural) damage should be taken as a peak component particle velocity (in frequency range of predominant pulse) of 15mm/s at 4Hz increasing to 20mm/s at 15Hz and 50mm/s at 40Hz and above. The standard also notes that below 12.5 mm/s PPV the risk of damage tends to be zero.

The recommended vibration limits in order to avoid cosmetic damage to buildings, as set out in both documents referred to above, are reproduced in Table 13.4. The documents note that minor structural damage can occur at vibration magnitudes which are greater than twice those presented in Table 13.4. Major damage to a building structure is possible at vibration magnitudes greater than four times the values set out in the Table. It should be noted that these values refer to the base of the building.

Table 13.4 Transient Vibration Guide Values for Cosmetic Damage

| Vibration (in terms of peak particle velocity) at the closest part of sensitive property to the source of vibration, at a frequency of | | |
|---|---|---|
| 4 to 15 Hz | 15 to 40Hz | 40Hz and above |
| 15 mm/s | 20 mm/s | 50 mm/s |

Human response to vibration stimuli occurs at orders of magnitudes below those associated with any form of building damage, hence vibration levels lower than those indicated in **Table 13.4** can lead to concern. BS5228-2 also provides a useful guide relating to the assessment of human response to vibration in terms of PPV. **Table 13.5** below summarises the range of vibration values and the associated potential effects on humans.

Table 13.5 Guidance on Effects of Human Response to PPV Magnitudes

| Vibration Level, mm/s PPV | Description of Effect | Possible Significance Rating |
|---|---|---|
| ≥10 mm/s PPV | Vibration is likely to be intolerable for any more than a brief exposure to a level of 10 mm/s | Very Significant |
| ≥1 mm/s PPV to <10 mm/s PPV | Increasing likelihood of complaints in residential environments but can be tolerated at the lower end of the scale if prior warning and explanation has been given to residents | Moderate to Significant |
| ≥0.3 mm/s PPV to <1 mm/s PPV | Increasing likelihood of perceptible vibration in residential environments | Slight |
| <0.3 mm/s PPV | Vibration is unlikely to be perceptible in even the most sensitive situations for most vibration frequencies associated with construction | Not Significant |

The standards note that single or infrequent occurrences of these levels do not necessarily correspond to the stated effect in every case. Where these values are routinely measured or expected then an assessment in accordance with BS 6472-1 might be more appropriate to determine whether time varying exposure is likely to give rise to any degree of adverse comment.

### 13.2.3 Construction Phase Temporal Criteria

The adapted DMRB guidance outlined will be used to assess the predicted construction noise levels at NSLs and comment on the likely effects during the construction stage.

In accordance with the DMRB Noise and Vibration Guidance, construction noise, vibration and construction traffic noise effects shall constitute a significant effect where it is determined that a major or moderate magnitude of effect will occur for a duration exceeding:

- Ten or more days or night in any 15 consecutive day or nights, or
- A total number of days exceeding 40 in any six consecutive months.

### 13.2.4 Operational Phase

The main potential source of outward noise from the proposed development will be limited to traffic flows to and from the development site onto the public roads. There will also be an element of mechanical and electrical plant required to service the buildings.

#### 13.2.4.1 Change in Traffic Noise Levels

In the absence of any Irish guidelines or standards describing the effects associated with changes in road traffic noise levels, reference has been made to the Design Manual for Roads and Bridges (2020) LA 111 Sustainability & Environmental Appraisal. Noise and Vibration Rev 2 (DMRB: Noise and Vibration - UKHA 2020). This document provides magnitude rating tables relating to changes in road traffic noise. For the operational phase of the development, changes in traffic noise will be assessed against the long-term magnitude criteria based on the future design year traffic flows along the surrounding road network (i.e. 15 years post opening). **Table 13.6** sets out the criteria used for assessing impacts associated with changes in traffic noise with reference to the DMRB (UKHA 2020) document and the EPA Guidelines on the information to be contained in Environmental Impact Assessment Reports, 2022.

Table 13.6 Impact associated with long-term change in traffic noise level (DBRM 2020)

| Change in Noise Level (dB LA10) | DMRB Long-Term Term Magnitude | EPA Classification Magnitude of Impact |
|---|---|---|
| < 3.0 | Negligible | Imperceptible to Not significant |
| 3 – 4.9 | Minor | Not Significant to Slight |
| 5 – 9.9 | Moderate | Slight to Moderate |
| 10+ | Major | Significant |

The criteria above reflect the key benchmarks that relate to human perception of sound. A change of 3 dB(A) is generally considered to be the smallest change in environmental noise that is perceptible to the human ear. A 10 dB(A) change in noise represents a doubling or halving of the noise level. The difference between the minimum perceptible change and the doubling or halving of the noise level is split to provide greater definition to the assessment of changes in noise level.

Traffic flows along the surrounding road network with and without the proposed development will be used to determine the potential traffic noise impacts arising as a result of the proposed development.

#### 13.2.4.2 Mechanical and Electrical Plant

The most appropriate standard used to assess the impact of a new continuous source (i.e. plant items) to a residential environment is BS 4142:2014+A1:2019 Methods for rating and assessing industrial and commercial sound. This standard describes a method for assessing the impact of a specific noise source at a specific location with respect to the increase in background noise level generated. The standard provides the following definitions that are pertinent to this application:

- ***Specific sound level*** ($L_{Aeq, Tr}$) is the equivalent continuous A-weighted sound pressure level produced by the specific sound source at the assessment location over a given reference time interval, T. This level has been determined with reference to manufacturers' information for specific plant items.
- ***Rating level*** ($L_{Ar,Tr}$) is the specific noise level plus adjustments for the character features of the sound (if any).
- ***Background noise level*** is the A-weighted sound pressure level that is exceeded by the residual sound at the assessment location for 90% of a given time interval, T. This level is expressed using the $L_{A90}$ parameter. These levels were measured as part of the baseline survey.

The assessment procedure in BS4142 is outlined as follows:

1. Determine the specific noise level;
2. Determine the rating level as appropriate;
3. Determine the background noise level, and;
4. Subtract the background noise level from the specific noise level in order to calculate the assessment level.

The lower the rating level is relative to the measured background sound level, the less likely it is that the specific source will have a negative impact or a significant negative impact. A difference of +10 dB or more is likely to be an indication of a significant negative impact. A difference of around +5 dB is likely to be an indication of a negative impact, dependent on the context. Where the rated plant noise level is equivalent to the background noise level, noise effects are typically considered to be neutral.

#### 13.2.4.3 Residential Inward Noise Assessment

##### 13.2.4.3.1 Dublin Agglomeration noise Action Plan 2024

The Dublin Agglomeration Noise Action Plan 2024-2028 states the following with respect to assessing the noise impact on new residential development:

To effectively employ the planning process for consistent noise exposure avoidance or mitigation, it is deemed beneficial to incorporate guidelines on noise exposure levels during the initial proposal and design phase of planning applications. Descriptions of guidance adopted in the Agglomeration is set out below.

##### 13.2.4.3.2 Dublin City Development Plan 2022-2028

Policy SI40 within the development plan is reproduced below:

*"To take account of the Dublin Airport Local Area Plan (2020) and Noise Action Plan for Dublin Airport 2019-2023 as part of the development management process in order to ensure the protection/ prevention of noise sensitive uses within this zone whilst facilitating the continued operation of Dublin Airport; and to develop similar appropriate plans for areas adjacent to Dublin Port."*

This assessment takes full account of the Dublin Airport Noise Zones. However, note that the Fingal Development Plan contains the latest noise zones with detailed information regarding the potential noise exposure for each contour.

##### 13.2.4.3.3 Fingal Development Plan 2023-2029

Noise Zones for Dublin Airport are included in the Fingal Development Plan 2023-2029. Three noise zones are shown in the Development Plan maps. Zones B and C within which the Council will continue to restrict inappropriate development, and Zone A within which new provisions for residential development and other noise sensitive uses will be actively resisted. An additional assessment zone, Zone D, is also proposed to identify any larger residential developments in the vicinity of the flight paths serving the Airport, in order to promote appropriate land use and to identify encroachment. The zones are based on potential noise exposure levels due to the airport using either the new northern or existing southern runway for arrivals or departures. This site is partially situated in Zone C of the airport contours.

**Table 13.7** outlines the objectives to be adhered to by applicants for developments in each zone.

Table 13.7 Aircraft Noise Zones

| Zone | Indication of Potential Noise Exposure during Airport Operations | Objective |
|---|---|---|
| D | ≥ 50 dB $L_{Aeq, 16hr}$ and < 54 dB $L_{Aeq, 16hr}$<br>and<br>≥ 40 dB $L_{night}$ and < 48 dB $L_{night}$ | To identify noise sensitive developments which could potentially be affected by aircraft noise and to identify any larger noise residential developments in the vicinity of the flight paths serving the Airport in order to promote appropriate land use and to identify encroachment.<br>All noise sensitive development within this zone is likely to be acceptable from a noise perspective. An associated application would not normally be refused on noise grounds, however where the development is residential-led and comprises non-residential noise sensitive uses, or comprises 50 residential units or more, it may be necessary for the applicant to demonstrate that a good acoustic design has been followed.<br>Applicants are advised seek expert advice. |
| C | ≥ 54 dB $L_{Aeq, 16hr}$ and < 63 dB $L_{Aeq, 16hr}$<br>and<br>≥ 48 dB $L_{night}$ and < 55 dB $L_{night}$ | To manage noise sensitive development in areas where aircraft noise may give rise to annoyance and sleep disturbance, and to ensure, where appropriate, noise insulation is incorporated within the development<br>Noise sensitive development in this zone is less suitable from a noise perspective than in Zone D. A noise assessment must be undertaken in order to demonstrate good acoustic design has been followed.<br>The noise assessment must demonstrate that relevant internal noise guidelines will be met. This may require noise insulation measures.<br>An external amenity area noise assessment must be undertaken where external amenity space is intrinsic to the development's design. This assessment should make specific consideration of the acoustic environment within those spaces as required so that they can be enjoyed as intended. Ideally, noise levels in external amenity spaces should be designed to achieve the lowest practicable noise levels.<br>Applicants are strongly advised to seek expert advice. |
| B | ≥ 54 dB $L_{Aeq, 16hr}$ and < 63 dB $L_{Aeq, 16hr}$<br>and<br>≥ 55 dB $L_{night}$ | To manage noise sensitive development in areas where aircraft noise may give rise to annoyance and sleep disturbance, and to ensure noise insulation is incorporated within the development.<br>Noise sensitive development in this zone is less suitable from a noise perspective than in Zone C. A noise assessment must be undertaken in order to demonstrate good acoustic design has been followed. |

| Zone | Indication of Potential Noise Exposure during Airport Operations | Objective |
|---|---|---|
| | | Appropriate well-designed noise insulation measures must be incorporated into the development in order to meet relevant internal noise guidelines.<br><br>An external amenity area noise assessment must be undertaken where external amenity space is intrinsic to the development's design. This assessment should make specific consideration of the acoustic environment within those spaces as required so that they can be enjoyed as intended. Ideally, noise levels in external amenity spaces should be designed to achieve the lowest practicable noise levels.<br><br>Applicants must seek expert advice. |
| A | ≥ 63 dB $L_{Aeq, 16hr}$<br><br>and/or<br><br>≥ 55 dB $L_{night}$ | To resist new provision for residential development and other noise sensitive uses.<br><br>All noise sensitive developments within this zone may potentially be exposed to high levels of aircraft noise, which may be harmful to health or otherwise unacceptable. The provision of new noise sensitive developments will be resisted. |
| ▪ 'Good Acoustic Design' means following the principles of assessment and design as described in ProPG: Planning & Noise – New Residential Development, May 2017;<br>▪ Internal and External Amenity and the design of noise insulation measures should follow the guidance provided in British Standard BS8233:2014 'Guidance on sound insulation and noise reduction for buildings' | | |

#### 13.2.4.3.4 Professional Guidance on Planning & Noise

The Professional Practice Guidance on Planning & Noise (ProPG) (2017) is the most commonly used guidance document for assessment of the inward noise impacts within new residential developments.

The ProPG outlines a systematic risk based 2-stage approach for evaluating noise exposure on prospective sites for residential development. The two primary stages of the approach can be summarised as follows: -

- Stage 1: Comprises a high-level initial noise risk assessment of the proposed site considering either measured and or predicted noise levels.
- Stage 2: Involves a full detailed appraisal of the proposed development covering four "key elements" that include: -
  - Element 1 – Good Acoustic Design Process
  - Element 2 – Noise Level Guidelines
  - Element 3 – External Amenity Area Noise Assessment
  - Element 4 – Other Relevant Issues
- A key component of the evaluation process is the preparation and delivery of an Acoustic Design Statement (ADS) (See section 13.4.3.3.3) which is intended for submission to the planning authority. This document is intended to clearly outline the methodology and findings of the Stage 1 and Stage 2 assessments, so as the planning authority can make an informed decision on the permission.

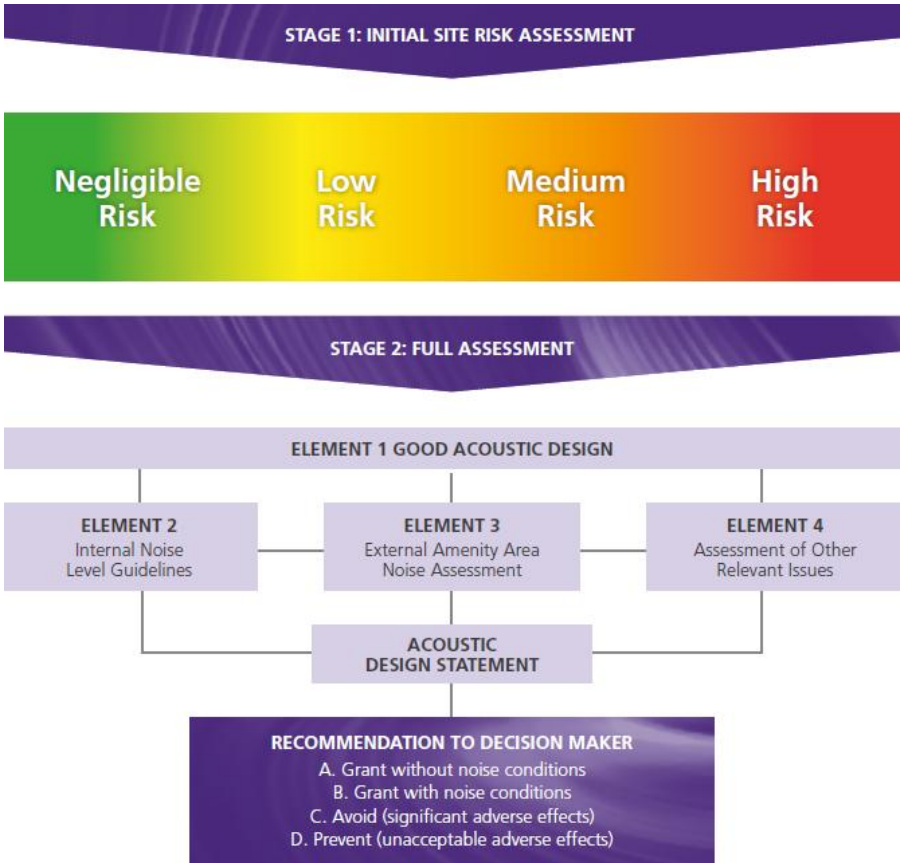
ProPG outlines the following possible recommendations in relation to the findings of the ADS:

- Planning consent may be granted without any need for noise conditions:

  a) Planning consent may be granted subject to the inclusion of suitable noise conditions;
  b) Planning consent should be refused on noise grounds in order to avoid significant adverse effects ("avoid"); or,
  c) Planning consent should be refused on noise grounds in order to prevent unacceptable adverse effects ("prevent").

- Section 3.0 of the ProPG provides a more detailed guide on decision making to aid local authority planners on how to interpret the findings of an accompanying Acoustic Design Statement (ADS). A summary of the ProPG approach is illustrated in Figure 13.1.

Figure 13.1 ProPG Approach (Source ProPG)




#### 13.2.4.3.5 BS8233 Guidance on sound insulation and noise reduction for buildings

There are no statutory guidelines or specific local guidelines relating to appropriate internal noise levels in dwellings. In this instance, reference is made to BS 8233: 2014: *Guidance on sound insulation and noise reduction for buildings.*

BS 8233 sets out recommended internal noise levels for several different building types from external noise sources such as traffic. The guidance is primarily for use by designers and hence BS 8233 may be used as the basis for an appropriate schedule of noise control measures. The recommended indoor ambient noise levels for residential dwellings are set out in Table 13.8.

Table 13.8 Internal noise design range for residential buildings (BS 8233: 2014)

| Activity | Location | Day (07:00 to 23:00hrs) dB $L_{Aeq,16hr}$ | Night (23:00 to 07:00hrs) dB $L_{Aeq,8hr}$ |
|---|---|---|---|
| Resting | Living room | 35 dB $L_{Aeq,16hr}$ | - |
| Dining | Dining room/ area | 40 dB $L_{Aeq,16hr}$ | - |
| Sleeping (Daytime resting) | Bedroom | 35 dB $L_{Aeq,16hr}$ | 30 dB $L_{Aeq,8hr}$ |

BS 8233 also provides some guidance on individual noise events, it states:

> *"Regular individual noise events (for example, scheduled aircraft or passing trains) can cause sleep disturbance. A guideline value may be set in terms of SEL or $L_{AFmax}$, depending on the character and number of events per night. Sporadic noise events could require separate values."*

Typically, a 45 dB $L_{AFmax}$ criterion is applied to individual noise events within bedrooms at night. This criterion is generally considered a noise level that should not typically be exceeded.

#### 13.2.4.3.6 External Noise (BS 8233 Amenity Areas)

BS 8233 also provides desirable noise levels for external amenity areas such as gardens, patios and balconies. It states:

> *"For traditional external areas that are used for amenity space, such as gardens and patios, it is desirable that the external noise level does not exceed 50 dB LAeq,T, with an upper guideline value of 55 dB LAeq,T which would be acceptable in noisier environments. However, it is also recognized that these guideline values are not achievable in all circumstances where development might be desirable. In higher noise areas, such as city centres or urban areas adjoining the strategic transport network, a compromise between elevated noise levels and other factors, such as the convenience of living in these locations or making efficient use of land resources to ensure development needs can be met, might be warranted. In such a situation, development should be designed to achieve the lowest practicable levels in these external amenity spaces, but should not be prohibited."*

## 13.3 Baseline Environment

The site of the proposed development is located in Clongriffin, bound to the north by future residential estates, to the west and south by mixed residential areas. To the east lie commercial buildings and a Park & Ride. The closest receptors are detailed further in the below sections.

The proposed site layout is presented in **Figure 13.2**

### 13.3.1 Receptor Locations

In the first instance, it is important to make reference to the nearest noise sensitive receptors to the proposed development. The identified receptors are detailed below and in **Figure 13.2**.

R1 - Future Residential Developments North of the site, located approximately 15m from the site.

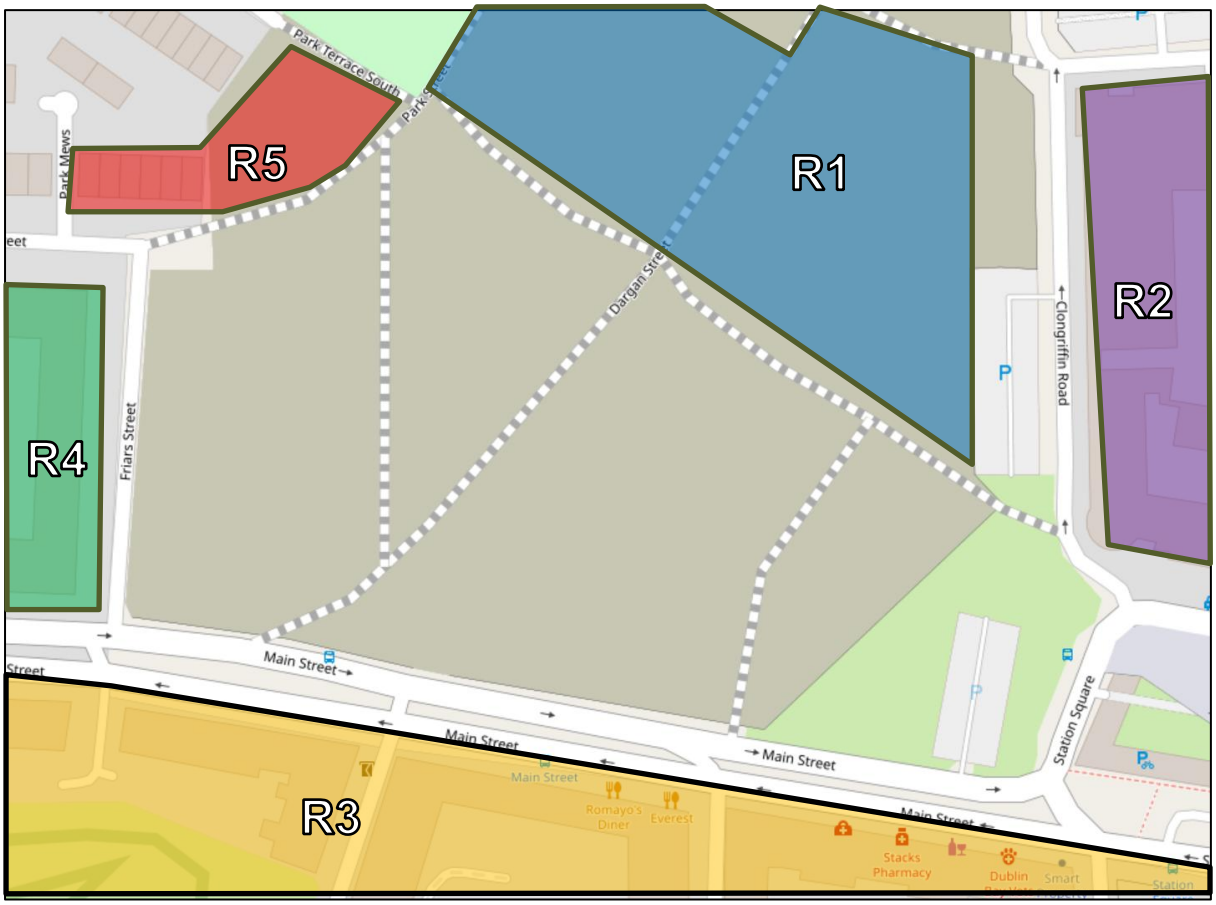
R2 - Clongriffin Road Commercial Buildings, located approximately 20m from the site.

R3 - Mixed Retail and Residential on Main St, located approximately 30m from the site.

R4 - Residential properties on Friar St, located approximately 20m from the site.

R5 - Residential properties on Park St, located approximately 20m from the site.

Figure 13.2 Proposed Site Layout and Receptor Locations




## 13.3.2 Noise Survey Location

An environmental noise survey has been conducted at the site in order to quantify the existing noise environment. The survey was conducted in accordance with ISO 1996: 2017: Acoustics – Description, measurement and assessment of environmental noise.

The noise measurement locations were selected to represent the noise environment at noise sensitive location surrounding the proposed project. The locations were chosen to capture how noise levels in the area around the site vary. The selected locations, shown in the **Figure 13.3**, below, are as follows:

- UT1 – Measurement location at the south end of the site boundary representing the existing noise climate along Main St;
- UT2 – Measurement location at the northern boundary of the proposed site representing the existing noise climate at façades within the development that are located away from the main thoroughfares.

Figure 13.3 Noise Monitoring Locations




### 13.3.3 Survey Period

The unattended measurements (UT1 and UT2) were carried out between the 8th January and the 12th January 2026. The weather during the survey periods was generally dry and stable until the 11th and 12th of January when wind speeds and rainfall increased substantially. These inclement conditions have been removed from the assessment process.

### 13.3.4 Instrumentation

AWN Consulting undertook the noise measurements. Measurements were undertaken with RION SLMs that were check calibrated on site during installation and removal. Calibration certificates are available on request.

### 13.3.5 Measurement Parameters

The noise survey results are presented in terms of the following parameters.

$L_{Aeq}$ is the equivalent continuous sound level. It is a type of average and is used to describe a fluctuating noise in terms of a single noise level over the sample period.

$L_{AFmax}$ is the instantaneous maximum sound level measured during the sample period using the 'F' time weighting.

$L_{A10}$ is the sound level that is exceeded for 10% of the sample period. It is typically used as a descriptor for traffic noise.

$L_{A90}$ is the sound level that is exceeded for 90% of the sample period. It is typically used as a descriptor for background noise.

The "A" suffix denotes the fact that the sound levels have been "A-weighted" in order to account for the non-linear nature of human hearing. All sound levels in this report are expressed in terms of decibels (dB) relative to $2x10^{-5}$ Pa.

### 13.3.6 Survey Results

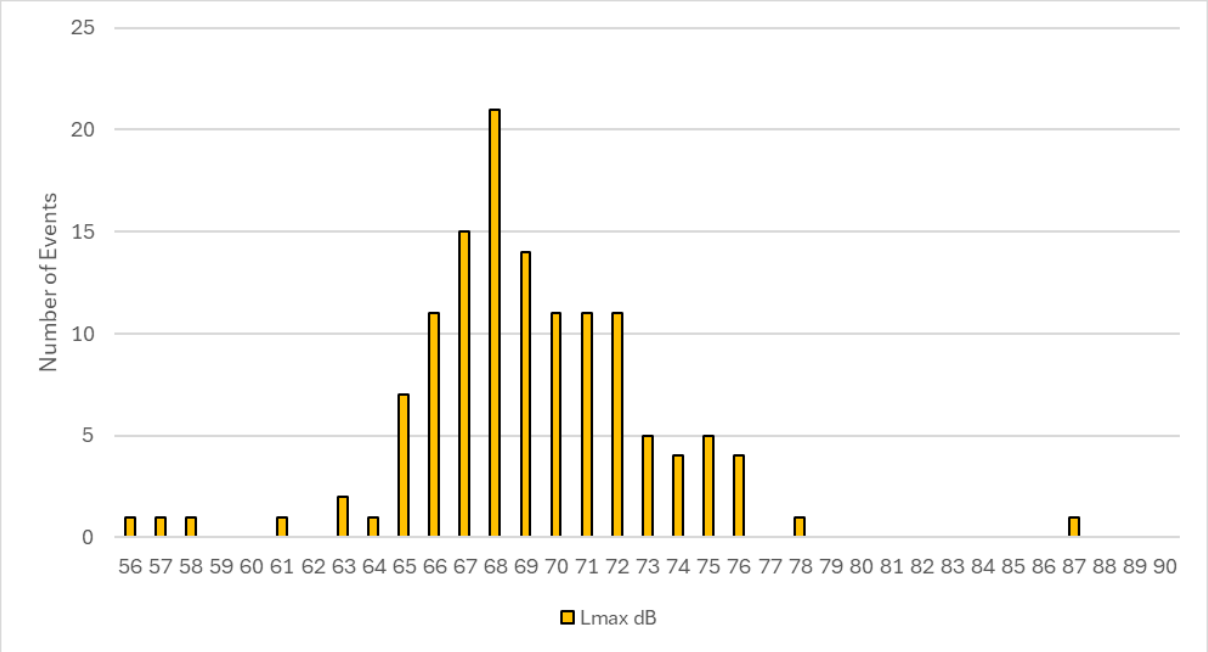
The survey results for location UT1 and UT2 are given in **Table 13.9** and **Table 13.10**, respectively. It's noted that during the survey there were elevated noise levels on the 11th and 12th January due to inclement weather conditions, including elevated wind speeds. These periods have been removed from the assessment.

#### 13.3.6.1 Location UT1

Table 13.9 Measured Noise Levels at Location UT1

| Date | Period (T) | dB $L_{Aeq,T}$ | dB $L_{A90,T}$ |
|---|---|---|---|
| 8/1/26 | Day (07:00 – 23:00) | 60 | 53 |
| | Night (23:00 – 07:00) | 56 | 44 |
| 9/1/26 | Day (07:00 – 23:00) | 60 | 53 |
| | Night (23:00 – 07:00) | 53 | 41 |
| 10/1/26 | Day (07:00 – 23:00) | 59 | 51 |
| | Night (23:00 – 07:00) | 55 | 43 |
| 11/1/26 | Day (07:00 – 23:00) | 60 | 49 |
| | Night (23:00 – 07:00) | 54 | 44 |
| 12/1/26 | Day (07:00 – 23:00) | 60 | 53 |

Figure 13.4 Occurrence of Maximum Events During the Night at UT1



The main sources noted at the unattended monitoring location UT1 was dominant road traffic noise from the local road directly south. Additional influences were distant rail noise, aircrafts and construction noise from the site to the north during the day period. Measured average ambient noise levels were 59 to 60 dB $L_{Aeq,16hr}$ with background noise levels measured in the range of 49 to 53 dB $L_{A90,16hr}$.

At night the measured average ambient noise levels were 53 to 56 dB $L_{Aeq,8hr}$ and the average background noise level measured at 41 to 44 dB $L_{A90,8hr}$. It can be seen from **Figure 13.4** typically don't exceed 74 dB at this location when periods of inclement weather is excluded.

## 13.4 Predicted Impacts of the proposed development

The potential effects of the proposed development are considered for the short-term construction phase and permanent operational phase. These are set out in the following sections.

### 13.4.1 Do-Nothing Impact

In the absence of the proposed Project being constructed (i.e. Do Nothing scenario), the noise environment at the nearest noise sensitive locations and within the Project Site will remain largely unchanged, resulting in a neutral and impact in the long-term. However, it should be noted that the site is zoned for development, hence, similar impacts to those predicted would be expected in the result of future development.

### 13.4.2 Construction Phase

#### 13.4.2.1 Construction Noise

The construction stage will be undertaken over a number of phases from site preparation through to building construction and internal fit out. In terms of the potential noise and vibration impacts, the key stages and activities are expected to involve:

- Ground works (excavation and piling);
- Superstructure Construction; and
- Internal fit out.

The construction programme will create typical construction activity related noise onsite. Indicative ranges of noise levels associated with construction may be calculated in accordance with the methodology set out in British Standard Institute (BSI) *BS 5228-1:2009 +A1:2014 Code of Practice for noise and vibration control of construction and open sites - Part 1: Noise* (BSI, 2014) . This standard sets out sound power / sound pressure levels for plant items normally encountered on construction sites, which in turn enables the prediction of noise levels.

The following section discusses typical noise levels associated with the proposed development demolition/construction phase and comments on potential noise impacts at distances to the nearest Noise Sensitive Locations (NSLs) during the key stages and types of activities that will occur on site.

##### 13.4.2.1.1 Excavation and Piling

For construction works associated with activities such as excavation and structural works including excavators, loaders, dozers, cranes, generators, concreting works and continuous flight augured piling

etc. noise levels are typically in the range of 70 to 82 dB $L_{Aeq}$ at 10m. Non-percussive piling methods will be employed on the site.

#### 13.4.2.1.2 Construction of Proposed Structure

For construction work areas with lower noise levels such as those associated with superstructure works including site compounds (for storage, offices and material handling, generators etc.), smaller items of mobile plant (excavators, cranes, dozers), landscaping and concreting works with lower noise emissions, a total construction noise level of 80 dB $L_{Aeq}$ at 10m has been used for the purposes of indicative calculations. This would include, for example two items of plant at 75 dB $L_{Aeq}$ and three items of plant at 70 dB $L_{Aeq}$ operating simultaneously within a work area.

#### 13.4.2.1.3 Indicative Construction Noise Levels

Indicative noise calculations have been undertaken which assume that plant items are operating for 66% of the time. Screening from a standard site hoarding of 2.4m is assumed around all site boundaries. It must be stated that for most of the time, plant and equipment will be a greater distance from the nearest NSLs than those used within the calculations and the "on-time" of plant and equipment will be less than those assumed over a normal working day (i.e. the use of piling rigs or breakers for demolition will be in use for shorter periods than those assumed over a normal working day) and consequently will have lower noise levels. The assessment presented is therefore representative of a best estimate conservative scenario representing construction activities. **Table 13.11** presents the calculated noise levels at varying distances

Table 13.11 Calculated Construction Noise Levels at Varying Distances

| Activity | Predicted Construction Noise Level LAeq(1hour) (dB) | | | | | |
|---|---|---|---|---|---|---|
| | 10m | 20m | 30m | 40m | 50m | 100m |
| Excavations and Piling Works | 75 | 69 | 65 | 63 | 61 | 56 |
| General Site Work including Superstructure and Fit out | 73 | 67 | 63 | 61 | 59 | 53 |

With the exception of R3, the receptors outlined in **Figure 13.2** are located 20m from the site at all boundaries, hence, reference to the construction noise levels in **Table 13.11** indicate that the CNT of 65 dB $L_{Aeq,T}$ will be exceeded when activities are occurring along the closest site boundaries. However, a range of noise levels will occur as works take place across the site, with noise levels decreasing at greater distances between the receptor and construction works.

During piling works, there is potential for the CNT to be exceeded at distances of 30m and closer, however the duration of these works is limited in the overall period of the construction phase of the project. During these periods it is calculated that a negative, moderate to significant and temporary impact will occur. At distances of 20m and beyond construction noise levels are calculated at 70 dB $L_{Aeq,T}$ and lower. Whilst the calculated noise levels are above the significance threshold of 65 dB $L_{Aeq,T}$, construction noise levels reaching 70 dB for temporary periods of time can be tolerated once advance notice is given to NSLs of the extent, timing and duration of the works.

During the general site construction works involving construction of the site buildings, lower noise levels will be generated on site. There is potential for the CNT to be exceeded by a small margin at 20m and closer if working along the immediate boundaries. When works are occurring at 25m or greater distances from NSLs the works are likely to be within the CNT and a slight to moderate impact will occur.

Recommended mitigation measures are presented in Section **Error! Reference source not found.**.

#### 13.4.2.2 Construction Traffic Noise

During the construction phase, traffic associated with the proposed development would consist of a mix of Light Goods Vehicles (LGVs) and Heavy Goods Vehicles (HGVs) travelling to and from the site.

In terms of the additional construction traffic on local roads that will be generated as a result of the proposed development, the following comment is presented: As stated in the DMRB Noise and Vibration (UKHE 2020), Volume 11, Section 3, Part 7, in order to increase traffic noise levels by 1 dB traffic volumes would need to increase by the order of 25% it is considered that additional traffic introduced onto the local road network due to the construction phase associated with various phases of the development will introduce a level of traffic that will not result in a significant noise impact.

#### 13.4.2.3 Construction Vibration

Potential for vibration impacts during the construction phase programme are likely to be limited given the ground breaking, piling and excavations required. There is potential for piling to be used for building and basement foundations for apartment buildings. For the purposes of this assessment the expected vibration levels during piling assuming augured or bored piles have been determined through reference to published empirical data. BS 5228-2 publishes the measured magnitude of vibration of rotary bored piling using a 600mm pile diameter for bored piling into soft ground over rock, (BS 5228-2 Table D.6, Ref. No. 106):

- 0.54 mm/s at a distance of 5 m, for auguring;
- 0.22 mm/s at a distance of 5 m, for twisting in casing;
- 0.42 mm/s at a distance of 5m, for spinning off, and;
- 0.43 mm/s at a distance of 5 m, for boring with rock auger.

Considering the low vibration levels at very close distances to the piling rigs, vibration levels at the nearest buildings are not expected to pose any significance in terms of cosmetic or structural damage. In addition, the range of vibration levels is typically below a level which would cause any disturbance to occupants of nearby buildings.

In this instance, taking account of the distance to the nearest sensitive off-site buildings, vibration levels at the closest neighbouring buildings are expected to be orders of magnitude below the limits set out in Error! Reference source not found. to avoid any cosmetic damage to buildings. Vibration levels are also expected to be below a level that would cause disturbance to building occupants, as set out in Error! Reference source not found.. The potential vibration impact during the construction phase is of short-term, negative and not significant impact.

### 13.4.3 Operational Phase

#### 13.4.3.1 Additional Vehicular Traffic

Traffic flows associated with the operational phase of the proposed development have been provided by the project design team. Information on development related traffic onto the existing road network has been used to determine the predicted change in noise levels in the vicinity of a number of roads in the area surrounding the proposed development for the opening year (2028) and the design year (2043). The information is provided for both the Do Nothing scenario (i.e. the proposed development is not built) and the Do Something scenario which assumes the full development is constructed and operational.

Table 13.12 summarises the calculated change in noise levels along the assessed road links associated with the addition of development related traffic.

The results indicate that the impacts from additional traffic will generally be imperceptible, with a worst case of one link (Ref 1) being Not Significant in the future year.

Table 13.12 Calculated Increase in Traffic Noise Along Surrounding Roads

| Ref | Road Link | Opening Year AADT (2028) | | Future Year AADT (2043) | | Change in Noise Level (dB) | |
|---|---|---|---|---|---|---|---|
| | | Do Nothing | Do Something | Do Nothing | Do Something | 2028 | 2043 |
| 1 | Main Street (between Friar Street and Park Avenue) | 5858 | 6142 | 7320 | 9595 | +0.2 | +1.2 |
| 2 | Main Street (between Park Avenue and Hole in the Wall Road) | 8852 | 9133 | 10618 | 12893 | +0.1 | +0.8 |
| 3 | Main Street (between Hole in the Wall Road and Belmayne Avenue) | 1309 | 1309 | 1861 | 1861 | 0.0 | 0.0 |
| 4 | Main Street (between Belmayne Avenue and Malahide Road) | 626 | 626 | 846 | 846 | 0.0 | 0.0 |
| 5 | Malahide Road (between Main Street and Belmayne) | 26757 | 26757 | 32866 | 32866 | 0.0 | 0.0 |
| 6 | Malahide Road (between Main Street and Clarehall Avenue) | 24722 | 24722 | 30419 | 30419 | 0.0 | 0.0 |
| 7 | Clarehall Avenue (between Belmayne Avenue and Malahide Road) | 32357 | 32517 | 39953 | 41395 | 0.0 | +0.2 |
| 8 | Belmayne Avenue (between Main Street and Clarehall Avenue) | 6693 | 6693 | 8126 | 8126 | 0.0 | 0.0 |
| 9 | Main Street (between Belmayne Avenue and Malahide Road) | 29491 | 29651 | 36282 | 37724 | 0.0 | +0.2 |
| 10 | Malahide Road (between Main Street and Belmayne) | 18750 | 18980 | 22586 | 24862 | +0.1 | +0.4 |
| 11 | Malahide Road (between Main Street and Clarehall Avenue) | 8363 | 8414 | 10118 | 10118 | 0.0 | 0.0 |
| 12 | Clarehall Avenue (between Belmayne Avenue and Malahide Road) | 4253 | 4253 | 5185 | 5710 | 0.0 | +0.4 |
| 13 | Belmayne Avenue (between Main Street and Clarehall Avenue) | 2753 | 2753 | 3082 | 3082 | 0.0 | 0.0 |

### 13.4.3.2 Building Services

Once operational, there will be building services plant items required to serve the development. The location or type of building services plant has not yet been established, therefore it is not possible to calculate noise levels to the surrounding environment, however, it is noted that air source heat pumps are likely to be installed for the project. In this instance, is it best practice to set appropriate noise limits that will inform the detailed design during the selection and layout of building services for the development. Plant items will be selected, designed and located so that there is no negative impact on sensitive receivers within the development itself, given that there will be large air source heat pumps

in use they will likely require additional screening. The cumulative operational noise level from building services plant at the nearest noise sensitive location will be designed/attenuated to meet the relevant BS 4142 noise criteria for day and night-time periods as set out in this assessment. Based on the baseline noise data collected for this assessment it is considered an appropriate design criterion for noise at offsite receptors is:

- Day - 49 dB $L_{Aeq,1hr}$;
- Night - 39 dB $L_{Aeq,15min}$;

The criteria has been selected to be equal to or less than the existing background noise level. Giving consideration to the criteria outlined in Section 13.2.4.2 it can be considered that when plant is designed to meet these thresholds the impact will be neutral, not significant and long-term.

### 13.4.3.3 Inward Noise Impact

#### 13.4.3.3.1 Initial Noise Risk Assessment

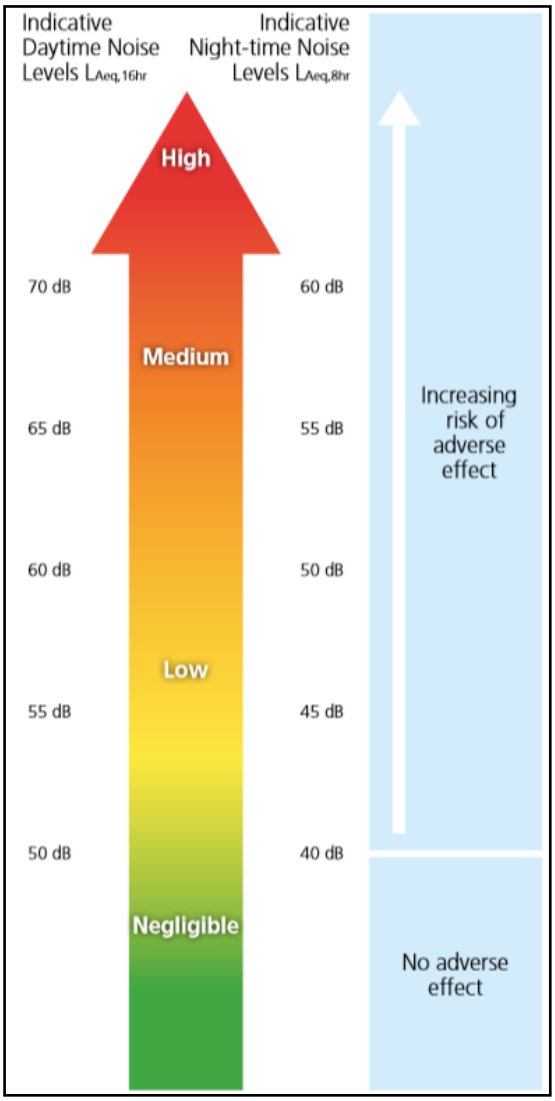
The initial noise risk assessment is intended to provide an early indication of any acoustic issues that may be encountered. It calls for the categorisation of the site as a negligible, low, medium or high risk based on the pre-existing noise environment. **Figure 13.6** presents the basis of the initial noise risk assessment; it provides appropriate risk categories for a range of continuous noise levels either measured and/or predicted on site.

It should be noted that a site should not be considered a negligible risk if more than 10 $L_{AFmax}$ events exceed 60 dB during the night period and the site should be considered a high risk if the $L_{AFmax}$ events exceed 80 dB more than 20 times a night.

Paragraph 2.9 of ProPG states that:

> *"The noise risk assessment may be based on measurements or prediction (or a combination of both) as appropriate and should aim to describe noise levels over a "typical worst case" 24 hour day either now or in the foreseeable future."*

Figure 13.6 ProPG Stage 1 - Initial Noise Risk Assessment




#### 13.4.3.3.2 Noise Risk Assessment Conclusion

Giving consideration to the measured noise levels presented in the previous sections, and taking account of the fact that the northern portion of the site lies within Zone C of the Dublin Airport Noise contours the initial site noise risk assessment has concluded that there is a low to medium level of noise risk across the site depending on the area of site. Generally the risk is considered medium at the boundary of the main roads.

Additionally, the Stage 1 Noise Risk Assessment requires analyses of the $L_{AFmax}$ noise levels. The results indicate that $L_{AFmax}$ noise levels do not exceed 80 dB more than 20 times per night on façades exposed to the on the main site road, hence a medium risk is also considered regarding maxima events.

ProPG states the following with respect to medium risks:

*Medium Risk* *As noise levels increase, the site is likely to be less suitable from a noise perspective and any subsequent application may be refused unless a good acoustic design process is followed and is demonstrated in an ADS which confirms how the adverse impacts of*

*noise will be mitigated and minimised, and which clearly demonstrate that a significant adverse noise impact will be avoided in the finished development*

An Acoustic Design Statement will be required to demonstrate that suitable care and attention has been applied in mitigating and minimising noise impact to such an extent that an adverse noise impact will be avoided in the final development. The Acoustic Design Statement is provided in the following section.

#### 13.4.3.3.3 ProPG Stage 2 – Acoustic Design Statement

Element 1 – Good Acoustic Design Process

In practice, good acoustic design should deliver the optimum acoustic design for a particular site without adversely affecting residential amenity or the quality of life or occupants or compromising other sustainable design objectives. It is important to note that ProPG specifically states that good acoustic design is not equivalent to overdesign or "*gold plating*" of all new development but that it seeks to deliver the optimum acoustic environment for a given site.

Section 2.23 of the ProPG outlines the following checklist for Good Acoustic Design (GAD):

- Check the feasibility of relocating, or reducing noise levels from relevant sources;
- Consider options for planning the site or building layout;
- Consider the orientation of proposed building(s);
- Select construction types and methods for meeting building performance requirements;
- Examine the effects of noise control measures on ventilation, fire regulation, health and safety, cost, CDM (construction, design and management) etc;
- Assess the viability of alternative solutions; and,
- Assess external amenity area noise.

In the context of the proposed development, each of the considerations listed above have been addressed in the following subsections.

*Relocation or Reduction of Noise from Source*

A large contribution to overall noise levels on site is due to Aircraft traffic to and from Dublin Airport. It is beyond the scope of this development to relocate or reduce this noise at source.

*Planning, Layout and Orientation*

Consideration has been given to the location of both the buildings and external amenity areas, however, given the contribution of noise from overhead aircraft it is not possible to screen amenity areas from noise through orientation of the site.

*Select Construction Types for meeting Building Regulations*

Typically external façades offers levels of sound insulation performance, with glazed elements and ventilation being the weakest elements in the façade in terms of sound insulation performance.

Consideration will therefore be given to the provision of upgraded glazing and mechanical ventilation. The proposal here will be to provide dwelling units with glazed elements that have good acoustic insulation properties so that when the windows are closed the noise levels internally are good.

*Impact of noise control measures on fire, health and safety etc*

The good acoustic design measures that have been implemented on site are considered to be cost neutral and do not have any significant impact on other issues.

*Assess Viability of Alternative Solutions*

Alternative solutions typically involve reorientation or removal of sensitive facades and rooms from the noise source, or incorporating screening along external boundaries. Due to the height and location of the proposed buildings it is considered that any acoustic screens along the boundary of the site to attenuate traffic noise would be ineffective.

*Assess External Amenity Area Noise*

ProPG provides the following advice with regards to external noise levels for amenity areas in the development:

> *"The acoustic environment of external amenity areas that are an intrinsic part of the overall design should always be assessed and noise levels should ideally not be above the range 50 – 55 dB LAeq,16hr."*

Noise levels across external amenity areas (i.e. courtyards) associated with the development are presented in Element 3 of this section.

*Summary*

Considering the constraints of the site, in so far as possible and without limiting the extent of the development area, the principles of Good Acoustic Design have been applied to the development.

In terms of viable alternatives to acoustic treatment of façade elements, there are no further options for mitigation outside of proprietary acoustic glazing and mechanical ventilation.

Element 2 – Internal Noise Guidelines

*Internal Noise Criteria*

Element 2 of the ProPG document sets out recommended internal noise targets derived from BS 8233 and WHO's Community Noise Guidelines. The recommended indoor ambient noise levels are set out in **Table 13.8**.

*Discussion on Open/Closed Windows*

In the first instance, it is important to note the typical level of sound reduction offered by a partially open window falls in the region of 10 to 15 dB.

Considering the design goals outlined in **Table 13.8**, and a sound reduction across an open window of 15 dB, the free-field noise levels that would be required to ensure that internal noise levels do not exceed good (i.e. at or below the internal noise levels) or reasonable internal noise levels (i.e. 5 dB above the internal noise levels) have been summarised in **Table 13.13**.

Table 13.13 Good and Reasonable Noise Levels

| Level Desired | Day 07:00 to 23:00hrs | Night 23:00 to 07:00hrs |
|---|---|---|
| Good<br>(i.e. at or below the internal noise levels) | 50 – 55 dB $L_{Aeq,16hrs}$ | 45 dB $L_{Aeq,8hrs}$ |
| Reasonable<br>(i.e. 5 dB above the internal noise levels) | 55 – 60 dB $L_{Aeq,16hrs}$ | 50 dB $L_{Aeq,8hrs}$ |

*Façade Levels*

The following façade noise levels take account of the measured site noise levels, as well as an increase in road traffic noise along Main St and the potential for aircraft noise due to planes taking off and landing at Dublin Airport. The resultant noise levels on the facades of the buildings will be as follows:

- Façades overlooking Main Street - 61 dB $L_{Aeq,16hrs}$ during the day period and 57 dB $L_{Aeq,8hrs}$ during the night period. (Highlighted as red in **Figure 13.10**)
- All other facades - 57 dB $L_{Aeq,16hrs}$ during the day period and 53 dB $L_{Aeq,8hrs}$ during the night period.
- dB $L_{max}$ noise levels ranged from 73 to 74 dB at all facades

Given these values it is noted that 'good' and 'reasonable' internal noise levels will not be achieved with windows open, hence an assessment of the façade envelope has been undertaken to consider if upgraded sound insulation will be required.

*Proposed Façade Treatment*

The British Standard BS EN 12354-3: 2000: *Building acoustics – Estimation of acoustic performance of buildings from the performance of elements – Part 3: Airborne sound insulation against outdoor sound* provides a calculation methodology for determining the sound insulation performance of the external envelope of a building. The method is based on an elemental analysis of the building envelope and can take into account both the direct and flanking transmission paths.

The Standard allows the acoustic performance of the building to be assessed taking into account the following:

- Construction type of each element (i.e. windows, walls, etc.);
- Area of each element;
- Shape of the façade, and;
- Characteristics of the receiving room.

The principles outlined in BS EN 12354-3 are also referred to in BS8233 and Annex G[33] of BS8233 provides a calculation method to determine the internal noise level within a building using the composite sound insulation performance calculated using the methods outlined in BS EN 12354-3. The methodology outlined in Annex G of BS8233 has been adopted here to determine the required performance of the building facades.

*Glazing*

As is the case in most buildings, the glazed elements of the building envelope are typically the weakest element from a sound insulation perspective. In this instance it has been calculated that the facades are to be provided with glazing that, when closed, achieve the sound insulation performance as set out in **Table 13.14.** It's noted that only one specification of glazing is provided for the scheme, this is because all facades experience similar $L_{max}$ noise levels which have driven the requirement for this specification.

[33] The methodology contained within Annex G of BS8233 is based on the assumption that the source is a line source (such as a road) and that the building facades are simple, i.e. do not have balconies. These assumptions are considered valid for the purposes of this assessment and have been adopted.

Table 13.14 Sound Insulation Performance Requirements for Glazing, SRI (dB)

| Zone | Nominal Rw (dB) | SRI (dB) per Octave Band Centre Frequency (Hz) | | | | | |
|---|---|---|---|---|---|---|---|
| | | 125 | 250 | 500 | 1k | 2k | 4k |
| All Facades | 33 | 22 | 21 | 28 | 38 | 32 | 37 |

*Wall Construction*

In general, all wall constructions (i.e. block work or concrete) offer a high degree of sound insulation, much greater than that offered by the glazing systems. Therefore, noise intrusion via the wall construction will be minimal. The calculated internal noise levels across the building façade have assumed a minimum sound reduction index of 63 dB $R_w$ for this construction.

*Ventilation*

It is understood that the proposed development will be ventilated with a centralised mechanical ventilation system with all openings fully ducted. The system will minimise noise intrusion and no further acoustic measures are required.

*Internal Noise Levels Conclusion*

The assessment has shown that the recommended internal noise criteria can be met by appropriately considering the proposed façade elements during the design stage. The glazing specifications provided illustrate that the required internal noise levels are achievable, however, they are preliminary and intended only as a basis for developing detailed noise-mitigation measures.

Alternative combinations of glazing systems may also satisfy the internal noise criteria, and final selections will depend on products available on the market at the time of construction. Consequently, these specifications may change as the project progresses, but the overriding requirement is that the internal noise criteria is met.

Element 3 – External Amenity Area Noise Assessment

In terms of the external communal amenity areas and courtyards proposed within the development, measurements on site during reasonable weather conditions indicate that noise levels away from the bounding roads are 55 to 56 dB $L_{Aeq,16hr}$. It's also noted that the site lies in the Dublin Airport noise contours which at their lowest level indicate a noise level of 54 dB $L_{Aeq,T}$ due to overhead aircraft, hence, any additional surrounding noise also contributing is likely to increase levels above the desired guidance level. Given the overall contribution from aircraft noise it's considered not possible to mitigate the external noise levels on site, however, it is noted that current noise levels measured within the site and only slightly over the guidance threshold of 55 dB $L_{Aeq,16hr}$ and that this increase above the threshold is unlikely to be perceptible.

Element 4 – Assessment of Other Relevant Issues

Element 4 gives consideration to other factors that may prove pertinent to the assessment, the items that are defined in the document that are relevant here are:

- 4(i) compliance with relevant national and local policy
- 4(ii) magnitude and extent of compliance with ProPG

Each is discussed in turn below.

*Compliance with Relevant National and Local Policy*

There are no National policy documents relating to the acoustic design of residential dwellings. Locally the Dublin Agglomeration Noise Action Plan 2024 – 2028 specifies that the guidance contained within ProPG should be used in assessing the noise impact on new residential developments.

This Acoustic Design Statement has been prepared in compliance with the requirements of ProPG and therefore complies with the requirements of local policy.

*Magnitude and Extent of Compliance with ProPG*

As discussed within this report the following conclusions have been drawn with regards to the extent of compliance with ProPG:

- All dwellings as part of the development have been designed to achieve the good level of internal noise levels specified within ProPG.
- The external amenity spaces have been measured to be slightly above the guidance threshold, however, given the contribution from overhead aircraft it is not considered possible to mitigate the noise source further. The increase over the recommended guidance threshold is likely to be imperceptible.

Based on the preceding it is concluded that the proposed development is in full compliance with the requirements of ProPG.

*Acoustic Design Statement Conclusion*

An initial site noise risk assessment has been carried out on the proposed residential development at Clongriffin. The assessment has classified the development site as having a medium noise risk. This was determined through a combination of measurements of noise levels on site and through the review of Dublin Airport noise contours.

Further discussion is presented in terms of the likely noise impact of both the external and internal areas of the proposed development. All habitable rooms will achieve a good internal noise environment with enhanced acoustic glazing installed. External amenity areas are measured to be slightly over the guidance noise thresholds due to the contribution from aircraft noise. It is not considered possible to mitigate this further and the increase over the threshold is considered imperceptible.

## 13.5 Mitigation Measures

### 13.5.1 Construction Phase

Noise

The Contractor undertaking the construction of the works will be obliged to take specific noise abatement measures and comply with the recommendations of BS 5228-1:2009+A1:2014 Code of Practice for Noise and Vibration Control on Construction and Open Sites - Noise and the European Communities (Noise Emission by Equipment for Use Outdoors) Regulations, 2001. These measures will ensure that:

- No plant used on site will be permitted to cause an ongoing public nuisance due to noise;
- The best means practicable, including proper maintenance of plant, will be employed to minimise the noise produced by on site operations;

- All vehicles and mechanical plant will be fitted with effective exhaust silencers and maintained in good working order for the duration of the contract;
- Compressors will be attenuated models fitted with properly lined and sealed acoustic covers which will be kept closed whenever the machines are in use and all ancillary pneumatic tools shall be fitted with suitable silencers;
- Machinery that is used intermittently will be shut down or throttled back to a minimum during periods when not in use;
- Any plant, such as generators or pumps that is required to operate outside of normal permitted working hours will be surrounded by an acoustic enclosure or portable screen;

BS 5228 -1:2009+A1 2014 includes guidance on several aspects of construction site practices, which include, but are not limited to:

- Selection of quiet plant
- Control of noise sources
- Screening
- Hours of work
- Liaison with the public

Further comment is offered on these items in the following paragraphs, however specific control measures relating to construction activities undertaken by the contractor will be set out within the Construction Environmental Management Plan (CEMP) to be prepared in advance of the works.

Noise control measures that will be considered include the selection of quiet plant, enclosures and screens around noise sources, limiting the hours of work and noise monitoring. The contractor will be required to conduct construction noise predictions prior to works taking place and put in place the most appropriate noise control measures depending on the level of noise reduction required at any one location.

*Selection of Quiet Plant*

The potential for any item of plant to generate noise will be assessed prior to the item being brought onto the site. The least noisy item of plant will be selected wherever possible. Should a particular item of plant already on the site be found to generate high noise levels, the first action will be to identify whether or not said item can be replaced with a quieter alternative.

For static plant such as compressors and generators used at work areas such as construction compounds etc., the units will be supplied with manufacturers' proprietary acoustic enclosures where possible.

In order to reduce noise levels during the works phases with highest noise levels (site clearance, demolition, ground breaking etc.) when occurring along the closest boundaries, the contractor will evaluate the choice of excavation, breaking or other working method taking into account various ground conditions and site constraints. Where possible, where alternative lower noise generating equipment that would economically achieve, in the given ground conditions, equivalent structural / excavation / breaking results, these will be selected to minimise potential disturbance.

The decision regarding the excavation techniques, rock breaking, crushing etc. to be used on a site will normally be governed by other engineering, environmental constraints. In these instances, it may not be possible for technical reasons to replace a noisy process by a quieter alternative. Even if it is possible,

the adoption of a quieter method may prolong the overall process, the net result being that the overall disturbance to the community will not necessarily be reduced.

*General Comments on Noise Control at Source*

If replacing a noisy item of plant is not a viable or practical option, consideration will be given to noise control "at source". This refers to the modification of an item of plant, or the application of improved sound reduction methods in consultation with the supplier or the best practice use of equipment and materials handling to reduce noise.

- For mobile plant items such as cranes, dump trucks, excavators and loaders, the installation of an acoustic exhaust and/or maintaining enclosure panels closed during operation can reduce noise levels by up to 10 dB. Mobile plant will be switched off when not in use and not left idling;
- For piling plant, noise reduction can be achieved by enclosing the driving system in an acoustic shroud. For steady continuous noise, such as that generated by diesel engines, it is possible to reduce the noise emitted by fitting a more effective exhaust silencer system or utilising an acoustic canopy to replace the normal engine cover;
- For percussive tools such as pneumatic concrete breakers, a number of noise control measures include fitting muffler or sound reducing equipment to the breaker 'tool' and ensuring any leaks in the air lines are sealed. Erection of localised screens around breaker or drill bit when in operation in close proximity to noise sensitive boundaries are other suitable forms of noise reduction;
- For all materials handling, the contractor will ensure that best practice site noise control measures are implemented including ensuring that materials are not dropped from excessive heights and drop chutes/dump trucks are lined with resilient materials, where relevant.
- Where compressors, generators and pumps are located in areas in close proximity to noise sensitive properties/ areas and have potential to exceed noise criterion, these will be surrounded by acoustic lagging or enclosed within acoustic enclosures providing air ventilation;
- Resonance effects in panel work or cover plates can be reduced through stiffening or application of damping compounds; rattling and grinding noises can be controlled by fixing resilient materials in between the surfaces in contact;
- Demountable enclosures can also be used to screen operatives using hand tools and may be moved around site as necessary;
- All items of plant will be subject to regular maintenance. Such maintenance can prevent unnecessary increases in plant noise and can serve to prolong the effectiveness of noise control measures.

*Screening*

Typically screening is an effective method of reducing the noise level at a receiver location and can be used successfully as an additional measure to other forms of noise control. The effectiveness of a noise screen will depend on the height and length of the screen, its mass, and its position relative to both the source and receiver.

The length of the screen should in practice be at least five times the height, however, if shorter sections are necessary then the ends of the screen will be wrapped around the source. BS 5228 -1:2009+A1 states that on level sites the screen should be placed as close as possible to either the source or the receiver. The construction of the barrier will be such that there are no gaps or openings at joints in the screen material. In most practical situations the effectiveness of the screen is limited by the sound transmission over the top of the barrier rather than the transmission through the barrier itself. In

practice, screens constructed of materials with a mass per unit of surface area greater than 10kg/m2 will give adequate sound insulation performance.

Annex B of BS 5228-1:2009+A1:2014 (Figures B1, B2 and B3) provide typical details for temporary and mobile acoustic screens, sheds and enclosures that can be constructed on site from standard materials.

In addition, careful planning of the site layout will also be considered. The placement of temporary site buildings such as offices and stores between the site and sensitive locations can provide a good level of noise screening during the phasing of works.

*Hours of Work*

Construction noise impacts will be controlled through strict working hours. Construction activity will take place during the following periods:

- Monday – Friday: 07:00 – 18:00;
- Saturday: 08:00 – 14:00;

It may be necessary to work outside of these hours for example during service diversion works, concrete finishing and fit out works etc.

Consideration will be given to the scheduling of activities in a manner that reflects the location of the site and the nature of neighbouring properties. Each potentially noisy event/activity will be considered on its individual merits and scheduled according to its noise level, proximity to sensitive locations and possible options for noise control.

*Liaison with the Public*

Clear forms of communication will be established between the contractor and noise sensitive areas in proximity so that residents or building occupants are aware of the likely duration of activities likely to generate higher noise or vibration.

The duration of piling, excavation, breaking and other high noise or vibration activities works is usually short in relation to the length of construction work as a whole, and the amount of time spent working near to sensitive areas can represent only a part of the overall period. Subjective impacts during these phases can be significantly reduced if timelines and potential impacts are known in advance.

A designated noise liaison officer will be appointed to site during construction works. All noise complaints will be logged and followed up in a prompt fashion by the liaison officer.

Vibration

On review of the likely vibration levels associated with construction activities, it may be concluded that the construction of the proposed development will not give rise to vibration that is either significantly intrusive or capable of giving rise to structural or cosmetic damage to adjacent buildings.

In the case of vibration levels giving rise to human discomfort, in order to minimise such impacts, the following measures shall be implemented during the construction period:

- A clear communication programme will be established to inform adjacent building occupants in advance of any potential intrusive works which may give rise to vibration levels likely to exceed perceptible levels. The nature and duration of the works will be clearly set out in all communication circulars;
- Alternative less intensive working methods and/or plant items shall be employed, where feasible;

- Appropriate vibration isolation shall be applied to plant, where feasible;

Monitoring will be undertaken at identified sensitive buildings, where proposed works have the potential to be at or exceed the vibration limit values.

All construction works will be required to operate within the Construction Vibration Limits Outlined in **Table 13.3** of the EIAR.

### 13.5.2 Operational Phase

#### 13.5.2.1 Additional Traffic on Adjacent Roads

During the operational phase of the development, noise mitigation measures with respect to the outward impact of traffic from the development are not deemed necessary.

#### 13.5.2.2 Building Services Plant

With consideration at the detailed design stage, the selection and location of plant items within the proposed development and associated buildings will ensure that noise emissions from any mechanical and electrical building services plant do not exceed the relevant noise criteria within Section **Error! Reference source not found.** and the thresholds defined in Section **Error! Reference source not found.**. In addition, noise emissions should be broadband in nature and should not contain any tonal or impulsive elements. Screening may be required for air source heat pumps, this will be determined at design stage when appropriate equipment has been selected for the project.

#### 13.5.2.3 Inward Noise Impact

An inward noise impact has been undertaken and indicates that upgraded acoustic glazing are required. A specification for façade sound insulation is provided in Section **Error! Reference source not found.** that illustrates that the required internal noise levels are achievable. Note that Alternative combinations of glazing systems may also satisfy the internal noise criteria, and final selections will depend on products available on the market at the time of construction. Consequently, these specifications may change as the project progresses, but the overriding requirement is that the internal noise criteria is met.

## 13.6 Residual Impacts

### 13.6.1 Construction Phase

During excavation and piling works it is calculated that a negative, moderate to significant and temporary impact will occur when works are within 30m of the closest receptors. This will occur at all identified receptors with the exception of R3, and will only occur for a portion of this construction phase. As works move further away from the receptors the construction noise levels will decrease, and at distances further than 30m from the works the impact is negative, slight to moderate and temporary.

During the general construction and superstructure works it is expected that a further 5 dB of attenuation can be achieved through mitigation measures. Given the distances to receptors the construction works the impact for this stage is calculated as negative, slight to moderate and short-term at all receptors.

### 13.6.2 Operational Phase

Noise levels from any building services plant within the development site will be controlled to not exceed the defined thresholds set out as part of the assessment. The residual noise effect is negative, not significant and long-term.

Traffic along the surrounding road network will not lead to a change in noise level that would pose any significant effect. The resultant impact is long-term, negative and imperceptible to not significant.

Noise levels inwards on the proposed development have been measured, calculated and assessed. Mitigation measures in the way of higher enhanced glazing have been specified to ensure that good or reasonable internal noise levels are achieved across the proposed development. The resultant residual noise impact at residents within the development will be negative, not significant and long term.

## 13.7 Monitoring

### 13.7.1 Construction Phase

During the construction phase, the contractor for each site will carry out noise monitoring at representative NSLs to evaluate and inform the requirement and / or implementation of noise management measures. Noise monitoring will be conducted in accordance with ISO 1996–1 (ISO 2016) and ISO 1996–2 (ISO 2017).

### 13.7.2 Operational Phase

There are no proposed monitoring requirements associated with the operational phase of the proposed Development.

## 13.8 Interactions

There are interactions between the noise and vibration assessment, traffic assessment and the population and human health assessment. With increased traffic movements, the noise levels in the surrounding area increase. The impacts of the proposed development on the noise environment are assessed by reviewing the change in traffic flows on roads close to the site. In this assessment, the impact of the interactions between traffic and noise are considered to be not significant due to the low-level changes in traffic flows associated with the proposed development.

## 13.9 Indirect and/or Secondary Impacts

There are no indirect and or secondary impacts from noise and vibration in relation to this proposed development.

## 13.10 Cumulative Impacts

It is noted that DCC Application LRD6064/24-S3 bounds the site to the north and is currently under construction. The projects have the potential to be ongoing simultaneously. Assuming that construction noise levels will be similar to those predicted for this proposed development, then an increase of around 3 dB may be possible at surrounding receptors if works progress at both sites simultaneously. In this scenario the increase in elevated construction noise emissions due to cumulative construction activities are only likely to be just perceptible, however, the duration of construction impacts would be expected to increase. Cumulative impacts will need to be managed during the

construction phase. It is recommended that liaison between both construction sites is on-going throughout the duration of the construction phase. Contractors should schedule work in a co-operative effort to limit the duration and magnitude of potential cumulative impacts on nearby sensitive receptors. For properties adjacent to the construction sites the cumulative construction noise impacts are expected to be short-term, negative, slight to significant, depending on the proximity of the works to the site boundary.

For the operational stage, traffic data provided for the assessment includes the cumulative flows from background plus additional flows from confirmed developments and local development plans. This includes the contribution from other phases of the wider development site of which the proposed development is part. Hence the impact assessed in Section 13.4.3.1 is cumulative and remains Not Significant.

## 13.11 Difficulties Encountered

There were no significant difficulties encountered in compiling this chapter.

## 13.12 References


- BS 8233: 2014: Guidance on sound insulation and noise reduction for buildings.
- British Standard BS 4142: 2014+A1:2019: Methods for Rating and Assessing Industrial and Commercial Sound
- British Standard BS 5228 (2009 +A1 2014): Code of Practice for Control of Noise and Vibration on Construction and Open Sites Part 1: Noise & Part 2: Vibration.
- British Standard BS 7385 (1993): Evaluation and measurement for vibration in buildings Part 2: Guide to damage levels from ground borne vibration.
- Calculation of Road Traffic Noise, Department of Transport Welsh Office, HMSO, 1988.
- ISO 1996: 2017: Acoustics – Description, measurement and assessment of environmental noise.
- EPA Advice Notes for Preparing Environmental Impact Statements, (May 2022).
- Professional Guidance on Planning & Noise (ProPG), (IoA, 2017).

# 14 Landscape & Visual

## 14.1 Introduction

This chapter assesses the potential effects of the proposed development on the landscape and views/visual amenity of the receiving environment. It should be read in conjunction with the verified photomontages submitted under separate cover as part of the planning application.

The chapter was prepared by Richard Butler (B.L. Arch., MSc, MILI MIPI) of Model Works Ltd. Richard has degrees in landscape architecture and town planning and is a member of the Irish Landscape Institute and Irish Planning Institute. He has 30 years' experience in development and environmental planning, specialising in Landscape Townscape and Visual Impact Assessment (LVIA).

In the last number of years, the author has prepared LVIA (in the form of EIAR chapters or stand-alone reports) for the following projects among others:

- Parkside 4, 5B and 6 SHDs, Clongriffin-Belmayne;
- Bluebell Waterways (DCC & LDA), Dublin;
- Independent House LRD, Abbey Street, Dublin;
- Pembroke Quarter (Irish Glass Bottle and Fabrizia sites) Phases 1, 1B, 2, A, Poolbeg, Dublin;
- Guinness Quarter, James's Street, the Liberties, Dublin;
- St Vincent's Hospital and Residential Development, Fairview, Dublin;
- O'Devaney Gardens SHD, Dublin;
- Dublin Arch (Connolly Station Quarter).

## 14.2 Method

The landscape and visual impact assessment (LVIA) was carried out with reference to:

- Guidelines for Landscape and Visual Impact Assessment, 3rd edition, 2013 (GLVIA), published by the Landscape Institute (the 'GLVIA');
- Guidelines on the Information to be Contained in Environmental Impact Assessment Reports, 2022, published by the EPA (the 'EPA guidelines');
- Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment, 2018, published by the Department of Housing, Planning and Local Government.

The EPA guidelines provide a general methodology and impact ratings for all the environmental topics of an EIAR. The GLVIA provides specific guidelines for LVIA. A combination of the EPA guidelines and the GLVIA has therefore informed the methodology for this assessment.

### 14.2.1 Key Principles of the GLVIA

#### 14.2.1.1 Use of the Word 'Townscape'

The GLVIA recommends that the word 'townscape' be used (instead of landscape) where a proposed development's receiving environment is dominated by built elements. The GLVIA defines townscape as *"the landscape within the built-up area, including the buildings, the relationships between them, the different types of urban spaces, including green spaces and the relationship between buildings and open spaces"*. Since the subject site is located in the urban environment, the word townscape is used in this chapter. The word 'landscape' is used in reference to green spaces or vegetation within the townscape.

#### 14.2.1.2 Assessment of Both Townscape & Visual Effects

The GLVIA requires that effects on views and visual amenity be assessed separately from the effects on townscape, although the two topics are inherently linked.

- Visual impact assessment is concerned with changes that arise in the composition of available views, the response of people to these changes and the overall effects on the area's visual amenity – with particular focus on public views and public visual amenity.
- 'Townscape' results from the interplay between the physical, natural and cultural components of our surroundings. Different combinations and spatial distribution of these elements create variations in townscape character. Townscape impact assessment identifies the changes to this character which would result from the proposed development, and assesses the significance of those effects on the townscape as a resource.

### 14.2.2 Method for Assessment of Townscape Effects

The assessment of potential townscape effects involves:

d) Classifying the sensitivity of the townscape receptors (the main elements, features, characteristics and character areas of the townscape);
e) Classifying the potential magnitude of change to each receptor; and
f) Combining these factors to arrive at an assessment of significance of the effects on each receptor, and the quality of the effects (positive, neutral or negative).

#### 14.2.2.1 Townscape Sensitivity

The sensitivity of the townscape is a measure of its 'susceptibility to change' (i.e. its ability to accommodate the proposed development without undue consequences for its existing character or the achievement of landscape/townscape policies or strategies) and the value attached to the landscape. The nature and scale of the development in question is taken into account, as are any trends of change, and relevant policy. Five categories are used to classify sensitivity, as set out in Table 14.1.

Table 14.1 Categories of townscape sensitivity

| Sensitivity | Description |
|---|---|
| Very High | Areas where the townscape exhibits very strong, positive character with valued elements, features and characteristics that combine to give an experience of unity, richness and harmony. The townscape character is such that its capacity to accommodate change is very low. These attributes are recognised in policy or designations as being of national or international value and the principle management objective for the area is protection of the existing character from change. |
| High | Areas where the townscape exhibits strong, positive character with valued elements, features and characteristics. The townscape character is such that it has limited/low capacity to accommodate change. These attributes are recognised in policy or designations as being of national, regional or county value and the principle management objective for the area is the conservation of existing character. |
| Medium | Areas where the townscape has certain valued elements, features or characteristics but where the character is mixed or not particularly strong, or has evidence of alteration, degradation or erosion of elements and characteristics. The townscape character is such that there is some capacity for change. These areas may be recognised in policy at local or county level and the principle management objective may be to consolidate townscape character or facilitate appropriate, necessary change. |

| Sensitivity | Description |
|---|---|
| Low | Areas where the townscape has few valued elements, features or characteristics and the character is weak. The character is such that it has capacity for change; where development would make no significant change or would make a positive change. Such townscapes are generally unrecognised in policy and the principle management objective may be to facilitate change through development, repair, restoration or enhancement. |
| Negligible | Areas where the townscape exhibits negative character, with no valued elements, features or characteristics. The character is such that its capacity to accommodate change is high; where development would make no significant change or would make a positive change. Such townscapes include derelict industrial lands, as well as sites or areas that are designated for a particular type of development. The principle management objective for the area is to facilitate change in the townscape through development, repair or restoration. |

#### 14.2.2.2 Note on Definitions Used in this Assessment

The definitions of the classifications in **Tables 14.1** (townscape sensitivity), **14.2** (magnitude of townscape change), **14.4** (viewpoint sensitivity) and **14.5** (magnitude of visual change) are not taken from either the GLVIA or the EPA Guidelines. Both of these guidance documents require that classifications of sensitivity and magnitude of change (such as high, medium, low, etc.) be used in the assessment process but neither guidance document provides definitions for such classifications. The GLVIA specifically avoids being prescriptive in this this regard (para. 1.20):

> *"The guidance concentrates on principles... **It is not intended to be prescriptive, in that it does not provide a detailed 'recipe' that can be followed in every situation**. It is always the primary responsibility of any landscape professional carrying out an assessment to ensure that the approach and methodology adopted are appropriate to the particular circumstances."*

The EPA guidelines state (Section 3, p. 49):

> *"While guidelines and standards help ensure consistency, the professional judgement of competent experts plays a role in the determination of significance. These experts may place different emphases on the factors involved. As this can lead to differences of opinion, **the EIAR sets out the basis of these judgements so that the varying degrees of significance attributed to different factors can be understood.**"*

The GLVIA and EPA guidelines thus require that the factors used in arriving at significance conclusions (i.e. classifications of sensitivity and magnitude) should be explained in the EIAR, but the guidelines do not provide the explanations themselves. It is for this reason that the definitions in **Tables 14.1**, **14.2**, **14.4** and **14.5** are provided in this section. These definitions have been developed and refined by LVIA practitioners in Ireland and the UK, including the chapter author, over decades of practice. They are not standard, i.e. the classifications / definitions used in this assessment may differ from those used by other practitioners. However, the author considers them to be reasonable and appropriate for the purpose of classifying the significance of landscape/townscape and visual effects and the same definitions have been used in many previous LVIA reports/chapters prepared by the author and accepted by the planning authorities.

#### 14.2.2.3 Magnitude of Townscape Change

Magnitude of change is a factor of the scale, extent or degree of change imposed on the townscape by a development, with reference to its key elements, features, characteristics and character areas

(collectively termed 'townscape receptors'). Five categories are used to classify magnitude of change, as set out in **Table 14.2**.

Table 14.2 Categories of magnitude of townscape change

| Sensitivity | Description |
|---|---|
| **Very High** | Change that is large in extent, resulting in the loss of or major alteration to key elements, features or characteristics of the townscape, and/or introduction of large elements considered totally uncharacteristic in the context. Such development results in fundamental change in the character of the townscape. |
| **High** | Change that is moderate to large in extent, resulting in major alteration to key elements, features or characteristics of the townscape, and/or introduction of large elements considered uncharacteristic in the context. Such development results in change to the townscape character. |
| **Medium** | Change that is moderate in extent, resulting in partial loss or alteration to key elements, features or characteristics of the townscape, and/or introduction of elements that may be prominent but not necessarily substantially uncharacteristic in the context. Such development results in change to the character of the landscape. |
| **Low** | Change that is moderate or limited in scale, resulting in minor alteration to key elements, features or characteristics of the townscape, and/or introduction of elements that are not uncharacteristic in the context. Such development results in minor change to the character of the landscape. |
| **Negligible** | Change that is limited in scale, resulting in no alteration to key elements features or characteristics of the townscape, and/or introduction of elements that are characteristic of the context. Such development results in no change to the townscape character. |

#### 14.2.2.4 Significance of Effects

To classify the significance of effects (for townscape and visual impacts), the magnitude of change is measured against the sensitivity of the receiving environment / receptor using the guide in **Table 14.3**.

Table 14.3 Guide to classification of significance of landscape and visual effects

| Magnitude of landscape / visual change | Sensitivity of the landscape / view | | | | |
|---|---|---|---|---|---|
| | **Very high** | **High** | **Medium** | **Low** | **Negligible** |
| **Very high** | Profound | Profound to very significant | Very significant to significant | Moderate | Slight |
| **High** | Profound to very significant | Very significant | Significant | Moderate to slight | Slight to not significant |
| **Medium** | Very significant to significant | Significant | Moderate | Slight | Not significant |
| **Low** | Moderate | Moderate to slight | Slight | Not significant | Imperceptible |
| **Negligible** | Slight | Slight to not significant | Not significant | Imperceptible | Imperceptible |

This matrix is derived from the EPA guidelines (refer to **Figure 1.3** in Chapter 1 of the EIAR). The matrix (**Table 14.3**) and the chart (**Figure 1.3**) are only a guide to the classification of impact significance. The assessor also uses professional judgement informed by their expertise, experience and common sense to arrive at a classification that is reasonable and justifiable. In the EPA guidelines, the chart is accompanied by a footnote stating that:

> *"The depiction of significance classifications is indicative and should not be relied on as being definitive. It is provided for general guidance purposes"* (Section 3, p. 53).

For example, according to the EPA chart, a change of high magnitude affecting a receptor of medium sensitivity could be classified as either 'significant' or 'moderate'. That judgement must be made by the assessor.

### 14.2.3 Method for Assessment of Visual Effects

Assessment of visual effects involves identifying a number of key / representative viewpoints in the site's receiving environment, and for each one of these: (a) classifying the viewpoint sensitivity, and (b) classifying the magnitude of change which would result in the view (informed by photomontages of the proposed development). These factors are combined to arrive at a classification of significance of the effects on each viewpoint.

#### 14.2.3.1 Sensitivity of Viewpoint / Visual receptor

Viewpoint sensitivity is a function of two main considerations:

- **Susceptibility of the visual receptor to change**: This depends on the occupation or activity of the people experiencing the view, and the extent to which their attention is focused on the views or visual amenity they experience at that location. Visual receptors most susceptible to change include residents at home, people engaged in outdoor recreation focused on the landscape (e.g. trail users), and visitors to heritage attractions and places of congregation where the setting contributes to the experience. Visual receptors less sensitive to change include travelers on road, rail and other transport routes (unless on recognised scenic routes), people engaged in outdoor recreation where the surrounding landscape does not influence the experience, and people in their place of work or shopping.
- **Value attached to the view**: This depends to a large extent on the subjective opinion of the visual receptor but also on factors such as policy and designations (e.g. scenic routes, protected views), or the view or setting being associated with a heritage asset, visitor attraction or having some other cultural status (e.g. appearing in arts).

Five categories are used to classify a viewpoint's sensitivity, as set out in **Table 14.4**.

Table 14.4 Categories of viewpoint sensitivity

| Sensitivity | Description |
|---|---|
| **Very High** | Iconic viewpoints (views towards or from a landscape feature or area) that are recognised in policy or otherwise designated as being of national value. The composition, character and quality of the view are such that its capacity for change is very low. The principle management objective for the view is its protection from change. |
| **High** | Viewpoints that are recognised in policy or otherwise designated as being of value, or viewpoints that are highly valued by people that experience them regularly (e.g. views from houses or outdoor recreation amenities focused on the landscape). The composition, character and quality of the view may be such that its capacity to accommodate change may or may not be low. The principle management objective for the view is its protection from change that reduces visual amenity. |
| **Medium** | Views that may not have features or characteristics that are of particular value, but have no major detracting elements, and which thus provide some visual amenity. These views may have capacity |

| Sensitivity | Description |
|---|---|
| | for appropriate change and the principle management objective is to facilitate change to the composition that does not detract from visual amenity, or which enhances it. |
| Low | Views that have no valued feature or characteristic, and where the composition and character are such that there is capacity for change. This category includes views experienced by people involved in activities with no particular focus on the landscape. For such views the principle management objective is to facilitate change that does not detract from visual amenity or enhances it. |
| Negligible | Views that have no valued feature or characteristic, or in which the composition may be unsightly (e.g. in derelict landscapes). For such views the principle management objective is to facilitate change that repairs, restores or enhances visual amenity. |

#### 14.2.3.2 Magnitude of Change to the View

Classification of the magnitude of change takes into account the size or scale of the intrusion of development into the view (relative to the other elements and features in the composition, i.e. its relative visual dominance), the degree to which it contrasts or integrates with the other elements and the general character of the view, and the way in which the change will be experienced (e.g. in full view, partial or peripheral view, or in glimpses). It also takes into account the geographical extent of the change, as well as the duration and reversibility of the visual effects. Five categories are used to classify magnitude of visual change to a view, as set out in **Table 14.5**.

Table 14.5 Categories of magnitude of visual change

| Sensitivity | Description |
|---|---|
| Very High | Full or extensive intrusion of the development in the view, or partial intrusion that obstructs valued features or characteristics, or introduction of elements that are completely out of character in the context, to the extent that the development becomes dominant in the composition and defines the character of the view and the visual amenity. |
| High | Extensive intrusion of the development in the view, or partial intrusion that obstructs valued features, or introduction of elements that may be considered uncharacteristic in the context, to the extent that the development becomes co-dominant with other elements in the composition and affects the character of the view and the visual amenity. |
| Medium | Partial intrusion of the development in the view, or introduction of elements that may be prominent but not necessarily uncharacteristic in the context, resulting in change to the composition but not necessarily the character of the view or the visual amenity. |
| Low | Minor intrusion of the development into the view, or introduction of elements that are not uncharacteristic in the context, resulting in minor alteration to the composition and character of the view but no change to visual amenity. |
| Negligible | Barely discernible intrusion of the development into the view, or introduction of elements that are characteristic in the context, resulting in slight change to the composition of the view and no change in visual amenity. |

#### 14.2.3.3 Significance of Visual Effects

As for townscape effects, to classify the significance of visual effects the magnitude of change to the view is measured against the sensitivity of the viewpoint, using the guidance in **Table 14.3**, above, and **Figure 1.3** in Chapter 1 (Introduction).

### 14.2.4 Quality of Effects

In addition to predicting the significance of the effects, Environmental Impact Assessment methodology requires that the quality of the effects be classified as positive / beneficial, neutral, or negative / adverse. For townscape to a degree, but particularly for visual effects, this is an inherently subjective exercise. This is because townscape and visual amenity are perceived by people and are, therefore, subject to variations in the attitude and values – including aesthetic preferences – of the receptor. One person's attitude to a development may differ from another person's, and thus their response to the effects of a development on a townscape or view may vary.

Additionally, in certain situations there might be policy encouraging a particular development in an area, in which case the policy is effectively prescribing townscape and visual change. If a development achieves the objective of the policy the resulting effect might be considered positive, even if the townscape character or views are profoundly changed. The classification of quality of townscape and visual effects should seek to take these variables into account and provide a reasonable and robust assessment.

### 14.2.5 Photomontage Method

The photomontages were produced by Model Works Ltd. and have been submitted as a standalone booklet under separate cover, as part of the planning application for the proposed development. The methodology is based on the Landscape Institute advice note 01/11 *Photography and Photomontage in Landscape and Visual Impact Assessment* and over 20 years' experience in photomontage production. The method has five main steps:

1. Photography;
2. Survey;
3. 3D modelling and camera matching;
4. Rendering and finishing of photomontages; and
5. Presentation.

#### 14.2.5.1 Photography

*Date, Time & Conditions*

The photography is timed so that the scene conditions, weather conditions and sun position allow – as far as possible – for a clear and representative baseline photograph to be captured. The objective is to ensure that all key elements of the view are clearly visible and unobscured by, for example, vehicular or pedestrian traffic in the foreground, precipitation, darkness / shade, sun glare, etc. The date and time of each photograph are recorded so that the sun position can be accurately portrayed in the 3D model ultimately montaged into the baseline photograph.

*Camera & Camera Set-up*

The photographs were taken using a Canon EOS5D Mark II camera with a 21 megapixel sensor and image resolution of 5616 × 3744 pixels. At each viewpoint the camera was positioned on a tripod with the lens 1.65m above ground level (the level of the average adult's eyes), directed at the site and levelled in the horizontal and vertical axes.

*Lenses*

Prime lenses (fixed focal length with no zoom function) are used as this ensures that the image parameters for every photograph are the same and that all photographs taken with the same lens are comparable. For the close-up to middle distant views, a 24mm prime lens is normally used. This lens captures a field of view of 73 degrees. This relatively wide field of view is preferred for the purpose of visual effects assessment in urban areas as it shows more of the context townscape surrounding a site (allowing the scale, architecture and materials of a proposed building to be considered in comparison to existing buildings in the view). For distant viewpoints, a 50mm prime lens is used, capturing a 39 degree horizontal field of view. The 50mm lens 'zooms in' to the object of the view so that it is depicted more clearly in views from a long distance – although the greater zoom necessarily excludes more of the context from the frame of view.

#### 14.2.5.2 Survey

The coordinates of each viewpoint / camera position, including the elevation, are recorded using a survey grade GPS receiver, the Trimble Geo7X, which is accurate to within 1cm. For each viewpoint, the coordinates of several static objects in the view are also surveyed (e.g. lamp posts, bollards, corners of buildings, etc.). The coordinates of these 'markers' are used as reference points later in the process, to ensure that the direction of view of the cameras in the 3D model matches the direction of view of the photographs.

#### 14.2.5.3 3D Model & Camera Matching

*Creation of 3D Model*

Drawings of the proposed development (buildings, roads, hard and soft landscape areas) were provided by the project architects and landscape architect in Autodesk Revit and CAD formats. These were used to generate a 3D model of the proposed development (positioned and scaled using the topographical survey drawing of the site provided by the project architect). The 3D CAD model was exported to Autodesk 3DS Max in which materials and textures were applied to the model.

*3D Camera Positions*

The surveyed camera positions and markers for each view are inserted into the 3D model, with information on the focal length of the lens attributed to each camera. For each camera / view, the date and time is set to match those of the original photograph. This ensures that the direction of sunlight and shadows in the 3D model match those of the photographs.

#### 14.2.5.4 Rendering of 3D Model & Finishing Photomontages

For each view, a render of the proposed development is generated. This is the process of creating a photo-realistic image of the 3D model, as seen from each camera position, with sunlight and shadow applied to the model. The render of the proposed development is then inserted (or 'montaged') into the photograph to create the photomontage.

#### 14.2.5.5 Presentation

The individual photomontages are presented on A3 pages in landscape format and submitted under separate cover as part of the planning application. For each photomontage, the viewpoint location

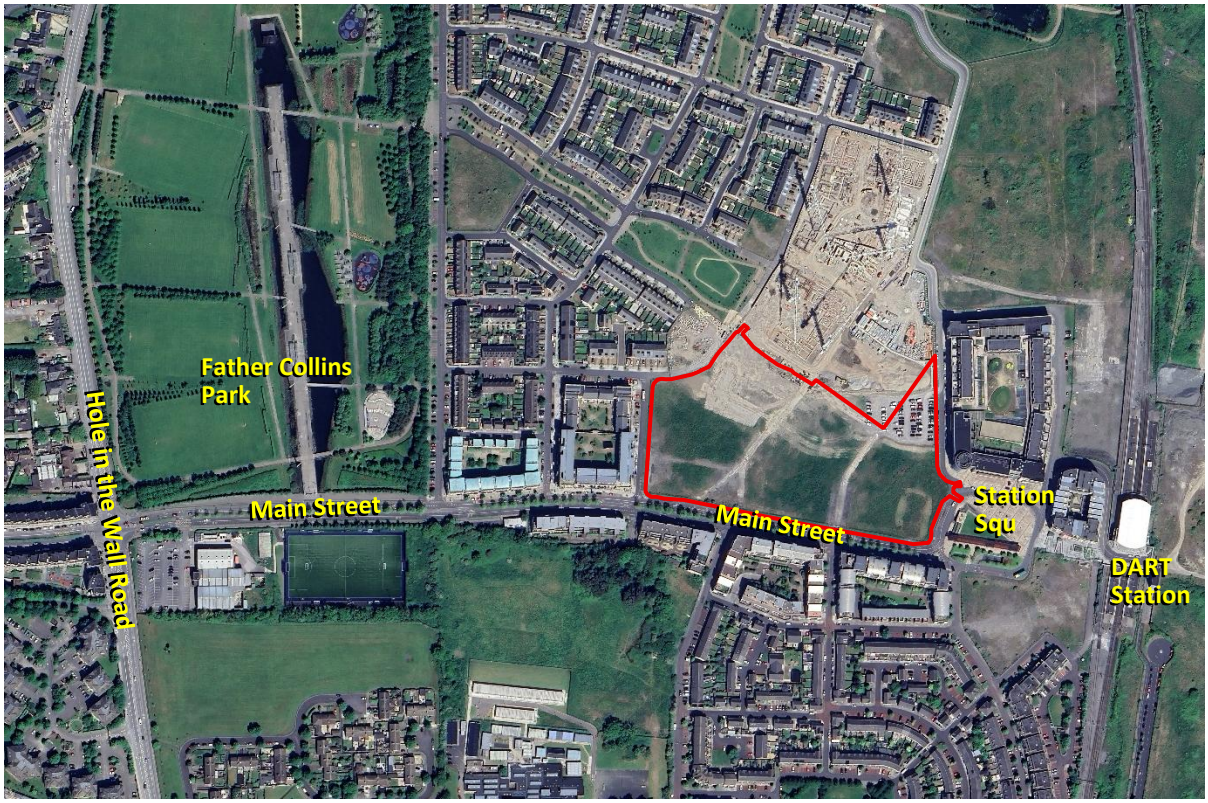
description, coordinates and the date and time of photography are provided on the page. The photomontages should be reviewed in conjunction with this chapter.

## 14.3 Baseline Environment

The site is located in the partly constructed townscape of Clongriffin, a previously agricultural/peri-urban area at the northern edge of Dublin, now in an advanced stage of plan-led transformation into a high density, mixed use urban quarter (see **Figures 14.1**, **14.2**). Certain elements and areas of the townscape are completed and operational, some areas are under construction, while other areas are yet to be developed.

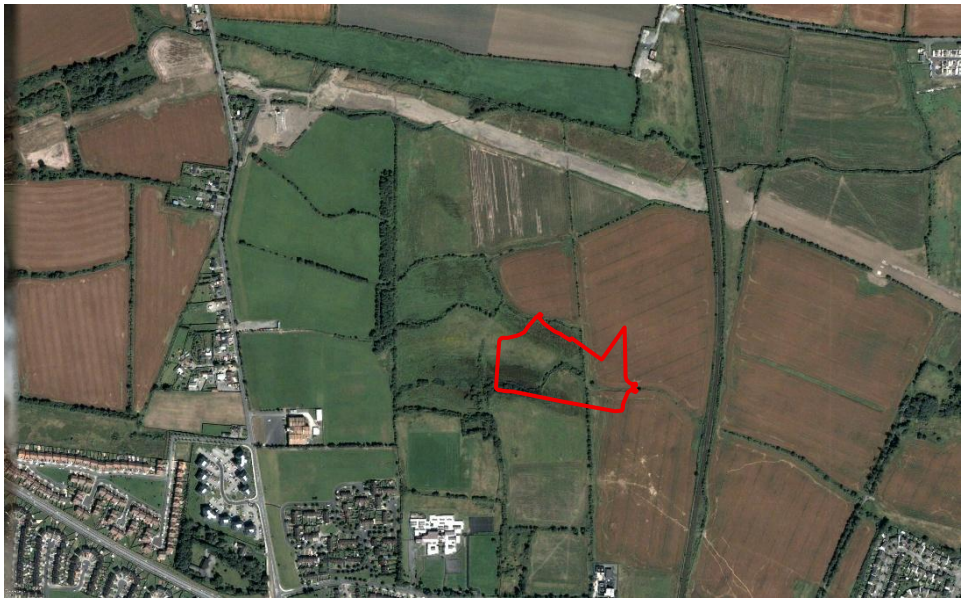
The subject site is one of the main remaining plots to be developed, and it has particular importance due to its size and prominent position in the town centre. The site has some 250m frontage to Main Street, and frontage to Station Square. Its development will be a determining factor in the townscape character and quality of Clongriffin town centre.

Figure 14.1 The proposed development's receiving environment

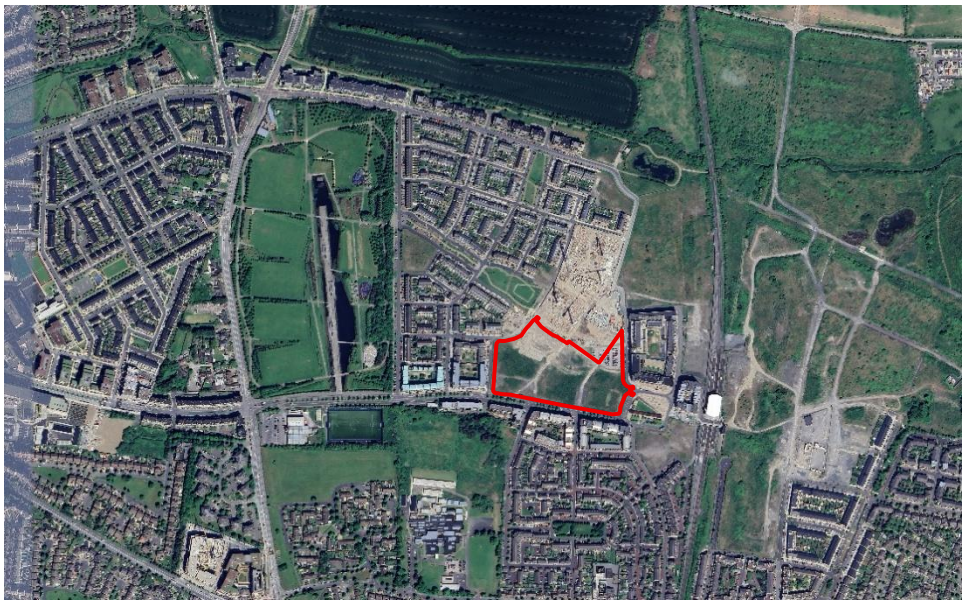



The development of Clongriffin has been driven by a sequence of national, regional and local planning policies aimed at consolidating growth within the Dublin Metropolitan Area and promoting transport-led urban expansion. The area's development was initiated by the North Fringe Action Area Plan 2000 (AAP). This identified the Clongriffin development parcel at the eastern end of a 'boulevard axis' between the Malahide Road to the west and the railway line to the east.

Figure 14.2 Evolution of Clongriffin townscape - 2004, 2017, 2025 (indicative site outline in red)







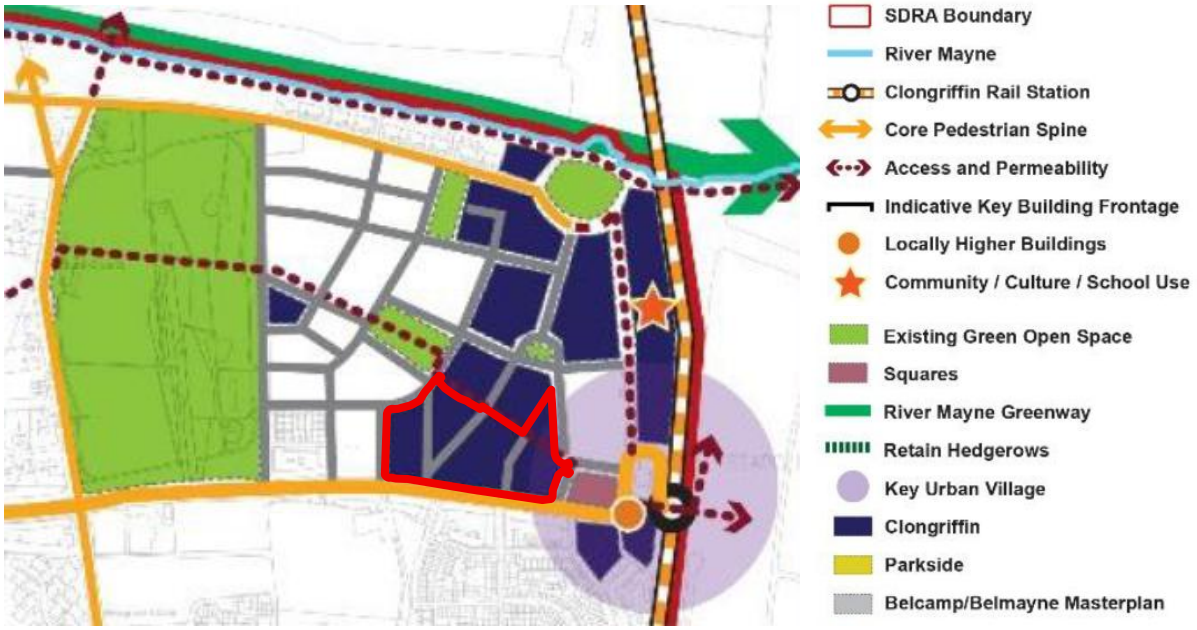
The North Fringe AAP envisaged that Clongriffin, to the east of Hole in the Wall Road, would include a district level park (Father Collins Park) and the new Clongriffin DART station, with a linear core of high density, mixed use development along the east-west aligned main street.

The AAP was followed by the Clongriffin-Belmayne Local Area Plan (LAP) 2012-2018 (extended to 2022), which focussed on phasing, urban structure, social and community structure, and delivery of the town centre. Delivery/implementation had become a focus because, while residential development in the area had progressed, Clongriffin town centre had faltered.

Development of the area has since been guided by the designation of Clongriffin/Belmayne as a Strategic Development and Regeneration Area (SDRA 1) in the Dublin City Development Plan (2016 and 2022). The area is additionally identified as Key Urban Village 1 (KUV 1). The overall vision for the area, as stated in the Section 13.3 of the Dublin City Development Plan 2022-2028 (DCDP) is:

> *"to facilitate a **highly sustainable, mixed use neighbourhood, centred on key public transport interchanges, with a distinct identity and sense of place**".*

Figure 14.3 Extract of Dublin City Development Plan 2022-2028 Figure 13-4: SDRA 1 Clongriffin/ Belmayne Environs Guiding Principles (with indicative site outline in red)




The townscape character and views in the receiving environment reflect the incomplete/transitional condition of the area. In places, it has the appearance of a modern, mixed density, mixed use urban neighbourhood (see **Figures 14.4**, **14.5**). Elsewhere, including in the vicinity of the site, the townscape is visibly incomplete, lacking the spatial definition/enclosure, density and mix of uses typical of a town centre environment, and/or disturbed by ongoing construction (see **Figures 14.6-8**).

Figure 14.4 Main Street to the west of the site




Figure 14.5 A mixed density residential street (Beau Park Avenue) to the south of the site



Figure 14.6 The vacant site as seen from Main Street



Figure 14.7 A view across the vacant site from the eastern end of Main Street beside Station Square



### 14.3.1 Townscape Sensitivity

This receiving environment, a planned town centre comprised of modern residential and mixed use buildings of varying typology, scale and architecture, with areas still under construction or undeveloped, is not sensitive to change. The townscape *requires* further development to realise the vision for the area. It therefore has a high capacity to accommodate change.

It is also a factor that there are no natural or cultural heritage assets/sensitivities on or in close proximity to the site, other than planned elements of the public realm and green infrastructure network (e.g. a planned Green Link traversing the site connecting Station Square to Belltree Park and onwards to Father Collins Park).

However, the site's size and prominent position in the town centre, and its proximity to some residential receptors (completed houses and apartments close to the site), raise the sensitivity of the receiving environment to **'medium'** (definition: *Areas where the townscape has certain valued elements, features or characteristics but where the character is mixed or not particularly strong, or has evidence of alteration, degradation or erosion of elements and characteristics. The townscape character is such that there is some capacity for change. These areas may be recognised in policy at local or county level and the principle management objective may be to consolidate townscape character or facilitate appropriate, necessary change*).

This is in recognition of the potential for the site's development to affect the townscape character and quality of Clongriffin town centre.

### 14.3.2 Key Receptors of Townscape and Visual Change

The key receptors of change in the receiving environment are as follows (refer to **Figure 14.9**).

- **Main Street**: Main Street is a 25m wide as it passes the site before terminating at Station Square. The streetscape is comprised of two traffic lanes in each direction, a central grassed median featuring a line of trees, and wide footpaths on both sides. The buildings on the south side, opposite the site, are 5-7 no storeys tall, with commercial use in the ground floor and residential above. The street has been envisaged as a 'Core Pedestrian Spine' or 'active boulevard' in the plans for the area. However, currently, with the site vacant along its 250m frontage, the street lacks enclosure, passive surveillance, and the critical mass of uses to fully activate the street. This is a major obstacle to the town centre realising its potential.

Figure 14.8 A view east along Main Street, with the vacant site to the left



Figure 14.9 Key receptors of change in the proposed development's receiving environment



- **Residential neighbourhood south of Main Street**: There is an established residential area south of Main Street, accessed by three roads perpendicular to the street (Grange Lodge Avenue, Beau Park Avenue, Railway Road). Density drops in this area with increasing distance from Main Street. **Figures 14.9** and **14.10** show the change in building typology and associated increase in density towards Main Street. This contributes to the legibility of the townscape.

Figure 14.10 A view along Grange Lodge Avenue towards Main Street and the site (with development under construction beyond the site in the distance)



(One notable characteristic of the area, visible in the photo above, is the poor condition of the render elements of some of the apartment building facades. Brick has weathered better.)

- **Station Square**: Station Square is a plaza to the east of the site, at the end of Main Street. The square is intended to function as an active town centre space, with the surrounding high density, mixed use buildings and the DART station generating footfall/activity. However, the square lacks built frontage/enclosure and active use to the west (the site) and south (another vacant plot).

Figure 14.11 Station Square with vacant plots to the west (the site) and south

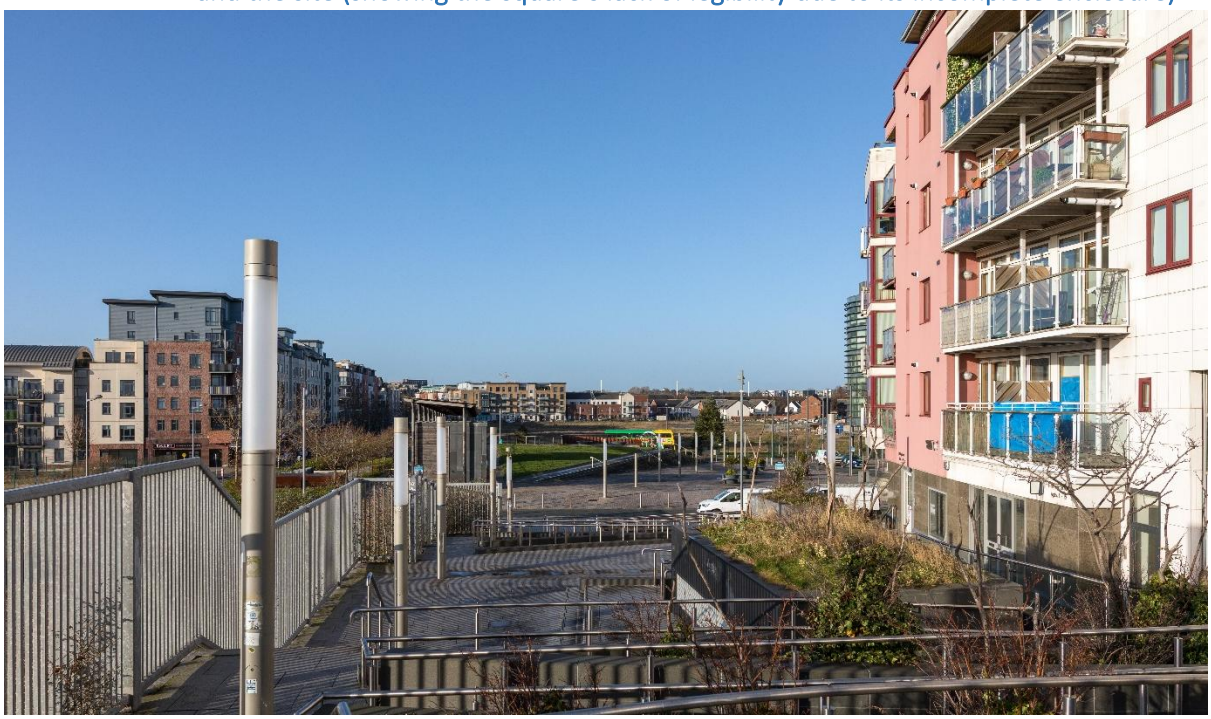


The building on the north side of the square (**Figure 14.12**) was intended to be mixed use, but its only current use is residential. The building to the east has some non-residential use in the ground floor, but this is insufficient to activate the space. Overall, Station Square does not read or function as intended (and active town centre plaza), and it would benefit from increased enclosure and intensive mixed use on the surrounding plots.

Figure 14.12 A view west towards the site across Station Square. The building to the right was designed as a mixed use town centre building, but its only current use is residential



Figure 14.13 The view west from Clongriffin DART station down the steps towards Station Square and the site (showing the square's lack of legibility due to its incomplete enclosure)



- **Residential neighbourhood west and north of the site**: Friar's Street runs along the site's west boundary. The street is lined by five storey apartments and three storey duplex buildings on its west side, opposite the site (**Figure 14.14**). To the north west is Park Street, which is lined by terraced houses on its north side, facing the site. This area (**Figure 14.15**) is the transition between the higher density town centre (including the site) and the lower density residential neighbourhood extending to the north and west towards Belltree Park and Father Collins Park.

Figure 14.14 View south along Friar's Street, towards Main Street, with the site to the left



Figure 14.15 View east from Park Street, showing the site at the interface between the high density town centre (ahead, right) and a lower density residential area to the north west (left)



- **Belltree Park and green corridor north west of site**: Belltree Park is part of a corridor of open space traversing the residential neighbourhood to the north west of the site, connecting to Father Collins Park.

Figure 14.16 A view across Belltree Park towards the site, with Blocks 5 and 6 under construction at the far end of the park, to the left



- **Clongriffin Blocks 5 and 6**: Directly to the north of the site, at the eastern end of Belltree Park, are two buildings under construction, Blocks 5 and 6 (reg. ref. LRD6064/24-S3). The permitted buildings range from 3-7 no. storeys, with height concentrated towards the east and south (i.e. towards the town centre and the DART station).

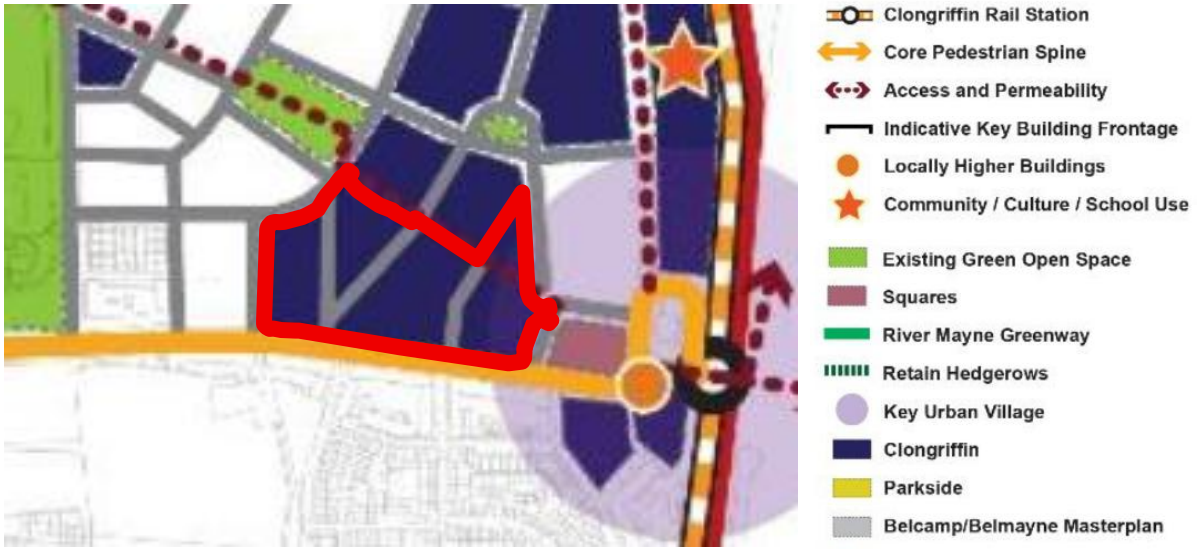
Figure 14.17 A CGI view of the permitted Block 6 to the north of the site



### 14.3.3 Relevant SDRA 1 (Clongriffin-Belmayne) Policy

In a situation such as Clongriffin, where transformative landscape change is the policy for the area, the most appropriate measure of a proposed development's potential landscape effects is its compliance with – or contribution to the realisation of – the vision or objectives for the area.

Figure 14.18 Extract of Dublin City Development Plan 2022-2028 Figure 13-4: SDRA 1 Clongriffin/ Belmayne Environs Guiding Principles (with indicate site outlined in red)




The following are the most significant aspects of the Guiding Principles plan above:

- The site has **frontage to Main Street**, the 'Core Pedestrian Spine'. Development on the site should therefore provide the pedestrian pavement, built frontage, active uses and passive surveillance required to realise a successful town centre street.
- The site has **frontage to Station Square** to the east. Development on the site should provide the pedestrian pavement (on the west side of Bridge Street), built frontage, active uses and passive surveillance required to realise a successful town centre plaza. Through its design, the development fronting the square should contribute to place-making, to give emphasis to the square in the townscape (thereby improving legibility and sense of place).
- The plan indicates an **'Access and Permeability' route along the northern site boundary** (and inside the creche site), connecting Station Square to Belltree Park to the north west.
- The plan indicates **2-3 no. north-south aligned streets across the site**, dividing the large plot into urban blocks that integrate with the established urban grain of the area, and contribute to pedestrian permeability.

In addition to the above objectives expressed in the DCDP Figure 13-4, the following stated objectives / guiding principles for SDRA 1 are relevant to this assessment.

*Urban Structure*

- ***"Completion of Clongriffin KUV centre to include the development of key sites adjacent to the train station, east of Father Collins Park…***
- *"Completion / upgrade of Belmayne Main Street in order to provide a strategic east west connection, linking the Key Urban Village (KUV) centre at Clongriffin Railway Station Square to the Key Urban*

*Village (KUV) centre at Belmayne Town Centre at Malahide Road, and* ***facilitate high quality bus, cycle and pedestrian facilities…***

- *"Urban Form and Block Layouts shall be arranged in a* ***perimeter block*** *configuration and shall* ***form a continuous urban edge with the street in order to create enclosure, provide passive surveillance and animation****. Typical block widths shall generally be in the range of between 45-50 m (lower scale housing) to 55-60 m (higher scale apartments). This will enable suitable separation distances to be achieved between the rear of blocks, as well as providing for private open space."*

*Land Use & Activity*

- *"****A rich mix of uses to include retail, commercial, community, employment and residential uses*** *will be sought on these lands, relative to the two KUV centres…*
- *"****Residential densities shall be highest within the two KUV centres and along Main Street, in proximity to the train station at Clongriffin*** *and along the proposed Core Bus Corridor."*

*Height*

- *"Building heights shall respond to the proposed urban structure and land uses and activities. In general,* ***the KUV centres at Belmayne Town Centre and Clongriffin Train Station shall contain the greatest building heights, in order to reinforce their status as a KUV****, subject to amenity and design safeguards…*
- *"****Gateway buildings form a key structuring element, enhancing legibility and avoiding the proliferation of monolithic heights****. As such, locally higher buildings shall be located within the KUV and along the Belmayne-Belcamp link, as illustrated.*
- *The following building heights shall be applied:*
  - ***Minimum heights of 5 storeys to the Key Urban Village centres at Clongriffin Rail Station*** *and Belmayne Town Centre at the R139/R107 junction.*
  - ***Minimum heights of four to five storeys for Main Street Boulevard.***
  - *A locally higher building adjacent to the rail station and at the junction of Malahide Road / R152.*
- *"****Any proposed height must have regard to existing neighbourhoods and character****, in order to protect residential and visual amenity."*

*Design*

- *"****Architectural treatment shall be of the highest quality*** *and allow for a range of building types and designs, creating* ***a visually coherent urban form****…"*

*Green Infrastructure*

- *"****Tree planting, landscaping and SuDS features will be integrated into the urban structure and movement framework for the SDRA lands. Key green links shall provide additional landscaping in order to accentuate their strategic importance as amenity, sustainable movement and biodiversity corridors****…"*

## 14.4 Predicted Impacts of the proposed development – Visual Amenity

### 14.4.1 Do-Nothing Impact

### 14.4.2 Construction Phase

During the estimated 24 month construction phase, the site and immediate environs would be disturbed by construction activity, and the incremental growth of the buildings on site. The magnitude of visual change would range from high in the immediate environs, to low, negligible or none with increasing distance from the site. The significance of the construction phase effects are classified for each viewpoint in **Table 14.6** below. In almost all cases, the effects would be negative, since construction is inherently disturbing of the townscape, and unsightly. The effects are however (a) temporary, and (b) normal in the urban area, particularly a receiving environment such as Clongriffin. This reduces the significance of the visual effects.

### 14.4.3 Operational Phase

Based on the analysis of the receiving environment in Section 14.3.1, the identification of key receptors of townscape and visual change in Section 14.3.2, and the identification of relevant policy objectives for SDRA 1 Clongriffin / Belmayne in Section 14.3.3, **16 no. viewpoints (including 4a and 4b) were selected for detailed visual effects assessment** informed by verified photomontages.

Figure 14.19 Viewpoints for visual effects assessment




The viewpoints are individually assessed in **Table 14.6** overleaf. For the assessment methodology and criteria and terms used, refer to Section 14.2.3 above.

For each viewpoint, a selection of photographs and photomontages is provided in the Verified Photomontages submitted along with this the EIAR, including:

- Existing view (photograph);
- Proposed view (photomontage of the proposed development);
- Cumulative view - where relevant (photomontage of the proposed development and permitted developments in the vicinity of the site).

Table 14.6 Viewpoint Assessments

| Viewpoint | Baseline View | Viewpoint Sensitivity | Proposed View | Magnitude of Change | Significance & Quality of Visual Effects | |
|---|---|---|---|---|---|---|
| | | | | | Construction (Temporary) | Operation (Permanent) |
| **Main Street** | | | | | | |
| 01. **Hole in the Wall Road** | - The view is taken from the junction of Hole in the Wall Road and Main Street. This is the gateway to Clongriffin from Belmayne and the wider environs.<br>- The width of Main Street, and its 'urban boulevard' specification, are evident.<br>- To the right is the Trinity sports club, an unsightly brick building set back behind a surface parking area. To the left is Father Collins Park, the large green space enclosed by a dense belt of maturing trees.<br>- Ahead along Main Street, in the distance, is Clongriffin town centre. The building typologies (multi-storey, mixed use) can be discerned, and this generates a 'town centre' character.<br>- There is a high capacity to accommodate change in the view, particularly in the distant town centre, where it is DCDP policy to employ building height to achieve townscape character and legibility gains (DCDP p.417):<br>*"Building heights shall respond to the proposed urban structure and land uses and activities. In general, the KUV centres at Belmayne Town Centre and Clongriffin Train Station shall contain the greatest building heights, in order to reinforce their status as a KUV, subject to amenity and design safeguards".*<br>- There are no sensitive elements/features or characteristics in this view. | **Low** | - Although some 500m distant, the development is visible, filling a gap and increasing the density and height of the distant town centre.<br>- The new buildings are closer (than the buildings that they screen in the view). This has the effect of bringing the town centre closer to the viewer (and the gateway to Clongriffin from Hole in the Wall Road).<br>- There is an increase in the height of the new buildings towards the far end of Main Street. The 10 storey volume on Zone 9 is most prominent, the building angled towards Station Square and the DART station. This marks the location as a place of importance in the townscape, and reinforces the status of the town centre as a Key Urban Village.<br>- In summary, the operation phase effect on the view is 'slight positive'. | **Low** | **Not significant negative** | **Slight positive** |
| 02. **Main Street west of site** | - This view is taken from a bus stop on Main Street approximately 125m from the site.<br>- This part of Main Street is complete and functioning well, with multi-storey mixed use buildings on both sides of the street generating urban character and a high level of activity.<br>- The variety of materials in the building facades and the active use at street level adds visual interest, and the street trees in the grassed central median add visual amenity to the view.<br>- There is a notable gap in the street elevation between the buildings in the foreground and a cluster of buildings in the distance (at Station Square). This gap is the vacant site.<br>- In the contemporary town centre context there is capacity for change, but this section of streetscape is successful, which raises the sensitivity to medium. | **Medium** | - The development fills the gap in the street elevation in the middle distance, with a series of buildings of 6-7 no. storeys (with 5 storey connecting volumes), creating a stepped roofline along the street.<br>- The Zone 7 building at the near corner is set at and angle to the street, which opens a view of the side elevation of the neighbouring Zone 8 building, and the entrance to a new street crossing the site.<br>- The buildings are clad in brick of various colours. The colour variation combines with the stepped roofline and the active use (community, cultural) in the ground floor to add visual interest to the street elevation.<br>- In summary, the street is completed by the addition of buildings of design and material quality, strengthening the character of Main Street as an active, urban boulevard. | **Low** | **Slight negative** | **Slight positive** |

| Viewpoint | Baseline View | Viewpoint Sensitivity | Proposed View | Magnitude of Change | Significance & Quality of Visual Effects | |
|---|---|---|---|---|---|---|
| | | | | | Construction (Temporary) | Operation (Permanent) |
| 03. **Main Street approaching site from west** | - This view illustrates the vacant site's detracting effect on the townscape character and visual amenity. Along the 250m site frontage, Main Street lacks enclosure/definition, activation by use, and passive surveillance on one side. The 'busy urban boulevard' character of the street at Viewpoint 02 is lost.<br>- The buildings around Station Square at the end of the street appear isolated and fail to achieve the required place-making effect.<br>- The buildings in the foreground to the right are render-clad and the facades lack articulation. These contribute to a weakness in townscape character, and limited visual amenity.<br>- There is a high capacity for change. | Low | - The development fills the wide gap in the street elevation. A series of 5-7 no. storey buildings provide frontage to the street, with active use in the ground floors, and residential use above for passive surveillance.<br>- The Zone 7 building at the near corner is set well back from the street, which creates a wide pedestrian space featuring ornamental planting, trees, and seating.<br>- The setback of Zone 7 also opens a view of the side elevation of the Zone 8 building, and the entrance to a new street crossing the site.<br>- The buildings are clad in brick of various colours, with the balconies and window frames of bronze coloured metal. The high quality materials and highly articulated facades counteract the negative effect of the buildings across the street, resulting in a net improvement in the built environment.<br>- The colour variations combine with buildings' disaggregated form, stepped building line, stepped roofline, streetscape planting and active uses in the ground floors to generate a high level of visual interest and amenity.<br>- In summary, the street is completed by the addition of buildings and new public realm of design and material quality, strengthening the character of Main Street as an active, urban boulevard. | High | Moderate negative | Significant positive |
| 04a & 04b. **Main Street alongside the site** | - These views illustrate the vacant site's detracting effect on the townscape character and visual amenity. Along the 250m site frontage, Main Street lacks enclosure/definition, activation by use and passive surveillance on one side.<br>- In View 04a, the buildings around Station Square at the end of the street appear isolated, the townscape visibly incomplete.<br>- In View 04b, the mixed density of the area, with an increase in density towards Main Street, is visible in the development on the far side of the site.<br>- There is a high capacity for change in the view. | Low | - The development fills the wide gap in the street elevation. A series of 5-8 no. storey buildings provide frontage to the street, with active use (community, cultural) in the ground floors, and residential use above for passive surveillance.<br>- The new streets crossing the site fill a gap in the urban grain, integrating the development with the surrounding townscape and providing visual and pedestrian permeability.<br>- The setback of the buildings from the street allows for ornamental planting and trees to soften the built frontage.<br>- The buildings are clad in brick of various colours, with the balconies and window frames of bronze coloured metal. The high quality, durable materials ensure that the buildings will weather well.<br>- The facades are highly articulated, which reduces the perceived massing (although there is no sense of excessive height or monolithic form).<br>- The colour variations combine with disaggregated form, stepped building line, stepped roofline, streetscape planting and active uses in the ground floors to generate a high level of visual interest and amenity.<br>- In summary, Main Street is completed by the addition of buildings and new public realm of design and material quality, strengthening its character as an active, urban boulevard. | High | Moderate negative | Significant positive |

| Viewpoint | Baseline View | Viewpoint Sensitivity | Proposed View | Magnitude of Change | Significance & Quality of Visual Effects | |
|---|---|---|---|---|---|---|
| | | | | | Construction (Temporary) | Operation (Permanent) |
| 05. **Main Street at Station Square** | - In the foreground to the right is a canopy structure in Station Square adjacent to the park & ride entrance.<br>- Bridge Street runs along the west side of the 'square', along the site frontage.<br>- The distinctive cylindrical feature volume of a town-centre building (designed for a mix of uses but currently in residential use only) is visible on the far side of the square.<br>- The vacant site is to the left, with Blocks 5 and 6 (see Figure 14.17 above), under construction, prominent beyond the site.<br>- Station Square lacks enclosure/definition (on its west and south sides), activation and passive surveillance. The square is failing to function as intended despite some buildings of quality on the adjacent plots, and the footfall generated by the DART station.<br>- There is a high capacity for change in the view. | Low | - Station Square is enclosed by two buildings of strongly vertical proportions, with a single storey central connecting element.<br>- The built form is disaggregated (by recessed or projecting volumes and steps in height) to reduce the massing.<br>- The buildings form a curved frontage to the square, with the buildings positioned to reinforce the square's orientation towards the DART station.<br>- The ground floor is occupied by activity-generating retail and food & beverage units, and the buildings are set back from Bridge Street to form a wide pedestrian space, which includes beds of planting, trees, and space for outdoor seating.<br>- The projecting volumes of the buildings are clad in a mottled brown brick. This distinguishes them from the main bodies of the buildings, which are buff brick. Variations in brick bond (e.g. soldier course) are used for detailing and articulation of the facades. The balconies and window frames are bronze coloured metal. (These are high quality, durable materials, which will weather well, maintaining the appearance of the buildings.)<br>- In summary, Station Square is completed on its west side by the addition of buildings and new public realm of design and material quality, and active use in the ground floor, strengthening the spatial definition, character and function of the square as the town centre's main pedestrian space. | High | **Moderate negative** | **Significant positive** |
| 06 & 07. **Beau Park Avenue & Grange Lodge Avenue** | - Beau Park Avenue and Grange Lodge Avenue are two streets that provide access to the established residential neighbourhood to the south of Main Street. The two streets are aligned roughly perpendicular to Main Street.<br>- For one block south of Main Street, both streets are lined with multi-storey apartment buildings. Further to the south, there is a transition to a lower density development typology (see View 07), with 2-3 no. storey houses the dominant form.<br>- Both streets frame views north towards Main Street and the site.<br>- The vacant site on the far side of Main Street combines with Blocks 5 and 6 under construction in the distance to give the townscape an unfinished appearance.<br>- There is capacity for change in the views. However, since these viewpoints represent established residential receptors, the sensitivity classification is raised to medium. | Medium | - In both views, the new buildings on the far side of Main Street are visible (framed by the foreground buildings), closing the vista.<br>- The new streets crossing the site north to south are aligned with Beau Park Avenue and Grange Lodge Avenue. This extends the established urban grain across the site, improving permeability and navigability. As a result, the new built form in both views is not solid, but rather split by the new streets.<br>- The buildings are clad in brick of various natural/earthy colours, and the balconies and window frames of bronze coloured metal. These are high quality, durable materials that will weather well.<br>- In View 07, the active use (community, cultural) in the ground floor is discernible. This helps to identify Main Street as an active street.<br>- In summary, the development partly closes the vistas along Beau Park Avenue and Grange Lodge Avenue, thereby defining Main Street in the views, while the new streets crossing the site are legible, maintaining permeability. | Low-Medium | **Not significant negative** | **Slight positive** |

| Viewpoint | Baseline View | Viewpoint Sensitivity | Proposed View | Magnitude of Change | Significance & Quality of Visual Effects | |
|---|---|---|---|---|---|---|
| | | | | | Construction (Temporary) | Operation (Permanent) |
| 08 & 09. **Station Square** | - View 08 is taken from a central position in Station Square, on a grass-covered podium over the park & ride, closer to the site.<br>- View 09 is taken from the eastern side of the square, in a hard-surfaced plaza area, further from the site.<br>- In View 08, Station Square does not read as a 'square' due to the lack of enclosure on the west side (i.e. on the site). In View 09, with greater built enclosure visible on the north side (right), the space is more clearly defined.<br>- However, the lack of active uses on the surrounding plots means the square doesn't function as intended, i.e. a busy urban plaza.<br>- The built frontage on the south side of Main street is visible to the left, along with diverse residential development in the distance to the west beyond the site, but the wider townscape – like Station Square - is incomplete.<br>- There is a high capacity for change in the views. The importance of the views – the 'principal view' from the town centre's main public space – raises the sensitivity classification to medium. | **Medium** | - The west side of the square is enclosed by two buildings of strongly vertical proportions, with a single storey central connecting element. (The buildings further west in the site – Zones 8 and 7 – can be seen in the gap between the Zone 9 buildings.)<br>- Projecting volumes in the east elevations (emphasised by a variation in brick colour) disaggregate the form and 'narrow' the buildings. The tall, slender forms give the buildings local landmark status.<br>- Their angled alignment, forming a curved frontage to the square (orientated towards the DART station) adds to the buildings' distinction.<br>- The active use in the ground floor can just be discerned in both views.<br>- The facades are articulated by (a) the variations in brick colour, bond and detailing, (b) a dense grid of generously sized windows, and (c) selected projecting balconies. The articulation reduces the massing.<br>- In isolation the two buildings form a pleasing composition of form, and the material quality adds to this.<br>- To the left, the enclosure/definition of Main Street is completed by the development.<br>- To the right, a new 'green street', Market Street, is formed. (This is most appreciable in View 09.)<br>- In View 08, a new triangular green space is visible beside the stand-alone creche, a two storey brick and timber clad building.<br>- In summary, Station Square is completed (on its west side) by the addition of buildings of design and material quality – and 'landmark character' - strengthening the definition, character and status of the square. The development also completes Main Street, and contributes to the creation of Market Street and an adjacent green space in the views. | **High** | **Moderate negative** | **Significant positive** |
| 10. **Clongriffin DART Station** | - View 10 is taken from the top of the stairs that lead down from Clongriffin DART station into Station Square. This view is experienced by a large number of people on a daily basis, upon their arrival into Clongriffin.<br>- As in Views 08 and 09, due to the absence of built enclosure on the far side of Station Square, the space is not distinct / recognisable as a square. There is also a lack of active uses in the existing buildings around the square, which limits its use.<br>- The built frontage on the south side of Main Street is visible to the left, along with diverse residential development in the distance to the west beyond the site. However, due to the site's vacant condition, the townscape appears incomplete.<br>- There is a high capacity for change, but the importance of the view raises the sensitivity classification to medium. | **Medium** | - The west side of the square is enclosed by two buildings of strongly vertical proportions, with a single storey central connecting element.<br>- The buildings further west (Zones 8 and 7) can be seen in the gap between the two Zone 9 buildings, and form one side of Market Street to the right.<br>- The combination of the buildings' height and positioning (in relation to Station Square and the DART station) gives them a landmark quality and function.<br>- The facades are articulated by (a) variations in brick colour, bond and detailing, (b) a dense grid of generously sized windows, and (c) projecting balconies. The articulation reduces the perceived massing.<br>- To the left, the enclosure/definition of Main Street is completed by the development. To the right, Market Street is formed.<br>- In summary, Station Square is completed (on its west side) by the addition of buildings of design and material quality – and 'landmark character' - strengthening the spatial definition, character and status of the square. The development also completes Main Street, and contributes to the creation of Market Street. | **Medium** | **Moderate negative** | **Significant positive** |

| Viewpoint | Baseline View | Viewpoint Sensitivity | Proposed View | Magnitude of Change | Significance & Quality of Visual Effects | |
|---|---|---|---|---|---|---|
| | | | | | Construction (Temporary) | Operation (Permanent) |
| 11. **Clongriffin Road** | - Clongriffin Road approaches the town centre (Station Square) from the north.<br>- The town centre Block 12, originally designed as a mixed use building (containing retail, F&B and other uses), is to the left. This building is now mostly in residential use, with some services in the ground floor, and a proportion of the building is unused.<br>- To the right of the street is an undeveloped plot currently in use as the construction compound for Blocks 5 and 6.<br>- Ahead, to the right of the street is the vacant site, and to the left Station Square. The buildings on the south side of Main Street form the backdrop.<br>- The townscape in clearly in an unfinished condition and would benefit from further development. There is a high capacity for change. | **Low** | - In the foreground to the right is the proposed stand-alone creche on a triangular plot with wide pedestrian pavements and ornamental planting beds to both sides.<br>- The creche has a distinctive, traditional form with timber and brick cladding.<br>- The Zone 9 (left) and Zone 8 (right) buildings rise behind the creche, forming one side of a new street ('Market Street') that leads across the site to Station Square.<br>- The apartment buildings are articulated by (a) steps in building line and height, (b) variations in brick colour, bond and detailing, (c) a grid of generously sized windows, and (d) projecting balconies. The articulation reduces the perceived massing despite the buildings' scale.<br>- The active use in the ground floor of the 10 storey building fronting Station Square can be seen ahead along the street. The step up in height indicates the building occupies a place of importance in the townscape (marking Station Square).<br>- A new street crosses the site between the two buildings, connecting Clongriffin Road to Main Street.<br>- In summary, the development fills in a large missing piece of the town centre, introducing buildings of design and material quality, new streets and areas of public realm, and new uses (creche and retail/F&B) – all strengthening the townscape character and improving visual amenity. | **High** | **Slight negative** | **Moderate positive** |
| 12. **Park Street** | - Park Street runs parallel to Main Street, one block to the north. The street is at the interface between the town centre, which lies to the east and south (ahead and right in the view) and the lower density residential neighbourhood to the north (left).<br>- This is reflected in the variation in housing typologies to the left and right of the street.<br>- The houses and apartments in the foreground frame a view towards the town centre to the east.<br>- A fence around the vacant site can be seen at the end of the street, with Block 5 under construction adjacent to the site.<br>- In distance, beyond the site, is the Block 12 town centre building, closing the vista.<br>- Due to the ongoing construction and the vacant site, there is capacity for change in the view. However, since the viewpoint represents an established residential neighbourhood, the sensitivity is raised to medium. | **Medium** | - A five storey apartment building is positioned at the end of the street, at an angle to the street. Two further buildings are visible behind it, stepping up towards the town centre.<br>- The new built form shortens the vista (and screens the existing Block 12 from view).<br>- The facades are articulated by (a) variations in brick colour, bond and detailing, (c) a grid of generously sized windows, and (d) projecting balconies. The articulation reduces the perceived massing.<br>- In summary, the development fills an empty plot in the townscape, and combines with the existing apartments on the south side of Park Street to form a distinct edge to the town centre. The change is not inappropriate, and there is no loss, nor gain, in visual amenity. | **Medium** | **Slight negative** | **Moderate neutral** |
| 13. **Belltree Park** | - Belltree Park is a large green space in the established lower density neighbourhood to the north west of Clongriffin town centre. It forms part of a green corridor connecting the town centre to Father Collins Park.<br>- In the existing view, the park is flanked by three storey houses to the left and right. (A stand of trees in the near corner of the park will ultimately mature to partially block the view.)<br>- On the far side of the park is Block 5, a 5-6 no. storey apartment building under construction. The vacant site is to the right of Block 5.<br>- The buildings on the south side of Main Street can be seen in the distance beyond the site.<br>- Due to the ongoing construction and the vacant site, there is capacity for change in the view. The view also illustrates the diversity of building typologies and | **Medium** | - The Zone 7 and 8 buildings fill the gap between the Belltree Park houses and Block 5.<br>- The nearest building at the corner is five storeys, and the buildings step up in height towards the east (towards the town centre and the DART station).<br>- The buildings form one side of a new green street ('Market Street') that connects Belltree Park to Station Square along the northern boundary of the site.<br>- By filing a gap and providing built frontage/definition to two streets, the development strengthens the urban structure. It also reinforces the existing transition in character between the town centre and the lower density neighbourhood around Belltree Park.<br>- The facades are articulated by (a) variations in brick colour, bond and detailing, (c) a grid of generously sized windows, and (d) projecting balconies. The articulation of the collective form and the facades reduces the perceived massing. | **Medium** | **Slight negative** | **Moderate positive** |

| Viewpoint | Baseline View | Viewpoint Sensitivity | Proposed View | Magnitude of Change | Significance & Quality of Visual Effects | |
|---|---|---|---|---|---|---|
| | | | | | Construction (Temporary) | Operation (Permanent) |
| | architecture in Clongriffin, which contributes to the area's capacity to accommodate change. However, since the viewpoint represents an established residential neighbourhood, the sensitivity is raised to medium. | | - In summary, the development fills an empty plot in the townscape, strengthening the urban structure (by improving the spatial definitions of streets and spaces), and reinforcing the area's established character. | | | |
| 14. **Park Avenue at Father Collins Park** | - The view is taken from Park Avenue between Father Collins Park and the green link to Belltree Park.<br>- Houses to the left and right frame a view along the open space corridor, and Block 5 under construction can be discerned at the far side of Belltree Park.<br>- A part of Howth Head is framed in the view.<br>- The viewpoint represents an established residential neighbourhood, but there are vacant plots and construction projects in view. This contributes to a degree of capacity for change. | **Medium** | - The buildings are visible in the distance to the right of Block 5 and protruding above the roofscape of the lower density neighbourhood in the intervening landscape.<br>- The development combines with Block 5 to (a) frame a view of Howth Head along the green link, and (b) form an appreciable edge to the town centre.<br>- In summary, the development contributes to the legibility of the townscape, by defining the edge between the higher density town centre and the lower density neighbourhood to the north west. | **Low** | **Not significant negative** | **Slight positive** |
| 15. **Lake Street** | - Lake Street approaches Clongriffin town centre from the north, from the direction of the Mayne River at the northern edge of the urban area.<br>- In the foreground to the right is a terrace of three storey houses and beyond that Blocks 5 and 6 under construction.<br>- To the left, beyond a vacant development plot, is Block 12, the town centre building originally intended to be mixed use but now mostly residential.<br>- The buildings on the south side of Main Street form the backdrop.<br>- The view shows (a) the mixed character of Clongriffin, and (b) the unfinished condition of the townscape. There is a high capacity for change. | **Low** | - The zone 9 (left) and Zone 8 buildings (right) frame a new street crossing the site on the alignment of Lake Street.<br>- The buildings are of comparable scale to Blocks 5 and 6, but step up to the left, where a 10 storey volume fronts Station Square.<br>- The facades are articulated by (a) variations in brick colour, bond and detailing, (c) a dense grid of generously sized windows, and (d) projecting balconies. The articulated form and facades reduce the perceived massing.<br>- In summary, the development occupies a missing piece of the town centre, introducing a new street (aligned with Lake Street, thereby integrating with the established urban grain) and buildings of design and material quality, strengthening the urban structure and contributing to legibility and navigability. | **Medium** | **Slight negative** | **Moderate positive** |

## 14.5 Predicted Impacts of the proposed development – Townscape Character

### 14.5.1 Do-Nothing Impact

The site would remain vacant / unused, in a disturbed condition, and fenced off from the surrounding townscape. As well as not fulfilling its land use objective, due to the site's size and prominent position (fronting Main Street and Station Square, i.e. highly exposed to view from the public realm), **it would continue to have a have a significant negative effect on townscape character and quality of Clongriffin**. The town centre would remain visibly incomplete and the public realm not fully activated.

### 14.5.2 Construction Phase

During the estimated 24 month construction phase, the site and immediate environs would be disturbed by construction activity, and the incremental growth of the buildings on site. The magnitude of townscape change would be medium (considering (a) that the context is a new urban area in the process of development, where similar change has been ongoing for approximately 20 years, and (b) the construction phase is short term).

The sensitivity of the townscape is medium (see Section 14.3.1 and 14.5.3.1 below).

Therefore, **the significance of the townscape effects during construction would be moderate negative**. Such temporary negative townscape effects are unavoidable during the construction phase of a development.

### 14.5.3 Operational Phase

#### 14.5.3.1 Townscape Sensitivity

This receiving environment, a planned town centre comprised of modern residential and mixed use buildings of varying typology, scale and architecture, with areas still under construction or undeveloped, is not sensitive to change. The townscape *requires* further development to realise the vision for the area. It therefore has a high capacity to accommodate change.

It is also a factor that there are no natural or cultural heritage assets/sensitivities on or in close proximity to the site, other than planned elements of the public realm and green infrastructure network (e.g. a planned Green Link traversing the site connecting Station Square to Belltree Park and onwards to Father Collins Park).

However, the site's size and prominent position in the town centre (and the related potential for the site's development to affect the townscape character and quality of Clongriffin town centre), and its proximity to some residential receptors (completed houses and apartments close to the site), raises the sensitivity of the receiving environment to **'medium'**.

(Medium sensitivity definition (see **Table 14.1** above): *Areas where the townscape has certain valued elements, features or characteristics but where the character is mixed or not particularly strong, or has evidence of alteration, degradation or erosion of elements and characteristics. The townscape character is such that there is some capacity for change. These areas may be recognised in policy at local or county level and the principal management objective may be to consolidate townscape character or facilitate appropriate, necessary change*.)

#### 14.5.3.2 Magnitude of Townscape Change

At 3.42 ha, and comprising three urban blocks of buildings ranging from 5-10 no. storeys, containing 711 no. apartments, community, culture and arts use, retail and café units and a stand-alone creche on a separate block, and providing approximately 250m built frontage to Main Street and the western frontage to Station Square, **the magnitude of townscape change would be 'high'**.

(High magnitude of change definition (see **Table 14.2** above): *Change that is moderate to large in extent, resulting in major alteration to key elements, features or characteristics of the townscape, and/or introduction of large elements considered uncharacteristic in the context. Such development results in change to the townscape character.*)

It should be noted that the proposal would *not* introduce elements that may be considered uncharacteristic in the context. The proposal is in keeping with the character of the planned and emerging Clongrifffin townscape. It is rather the overall scale of the development, and its effects on key elements of the townscape (Main Street and Station Square) that warrants the 'high' magnitude of change classification.

#### 14.5.3.3 Significance of Townscape Effects

Measuring the magnitude of change against the townscape sensitivity (refer to **Figure 14.3** and **Figure 1.3** above), **the significance of the townscape effects is predicted to be 'significant'** (EPA definition of significant effect: *"An effect which, by its character, magnitude, duration or intensity alters a sensitive aspect of the environment"*).

The significance classification results from the high magnitude of change that would occur to Main Street and Station Square, two key elements of the Clongriffin townscape. In their current, incomplete condition, the street and square are not sensitive receptors, but they are of utmost importance in determining the overall character and quality of Clongriffin town centre. Since the development would alter the character of Main Street and Station Square (intentionally), it would alter the character of the town centre and Clongriffin as a whole. Hence the classification of the townscape effects as 'significant'.

The pertinent question is whether the townscape effects would be positive, neutral or negative. Based on the following assessment of the proposal against the relevant DCDP policy objectives / guiding principles for SDRA 1 Clongriffin / Belmayne, and the visual effects assessment in Section 14.4, **the townscape effects can be classified 'significant positive'**.

Table 14.7 Assessment of Proposal Against Townscape-Related Objectives / Guiding Principles for SDRA 1 Clongriffin / Belmayne

| Townscape-related Objectives and Guiding Principles for SDRA 1 Clongriffin / Belmayne | Comment |
|---|---|
| The site has frontage to Main Street, the 'Core Pedestrian Spine' of Clongriffin town centre.<br><br>*"Urban Form and Block Layouts shall be arranged in a perimeter block configuration and shall* ***form a continuous urban edge with the street in order to create enclosure, provide passive surveillance and animation****."*<br>*"****Residential densities shall be highest*** *within the two KUV centres and* ***along Main Street****..."*<br>*"The following building heights shall be applied:*<br>- ***Minimum heights of four to five storeys for Main Street Boulevard****."*<br>*"****Architectural treatment shall be of the highest quality*** *and allow for a range of building types and designs, creating* ***a visually coherent urban form****..."* | The proposed development:<br>- Provides built frontage / enclosure to Main Street;<br>- Provides a generously wide pedestrian pavement between the street and the buildings, with ornamental planting beds and trees to soften the built frontage and enhance visual amenity;<br>- Provides active frontage (community, cultural and arts uses) in the ground floor along the full frontage to the street, thereby activating the streetscape;<br>- Provides passive surveillance of the street.<br>The photomontages show that the street can comfortably accommodate the proposed height with no sense of excessive enclosure, and that the proposed buildings are of suitably high design and material quality to realise the vision for Main Street.<br> |

| Townscape-related Objectives and Guiding Principles for SDRA 1 Clongriffin / Belmayne | Comment |
|---|---|
| The site has frontage to Station Square.<br><br>*"**Completion of Clongriffin KUV centre to include the development of key sites adjacent to the train station** …*<br><br>*"Urban Form and Block Layouts shall be arranged in a perimeter block configuration and shall **form a continuous urban edge with the street in order to create enclosure, provide passive surveillance and animation**…*<br><br>*"Building heights shall respond to the proposed urban structure and land uses and activities…*<br><br>*"In general, **the KUV centres** at… **Clongriffin Train Station shall contain the greatest building heights, in order to reinforce their status as a KUV**…*<br><br>*"**Gateway buildings form a key structuring element, enhancing legibility and avoiding the proliferation of monolithic heights**. As such, locally higher buildings shall be located within the KUV...*<br><br>*"The following building heights shall be applied:*<br><br>- ***Minimum heights of 5 storeys to the Key Urban Village centres at Clongriffin Rail Station**…*<br>- *A locally higher building adjacent to the rail station…"* | The proposed development:<br><br>- Provides built frontage / enclosure to Station Square, improving its definition and legibility as a space;<br>- Gives emphasis / status to the square (by the buildings' height and distinctive form), and orientates the square towards the train station;<br>- Provides active frontage to the square (retail and F&B units) to activate the space;<br>- Provides a wide pedestrian pavement between Bridge Street and the buildings, with ornamental planting and trees to soften the built frontage, and space for outdoor seating for the F&B units;<br>- Provides passive surveillance of the square.<br><br>The buildings will function as a landmark and a gateway, reinforcing Station Square's status as the centre of the KUV, and activating the square as a public space.<br><br> |

| Townscape-related Objectives and Guiding Principles for SDRA 1 Clongriffin / Belmayne | Comment |
|---|---|
| The plan indicates 2-3 no. north-south aligned streets across the site, dividing the large plot into urban blocks.<br> | The proposed development includes two new streets crossing the site north-south.<br>The new streets are aligned with existing streets south of Main Street (Beau Park Avenue and Grange Lodge Avenue – see Viewpoints 06 and 07) and to the north of the site, so that **the development will integrate with the existing urban grain, improving permeability and navigability**.<br><br><br> |

| Townscape-related Objectives and Guiding Principles for SDRA 1 Clongriffin / Belmayne | Comment |
|---|---|
| The plan indicates an 'Access and Permeability' route along the northern site boundary (and inside the creche site), connecting Station Square to Belltree Park to the north west. | The proposed development includes a new green link / street ('Market Street') along the site's northern boundary (and between Zone 9 and the creche). This is a wide pedestrian and cycle street featuring extensive planting and trees, connecting Station Square to Belltree Park and onwards to Father Collins Park.<br><br> |

Based on the above, and on the verified photomontages and visual effects assessment (**Table 14.6**), the townscape effects of the proposed development can be classified positive.

## 14.6 Mitigation Measures

### 14.6.1 Construction Phase

No mitigation measures other than best practice construction site management are proposed.

### 14.6.2 Operational Phase

The potential townscape effects during the operational phase have been classified 'significant positive'. The potential visual effects for all 16 no. viewpoints have been classified as positive or neutral. Therefore, no mitigation measures are required/recommended.

## 14.7 Residual Impacts – Visual Amenity

### 14.7.1 Construction Phase

The visual effects during the construction phase have been classified for each viewpoint in **Tables 14.6** and **14.7**. Where the site is visible, the effects would be negative as construction is inherently unsightly. Site hoarding is only effective as a visual screen for ground level activity. Once buildings under construction rise above ground level, they are exposed, and until they are completed their visual effects are negative. Such temporary negative visual effects are unavoidable during the construction phase of a development.

### 14.7.2 Operational Phase

Since no mitigation measures have been recommended, the residual visual effects are the same as the predicted / potential visual effects described in **Table 16.6** above. The effects are further summarised in Table 14.8 below.

Table 14.8 Residual Visual Effects

| Viewpoint | Viewpoint Sensitivity | Magnitude of Change | Significance & Quality of Visual Effects | |
|---|---|---|---|---|
| | | | Construction (Temporary) | Operation (Permanent) |
| 01. Hole in the Wall Road | Low | Low | Not significant negative | Slight positive |
| 02. Main Street west of site | Medium | Low | Slight negative | Slight positive |
| 03. Main Street approaching site from west | Low | High | Moderate negative | Significant positive |
| 04a. Main Street alongside the site | Low | High | Moderate negative | Significant positive |

| Viewpoint | Viewpoint Sensitivity | Magnitude of Change | Significance & Quality of Visual Effects | |
|---|---|---|---|---|
| | | | Construction (Temporary) | Operation (Permanent) |
| 04b. Main Street alongside the site | Low | High | Moderate negative | Significant positive |
| 05. Main Street at Station Square | Low | High | Moderate negative | Significant positive |
| 06. Beau Park Avenue | Medium | Low-Medium | Not significant negative | Slight positive |
| 07. Grange Lodge Avenue | Medium | Low-Medium | Not significant negative | Slight positive |
| 08. Station Square | Medium | High | Moderate negative | Significant positive |
| 09. Station Square | Medium | High | Moderate negative | Significant positive |
| 10. Clongriffin DART Station | Medium | Medium | Moderate negative | Significant positive |
| 11. Clongriffin Road | Low | High | Slight negative | Moderate positive |
| 12. Park Street | Medium | Medium | Slight negative | Moderate neutral |
| 13. Belltree Park | Medium | Medium | Slight negative | Moderate positive |
| 14. Park Avenue at Father Collins Park | Medium | Low | Not significant negative | Slight neutral |
| 15. Lake Street | Low | Medium | Slight negative | Moderate positive |

## 14.8 Residual Impacts – Townscape Character

### 14.8.1 Construction Phase

During the construction phase, the site and immediate environs would be disturbed by construction activity, and the incremental growth of the buildings on site.

The magnitude of townscape change would be medium. This is based on (a) the fact that the context is a new urban area still in the process of development, with similar construction projects taking place in

the vicinity, and (b) the construction phase is short term), but (c) the site is prominently located in the town centre, therefore highly visually exposed. The sensitivity of the townscape is medium (see Section 14.5.3.1 above).

Therefore, **the significance of the townscape effects during construction would be moderate negative**. Such temporary negative townscape effects are unavoidable during the construction phase of a development.

### 14.8.2 Operational Phase

Since no mitigation measures have been recommended, the residual townscape effects are the same as the predicted / potential townscape effects described in Section 14.5.3 above.

The magnitude of townscape change would be high. This classification is based on (a) the scale of the site (3.42 ha), (b) the quantity of development (three urban blocks of buildings ranging from 5-10 no. storeys, containing 711 no. apartments, extensive community, cultural and arts use, retail and café units and a stand-alone creche, as well as extensive public realm), and (c) the effect on key elements of the townscape (e.g. 250m frontage to Main Street, and frontage to Station Square). The sensitivity of the townscape is medium (see Section 14.5.3.1 above).

**Therefore, measuring the magnitude of change against the townscape sensitivity, the significance of the townscape effects in the operational phase would be 'significant'** (EPA definition of significant effect: *"An effect which, by its character, magnitude, duration or intensity alters a sensitive aspect of the environment"*).

The significance classification results from the high magnitude of change that would occur to Main Street and Station Square, two key elements of the Clongriffin townscape. In their current, incomplete condition, the street and square are not sensitive receptors, but they are of utmost importance in determining the overall character and quality of Clongriffin town centre. Since the development would alter the character of Main Street and Station Square (intentionally), it would alter the character of the town centre and Clongriffin as a whole. Hence the classification of the townscape effects as 'significant'. Importantly, the townscape effects would be positive. This is based on the visual effects assessment (Section 14.4) and an assessment of the proposal against the relevant DCDP policy objectives / guiding principles for SDRA 1 Clonggriffin / Belmayne. **In conclusion, the townscape effects in the operational phase would be significant positive**.

## 14.9 Monitoring

No monitoring of townscape and visual effects is required.

## 14.10 Reinstatement

No reinstatement is required post construction.

## 14.11 Interactions

### 14.11.1 Townscape / Visual and Population and Human Health (Noise and Dust Emissions)

During the construction phase, there is potential for negative townscape and visual effects of construction to combine with noise and dust emissions from the construction site to negatively impact the residential amenity of residential neighbourhoods / receptors near the site.

### 14.11.2 Townscape / Visual and Population and Human Health

During the operational phase:

- The proposed development would introduce a new, high density residential neighbourhood to the townscape, with a creche, a community, cultural and arts element, and retail and F&B units in the frontage to Station Square. These uses would occupy a large, currently vacant plot in Clongriffin town centre. This would strengthen the townscape character and improve the appearance of the area.
- The proposed development would complete the formation of Main Street (by the introduction of built frontage and active uses along the street) and contribute to the completion of Station Square and Market Street. This would improve the spatial definition, appearance and functionality of these spaces, as well as providing new areas of public realm.
- The proposed development would provide new streets and pedestrian routes across the site, improving the area's permeability / navigability.

These townscape changes would have significant, long-term, positive impacts for the new resident community and the established population of Clongriffin.

### 14.11.3 Townscape / Visual and Climate Change

The new homes would be located minutes' walk from Clongriffin DART station and the bus stops in Station Square and on Main Street, and walking distance from various local and district level public open spaces / green infrastructure (e.g. Belltree Park, Father Collins Park, Mayne River Greenway, Station Square, etc.). The high density residential use adjacent to public transport and public open space would encourage sustainable mobility. This would have positive public health and climate change impacts, by minimising the requirement for use of private cars.

## 14.12 Indirect and/or Secondary Impacts

No indirect or secondary townscape or visual impacts were identified.

## 14.13 Cumulative Impacts

The assessment of townscape and visual impacts has taken account of all permitted developments in the vicinity of the site (see Chapter 22, Table 22.1). The cumulative photomontages accompanying this chapter show the proposed development along with the most relevant permitted developments (specifically Blocks 5 and 6 to the north of the site).

In combination, the proposed development and the nearby permitted schemes (and schemes under construction) are predicted to result in significant positive cumulative townscape and visual effects, by contributing to the realisation of the DCDP vision for SDRA 1 Clongriffin / Belmayne (*"The overall vision of the lands is to facilitate a highly sustainable, mixed use neighbourhood, centred on key public transport interchanges, with a distinct identity and sense of place*" (DCDP p.415)). Due to its large scale and prominent, central location, the proposed development would make a particularly important contribution to this vision.

## 14.14 Difficulties Encountered

No difficulties were encountered in the preparation of the LVIA chapter.

## 14.15 References


- Dublin City Development Plan 2022-2028, Dublin City Council.
- Fingal County Development Plan 2023-2029, Fingal County Council.
- Guidelines for Landscape and Visual Impact Assessment, 3rd edition (2013), Landscape Institute and Institute of Environmental Management and Assessment.
- Guidelines on the Information to be Contained in Environmental Impact Assessment Reports (2022), Environmental Protection Agency.
- Photography and Photomontage in Landscape and Visual Impact Assessment (2011), Landscape Institute.
- Townscape Character Assessment, Technical Information Note 05/2017 (2017), Landscape Institute.

# 15 Cultural Heritage – Archaeology & Architectural Heritage

## 15.1 Introduction

The following chapter details an archaeological, architectural and cultural heritage assessment undertaken in advance of a proposed development at, Clongriffin, Dublin 13 (ITM 722778, 740819; Figure 15.1). This assessment has been carried out to ascertain the potential impact of the proposed development on the archaeological, architectural and historical resource that may exist within the area. This assessment was undertaken by Faith Bailey and Elizabeth Di Vincenzo of IAC Archaeology.

This study determines, as far as reasonably possible from existing records, the nature of the archaeological and cultural heritage resource in and within the vicinity of the application area using appropriate methods of study. Desk-based assessment is defined as a programme of study of the historic environment within a specified area or site that addresses agreed research and/or conservation objectives. It consists of an analysis of existing written, graphic, photographic and electronic information in order to identify the likely heritage assets, their interests and significance and the character of the study area (200m) including appropriate consideration of the settings of heritage assets (Chartered Institute for Archaeologists 2020). This leads to the following:

- Determining the presence of known archaeological and built heritage sites that may be affected by the proposed development;
- Assessment of the likelihood of finding previously unrecorded archaeological remains during the construction programme;
- Determining the impact upon the setting of known cultural heritage sites in the surrounding area.

### 15.1.1 Guidance and Legislation

This assessment has been undertaken having regard to the following legislation and guidelines.

- National Monuments Act 1930 to 2014;
- The Planning and Development Act 2000, as amended;
- Heritage Act, 1995 (as amended);
- Draft Advice Notes on Current Practice (in the preparation of Environmental Impact Statements), 2015, EPA;
- Guidelines on the Information to be contained in Environmental Impact Assessment Report 2022, EPA;
- Frameworks and Principles for the Protection of the Archaeological Heritage, 1999, (formerly) Department of Arts, Heritage, Gaeltacht, and Islands; and
- Architectural Heritage (National Inventory) and Historic Monuments (Miscellaneous Provisions) Act, 2000 and the Local Government (Planning and Development) Act 2000.

The National Monuments Act 1930, as amended by various acts including but not limited to, the National Monuments (Amendment) Act 1954, the National Monuments (Amendment) Act 1987, the National Monuments (Amendment) Act 1994 and the National Monuments (Amendment) Act 2004 (together the National Monuments Acts) make provision for the protection and preservation of national monuments, archaeological monuments and archaeological objects in Ireland. The description of the existing environment in this chapter takes account of those statutory designations and the chapter takes account of the legislative monitoring and licencing requirements as mitigation.

The Historic and Archaeological Heritage and Miscellaneous Provisions Act 2023 (the 2023 Act) was enacted by the Oireachtas in late 2023 and aims to address a range of structural issues, simplify terminology, as well as provide a single accessible piece of legislation. At the date of writing many sections of the 2023 Act have yet to commence. It is not anticipated that this will result in statutory protection being extended to any potential receptors apart from those already considered in this chapter and the chapter already identifies as mitigation the various archaeological investigations and licencing requirements that will come into force when the 2023 Act is commenced. Accordingly, the EIAR conclusions are likely to be unchanged should the 2023 Act commence fully while the application is moving through the planning process.

### 15.1.2 Consultation

Following the initial research, a number of statutory and voluntary bodies were consulted to gain further insight into the cultural background of the background environment, receiving environment and study area, as follows:

- Department of Housing, Local Government and Heritage (DoHLGH) – the Heritage Service, National Monuments: Record of Monuments and Places; Sites and Monuments Record; Monuments in State Care Database and Preservation Orders.
- National Museum of Ireland, Irish Antiquities Division: topographical files.
- Dublin City Council.
- Trinity College Dublin, Map Library: Historical and Ordnance Survey Maps.

## 15.2 Assessment Methodology

Research for this chapter comprised a paper survey of all available archaeological, historical and cartographic sources. A field inspection of the proposed development area was also carried out.

### 15.2.1 Paper Survey

- Record of Monuments and Places for County Dublin;
- Sites and Monuments Record for County Dublin;
- National Monuments in State Care Database;
- Preservation Orders List;
- Topographical files of the National Museum of Ireland;
- Cartographic and written sources relating to the study area;
- Dublin City Development Plan, 2022-2028;
- Fingal County Development Plan, 2023-2029;
- Aerial photographs and satellite imagery;
- Excavations Bulletin (1970–2025);
- National Inventory of Architectural Heritage; and
- Dublin City Industrial Heritage Record (DCIHR).

Record of Monuments and Places (RMP) is a list of archaeological sites known to the National Monuments Section, which are afforded legal protection under Section 12 of the 1994 National Monuments Act and are published as a record.

Sites and Monuments Record (SMR) holds documentary evidence and field inspections of all known archaeological sites and monuments. Some information is also held about archaeological sites and monuments whose precise location is not known e.g. only a site type and townland are recorded. These

are known to the National Monuments Section as 'un-located sites' and cannot be afforded legal protection due to lack of locational information. As a result, these are omitted from the Record of Monuments and Places. SMR sites are also listed on a website maintained by the Department of Housing, Local Government and Heritage (DoHLGH) – www.archaeology.ie.

National Monuments in State Care Database is a list of all the National Monuments in State guardianship or ownership. Each is assigned a National Monument number whether in guardianship or ownership and has a brief description of the remains of each Monument. The Minister for the DoHLGH may acquire national monuments by agreement or by compulsory order. The state or local authority may assume guardianship of any national monument (other than dwellings). The owners of national monuments (other than dwellings) may also appoint the Minister or the local authority as guardian of that monument if the state or local authority agrees. Once the site is in ownership or guardianship of the state, it may not be interfered with without the written consent of the Minister.

Preservation Orders List contains information on Preservation Orders and/or Temporary Preservation Orders, which have been assigned to a site or sites. Sites deemed to be in danger of injury or destruction can be allocated Preservation Orders under the 1930 Act. Preservation Orders make any interference with the site illegal. Temporary Preservation Orders can be attached under the 1954 Act. These perform the same function as a Preservation Order but have a time limit of six months, after which the situation must be reviewed. Work may only be undertaken on or in the vicinity of sites under Preservation Orders with the written consent, and at the discretion, of the Minister.

The topographical files of the National Museum of Ireland are the national archive of all known finds recorded by the National Museum. This archive relates primarily to artefacts but also includes references to monuments and unique records of previous excavations. The find spots of artefacts are important sources of information on the discovery of sites of archaeological significance.

Cartographic sources are important in tracing land use development within the development area as well as providing important topographical information on areas of archaeological potential and the development of buildings. Cartographic analysis of all relevant maps has been made to identify any topographical anomalies or structures that no longer remain within the landscape.

Documentary sources were consulted to gain background information on the archaeological, architectural and cultural heritage landscape of the proposed development area.

Development Plans contain a catalogue of all the Protected Structures and archaeological sites within the county. The Dublin City Development Plan, 2022-2028 was consulted to obtain information on cultural heritage sites in and within the immediate vicinity of the proposed development area. The Fingal County Development Plan (2023-2029) was also reviewed, due to the proximity of the administrative boundary to the north of the proposed development area.

Aerial photographic coverage is an important source of information regarding the precise location of sites and their extent. It also provides initial information on the terrain and its likely potential for archaeology. A number of sources were consulted including aerial photographs held by the Ordnance Survey, Bing Maps and Google Earth.

Excavations Bulletin is a summary publication that has been produced every year since 1970. The hard copy publication summarises every archaeological excavation that has taken place in Ireland during that year up until 2010 and since 1987 has been edited by Isabel Bennett. This information is vital when examining the archaeological content of any area, which may not have been recorded under the SMR

and RMP files. Since 2010 all summary information up until 2025 is available online (www.excavations.ie).

The National Inventory of Architectural Heritage is a state initiative established under the provisions of the Architectural Heritage (National Inventory) and Historic Monuments (Miscellaneous Provisions) Act 1999 tasked with making a nationwide record of significant local, regional, national and international structures, which in turn provides county councils with a guide as to what structures to list within the Record of Protected Structures. The NIAH have also carried out a nationwide desk-based survey of historic gardens, including demesnes that surround large houses.

The Dublin City Industrial Heritage Record (DCIHR) makes recommendations for sites to be added to the Record of Protected Structures (RPS) in the City Development Plan and is maintained by Dublin City Council. It is a policy of the Council to implement the recommendations of the DCIHR.

### 15.2.2 Field Inspection

A field inspection was carried out. Field inspection is necessary to determine the extent and nature of archaeological and historical remains, and can also lead to the identification of previously unrecorded or suspected sites and portable finds through topographical observation and local information.

The archaeological and architectural field inspection entailed –

- Walking the proposed development and its immediate environs.
- Noting and recording the terrain type and land usage.
- Noting and recording the presence of features of archaeological, architectural or historical significance.
- Verifying the extent and condition of any recorded sites.
- Visually investigating any suspect landscape anomalies to determine the possibility of their being anthropogenic in origin.

### 15.2.3 Impact Assessment

The quality and type of an effect can be classed as one of the following (as per the Guidelines on the Information to be Contained in Environmental Impact Assessment Reports [EPA 2022]:

- negative effect: A change which reduces the quality of the environment, for example a change that will detract from or permanently remove an archaeological, architectural or cultural heritage site from the landscape;
- neutral effect: A change which does not affect the quality of the environment; or
- positive effect: A change which improves the quality of the environment, for example a change that improves or enhances the setting of archaeological, architectural or cultural heritage sites.

The below terms are used in relation to the archaeological and architectural heritage and relate to whether a site will be physically affected upon or not:

- direct effect: Where an archaeological/architectural/cultural heritage feature or site is physically located within the footprint of the proposed development and entails the removal of part, or all, of the monument or feature; and
- indirect effect: Where a feature or site of archaeological/architectural or cultural heritage merit or its setting is located in close proximity to the footprint of a development.
- Neutral: No effects (either negative or positive) are predicted.

### 15.2.4 Sensitivity of Receptor

For each impact, the assessment identifies receptors sensitive to that impact and implements a systematic approach to understanding the impact pathways, magnitude and the level of effects on given receptors.

The definitions of receptor sensitivity for the purpose of the archaeology, architectural and cultural heritage assessment are provided in **Table 15.1**. This is based on the presence (or not) of statutory protection and the determination by the authors.

Table 15.1 Criteria for determination of receptor sensitivity

| SENSITIVITY | CRITERIA |
|---|---|
| Very High | Sites of International Importance: UNESCO World Heritage Properties (including tentative list)<br>National Monuments<br>Monuments subject to Preservation Orders |
| High | RMP<br>Proposed RMP<br>Record of Protected Structures (RPS)<br>Architectural Conservation Area (ACA)<br>Previously unrecorded archaeological sites |
| Medium | SMR<br>Conservation Areas (CA)<br>Dublin City Industrial Heritage Record (DCIHR)<br>Previously unrecorded archaeological sites<br>Sites listed on the NIAH (upstanding)<br>Buildings not on NIAH/RPS (based on professional judgement) |
| Low | Buildings not on NIAH/RPS (based on professional judgement) |
| Very Low | SMR – Record only or redundant record<br>Proposed RMP – excavated |

### 15.2.5 Magnitude of Impact

The scale or magnitude of potential impacts (both positive and negative) depends on the degree and extent to which the proposed activities may change the environment, which usually varies according to project phase (i.e. construction, operation and maintenance and decommissioning).

As per the EPA Guidelines (2022), the nature of impacts can be categorised as follows:

- Quality: Positive, neutral or negative
- Nature: Direct, indirect
- Probability: Likely or unlikely
- Duration: Momentary, brief, temporary, short-term, medium-term, long-term, permanent, reversible
- Frequency: Once, rarely, occasionally, frequently, constantly

The criteria used to assess the different impacts associated with the proposed project are shown in **Table 15.2**. The criteria have been defined in consideration of the "Guidelines on Information to be Contained in Environmental Impact Statements" (EPA 2022).

Table 15.2 Criteria for determination of magnitude of impact

| MAGNITUDE | CRITERIA |
|---|---|
| Very High | These impacts arise where an archaeological, architectural or cultural heritage site, either below ground or upstanding, is completely and irreversibly destroyed. |
| High | An impact which, by its magnitude, duration or intensity, alters an important aspect of the archaeological, architectural and cultural heritage environment, including the setting of upstanding monuments/structures. An impact like this would be where part of a site would be permanently impacted upon, leading to a loss of character, integrity and data about an archaeological or cultural heritage feature/site. |
| Medium | A medium impact arises where a change to a structure/monument is proposed which though noticeable, is not such that the archaeological, architectural or cultural heritage integrity of the site is compromised. The change is likely to be consistent with existing and emerging trends. Impacts are probably reversible and may be of relatively short duration. |
| Low | An impact which causes changes in the character of the environment, such as a visual impact, which are not high or very high and do not directly impact or affect an archaeological, architectural or cultural heritage feature, structure or monument. |
| Very Low | An impact on an archaeological, architectural or cultural heritage feature or monument capable of measurement but without noticeable consequences. |

### 15.2.6 Significance of Effects

An Impact Assessment Matrix (IAM) is used to determine the significance of an effect. In basic terms, the potential significance of an effect is a function of the sensitivity of the receptor and the magnitude of the impact, as shown in Table 15.3.

The matrix provides a framework for the consistent and transparent assessment of predicted effects although it is important to note that the assessments are based on the application of expert judgement.

The matrix provides levels of effect significance ranging from imperceptible to profound. For the purposes of this assessment, potential effects identified to be of significant significance or above (i.e., significant, very significant or profound) are considered to be "significant in EIA terms" and additional mitigation will be required. Potential effects identified as less than significant (i.e. moderate, slight, imperceptible or not significant) are considered to be not significant in EIA terms.

Table 15.3 Impact Assessment Matrix For The Determination Of Significance Of Effect

| SENSITIVITY OF RECEPTOR | MAGNITUDE OF IMAPACT | | | | |
|---|---|---|---|---|---|
| | VERY HIGH | HIGH | MEDIUM | LOW | VERY LOW |
| VERY HIGH | Profound | Very Significant | Significant | Moderate | Slight |
| HIGH | Very Significant | Significant | Significant - Moderate | Moderate - Slight | Not Significant |

| SENSITIVITY OF RECEPTOR | MAGNITUDE OF IMAPACT | | | | |
|---|---|---|---|---|---|
| | VERY HIGH | HIGH | MEDIUM | LOW | VERY LOW |
| MEDIUM | Significant | Significant - Moderate | Moderate | Slight | Imperceptible |
| LOW | Moderate | Moderate - Slight | Slight | Not Significant | Imperceptible |
| VERY LOW | Slight | Not Significant | Imperceptible | Imperceptible | Imperceptible |

## 15.3 Receiving Environment

### 15.3.1 Archaeological and Historical Background

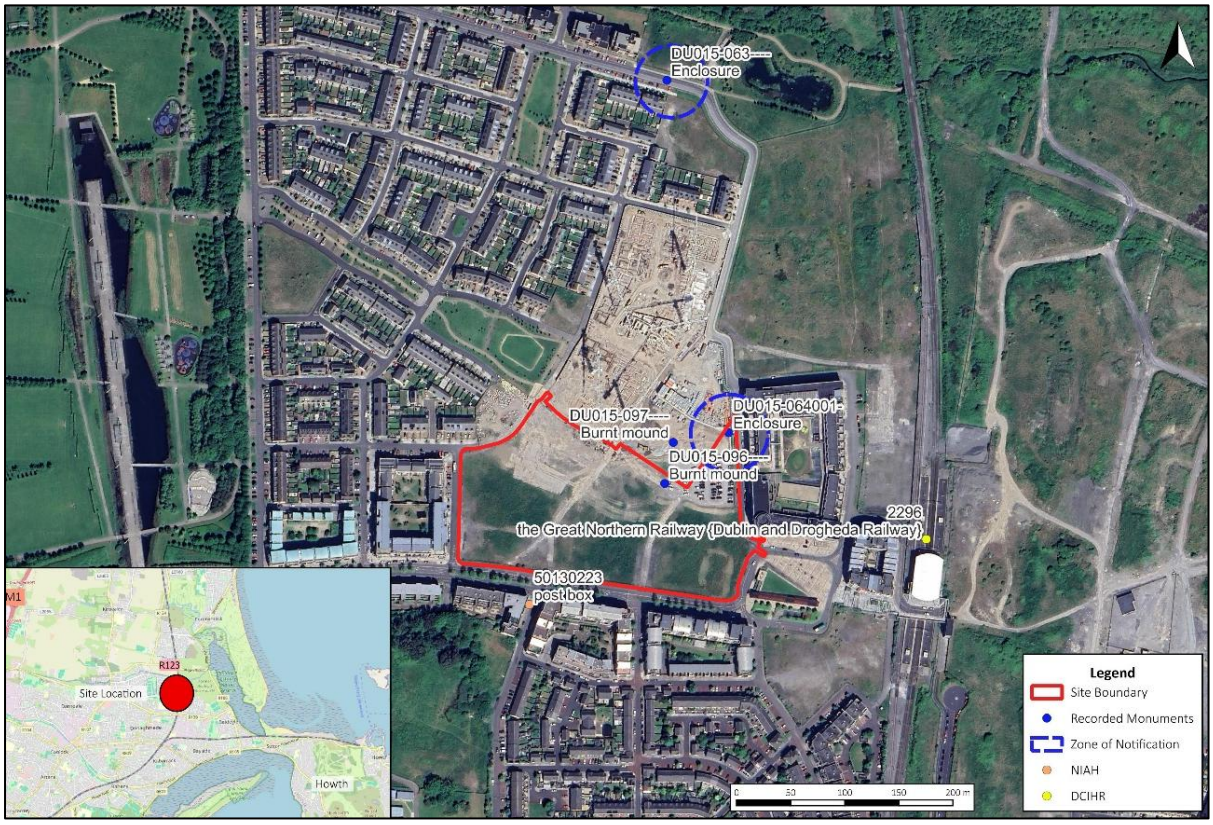
The proposed development area is located in Grange townland, within the parish of Portmarnock and the barony of Coolock. The site comprises three parcels of land (to the north of Main Street and west of Clongriffin Road. Modern developments boarder the site to east and west. Clongriffin Railway Station and railway lines lies c. 142m to the east.

There are two recorded archaeological sites within the proposed development area, which comprise a burnt mound (DU015-096) and an enclosure (DU015-064001). The enclosure (DU015-064001) was initially identified during aerial photographic analysis and was subjected to text excavations in 2003. No archaeological remains relating to the enclosure were identified at this location. There is one further recorded monument, a burnt mound (DU015-097) within the study area, c. 36m to the north. Both burnt mounds (DU015-096 and DU015-097) were identified in 2003 during a programme of archaeological test trenching. From 2004 onwards, the development area experienced a large degree if ground disturbances, associated with wider development in the landscape (**Figure 15.1**).

There are no protected structures within the proposed development or study area. The nearest is a railway bridge (RPS 919) located c. 350m to the northeast. There is one structured listed in the NIAH within the study area. This comprises a post box (NIAH 50130223), c. 31m to the south.

There is one DCIHR site located within the study area. This is the Great Northern Railway (Dublin and Drogheda Railway, No. 2296) located c. 142m to the east.

Figure 15.1 Recorded Archaeological And Built Heritage Sites Within The Vicinity Of The proposed development Area (Indicative Outline In Red)




### 15.3.1.1 Prehistoric Period

#### Mesolithic Period (c. 8000-4000 BC)

Recent discoveries may suggest the possibility of a human presence in the southwest of Ireland as early as the Upper Palaeolithic (Dowd and Carden 2016); however, the Mesolithic period is the earliest time for which there is clear evidence for prehistoric human colonisation of the island of Ireland. During this period people hunted, foraged and gathered food and appear to have led a primarily mobile lifestyle. The presence of Mesolithic communities is most commonly evidenced by scatters of worked flint material, a by-product of the production of flint implements.

There is no archaeological evidence of Mesolithic activity within the immediate environs of the proposed development area. The wider receiving environment is likely to have been visited by Mesolithic communities who would have utilised the coastal resources.

#### Neolithic Period (c. 4000–2500 BC)

During this period communities became less mobile and their economy became based on the rearing of stock and cereal cultivation. The transition to the Neolithic was marked by major social change. Communities had expanded and moved further inland to more permanent settlements. This afforded the development of agriculture which demanded an altering of the physical landscape. Forests were rapidly cleared and field boundaries were constructed. Pottery was also being produced, possibly for the first time. The advent of the Neolithic period also provided the megalithic tomb. There are four types of tombs in Ireland, namely the Court Cairn, Portal, Passage and Wedge; of which the latter style straddles the Neolithic to Bronze Age transition.

While recent years have seen a large increase in the number of identified Neolithic settlement and habitation sites, there is no archaeological evidence to substantiate Neolithic settlement within the immediate environs of the proposed development area.

### Bronze Age (c. 2500–800 BC)

This period is marked by the use of metal for the first time. As with the transition from Mesolithic to Neolithic, the transition into the early Bronze Age was accompanied by changes in society. Megaliths were replaced in favour of individual, subterranean cist or pit burials that were either in isolation or in small cemeteries. These burials contained inhumed or cremated remains and were often, but not always, accompanied by a pottery vessel. Numerous ring ditches and evidence for Bronze Age activity is recorded in the landscape to the north of the River Mayne, although none of these are located within the study area of the proposed development areas.

Over 7,000 burnt mounds or *fulacht fia* sites have been recorded in the country and c. 1,500 examples excavated, making them the most common prehistoric monument in Ireland (Waddell 2022, 164). Although burnt mounds of shattered stone occur as a result of various activities that have been practiced from the Mesolithic to the present day, the Bronze Age has long been believed to have seen the peak of this activity. Dating evidence from a growing number of burnt mounds, suggests activities resulting in burnt mounds were being carried over a span of 3,500 years in Ireland (Hawkes 2018). They are typically located in areas where there is a readily available water source, often in proximity to a river or stream or in places with a high-water table. In the field burnt mounds may be identified as charcoal-rich mounds or spreads of heat shattered stones; however, in many cases, the sites have been disturbed by later agricultural activity and are no longer visible on the field surface. Nevertheless, even disturbed spreads of burnt mound material often preserve the underlying associated features, such as troughs, pits and gullies, intact.

Bronze Age activity has been recorded and excavated within the proposed development and immediate environs in 2004. Two *fulachta fia* were excavated within the proposed development area (Elder 2004, Licence Nos. 04E0352, 04E0367) and another *fulacht fia* was found c. 405m north of the proposed development area (Elder 2004, Licence No. 04E0701). A cremation pit of probable Bronze Age date was also recorded c. 80m to the southeast (Licence No. 04E0349).

### Iron Age (c. 800 BC–AD 500)

There is increasing evidence for Iron Age settlement and activity in recent years as a result of development-led excavations as well as projects such as Late Iron Age and Roman Ireland (Cahill Wilson 2014). Yet this period is distinguishable from the rather rich remains of the preceding Bronze Age and subsequent early medieval period, by a relative paucity within the current archaeological record. The Iron Age in Ireland is problematic for archaeologists as few artefacts dating exclusively to this period have been found and without extensive excavation it cannot be determined whether several monument types, such as ring-barrows or standing stones, date to the late Bronze Age or Iron Age. It is likely that there was significant continuity in the Iron Age, with earlier monuments re-used in many cases.

Evidence of Iron age activity within the environs of the development area has been recorded. A complex of pits located c. 203m north of the proposed development area were radiocarbon dated to this period (Elder 2004, 04E0598). A corn drying kiln was also recorded as being Iron Age is date, along with another

pit, c. 360m northwest of the proposed development area, which also dated to this period (Elder 2004, 04E0703).

#### 15.3.1.2 Early Medieval Period (AD 500-1100)

The early medieval period is depicted in the surviving sources as an almost entirely rural based society. Territorial divisions were based on the *túath*, or petty kingdom, with Byrne (1973) estimating that there may have been at least 150 kings in Ireland at any given time. This period, with a new religious culture and evolving technologies, saw significant woodland clearance and the expansion of grassland. A new type of plough and the horizontal mill were two innovations that improved agriculture and allowed for the population to increase. Consequently, from c. AD 500 onwards, the landscape became well settled, as evidenced by the profuse distribution of ringforts, a dispersed distribution of enclosed settlements, normally associated with various grades of well-to-do farming and aristocratic classes in early medieval Ireland (Stout and Stout 1997, 20).

The ringfort or rath is considered to be the most common indicator of settlement during the early medieval period (Stout 1997). One of the most recent studies of early medieval settlement enclosures has suggested that there is potential for at least 60,000 such sites to have existed on the island (O'Sullivan et al. 2014, 49). Ringforts were often constructed to protect rural farmsteads and are usually defined as a broadly circular enclosure delineated by a bank and ditch. Ringforts can be divided into three broad categories – univallate sites, with one bank or ditch; multivallate sites with as many as four levels of enclosing features and platform or raised ringforts, where the interior of the ringfort has been built up. These enclosed sites were intimately connected to the division of land and the status of the occupant.

Extensive early medieval settlement is recorded in the landscape to the north of the River Mayne with multiple enclosures of varying sizes present, many of which have been subject to archaeological excavation due to ongoing residential developments. A ringfort was excavated c. 115m to the northeast of the proposed development area in 2004 (Elder 2004. Licence No. 04E0342). Evidence for a gate tower was uncovered within the immediate entrance and radiocarbon dating indicates it was an early medieval settlement. An iron needle and part of a lignite bangle were also recorded.

A church site is recorded c. 1.21km west of the proposed development area. This was a medieval structure but is not marked within the historic mapping. The church site was incorporated into a residential development in 2004 and archaeological investigations identified some burials, along with medieval pottery. A possible enclosing feature was also identified. The church may have been dedicated to St Samsom, who was a Welsh Saint born in the late sixth century and it is possible the dedication came from someone with Welsh origins. This is further supported by the name of the townland where the church was located, which is Balgriffin. The name is recorded from 1181 and may relate to Gruffydd ap Cynan, the future king of Gwynedd and leader of Welsh resistance to Norman rule, who was reportedly born in Dublin in c. 1055. The 12th century document Historia Gruffud vab Kenan records that Gruffydd was fostered at Swords, 'three miles from where his mother and foster mother lived'. Balgriffin has been identified as the location of this homestead (Duffy 2018). In 1958 part of a graveslab was recovered from close to the church site and is now in the National Museum. This bears striking Scandinavian carvings, and may date to the 9th or 10th century (ibid). Similar carved slabs have been recorded in the Isle and Man and Wales (and Wexford Town) and it is possible that the church was an early medieval foundation in a landscape settled by Vikings and/or Welsh populations before the arrival of the Anglo-Normans. In addition, Baldoyle or *Báile Dubh Gaill*, located to the east of the development

area translates directly as 'town of the dark foreigners', (albeit this has been subject to some argument by academics) but it appears to relate directly to non-Irish populations and was also located within the Viking-controlled hinterland of Dublin known as the *Dyflinnarskíri*.

More recently, an earthwork site (DU015-152) has been recorded c. 948m northeast of the proposed development area, which has the potential to represent a previously unrecorded Viking longphort site potentially relating to 'Port Manann' recorded in the Fragmentary Annals of Ireland s.a. 866 (SMR file, Downham 2008, 62). The site is located to the immediate north of the River Mayne and comprises a number of earthworks that have been interpreted as a potential longphort site, although the area has not been subject to archaeological investigation.

#### 15.3.1.3 Medieval Period (AD 1100-1600)

The piecemeal conquest by the Anglo-Normans of Ireland, which commenced in AD 1169, had a fundamental impact on the Irish landscape. Their presence was strongest in the east of the country, and it is mainly in this region that land was carved up and granted to the newly arrived lords who participated. The main success of the Anglo-Norman occupation was the welding of scattered territories into a cohesive unit through the introduction of the English form of shire government. The rural landscape became a network of manorial centres; these units would generally contain a castle (motte and bailey), a manorial house and a number of dwellings, with extensive surrounding acreage. During the 14th to 16th centuries, tower houses were the typical residence of the Irish gentry and are a common feature in the Irish landscape.

Portmarnock, c. 1.5km to the north pf the proposed development, was a pre-Norman ecclesiastical site that was taken over by the Ango-Normans and became a manorial village in the 12th to 15th centuries. Excavations in 2008 found the possible remnants of this settlement, c. 45m north of the recorded mound DU015-014. Defined property plots, housing foundations and an associated medieval roadway (SMR DU015-136) were identified along with 2,000 sherds of medieval pottery (mainly locally produced Leinster cooking ware and Dublin-type wares), and 3,001 metal objects. Evidence for food waste included large amounts of butchered animal bone as well as quantities of seashell (cockles, muscles, oysters, periwinkles, razor shell, etc.) and carbonised grains. Additional archaeological investigations undertaken at the recorded mound to the south of the settlement suggest that this was the site of an Anglo-Norman motte and bailey.

Cartographic analysis has shown that the proposed development area was formed by agricultural land throughout the post medieval period. The site is likely to have been in use for agricultural activity throughout the medieval period and this is reflected in the name of the townland: 'Grange'. This name fossilises the former function of the land as a Grange Farm associated with Priory of All Hallows (now Trinity College Dublin). The grange of Baldoyle, at 1235 acres, extended over the civil parish of Baldoyle and would have included the townlands of Baldoyle, Stapolin and Grange (MacCotter). A medieval church that likely served tenants of the farm is located c. 530m southwest of the proposed development area. This is a National Monument today and was subject to archaeological investigations in 1986 (RMP DU015-069001/2, Nat. Mon. Ref.: 605, PO Ref.: 3/1981). Pottery dating to the 13th century was recorded, as well as burials within the church. No evidence of a surrounding graveyard was recorded. The church is labelled within the historic mapping as 'Grange Abbey' and during the post medieval period was incorporated into a small demesne landscape associated with Grange House, which is no longer extant.

#### 15.3.1.4 Post-Medieval Period (AD 1600-1800)

The ending of the Williamite Wars saw the beginning of a comparative politically calm era, which allowed the country's landowners the security to experiment with the latest styles of architecture without the need to refer to defensive matters. Initially, constraints on available resources resulted in mansions of a relatively modest scale and relatively plain appearance. However, as the Irish aristocracy's sense of security grew over the following decades, their greater access to wealth helped foster a shift towards more ostentatious buildings. A number of large houses and demesnes were established in the wider landscape of the proposed development area, including Balgriffin Park to the west, Newgrove House to the southwest and Stapolin to the east. None of these houses or landscapes are within the study area nor do they survive today due to the suburban expansion of Dublin City.

The construction of the railway line, c. 142m to the east of the proposed development area, during the 19th century was the largest change in this landscape during this period. A small bridge carrying the railway line across the River Mayne is located c. 340m northeast of the of the development area.

### 15.3.2 Summary of Previous Archaeological Fieldwork

A review of the Excavations Bulletin (1970–2025) has revealed that extensive archaeological monitoring and excavation has taken place within the proposed development area and surrounding area. These are summarised in **Table 15.4** and mostly relate to the initial development of the site in 2004, when the entire development area was stripped of topsoil.

Table 15.4 Previous Archaeological Investigations

| LICENCE NO. | LOCATION | SITE TYPE | DESCRIPTION | DISTANCE FROM DEVELOPMENT |
|---|---|---|---|---|
| 04E0352 | Grange | *Fulacht Fia* | Found during monitoring an oval pit was then subject to excavation. The heat-shattered stone and charcoal-rich deposits filling the recorded pit and spread were consistent with a burnt-mound site, though it is believed that intensive cultivation removed almost all traces of the mound. | 0m |
| 04E0705 | Grange | Habitation Site | A rectilinear setting of four pit features was subject to excavation. All of the deposits contained charcoal to some extent, though none of the features showed evidence of burning in situ. | 0m |
| 03E1496 | Grange | Burnt mound | Testing of enclosure site DU015-064001 failed to identify any remains of an enclosure. A small burnt mound was identified during testing (DU015-097). | c. 36m north |
| 04E0367 | Grange | *Fulacht Fia* and Road | A complex of pits and stake-holes, with cobbling and associated burnt-mound spread were excavated. The band of cobbling was noted along the southern extreme of the site, overlying the burnt-mound spread. | c. 36m north |

| LICENCE NO. | LOCATION | SITE TYPE | DESCRIPTION | DISTANCE FROM DEVELOPMENT |
|---|---|---|---|---|
| 04E0696 | Grange | Pits | Two pits in isolation were excavated. | c. 40m west |
| 04E0598 | Grange | Complex of Pit Features | Two ovoid features, seven postholes, and a figure of eight shaped cut were excavated. All contained charcoal-rich silty clay fills. Charred cereals were found in one of the pits which may have been a primitive corn drying kiln. Radiocarbon dated the features to the Iron Age. | c. 203m north |
| 04E0342 | Grange | Ringfort | A penannular fosse with a metalled pathway leading through the north facing entrance were excavated. A series of internal features within the enclosure, including four postholes immediately inside the entrance, suggest a gate tower. A series of pits and postholes were excavated within the enclosure, but there was no evidence for definitive dwellings. The site was dated to the early medieval period. | c. 115m northeast |
| 04E0349 | Grange | Cremation Pit | Cremation pit that was identified during monitoring was then excavated. The base was lined with small to medium-sized angular, sub-angular and sub-rounded stones, and the charcoal-rich deposit contained cremated bone laid directly over the stone layer. | c. 80m southeast |
| 04E0697 | Grange | Pit | A small subcircular feature containing charcoal-rich silty clay and fire-cracked stone was excavated. This pit was situated close to the found *fulacht fia* (Licence No. 04E0367). One of the fills dated to the early medieval period. | c. 145 northwest |

### 15.3.3 Cartographic Analysis

#### 15.3.3.1 William Petty, Down Survey: Barony of Coolock in County Dublin, c. 1655

The proposed development is not shown in any detail in this map due to it being on unforfeited lands. The lands are under the ownership of the Lord of Howth. The river Mayne is depicted to the northeast entering the estuary and the townland of Maynetown is labelled 'part of Mayne'.

### 15.3.3.2 John Rocque's Map of the City and County of Dublin, 1757

By the time of this map, more detail is seen regarding the proposed development area (**Figure 15.2**). The area is entirely agricultural land. Ballydoyle village lies to the southeast, with houses along the main street with their own plots of lands to the rear. Grange House is depicted to the southwest and 'Stopolin' estate is marked to the west, although this is Balgriffin House and appears to have been mis-labelled by Rocque.

Figure 15.2 Extract from Rocque's map (1757) showing approximate location of proposed development area

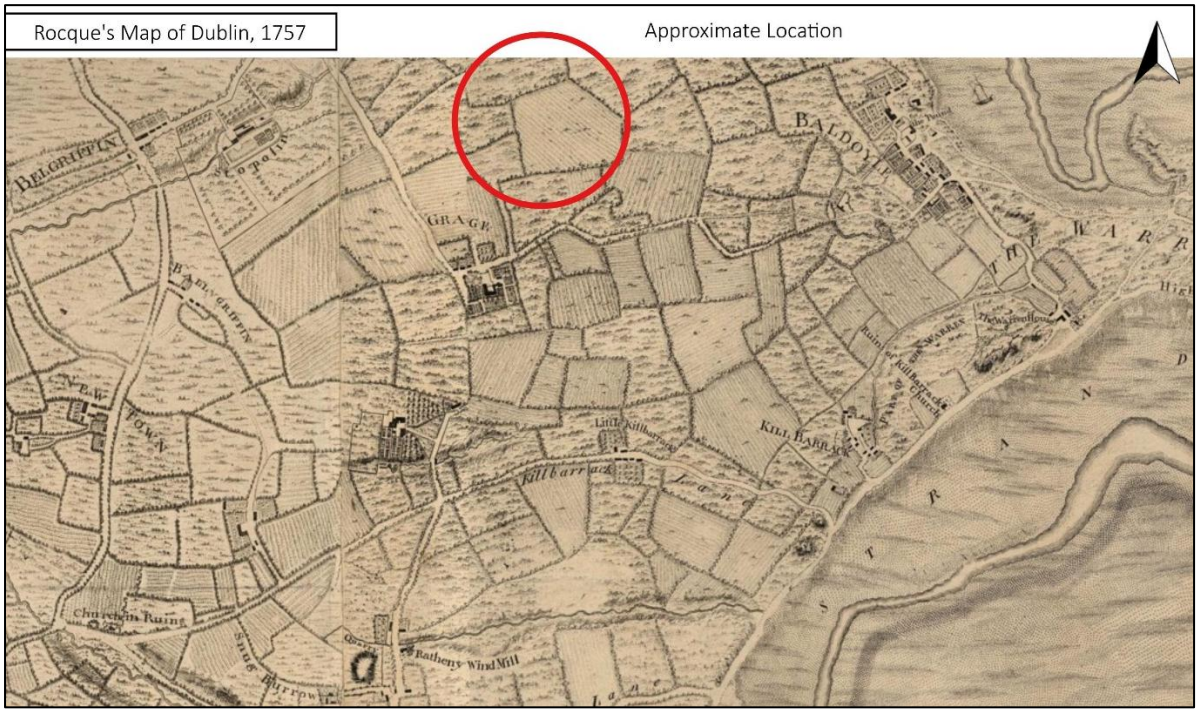
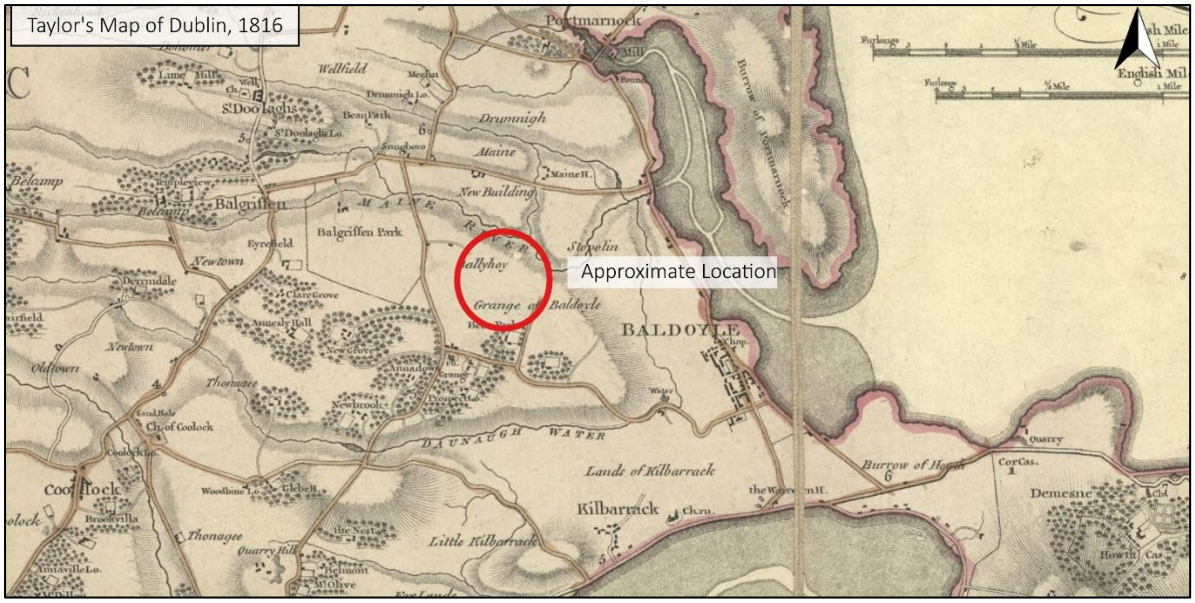



Figure 15.3 Extract from Taylor's map (1816) showing approximate location of proposed development area



#### 15.3.3.3 John Taylor's Map of the Environs of Dublin 1816

This map does not provide great detail; however, it illustrates the 'Maine River' and the Grange of Baldoyle (**Figure 15.3**). The proposed development area is located within the open space between the two.

#### 15.3.3.4 First Edition Ordnance Survey Map, 1837, scale 1:10,560

This is the first accurate historic mapping coverage of the area containing the proposed development area (**Figure 15.4**). The proposed development area is formed by parts of five agricultural fields. The townland boundary for Grange/ Stapolin is c.153m to the east. The Railway tracks for Dublin to Drogheda, immediate east of the proposed site, is marked as 'in progress'.

#### 15.3.3.5 Second Edition Ordnance Survey Map, 1871, scale 1:10,560

There are no major changes to note within this map that relate to the proposed development area, although the railway line to the east has been completed.

#### 15.3.3.6 Ordnance Survey Map, 1909, scale 1:2,500

The proposed development area now comprises seven agricultural fields (**Figure 15.5**). There are no other significant changes to note.

Figure 15.4 Extract from the first edition Ordnance Survey map (1837) showing the proposed development area (indicative outline in red)

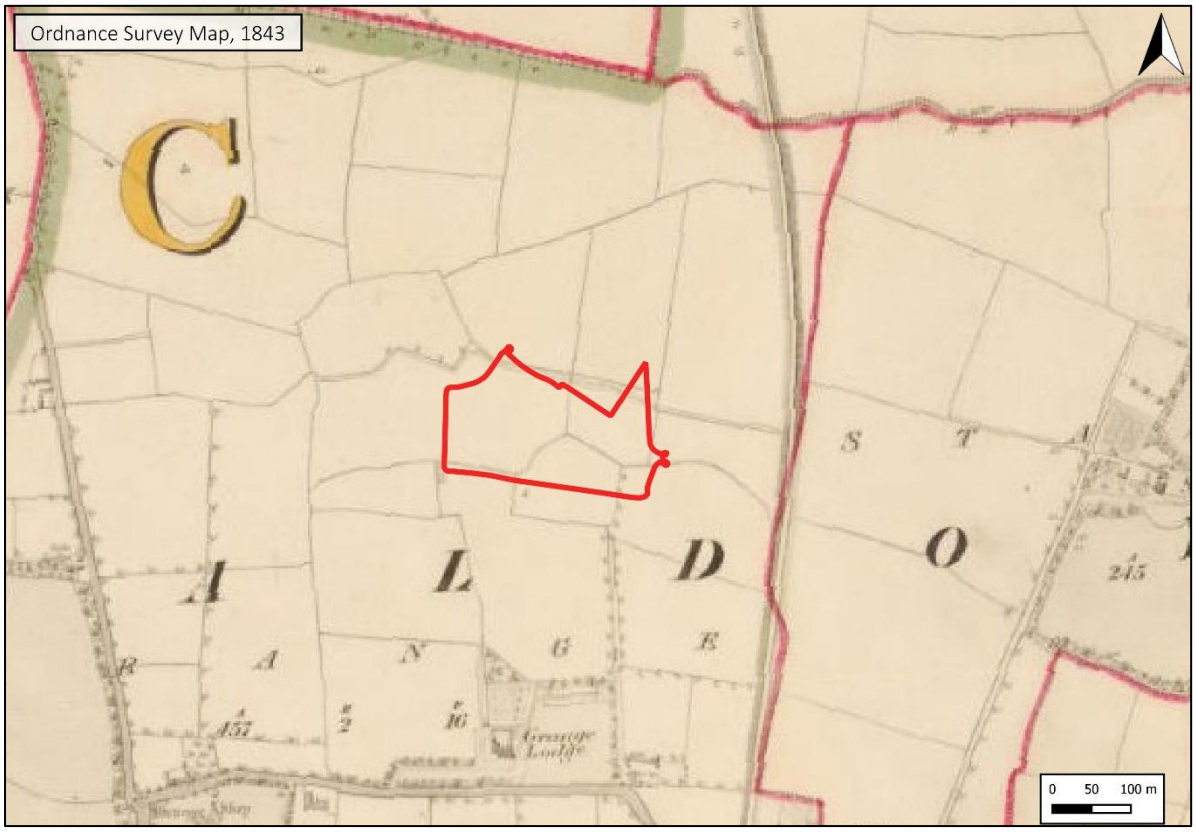
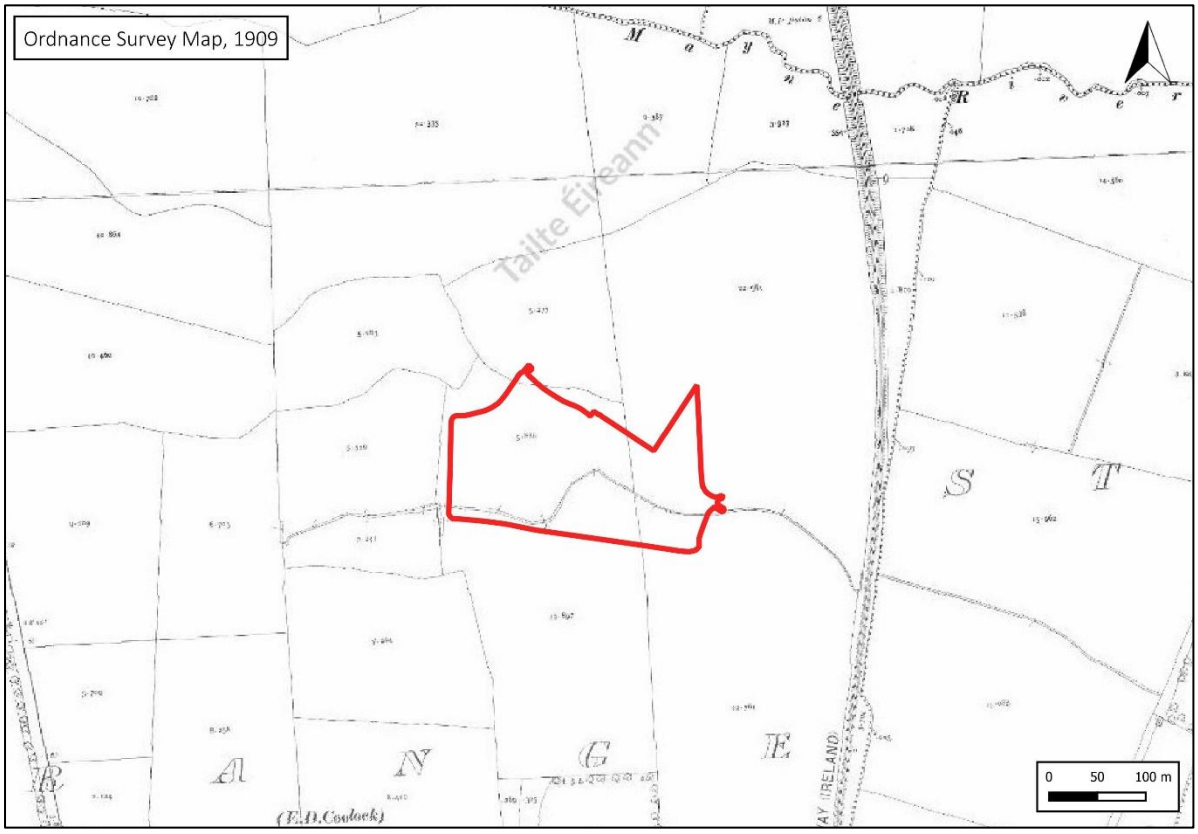


Figure 15.5 Extract from the Ordnance Survey map (1909) showing the proposed development area (indicative outline in red)




## 15.3.4 Development Plan

### 15.3.4.1 Record of Monuments and Places

The Dublin City Development Plan 2022-2028 recognises the statutory protection afforded to all Record of Monuments and Places (RMP) sites under the National Monuments Legislation (1930–2014). The plan lists a number of aims and objectives in relation to archaeological heritage. With regards to the development area, it contains two recorded monuments and as such the following policies, as laid out in Chapter 11 of the plan, are applicable (Ref.: BHA26):

- To protect and preserve Monuments and Places listed on the statutory Record of Monuments and Places (RMP) as established under Section 12 of the National Monuments (Amendment) Act 1994 which have been identified in the Record of Monuments and Places.
- To protect archaeological material in situ by ensuring that only minimal impact on archaeological layers is allowed, by way of re-use of standing buildings, the construction of light buildings, low impact foundation design, or the omission of basements (except in exceptional circumstances) in the Monuments and Places listed on the statutory Record of Monuments and Places (RMP) as established under Section 12 of the National Monuments (Amendment) Act 1994.
- To seek the preservation in situ (or where this is not possible or appropriate, as a minimum, preservation by record) of all archaeological monuments included in the Record of Monuments and Places.
- Development proposals within the Record of Monuments and Places (RMP) as established under Section 12 of the National Monuments (Amendment) Act 1994, notification of sites over 0.5 hectares size with potential underwater impacts and of sites listed in the Dublin City Industrial

Heritage Record, will be subject to consultation with the City Archaeologist and archaeological assessment prior to a planning application being lodged.

Further requirements are also included in Section 15.15, pg. 629, Chapter 15 (Development Standards). These include the following:

- All applications for proposed new developments at sites marked as Sites and/or Zones of Archaeological Interest identified on the development plan zoning maps shall be subject to pre application discussion/consultation with the Archaeology Office.
- Where a site is located within a Zone of Archaeological Interest, an Archaeological Assessment as defined in National policy and guidelines shall be prepared in consultation with the City Archaeologist and provided as part of the planning application. The assessment will evaluate the archaeological potential of the site for and the impact of the proposed development on them.
- New basement development in the medieval core and known medieval sites shall be avoided. Approved basements may be rescinded where undue damage to in situ archaeological deposits will occur as a result.
- The impact and merits/demerits of foundation type and soil hydrology shall be archaeologically assessed to determine appropriate mitigation (including avoidance, redesign, etc.).
- Buildings on the first edition OS that are not protected structures shall be recorded as part of the archaeological assessment that accompanies the planning application. Appropriate specifications for the recording of historic buildings will be determined in consultation with the City Archaeologist. Records of historic buildings will inform decisions relating to the approval or implementation of a scheme of development as part of the planning process or to document buildings, or parts of buildings, which will be lost as a result of demolition or alteration.

While there are two recorded monuments noted within the development area (DU015-096 and DU015-064001; Table 15.5), these are no longer extant, due to the fact that the entire site was stripped of topsoil in 2004, and all identified archaeology was preserved by record. This also includes the recorded monument within the study area (DU015-097), c. 36m to the north of the proposed development.

The closest intact recorded archaeological site is located c. 510m to the southwest and comprises a church and graveyard, which is also listed as a National Monument and is under a Preservation Order (RMP DU015-069001/2, Nat. Mon. Ref.: 605, PO Ref.: 3/1981).

Table 15.5 Recorded archaeology within the study area

| RMP NO. | LOCATION | CLASSIFICATION | DISTANCE FROM DEVELOPMENT |
|---|---|---|---|
| DU015-096 | Grange | Burnt mound<br>(Excavated during 2004) | 0m |
| DU015-064001 | Grange | Enclosure<br>(Not identified during testing or subsequent excavations) | 0m |
| DU015-097 | Grange | Burnt mound<br>(Excavated during 2004) | c. 36m north |

#### 15.3.4.2 Record of Protected Structures

The Dublin City Development Plan, 2022-2028 details the protected structures within the vicinity of the proposed development area. There are no recorded protected structures within the proposed development or study area.

The nearest protected structure comprises a railway bridge, c. 350m to the northeast, which is listed in the Fingal County Development Plan (2023-2029).

#### 15.3.4.3 Architectural Conservation Areas (ACAs)

The proposed development area is not located within an ACA. Furthermore, there are no designated ACAs in the study area.

#### 15.3.4.4 Conservation Areas (Cas)

There are no designated Conservation Areas within the proposed development area study area.

### 15.3.5 National Inventory of Architectural Heritage (NIAH)

#### 15.3.5.1 Building Survey

A review of the National Inventory of Architectural Heritage survey of County Dublin was undertaken as part of this assessment and included buildings within 200m of the proposed development area.

There is one structured listed in the NIAH within the study area. This comprises a post box (NIAH 50130223), c. 31m to the south.

#### 15.3.5.2 Garden Survey

The NIAH Garden Survey was carried out as a desktop survey, which is based on the extent of landscapes shown first edition OS map of 1837. The landscapes are also shown on later mapping from 1871 and 1909. There are no landscapes located within the study area. The nearest comprises Grange House, c. 476m to the southwest. This house and landscape are no longer extant.

### 15.3.6 Topographical Files of the National Museum of Ireland

Information on artefact finds from the study area in County Dublin has been recorded by the National Museum of Ireland since the late 18th century. Location information relating to these finds is important in establishing prehistoric and historic activity in the study area. There are no stray finds recorded within the proposed development or study area.

### 15.3.7 Aerial Photographic Analysis

Inspection of the aerial photographic coverage of the proposed development area held by the Ordnance Survey (1995–2013), Google Earth (2008–2025) and Bing Maps revealed the proposed development area was used as agricultural land (**Figure 15.6**) until the early 2000s. The whole area was stripped of topsoil in 2004 and has been subject to varying degrees of disturbance since that date (**Figure 15.7**).

Figure 15.6 1996 MapGenie map of the proposed development area




Figure 15.7 2005 MapGenie map of the proposed development area




### 15.3.8 Dublin City Industrial Heritage Record

A review of the Dublin City Industrial Heritage Record (DCIHR) has shown that there is one site (No. 2296) listed within the survey within the study area of the proposed development. This comprises the

Great Northern Railway {Dublin and Drogheda Railway}, which lies c. 142m to the east. The railway remains in use, and has been subject to modern upgrades during the modern era.

### 15.3.9 Cultural Heritage

The term 'cultural heritage' can be used as an over-arching term that can be applied to both archaeology and architecture. It also refers to more ephemeral aspects of the environment, which are often recorded in folk law or tradition or possibly date to a more recent period. The archaeological and architectural features and landscapes discussed throughout this chapter also constitute cultural heritage features. There are no cultural heritage sites identified during the course of this assessment that relates to the proposed development area.

#### 15.3.9.1 Toponomy of Townlands

Townland and topographic names are an invaluable source of information on topography, land ownership and land use within the landscape. They also provide information on history; archaeological monuments and folklore of an area. A placename may refer to a long-forgotten site, and may indicate the possibility that the remains of certain sites may still survive below the ground surface. The Ordnance Survey surveyors wrote down townland names in the 1830's and 1840's, when the entire country was mapped for the first time. Some of the townland names in the study area are of Irish origin and through time have been anglicised. The main references used for the place name analysis are Irish Local Names Explained by P.W Joyce (1870) and the *logainm* database (www.logainm.ie). A description and possible explanation of each townland name in the environs of the proposed development area are provided in the below table.

Table 15.6 Placename Analysis

| PLACENAME | DERIVATION | POSSIBLE MEANING |
|---|---|---|
| Grange | *Gráinseach* | Monastic Farm |
| Stapolin | *Steach Póilín* | House |

#### 15.3.9.2 Townland Boundaries

The townland is an Irish land unit of considerable longevity as many of the units are likely to represent much earlier land divisions; however, the term townland was not used to denote a unit of land until the Civil Survey of 1654. It bears no relation to the modern word 'town' but like the Irish word *baile* refers to a place. It is possible that the word is derived from the Old English tun land and meant 'the land forming an estate or manor' (Culleton 1999, 174).

Gaelic land ownership required a clear definition of the territories held by each sept and a need for strong, permanent fences around their territories. It is possible that boundaries following ridge tops, streams or bog are more likely to be older in date than those composed of straight lines (ibid. 179).

The vast majority of townlands are referred to in the 17th century, when land documentation records begin. Many of the townlands are mapped within the Down Survey of the 1650s, so called as all measurements were carefully 'laid downe' on paper at a scale of forty perches to one inch. Therefore, most are in the context of pre-17th century landscape organisation (McErlean 1983, 315).

In the 19th century, some demesnes, deer parks or large farms were given townland status during the Ordnance Survey and some imprecise townland boundaries in areas such as bogs or lakes, were given more precise definition (ibid.). Larger tracks of land were divided into a number of townlands, and named Upper, Middle or Lower, as well as Beg and More (small and large) and north, east, south and

west (Culleton 1999, 179). By the time the first Ordnance Survey had been completed a total of 62,000 townlands were recorded in Ireland.

Although not usually recorded as archaeological monuments in their own right, townland boundaries are important as cultural heritage features, as they have indicated the extents of the smallest land division unit in the country—the townland—which have been mapped since the 19th century. It remains unclear how old these land units actually are, though it has been convincingly argued that they date to at least the medieval period and may be significantly older than this (McErlean 1983; MacCotter 2008).

The proposed development area is located within the townland of Grange and does not include any townland boundaries.

### 15.3.10 Field Inspection

The field inspection sought to assess the site, its previous and current land use, the topography and any additional information relevant to the report. During the course of the field investigation the proposed development site and its surrounding environs were inspected (**Figure 15.1**).

As demonstrated throughout the course of this assessment, the proposed development area was stripped of topsoil in 2004 and all archaeological sites identified were preserved by record. The sites have since been subject to various ground disturbances, with the development area now formed by rough scrubby land, which is surrounded by modern metal fencing.

The proposed development area is a parcel of land to the north of the Main Street, which is bound to the east and west by residential development and an area currently under construction to the north. The area is covered in a mixture of scrub and areas of hard standing (Plates 15.1-15.2).

No features or areas of archaeological significance were identified during the course of the field inspection. The inspections did confirm the disturbed nature of the development area, which was stripped of topsoil and subject to disturbance from 2004 onwards.

*Plate 15.1 Western portion of site, facing north*



*Plate 15.2 Eastern portion of site, facing northeast*



### 15.3.11 Conclusions

During the course of this assessment, two recorded archaeological sites have been noted within the proposed development area, which comprises an enclosure (DU015-064001) and a burnt mound (DU015-096). A further burnt mound (DU015-097) is located c. 36m to the north. The enclosure was initially identified during aerial photographic analysis and DU015-064 was subject to test excavations in 2003. No archaeological remains relating to the enclosure were identified at this location. Both burnt mounds were identified in 2003 during a programme of archaeological test trenching. From 2004 onwards the entire development area was subject to topsoil stripping and these works were subject to archaeological monitoring. Numerous archaeological sites were recorded and preserved by record. The remains dated to the prehistoric and early medieval periods and represented relatively small and scattered activity, with the exception of a larger probable ringfort, which was recorded c. 115m to the northeast.

Cartographic analysis has shown that the proposed development area was formed by agricultural land throughout the post medieval period. This was the function of the area up until 2004 when the site was stripped. The aerial photographic coverage from this time clearly shows the evolution of the site over the next 25 years, where different phases of construction and disturbance was carried out. A field inspection has been carried out as part of this assessment. This confirmed that the development area has been previously cleared of topsoil and ground disturbances have occurred. No previously undisturbed areas were identified during course of the assessment or field inspection.

## 15.4 Characteristics of the proposed development

### 15.4.1 proposed development

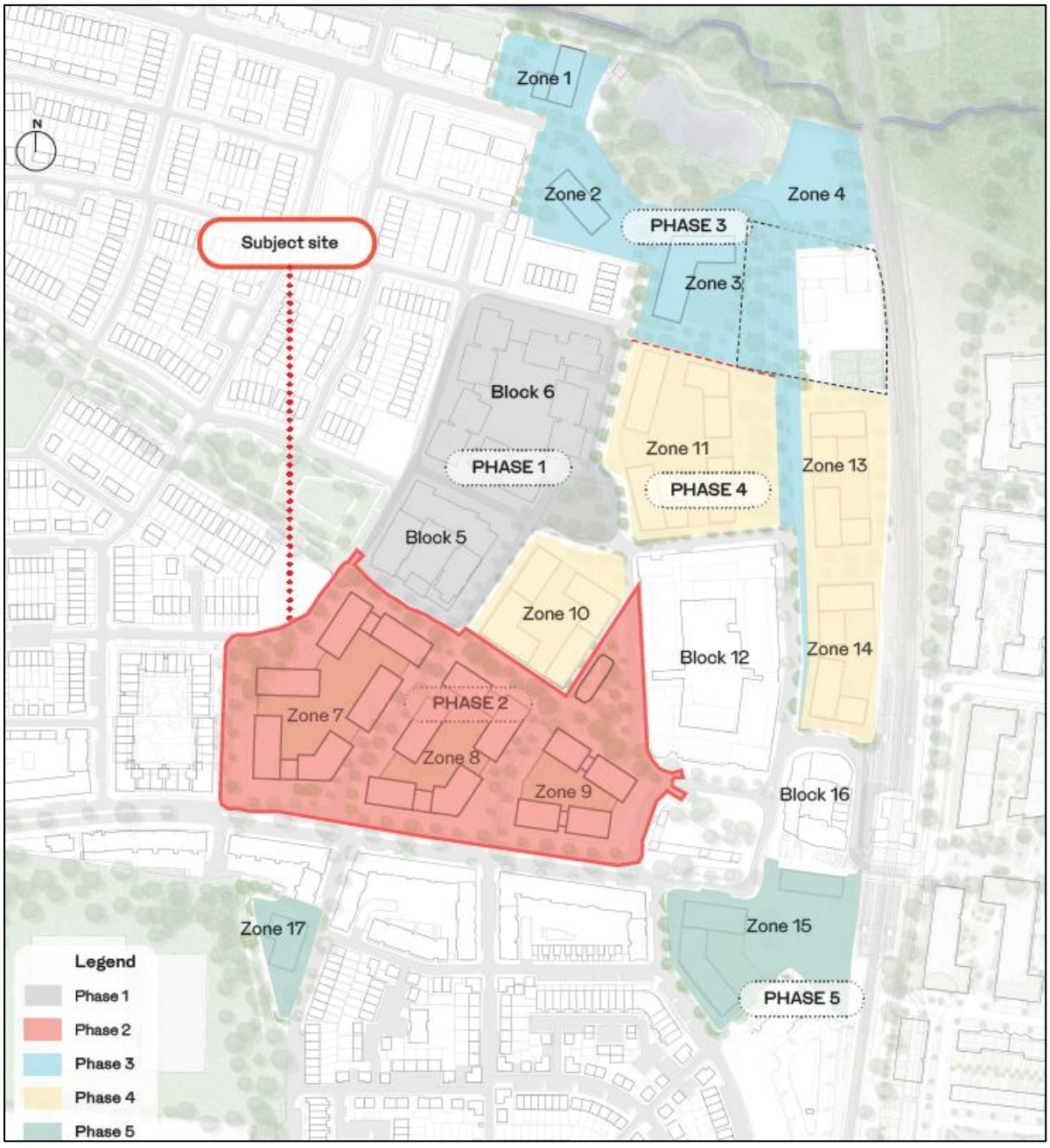
'The development will consist of the construction of a residential development set out in 3 no. blocks (identified as Zones 7, 8 & 9), ranging in height from 5 to 10 storeys, to accommodate 711 no. apartments in addition to cafe/restaurant/retail units, community/cultural spaces, and a standalone creche building.

The 3 no. residential buildings are arranged around podium courtyards accommodating communal amenity spaces for future residents. Zone 7 is a 5 to 7 storey block located on Main St., Friar's St., Park St and the under-construction Market St. containing 280 no. apartments. Zone 8 is a 6 to 8 storey block between Main St. and Market St. containing 263 no. apartments. Zone 9 is a 6 to 10 storey block located on Main St., Station Square and Market St. containing 168 no. units.

Car and cycle parking for both residents and visitors is provided below podium and at surface level throughout the scheme. The proposed development includes all site landscaping works, open space, green roofs, lighting, servicing and utilities, signage, and associated and ancillary works, including site development works above and below ground.

The proposed development sits as part of a Masterplan for a wider Clongriffin landbank which includes the under-construction Blocks 5 & 6 to the north of Market Street.'

Figure 15.8 Plan of proposed development



## 15.5 Potential Impacts

### 15.5.1 Construction Phase

No archaeological, architectural or cultural heritage potential impacts have been identified in relation to the proposed development area. The site has been fully stripped of topsoil and any archaeological remains were preserved by record in 2004. No architectural or cultural heritage sites are located within the site or the study area, which would be affected by the proposed development.

### 15.5.2 Operational Phase

No operational impacts are predicted upon the archaeological, architectural and cultural heritage resources.

## 15.6 Potential Cumulative Impacts

### 15.6.1 Construction Phase

No impacts have been identified upon the archaeological, architectural and cultural heritage resource as a result of the construction of the development. As such, no cumulative impacts have been identified.

### 15.6.2 Operational Phase

No impacts have been identified upon the archaeological, architectural and cultural heritage resource as a result of operation of the development. As such, no cumulative impacts have been identified.

## 15.7 Mitigation Measures

### 15.7.1 Construction Phase

No mitigation is required for the archaeological, architectural and cultural heritage resource during the construction phase.

### 15.7.2 Operational Phase

Whilst no mitigation is required for the archaeological, architectural and cultural heritage resource during the operation phase, there is an opportunity to implement a heritage strategy for the development. This may include the following elements, where deemed appropriate by the local authority:

- Dissemination of the results of the 2004 excavations throughout the proposed development area, with information boards regarding the excavated archaeological sites;
- Provision of a historic background to the proposed development area at points through the development;
- Development of place/street names that reflect the historic character of the surrounding landscape;
- Physical place-making within the site that reference the historic landscape.

## 15.8 Predicted Impacts

### 15.8.1 Construction Phase

There will be no residual impacts on the archaeological, architectural or cultural heritage resource as a result of the construction of the development.

### 15.8.2 Operational Phase

There will be no residual impacts on the archaeological, architectural or cultural heritage resource as a result of the operation of the development.

## 15.9 'Do Nothing' Scenario

If the proposed development were not to proceed there would be no negative impacts on the archaeological, architecture or cultural heritage resource.

## 15.10 Worst Case Scenario

The proposed development area has already been subject to full archaeological investigation and preservation by record. As such, a worst case scenario is not applicable.

## 15.11 Monitoring & Reinstatement

The proposed development area has already been subject to full archaeological investigation and preservation by record. As such, monitoring and reinstatement is not applicable.

## 15.12 Difficulties in Compiling Information

No difficulties were encountered during the compilation of this chapter.

## 15.13 References


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## CARTOGRAPHIC SOURCES


- William Petty, Down Survey Map of the Barony of Coolock, c. 1655
- John Rocque, Exact survey of the city and suburbs of Dublin, 1757
- John Taylor, Map of the environs of Dublin, 1816
- Ordnance Survey maps of County Dublin, 1837, 1871 and 1909


## ELECTRONIC SOURCES


- www.excavations.ie – Summary of archaeological excavation from 1970-2025.
- www.archaeology.ie – DoHLGH website listing all SMR/RMP sites.
- www.heritagemaps.ie – The Heritage Council web-based spatial data viewer which focuses on the built, cultural and natural heritage, including the DCIHR
- www.geohive.ie– Ordnance Survey Ireland National Townland and Historical Map Viewer (including Aerial imagery 1995, 2000, 2005 and 2013)
- www.googleearth.com – Satellite imagery (2005–2024)

# 16 Microclimate – Daylight & Sunlight

## 16.1 Introduction

This Chapter of the EIAR was prepared by Ashish Nautiyal, Senior Energy & Sustainability Engineer at O'Connor Sutton Cronin. Ashish has a B.Tech. (Hons) in Mechanical Engineering and over 10 years' experience in the design and supervision of Energy & Sustainability services for a wide range of projects within the residential, healthcare, commercial and educational sectors. He has worked on a range of projects focusing on Part L, overheating, wind, daylight and LEED energy assessment.

This chapter assesses the likely potential impacts in term of access to daylight and sunlight associated with the microclimate of the proposed development, located at Main Street, Clongriffin, Dublin 13.

The development will consist of the construction of a residential development set out in 3 no. blocks (identified as Zone 7, 8 & 9), ranging in height from 5 to 10 storeys, to accommodate 711 no. apartments including café/restaurant/retail units, community/cultural spaces, a standalone creche building and the completion of Market St.

The 3 no. residential buildings are arranged around podium courtyards accommodating communal amenity spaces for future residents. Zone 7 is a 5 to 7 storey block onto Main St, Friar's St, Park St and Market St containing 280 apartments. Zone 8 is a 6 to 8 storey block between Main St and Market Street containing 263 apartments. Zone 9 is a 6 to 10 storey block located on Main St, Station Square and Market Street containing 168 units.

Car and cycle parking for both residents and visitors is provided below podium and at surface level throughout the scheme. The proposed development includes all site landscaping works, open space, green roofs, lighting, servicing and utilities, signage, and associated and ancillary works, including site development works above and below ground.

The proposed development sits as part of a Masterplan for a wider Clongriffin landbank which includes the under-construction Block 5 & 6 to the north of Market Street.

For a more detailed description please refer to the Statutory Notices.

## 16.2 Method

### 16.2.1 Scope of Assessment

The aim of this assessment is to evaluate the potential daylight and sunlight effects associated with the proposed development and to identify any likely significant effects on the environment. The assessment specifically considers the following:

- The internal daylight levels within the proposed development;
- The impact of the proposed development on daylight levels within adjacent existing buildings;
- The impact of the proposed development on sunlight access to adjacent existing residential properties, including Annual Probable Sunlight Hours (APSH) and Winter Probable Sunlight Hours (WPSH);
- The impact of the proposed development on sunlight access to existing and proposed amenity spaces; and
- The potential overshadowing effects arising from the proposed development.

The assessment of daylight and sunlight effects for both the proposed development and surrounding existing properties has been undertaken with reference to Site Layout Planning for Daylight and Sunlight: A Guide to Good Practice published by the Building Research Establishment (BRE). This document provides the primary guidance relating to the assessment methodologies, performance criteria, and calculation procedures for daylight and sunlight assessments.

The BRE guidance includes simplified assessment methods for straightforward site arrangements together with more detailed approaches suitable for complex urban environments. The guidance also notes that the recommended numerical targets should be applied with an appropriate degree of flexibility, recognising that daylight and sunlight considerations form one of several factors influencing site layout and design. As stated within the BRE Guide, Third Edition (2022):

*"The advice given here is not mandatory and this document should not be seen as an instrument of planning policy. Its aim is to help rather than constrain the designer. Although it gives numerical guidelines these should be interpreted flexibly because natural lighting is only one of the many factors in site layout design."*

### 16.2.2 Relevant Guidelines

*The following guidance documents and standards have been referenced in undertaking the daylight and sunlight impact assessment:*

#### Site Layout Planning for Daylight and Sunlight: A Guide to Good Practice (Building Established Report, Third Edition, 2022)

Site Layout Planning for Daylight and Sunlight: A Guide to Good Practice is the primary reference document used for the daylight and sunlight assessment methodology set out within this chapter. The guidance document establishes the recommended assessment methodologies, performance criteria, and best practice principles for evaluating daylight, sunlight, and overshadowing effects associated with proposed developments. It also provides guidance to minimise potential impacts on neighbouring properties while optimising internal daylight provision and sunlight access to external amenity areas within the proposed development.

#### BS 8206-2:2008 – Lighting for Buildings, Part 2: Code of Practice for Daylighting

These standard outlines effective practices for daylight design and sets forth criteria aimed at improving the well-being and satisfaction of individuals within buildings. BS 8206-2 was superseded in 2018. It was replaced by BS EN 17037:2018 – Daylight in Buildings.

#### I.S. EN 17037:2018 – Daylight in Buildings

This standard directly adopts EN 17037:2018 and therefore includes recommendations for Sunlight Exposure that are integrated into the BRE Guideline 3rd Edition, 2022, but it does not provide room specific target recommendations for daylight. As mentioned in the Appendix 16 of the Dublin City Council (DCC)Development Plan: It does not offer guidance on how new developments will impact surrounding existing environments and, therefore, has not been used as a reference for this purpose.

#### BS EN 17037:2018 – Daylight in Buildings

As outlined within the BRE guidance document, Site Layout Planning for Daylight and Sunlight: A Guide to Good Practice, reference is made to BS EN 17037:2018 to provide recommendations for daylight provision within rooms based on illuminance levels, together with guidance relating to sunlight

exposure within proposed developments. BS EN 17037:2018 supersedes the former BS 8206-2 standard. However, BS EN 17037:2018 does not provide guidance on how new developments will impact existing surrounding developments; however, the provision targets specified in the national Annex of this standard, depending on the function of a room, are relevant.

#### Dublin City Council (DCC) Development Plan

This report also references of the Dublin City Council (DCC) Development Plan 2022-2028. The Dublin City Development Plan (2022-2028) came into effect on the 14th of December 2022 which sets out how the city will develop to meet the needs of all citizens and visitors. The aim of the plan is to improve the quality of life for its citizens and make sure that Dublin City is an attractive place to live, work and visit.

Dublin City Council Appendix 16 of the Dublin City Development Plan 2022-2028 provides guidance on the assessment of daylight, sunlight, overshadowing, and residential amenity impacts associated with proposed developments.

The appendix outlines the recommended assessment methodologies, relevant performance metrics, and applicable guidance documents, including BRE guidance and BS EN 17037:2018, to ensure adequate daylight and sunlight provision within proposed developments while minimising impacts on surrounding existing properties and amenity spaces.

#### Sustainable Urban Housing Design Standards for New Apartments

Sustainable Urban Housing: Design Standards for New Apartments in Ireland states that new apartment developments should provide adequate daylight and sunlight access to habitable rooms and amenity spaces to ensure a high standard of residential amenity and occupant wellbeing. The guidelines recommend that daylight and sunlight assessments should be undertaken with reference to BRE guidance and BS EN 17037:2018 / IS EN 17037:2018.

### 16.2.3 Daylight Access Impact Assessment

The analysis of the development's potential and the quality of amenity for the new development, as well as for the surrounding properties once the scheme has been implemented, has been based on the Building Research Establishment (BRE) guidelines on "Site Layout Planning for Daylight and Sunlight. A Guide to Good Practice (Building Research Establishment Report, Third Edition, 2022)."

These guidelines provide the criteria and methodology for calculations pertaining to daylight and sunlight and are the primary reference for this matter. The guidelines give simple rules for analysing sites where the geometry of the surroundings is straightforward, supplementing them with graphical methods for complex sites.

However, it is important to note that the performance targets which are included should be used with a degree of flexibility as per the extract below from the BRE Guide:

*"The advice given here is not mandatory and this document should not be seen as an instrument of planning policy. Its aim is to help rather than constrain the designer. Although it gives numeral guidelines these should be interpreted flexibly because natural lighting [and sunlight] is only one of the many factors in site layout design."*

## 16.2.4 Daylight Assessment Methodology

### 16.2.4.1 Dwellings within the proposed development

The analysis of the development's daylight potential and the quality of amenity spaces have been based on the Building Research Establishment (BRE) guidelines on "Site Layout Planning for Daylight and Sunlight: A BRE "Site Layout Planning for Daylight and Sunlight: A Good Practice Guide" by PJ Littlefair, 2022.
For new developments, the BRE Guide, Third Edition (2022), refers to EN 17037, and recommends that daylight performance within the proposed development is assessed using illuminance-based criteria. Unlike previous methodology based primarily on average daylight factor, the EN 17037 standard also considered the distribution of daylight within internal spaces.

The BRE Guide, Third Edition. Sets out an illuminance-based assessment methodology comprising the following two daylight compliance criteria.

- Criterion I recommends that in the analysed space an illuminance of ≥ 100 lux must be achieved for half of the daylight time in a year (2,190 hours), across ≥ 95% of the floor area of the given space;
- Criterion II recommends that in the analysed space an illuminance of ≥ 300 lux must be achieved for half of the daylight time in a year (2,190 hours), across ≥ 50% of the floor area of the given space.

Figure 16.1 EN 17037 – Table A.1: Recommendations of daylight provision

| Level of recommendation for vertical and inclined daylight opening | Target illuminance $E_T$ lx | Fraction of space for target level $F_{plane,\%}$ | Minimum target illuminance $E_{TM}$ lx | Fraction of space for minimum target level $F_{plane,\%}$ | Fraction of daylight hours $F_{time,\%}$ |
|---|---|---|---|---|---|
| Minimum | 300 | 50 % | 100 | 95 % | 50 % |
| Medium | 500 | 50 % | 300 | 95 % | 50 % |
| High | 750 | 50 % | 500 | 95 % | 50 % |
| NOTE Table A.3 gives target daylight factor ($D_T$) and minimum target daylight factor ($D_{TM}$) corresponding to target illuminance level and minimum target illuminance, respectively, for the CEN capital cities. | | | | | |

### 16.2.4.2 Existing Dwellings Adjacent to the Site

*Identifying Sensitive Receptors*

In order to undertake the assessment of impacts to adjacent buildings, first the key sensitive receptors around the site need to be identified. According to the BRE Guidelines, sensitive receptors are described as:

- Windows to habitable rooms facing the Site where the occupants have a reasonable expectation of daylight; and
- Gardens and open spaces on adjacent properties to the proposed development, excluding public footpaths, front gardens and car parks.

In accordance with the BRE Guidelines, windows are selected as sensitive receptors on the basis of being a habitable room facing the proposed development.

Similarly, amenities and open spaces are selected on the basis of being in the immediate vicinity of the proposed development. The primary purpose of a daylight, sunlight and overshadowing assessment is to determine the likely loss of light to adjacent buildings resulting from the construction of the proposed development.

Therefore, in this case, the proposed development is identified as the potential source of impact. The sensitive receptors identified for this study are windows of habitable rooms facing, and within, the site where the occupants have a reasonable expectation of daylight.

As per the BRE Guidelines it is important to safeguard the daylight to nearby buildings, from a proposed development, where a reasonable expectation of daylight is required. The flow matrix below in **Figure 16.2,** outlines the criteria to be assessed, as per the BRE Guidelines, in order to ascertain any potential impact to adjacent buildings from the proposed development.

*Assessment Criteria*

As per the BRE Guidelines, it is important to safeguard the daylight to nearby buildings where a reasonable expectation of daylight is required. The flow matrix below (**Figure 16.2**) outlines the criteria to be assessed, as per the BRE Guidelines, in order to ascertain any potential impact to adjacent existing buildings from the proposed development.

As per the flow matrix, the BRE Guidelines provide three main methods for assessing daylight availability:

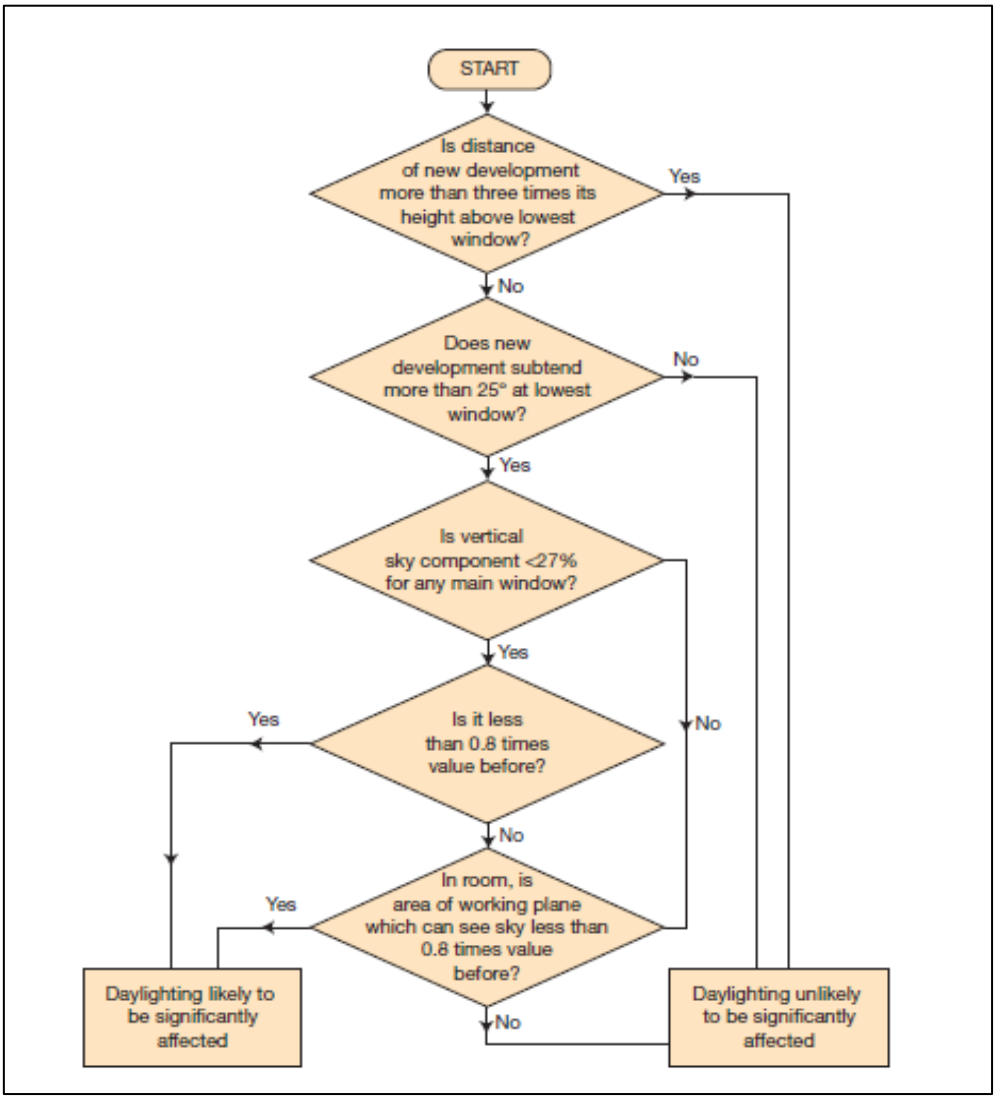
1. ***Distance From the proposed development – Step 1:*** As per the flow matrix, the loss of light to existing windows is not required to be analysed if the distance of each part of the new development from the existing window is three or more times its height above the centre of the existing windows. Otherwise, BRE guideline provide the following methods for assessing daylight availability.
2. ***25° Line Criteria – Step 2:*** In the first instance, if a proposed development falls beneath a 25° angle taken from a point 1.6 metres above ground level from any adjacent properties, then the BRE Guidelines say that no further analysis is required in relation to impact on surrounding properties as adequate skylight will still be available. If the proposed development extends beyond the 25° line then further analysis is required (Step 3).
3. ***Vertical Sky Component (VSC) – Step 3:*** The following method is known as the Vertical Sky Component (VSC). The VSC calculation is the ratio of the direct sky illuminance falling on the outside of a window, to the simultaneous horizontal illuminance under an unobstructed sky. The BRE Guide sets out two guidelines for the VSC:
    i. If the VSC at the centre of the existing window exceeds 27% with the new development in place, then enough sky light should still be reaching the existing window;
    ii. If the VSC with the new development in place is both less than 27% and less than 80% its former value, then the reduction in light to the window is likely to be noticeable;

This means that even if the VSC is less than 27%, as long as the VSC value is still greater than 80% of its former value, this would be acceptable and thus the impact would be considered negligible.

It is important to note that the VSC is a simple geometrical calculation which provides an early indication of the potential for daylight entering the space. However, it does not assess or quantify the actual daylight levels inside the rooms. If the VSC standard is not met on any window, Step 4 is then followed.

4. ***No Sky Line – Step 4:*** This method is the No Sky Line or Daylight Distribution Method. This method assesses the change in position of the No Sky Line between the existing and proposed situations. It does take into account the number and size of windows to a room, but still does not give any qualitative or quantitative assessment of the light in the room, only where sky can or cannot be seen. Thus, as this method is limited, Step 3 is considered more appropriate.

Figure 16.2 Daylight Assessment Methodology for Adjacent Properties




As per the flow matrix, the BRE and BS8206 guidelines provide four main methods for assessing daylight availability.

## 16.2.5 Sunlight Assessment Methodology

### 16.2.5.1 Within proposed development

In considering the development potential and the quality of amenity for the new development once the scheme has been implemented, similarly to the daylight access impact assessment, the assessment methodology in respect of sunlight access has been based on the Building Research Establishment (BRE) Guidelines on Site Layout Planning for Daylight and Sunlight (the BRE Guide).

In terms of the sunlight impact assessment, two analysis are carried out:

- Annual Probable Sunlight Hours (APSH);
- Sunlight to Open Spaces.

In order to assess the amount of sunlight that is received by windows within the proposed development, the Annual Probable Sunlight Hours (APSH) calculation methods as outlined in BRE Guide Third Edition (2022) have been used.

BRE Guidelines outline that in housing, the main requirement for sunlight is in living rooms, where it is valued at any time of the day but especially in the afternoon. BRE Guidelines also state that sunlight is less important in bedrooms and kitchens, however, all windows to occupied rooms within the development have been included within the analysis.

The sunlight values experienced across the development have been assessed against the BRE Guide Third Edition (2022). The 2022 methodology states that windows shall receive a minimum of 1.5 hours of direct sunlight on the test day, March 21st. The 2022 Methodology also sets out a standard for medium (3 hours), and high (4 hours) levels of direct sunlight.

It must be noted that the results within this report should be treated with certain degree of flexibility, based on the following statement in the BRE Guidelines:

*"the guide is intended for building designers and their clients, consultants and planning officials. The advice given here is not mandatory and the guide should not be seen as an instrument of planning policy; its aim is to help rather constrain the designer. Although it gives numerical guidelines, these should be interpreted flexibly since natural lighting is only one of many factors in site layout design".*

In addition, BRE Guidelines states that "the degree of satisfaction is related to the expectation of sunlight. If a room is necessarily north facing or if the building is in a densely built urban area, the absence of sunlight is more acceptable than when its exclusion seems arbitrary".

In relation to the amenity open space, the BRE Guidelines recommend that for an external amenity space to appear adequately sunlit throughout the year, at least half of the garden or amenity space should receive at least two hours of sunlight on March 21st.

#### 16.2.5.2 Properties Adjacent to the proposed development

The BRE Guide, Third Edition (2022), states that sunlight assessments should be undertaken for main living room windows and conservatories that face within 90° of due south, as these windows are most likely to receive direct sunlight. The guidance notes that north-facing windows generally receive very limited direct sunlight and therefore do not normally require assessment.

The BRE guidance recommends assessing sunlight availability using the Annual Probable Sunlight Hours (APSH) and Winter Probable Sunlight Hours (WPSH) methodologies, measured at the centre point of the external face of the window. A room is considered to receive adequate sunlight where the window achieves at least 25% APSH, including at least 5% WPSH.

The BRE Guide further states that a noticeable reduction in sunlight may occur where:

- The available sunlight hours are both less than the BRE target values and less than 0.8 times their former value, either annually or during the winter period; and
- The overall annual loss of APSH exceeds 4%.

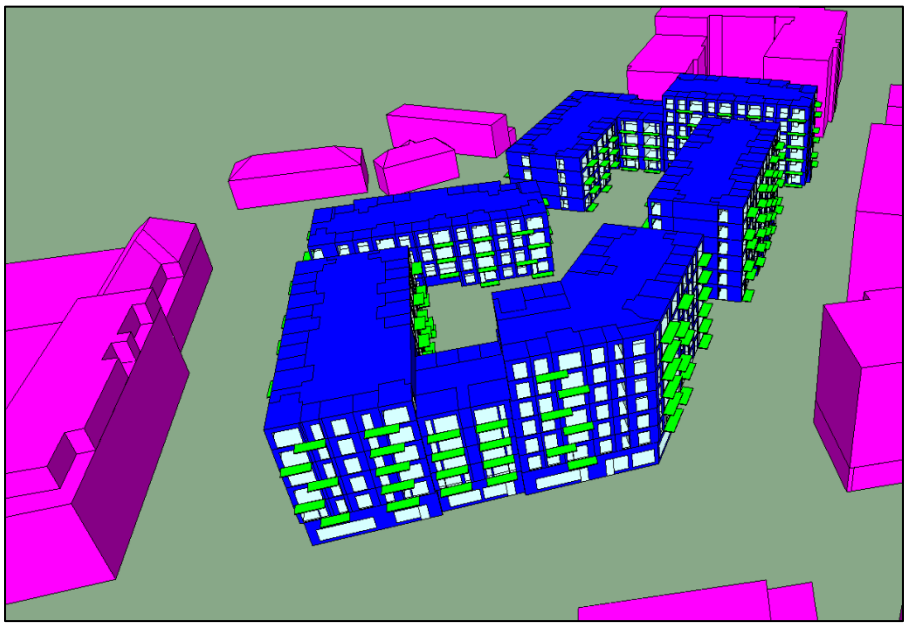
The guidance also notes that where the overall annual loss of APSH is 4% or less, the reduction in sunlight is likely to be small.

### 16.2.6 Modelling Software

To assess the daylight performance of the proposed development, a detailed three-dimensional model of the proposed scheme and surrounding context was developed using the IESVE software package. Computer-based daylight simulations were subsequently undertaken to determine the illuminance levels achieved within the proposed dwellings. Representative model views of the proposed development are presented in **Figures 16.3**, **16.4** and **16.4**.

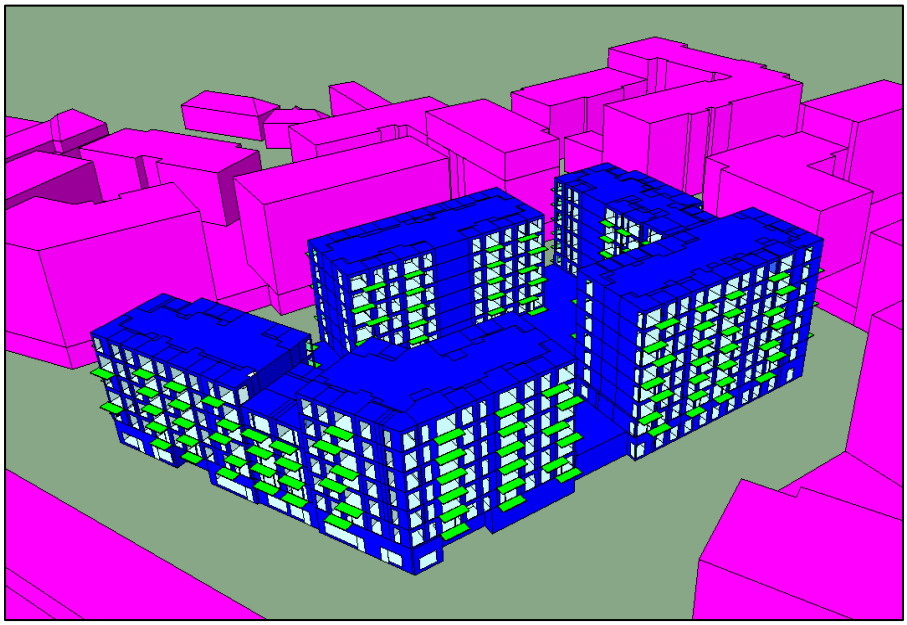
The daylight assessment has been undertaken for the entirety of the proposed development and also considers the potential daylight effects on adjacent existing buildings surrounding the site.

Figure 16.3 IES VE Model of the proposed development (Zone 07)



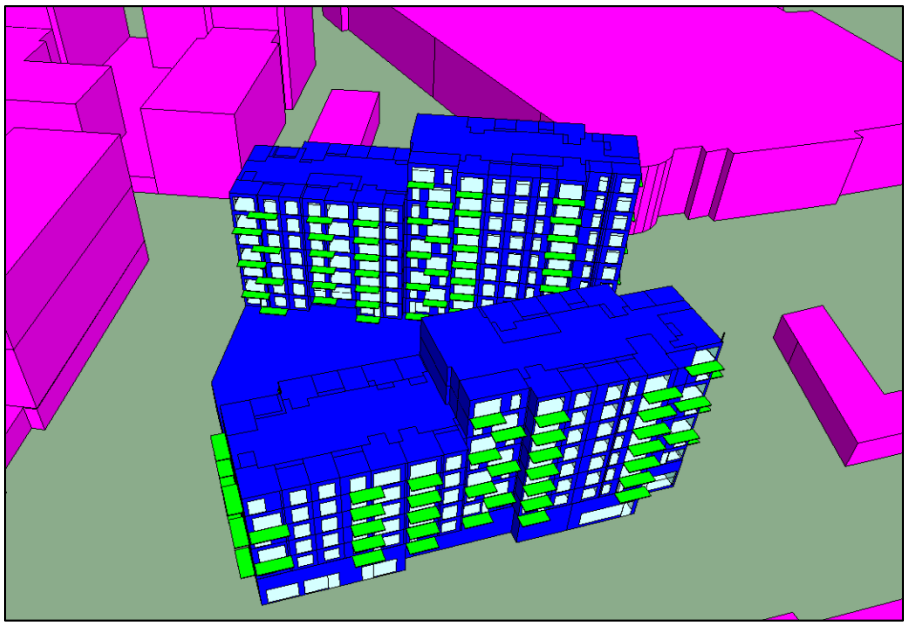
| Legends | |
|---|---|
| Blue | proposed development |
| White | Windows |
| Green | Balconies |
| Pink | Adjacent Properties |

Figure 16.4 IES VE Model of the proposed development (Zone 08)



| Legends | |
|---|---|
| Blue | proposed development |
| White | Windows |
| Green | Balconies |
| Pink | Adjacent Properties |

Figure 16.5 IES VE Model of the proposed development (Zone 09)



| Legends | |
|---|---|
| Blue | proposed development |
| White | Windows |
| Green | Balconies |
| Pink | Adjacent Properties |

## 16.2.7 Impact Significance Criteria

### 16.2.7.1 BRE Impact Classification

The significance of daylight and sunlight effects has been assessed with reference to the impact classification criteria set out in Appendix H of the BRE Guide, Third Edition (2022), as summarised in the table below.

Table 16.1 Description of Impact categories Per BRE Guideline

| Impact per BRE Guideline | Description |
|---|---|
| Negligible | Where the loss of light is well within guideline or only a small number of windows or limited area of open space lose light |
| Minor Adverse | Where the loss of the light is only just within the guidelines, and a larger number of windows or open spaces are affected<br>OR<br>Where the loss of skylight or sunlight does not meet the guidelines, and only a small number of windows or limited area of open space are affected |
| Moderate Adverse | Where the loss of skylight or sunlight does not meet the guidelines, and a moderate number of windows or limited area of open space are affected |
| Major Adverse | Where the loss of skylight or sunlight does not meet the guidelines, and a large number of windows or limited area of open space are affected |

#### 16.2.7.2 EPA Impact Classification

The significance of daylight and sunlight effects has been assessed in accordance with the impact significance criteria set out within the Environmental Protection Agency Guidelines (2022), as presented in the table below.

Table 16.2 Description of Impact categories per EPA

| Impact per EPA Guideline | Description |
|---|---|
| Imperceptible | An effect capable of measurement but without significant consequences. |
| Not Significant | An effect which causes noticeable changes in the character of the environment but without significant consequences. |
| Slight Effects | An effect which causes noticeable changes in the character of the environment without affecting its sensitivities. |
| Moderate Effects | An effect that alters the character of the environment in a manner that is consistent with existing and emerging baseline trends. |
| Significant Effects | An effect which, by its character, magnitude, duration or intensity, alters a sensitive aspect of the environment. |
| Very Significant | An effect which, by its character, magnitude, duration or intensity, significantly alters most of a sensitive aspect of the environment. |
| Profound Effects | An effect which obliterates sensitive characteristics. |

#### 16.2.7.3 Comparative BRE and EPA Impact Classification

To align the assessment with the requirements of the Environmental Protection Agency Guidelines (2022), professional judgement has been applied to relate the BRE daylight and sunlight impact classifications to the EPA significance criteria. The comparative impact classification methodology adopted for this EIAR is presented in the table below.

Table 16.3 Comparative BRE and EPA Impact Classification Criteria

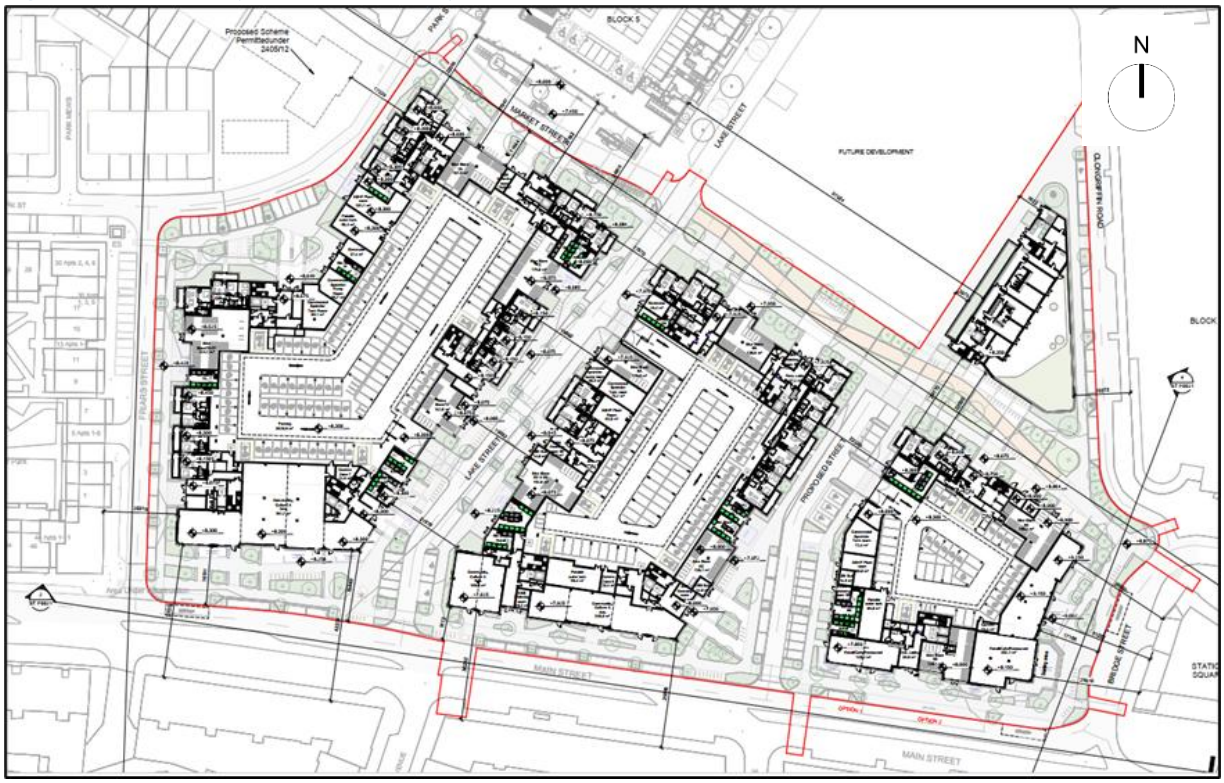
| Impact per BRE Guideline | Impact per EPA Guideline |
|---|---|
| Negligible | Imperceptible/Not Significant |
| Minor Adverse | Slight Effects |
| Moderate Adverse | Moderate Effects |
| Major Adverse | Significant Effects |

## 16.3 Description of the Receiving Environment

### 16.3.1 proposed development

A detailed description of the proposed development is provided in Chapter 5 (Description of the proposed development). Refer also to Figure below, which provides a layout of the proposed development.

Figure 16.6 Proposed Site Development Plan




### 16.3.2 Existing Adjacent Residential Properties

As part of the analysis, the impact to the existing adjoining properties due to the proposed development was analysed. **Figure 16.7** illustrates the adjoining buildings to the proposed development that were analysed, and **Table 16.4** describes these adjacent buildings.

Table 16.4 Sensitive Receptors

| Development Ref. | Development Name | Status |
|---|---|---|
| Ref. 1 | Block 12, Apartments | Existing |
| Ref. 2 | Block 12, Apartments | Existing |
| Ref. 3 | Block 20, Apartments | Existing |
| Ref. 4 | Block 21, Apartments | Existing |
| Ref. 5 | Block 22, Apartments | Existing |
| Ref. 6 | Ref. 6, Apartments | Existing |
| Ref. 7 | Block 2, Apartments | Existing |
| Ref. 8 | Block 2, Apartments | Existing |

| | | |
|---|---|---|
| Ref. 9 | Houses | Existing |
| Ref. 10 | Houses | Approved |
| Ref. 11 | Houses | Approved |
| Ref. 12 | Block 5, Apartments | Approved |

Figure 16.7 Location of Sensitive Receptors




## 16.3.3 Existing Adjacent Amenity Spaces

As part of the assessment, the potential sunlight effects of the proposed development on adjacent existing amenity spaces were evaluated. Figure 16.8 identifies the surrounding amenity spaces included within the sunlight assessment.

Figure 16.8 Existing Amenity Spaces Adjacent to proposed development

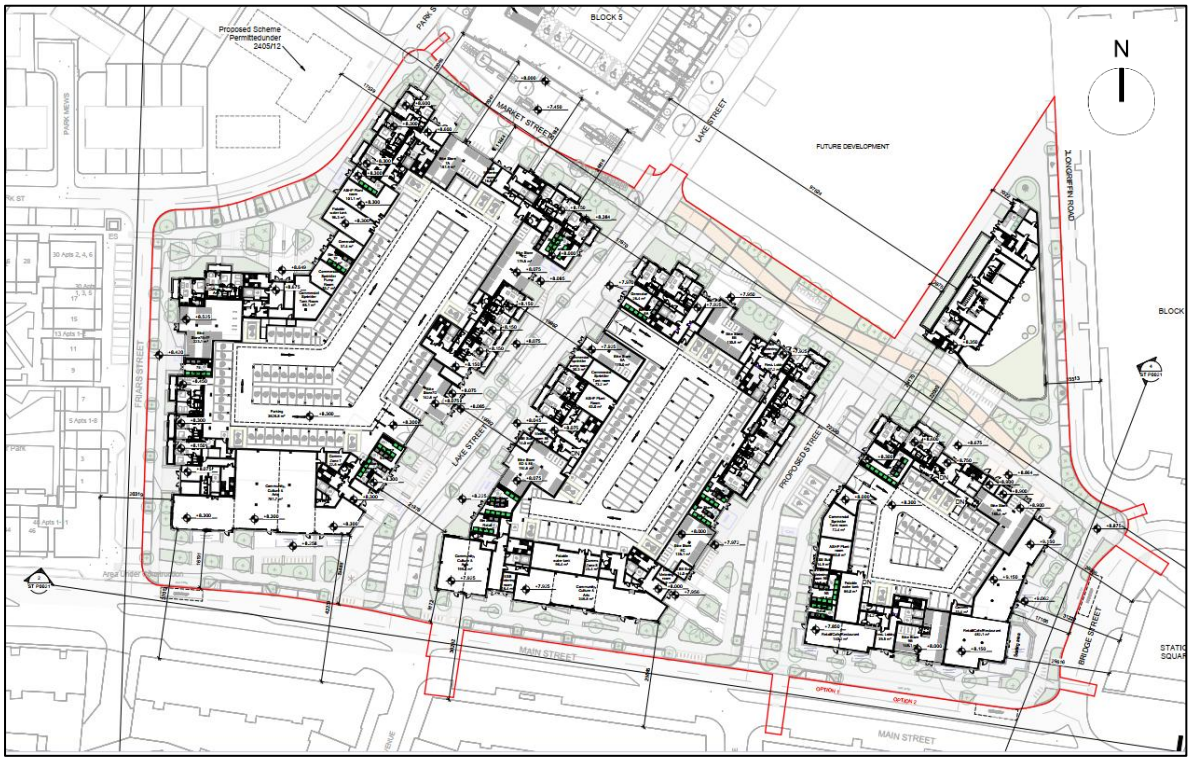



## 16.4 Baseline Environment

The subject site is located approx. 10 km from Dublin City Centre as part of a Masterplan for a wider Clongriffin landbank which includes the under-construction Block 5 & 6 to the north of Market Street and comprises of empty lands. The site is currently unused and has been zoned under the current County Development Plan 2022-2028 for the provision of new residential communities in accordance with the approved plans.

The site is bordered with established residential developments to the East, West and South of the site. In addition, permitted development (under construction) will border the North of the site and has also been considered as present for the daylight assessment.

Figure 16.9 proposed development Site




## 16.5 Predicted Impacts of the proposed development

This section will consider the potential impact of the proposed development under the following factors:

- Daylight levels within the proposed development and any impact on the environment;
- The impact of the proposed development on daylight levels within adjacent existing buildings;
- The impact of the proposed development on sunlight access to adjacent existing residential properties, including Annual Probable Sunlight Hours (APSH) and Winter Probable Sunlight Hours (WPSH);
- The impact of the proposed development on sunlight access to existing and proposed amenity spaces;
- The potential overshadowing effects arising from the proposed development.

### 16.5.1 Do-Nothing Impact

In a Do-Nothing scenario, no buildings will be constructed on the Site and, therefore, the impact will be ***imperceptible*** and ***neutral*** on the adjoining properties and surrounding properties, with existing daylight levels remaining unchanged.

### 16.5.2 Construction Phase

It is considered that, during the construction phase, there will be no impacts experienced in relation to daylight and sunlight to the proposed development, and the impact to the existing properties in the adjoining developments will be ***imperceptible*** with ***no short or long-term effects***.

### 16.5.3 Operational Phase

As previously noted in Section 16.2.1, the performance targets set out in the BRE Guidelines should be used with a degree of flexibility.

The proposed development achieves a high level of daylight provision within all living/dining areas and bedrooms. Some impact on daylight availability to adjacent properties may occur as a result of the proposed development; however, detailed Vertical Sky Component (VSC) analysis, together with daylight assessments of selected worst-case rooms in neighbouring buildings, demonstrates that these spaces will continue to receive adequate levels of daylight.as per the results presented in **Table 16.10** and **16.11**.

Accordingly, the effect on existing properties within adjoining developments is considered to be ***negligible*** or ***imperceptible***, resulting in a ***neutral, long-term impact***.

To assess the potential impact of the proposed development during the operational phase in terms of daylight access for both the properties within the Site and the adjacent buildings, the methodology outlined in Sections 16.2.4 and 16.2.5 has been followed.

#### 16.5.3.1 Internal Daylight Assessment of the proposed development

As previously outlined, the daylight analysis is completed within the IES software, and all room results are tabulated in Appendix 16.1. The design and layout of each apartment type have been carefully considered with generous window openings being provided. Where possible, rooms have been designed as dual aspect and bathroom and storage areas have been provided to the back of apartments to give living spaces greater access to daylight.

The surface reflectance values adopted within the daylight analysis are based on the recommendations set out in the BRE Guide, Thire Edition (2022), as presented in **Table 16.5**.

Surface reflectance values influence how daylight is distributed within internal spaces and therefore form an important component of daylight modelling assessments. Higher reflectance values for internal surfaces such as walls, ceilings, and floors increase the amount of daylight reflected within a room, thereby improving overall daylight distribution and illuminance levels. Conversely, darker surfaces with lower reflectance values absorb lighter and reduce daylight penetration within internal spaces.

In accordance with the BRE Guide, Third Edition (2022), standardised surface reflectance assumptions were adopted within the daylight analysis to provide a realistic representation of typical internal finishes and to ensure consistency in the assessment methodology.

Table 16.5 Surface Reflectance Values

| Surface Type | Reflectance (%) |
|---|---|
| External Wall | 20 |
| Internal Partitions | 50 |
| Ceiling | 70 |
| Floor | 20 |
| Adjacent Buildings | 20 |
| Glazing Transmittance | 70 |

*Summary of Effects*

The analysis confirms that the vast majority of assessed spaces within the proposed development not only comply with, but substantially exceed, the daylight recommendations set out within the BRE Guide, Third Edition (2022) methodology. Overall, 99.9% of assessed rooms achieve compliance with Criterion 1, while 98.9% of assessed rooms achieve compliance with Criterion 2.

Only a very limited number of rooms do not achieve the recommended criteria and, given the small proportion of these rooms relative to the overall development, the resulting effect is considered to be ***Imperceptible / Not Significant*** in accordance with the EPA Guidelines and ***Negligible*** in terms of the BRE impact classification.

These results demonstrate that a high standard of internal daylight amenity is provided throughout the development, with good daylight distribution and illuminance levels achieved within the majority of habitable spaces. Accordingly, the proposed development is considered to provide an appropriate level of residential amenity in terms of internal daylight provision.

*Note - A room-by-room daylight assessment has been undertaken for the proposed development. The detailed results of the internal daylight analysis for each assessed room are presented in Appendix 16.1 of this chapter.*

#### 16.5.3.2 Daylight Impact on Adjacent Properties

*VSC Assessment*

Prior to following the flow matrix, first the key sensitive receptors around the site need to be identified. According to the BRE Guide, sensitive receptors are described as:

- Habitable rooms in residential buildings, where the occupants have a reasonable expectation of daylight;
- Other sensitive receptors are gardens and open spaces on adjacent properties to the new scheme, excluding public footpaths, front gardens and car parks. In accordance with the BRE Guide, windows are selected as sensitive receptors on the basis of being a habitable room facing the proposed development.

Similarly, amenities and open spaces are selected on the basis of being in the immediate vicinity of the proposed development. The primary purpose of a daylight, sunlight and overshadowing assessment is to determine the likely loss of light to adjacent buildings resulting from the construction of the proposed development.

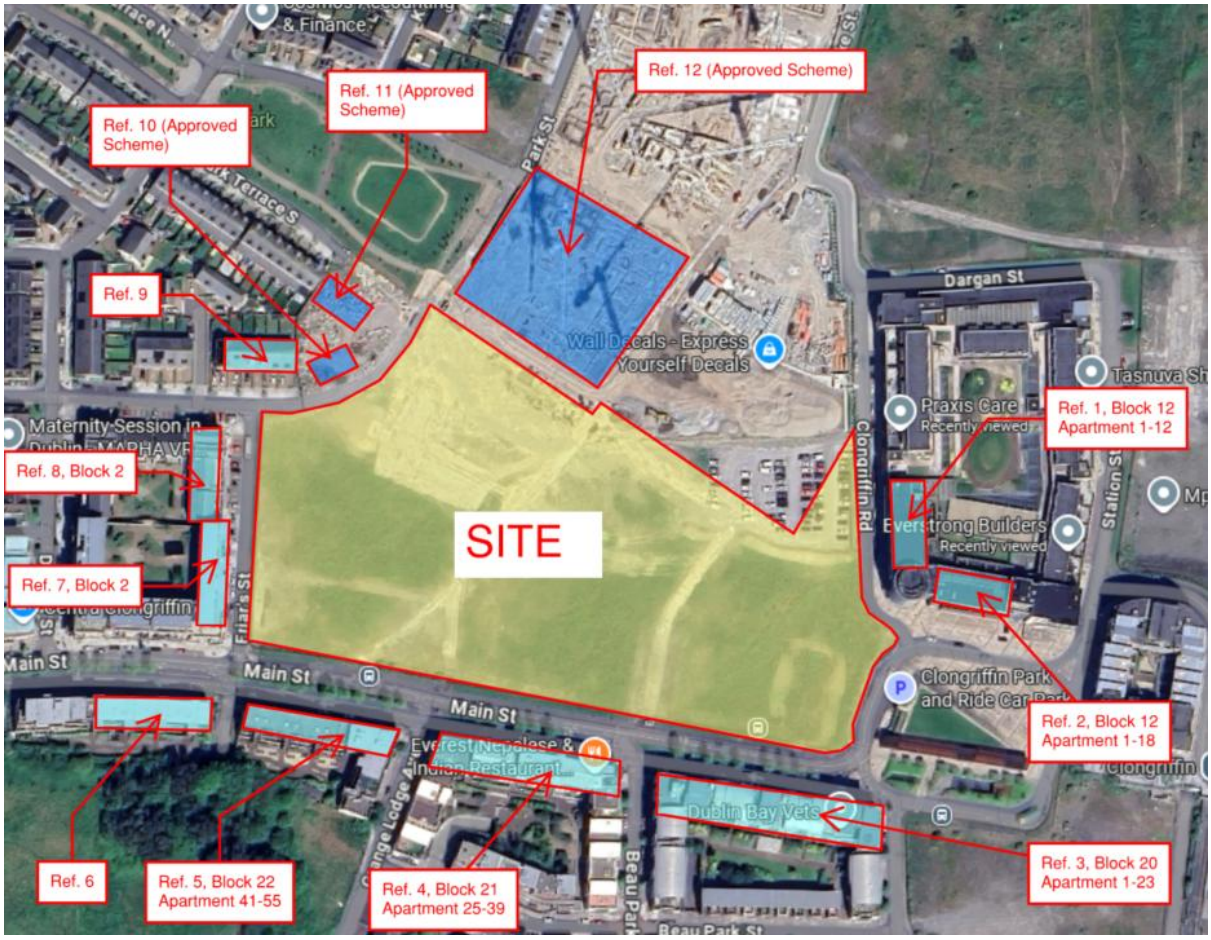
Therefore, in this case, the proposed development is identified as the potential source of impact. The sensitive receptors identified for this study are windows of habitable rooms facing the site where the occupants have a reasonable expectation of daylight. Table 16.6 identifies all sensitive receptors analysed, whilst Figure 16.10 identifies their location.

Table 16.6 Sensitive Receptors Surrounding the proposed development

| Development Ref. | Development name | Status |
|---|---|---|
| Ref. 1 | Block 12, Apartments | Existing |
| Ref. 2 | Block 12, Apartments | Existing |
| Ref. 3 | Block 20, Apartments | Existing |
| Ref. 4 | Block 21, Apartments | Existing |

| | | |
|---|---|---|
| Ref. 5 | Block 22, Apartments | Existing |
| Ref. 6 | Ref. 6, Apartments | Existing |
| Ref. 7 | Block 2, Apartments | Existing |
| Ref. 8 | Block 2, Apartments | Existing |
| Ref. 9 | Houses | Existing |
| Ref. 10 | Houses | Approved |
| Ref. 11 | Houses | Approved |
| Ref. 12 | Block 5, Apartments | Approved |

Figure 16.10 Location of Sensitive Receptors




25° line criteria

BRE Guidelines state that if a proposed development falls beneath a 25° line taken from a point 1.6 metres above ground level from any adjacent properties, then no impact is perceived, and further analysis is not required. This methodology was followed for this analysis (to assess the impact of the reduction in block heights), as it was followed for the initial assessment for the permitted.

As the sensitivity receptors fall above the 25° line, a VSC assessment was then carried out.

VSC > 27%

Sensitive receptor ref. 1 to 12 have been selected for VSC analysis. All the windows of adjacent properties were modelled to give a good indication of the daylight impact that will be perceived by sensitive receptor ref. 1 to 12.

The results of the VSC analysis are presented in the Appendix 16.2 of this chapter. Since the VSC with the proposed development in place falls below 27% for certain spaces, the achieved VSC levels have been compared with both the previously permitted development and a mirror-image scenario (which assumes a building of the same height as the adjacent properties on the currently vacant site). This comparison has been undertaken to determine whether any reduction in light accords with BRE Guideline recommendations and whether the VSC continues to achieve at least 80% of its former value once the proposed development is in place. Additionally, the daylight level (Lux level) has been analysed in the few worst-case rooms in the adjacent properties where the VSC is low to ensure that these rooms still receive sufficient daylight.

*Note - Detailed VSC analysis results are provided in Appendix 16.2 of this chapter.*

*Lux Level Analysis for of Representative Worst-Case Rooms*

In order to demonstrate that the surrounding properties classified as impacted by the proposed development will continue to receive good levels of daylight, a more detailed assessment on internal daylight levels (beyond the VSC analysis outlined in the previous section) has been carried out. This method not only considers the amount of sky visible from the vertical face of the window, but also the window size, room size and room use. It gives guidance as to the qualitative and quantitative change in daylight.

To provide an indication of expected daylight levels within surrounding properties, a sample of rooms with low Vertical Sky Component (VSC) has been selected for analysis. The “worst-case” rooms are those located close to the proposed development and situated at lower levels. In this case, Ref. 3 and Ref. 12 have been selected, as they contain windows facing the proposed development that exhibit the lowest VSC, as illustrated below.

The worst-case apartments experiencing low VSC, when assessed using the lux level method, have demonstrated that the units in question will achieve adequate daylight once the Clongriffin residential development is in place.

Figure 16.11 Location of sensitive receptors – Ref. 3 (Rooms Selected for Lux Level Analysis)

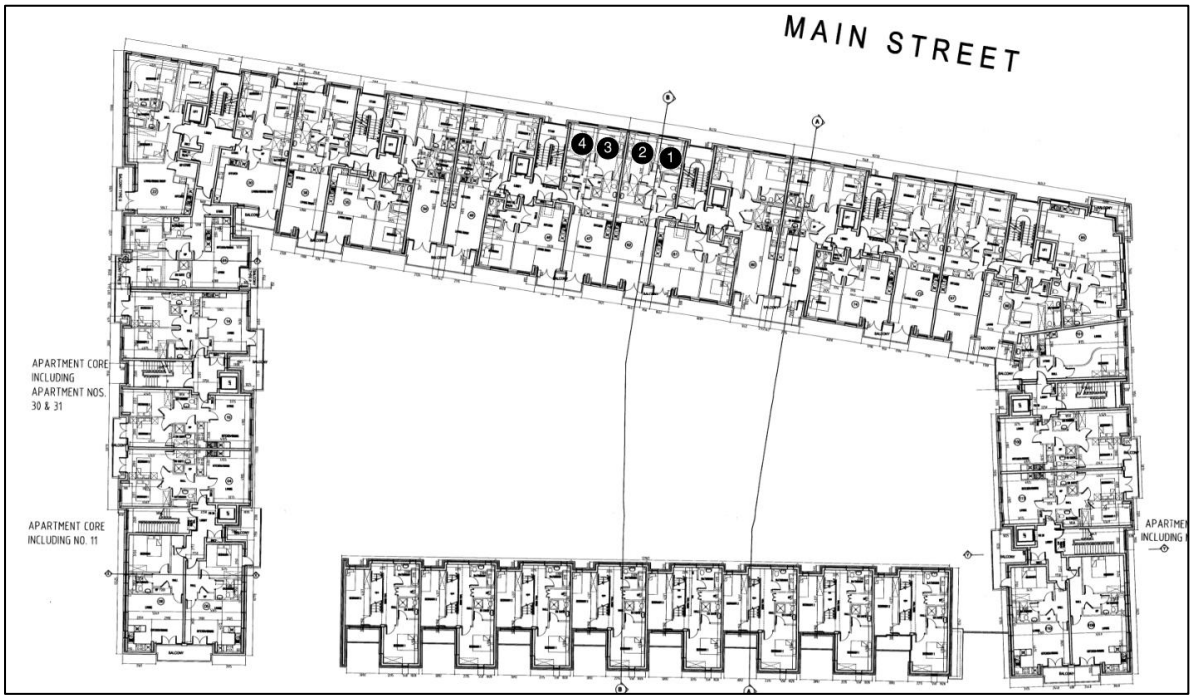



Table 16.7 Lux Level Results (Ref. 2)

| Legend | Space | 2022 Methodology Criterion 1 (%) (Compliance at ≥ 95% @100lux) | 2022 Methodology Criterion 1 Compliance | 2022 Methodology Criterion 2 (%) (Compliance at ≥ 50% @300lux) | 2022 Methodology Criterion 2 Compliance |
|---|---|---|---|---|---|
| Room 1 | Bedroom | 100% | Y | 100% | Y |
| Room 2 | Bedroom | 100% | Y | 93% | Y |
| Room 3 | Bedroom | 100% | Y | 93% | Y |
| Room 4 | Bedroom | 100% | Y | 100% | Y |

Figure 16.12 Location of sensitive receptors – Ref. 12 (Rooms Selected for Lux Level Analysis)




Table 16.8 Lux Level Results (Ref. 2)

| Legend | Space | 2022 Methodology Criterion 1 (%) (Compliance at ≥ 95% @100lux) | 2022 Methodology Criterion 1 Compliance | 2022 Methodology Criterion 2 (%) (Compliance at ≥ 50% @300lux) | 2022 Methodology Criterion 2 Compliance |
|---|---|---|---|---|---|
| Room 1 | Bedroom | 100% | Y | 79% | Y |
| Room 2 | Liv/Din | 100% | Y | 57% | Y |
| Room 3 | Liv/Din | 100% | Y | 68% | Y |
| Room 4 | Liv/Din | 100% | Y | 58% | Y |
| Room 5 | Liv/Din | 100% | Y | 51% | Y |
| Room 6 | Bedroom | 100% | Y | 80% | Y |
| Room 7 | Bedroom | 100% | Y | 55% | Y |
| Room 8 | Liv/Din | 100% | Y | 100% | Y |
| Room 9 | Bedroom | 100% | Y | 95% | Y |
| Room 10 | Study | 100% | Y | 67% | Y |
| Room 11 | Liv/Din | 100% | Y | 72% | Y |

All of the adjacent worst-case rooms selected for the analysis have achieved the minimum lux level target levels set out in the EN 17073 per the BRE Guideline, Third Edition, 2022. Therefore, it can be demonstrated that the majority of the rooms in the adjacent buildings will continue to receive sufficient levels of daylight once the proposed development is constructed.

As the site is located within an established compact, urban area, on zoned residential lands, it represents a prime opportunity to deliver compact and sustainable development in line with national and local planning policy. It is generally accepted in urban planning that a certain level of impact, particularly in relation to daylight and sunlight is unavoidable in high density urban environments. In this case, there should be a balanced and flexible approach where there is a significant need to optimise land use in serviced urban areas and the objective of achieving urban regeneration and compact growth as articulated in Section 5.3.7 of the 2024 Sustainable Residential Development and Compact Settlements Guidelines for Planning Authorities which state that:

*"In drawing conclusions in relation to daylight performance, planning authorities must weigh up the overall quality of the design and layout of the scheme and the measures proposed to maximise daylight provision, against the location of the site and the general presumption in favour of increased scales of urban residential development."*

As per the above statement, in the absence of mitigation, a limited number of rooms within the proposed development would not fully achieve the BRE daylight recommendations. However, these instances represent a small proportion of the overall development and primarily occur within the context of a higher-density urban environment where some degree of daylight constraint is inherent.

Having regard to the overall design quality of the proposed development, the site's urban location, the provision of enhanced residential amenity measures, and the policy support for increased urban residential density set out within the Sustainable Residential Development and Compact Settlements Guidelines for Planning Authorities (2024), the resulting effects are not considered likely to give rise to significant adverse environmental effects.

*Summary of Effects and EPA Significance*

Accordingly, based on the Vertical Sky Component (VSC) assessment of the adjacent buildings, together with the detailed lux level analysis undertaken for a number of representative worst-case rooms with the proposed development in place, the resulting effects on daylight levels within adjacent properties are considered to be ***Imperceptible / Not Significant*** in accordance with the EPA Guidelines and ***Negligible*** in terms of the BRE impact classification.

### 16.5.3.3 Sunlight Impact on Existing Adjacent Buildings

*Annual probably Sunlight Hours and Winter Sunlight Hours (APSH/WPSH) Assessment*

In order to assess the amount of sunlight that is received by windows, the Annual Probable Sunlight Hours (APSH) calculation methods as outlined in BRE Guide 3rd Edition have been used.

When designing a new development, consideration should be given to the safeguarding of access to sunlight for both existing dwellings and for any nearby non-domestic buildings where there is a requirement for sunlight. To assess if there will be a loss of sunlight to an existing building, BRE Guide 3rd Edition in section 3.2.3 suggested that all main living rooms of dwellings, and conservatories, should be checked if they have a window facing within 90° of due south. Kitchens and bedrooms are less important, although care should be taken not to block too much sun. If the proposed development is fully north of the existing window, then sunlight need not be assessed.

To calculate this assessment, the Annual and Winter Probable Sunlight Hours (APSH/WPSH) is used. APSH represents the sunlight that a given window may expect to receive over a year. The probable

sunlight hours are expressed as the percentage of direct sunlight hours divided by the number of hours that the sun is expected to shine on unobstructed ground. The APSH uses a full year as the time period, whereas WPSH uses a period from the 21st of September to the 21st of March.

BRE Guide 3rd Edition in section 3.2.13 suggests that the APSH/WPSH should be measured at the centre point of the outside face of the window. It also states that if a room can receive more than 25% of APSH, including at least 5% of WPSH, then it should still receive enough sunlight. Also, if the overall annual loss of APSH is 4% or less, the loss of sunlight is small. Any reductions of sunlight access below the above values should be kept to a minimum. Loss in sunlight will be noticeable by the occupants if the available sunlight hours are both less than the amount above and less than 0.80 times their former value, either over the full year or just in the winter months, and the overall annual loss is greater than 4% of APSH. These criteria can be broken down as follows; noticeable reductions of sunlight access can occur if the following occurs:

- The APSH/WPSH drops below 25% for annual or 5% for winter guidelines, and
- The APSH value is less than 0.80 times the baseline value, and
- There is a reduction of more than 4% of the annual APSH.

An indicator to determine if a proposed development could obstruct sunlight access on nearby existing buildings is provided in BRE Guide 3rd Edition whereby if the proposed development is located to the south and is at a distance of less than three times its height from an existing dwelling, or if the angle from the existing window to the proposed development subtends 25° to the horizontal when measured in a perpendicular section. BRE Guide 3rd Edition also suggests that windows orientated within 90° of due south should be assessed as windows located to the north generally receive sunlight on very few occasions in a year.

As the APSH and WPSH values for certain spaces fall below 25% and 5%, respectively, with the proposed development in place, the achieved levels have been compared against both the previously permitted scheme and a mirror-image scenario (assuming a building of the same height as the adjacent properties on the currently vacant site). This comparison has been undertaken to assess whether any reduction in sunlight is in accordance with BRE guideline recommendations and to confirm whether the affected spaces continue to retain at least 80% of their former values following the proposed development.

Below table shows that which adjacent properties are required to analyse per the BRE guidelines.

Table 16.9 APSH Analysis Requirement

| Development Ref. | Development name | APSH Analysis |
|---|---|---|
| Ref. 1 | Block 12, Apartments | As per section 3.2 of BR209, not required as the proposed development is located wholly due north of the existing buildings |
| Ref. 2 | Block 12, Apartments | |
| Ref. 3 | Block 20, Apartments | |
| Ref. 4 | Block 21, Apartments | |
| Ref. 5 | Block 22, Apartments | |
| Ref. 6 | Ref. 6, Apartments | |
| Ref. 7 | Block 2, Apartments | Required |
| Ref. 8 | Block 2, Apartments | Required |

| | | |
|---|---|---|
| Ref. 9 | Houses | Required |
| Ref. 10 | Houses | Required |
| Ref. 11 | Houses | Required |
| Ref. 12 | Block 5, Apartments | Required |

Table 16.10 and 16.11 present a summary of APSH and WPSH analysis for all the surrounding properties and 100% of spaces complied against APSH and 87.15% against WPSH criterion.

Table 16.10 APSH results summary

| Existing Dwellings | Number of Spaces | APSH Spaces showing Pass | APSH Pass (%) |
|---|---|---|---|
| Ref. 07 | 57 | 57 | 100.00% |
| Ref. 08 | 39 | 39 | 100.00% |
| Ref. 09 | 18 | 18 | 100.00% |
| Ref. 10 | 13 | 13 | 100.00% |
| Ref. 11 | 43 | 43 | 100.00% |
| Ref. 12 | 79 | 79 | 100.00% |
| Overall Total | 249 | 249 | 100.00% |

Table 16.11 WPSH results summary

| Existing Dwellings | Number of Spaces | WPSH Spaces showing Pass | WPSH Pass (%) |
|---|---|---|---|
| Ref. 07 | 57 | 50 | 87.72% |
| Ref. 08 | 39 | 18 | 46.15% |
| Ref. 09 | 18 | 18 | 100.00% |
| Ref. 10 | 13 | 13 | 100.00% |
| Ref. 11 | 43 | 40 | 93.02% |
| Ref. 12 | 79 | 78 | 98.73% |
| Overall Total | 249 | 217 | 87.15% |

*Note - Detailed APSH and WPSH assessment results are presented in Appendix 16.3 of this chapter.*

*Summary of Effects and EPA Significance*

As the majority of assessed windows within the selected adjacent properties continue to achieve the BRE sunlight recommendations, with only a limited number experiencing shortfalls, the resulting effect of the proposed development is generally considered to be ***Imperceptible / Not Significant*** in accordance with the EPA Guidelines and ***Negligible*** in terms of the BRE impact classification.

#### 16.5.3.4 Sunlight Impact on Existing Amenity Areas

*Sunlight Impact to Existing Surrounding Amenity Spaces*

BRE Guide 3rd Edition recommends that for external amenity spaces to appear adequately sunlit throughout the year, at least half of the space should receive at least two hours of sunlight on March 21st is chosen as the test date by BRE as it is the equinox and represents the average level of shading across the year.

In the case of existing amenity spaces, if they are already below the 50% threshold then BRE Guide 3rd Edition recommends the results are to be kept to within 0.80 times of its former value. In order to show the sunlight levels within the existing nearby residential amenity spaces located next to a proposed development.

The red squares in the **Figures 16.13** below represent the portions of adjacent existing amenity spaces that receive two hours or more of sunlight on 21st March with the proposed development in place. The assessment demonstrates that the adjacent amenity spaces continue to achieve compliance with the BRE Guide, Third Edition (2022), as more than 50% of the assessed amenity areas receive at least two hours of sunlight on 21 March, as summarised in **Table 16.12**.

Figure 16.13 Adjacent Amenity Space Sunlight Analysis March 21st

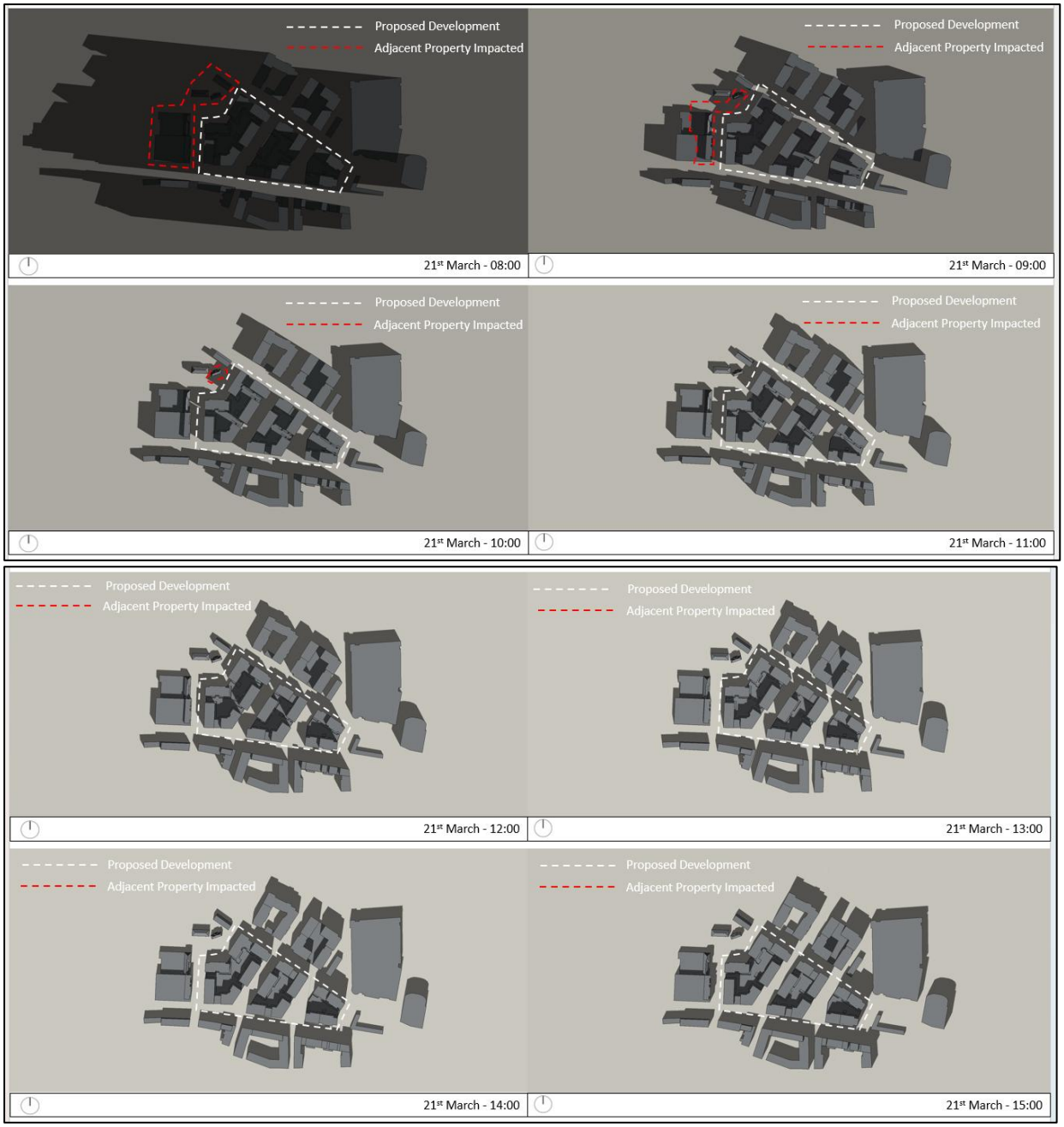


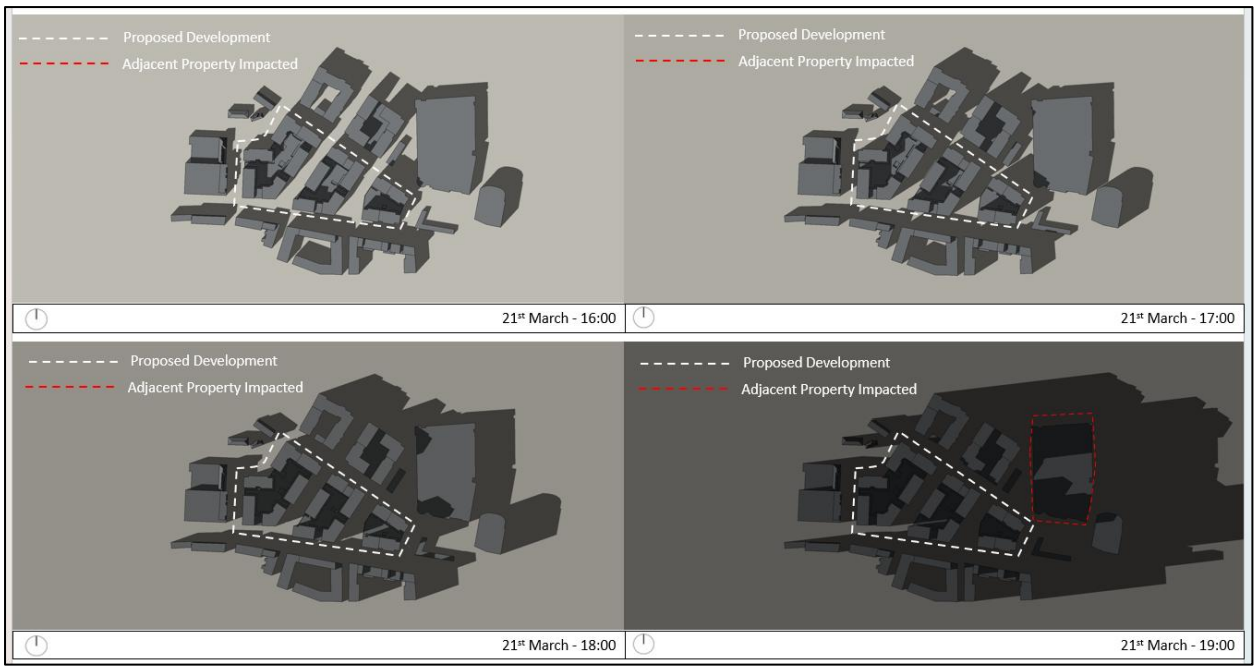

Table 16.12 Sunlight Analysis 3rd Edition Results (Window Specific Summary)

| Unit Ref. | Portion of Amenity Space receiving ≥ 2 hours Sunlight on 21st March (%) |
|---|---|
| Open Garden | 100% |
| Block 5 Amenity | 58.2% |

*Overshadowing impact to properties*

The overshadowing impact on adjacent properties was assessed on the 21st of March test day. Only minimal impacts were observed on the buildings to the east and west of the proposed development, which is expected due to the sun's position during sunrise and sunset. Overall, no significant overshadowing impact on adjacent properties is anticipated as a result of the proposed development.


Proposed Development
Adjacent Property Impacted
21st March - 08:00
Proposed Development
Adjacent Property Impacted
21st March - 09:00
Proposed Development
Adjacent Property Impacted
21st March - 10:00
Proposed Development
Adjacent Property Impacted
21st March - 11:00
Proposed Development
Adjacent Property Impacted
21st March - 12:00
Proposed Development
Adjacent Property Impacted
21st March - 13:00
Proposed Development
Adjacent Property Impacted
21st March - 14:00
Proposed Development
Adjacent Property Impacted
21st March - 15:00




*Summary of Effects and EPA Significance*

As the adjacent amenity spaces continue to achieve the BRE recommended sunlight levels with the proposed development in place, and the overshadowing effects are primarily limited to the eastern and western sides of adjacent buildings during sunrise and sunset periods, the resulting effects are considered to be ***Imperceptible / Not Significant*** in accordance with the EPA Guidelines and ***Negligible*** in terms of the BRE impact classification.

### 16.5.3.5 Sunlight Assessment of the proposed development

*Annual Probable Sunlight Hours (APSH Assessment)*

The sunlight values expected across the development are illustrated in the following images. Windows coloured red achieves the high, medium, or minimum standard as outlined in BRE Guide Third Edition (2022) on March 21st.

The sunlight values experienced across the development as measured against the BRE Guide 3rd Edition are illustrated in the images included in the Appendix 16.4. Windows coloured red achieve the minimum standard for sunlight on the test day of March 21st.

*Note – All the APSH images for the proposed development is provided in the Appendix 16.4 of this chapter.*

Table 16.13 Sunlight Analysis 3rd Edition Results (Window Specific Summary)

| Element | Sunlight Assessment (BRE 3rd Edition) Minimum Level | | | |
|---|---|---|---|---|
| | Zone 7 | Zone 8 | Zone 9 | Total |
| Total Windows Passing | 680 | 580 | 384 | 1644 |
| Total No. of Windows Analysed | 883 | 806 | 518 | 2207 |
| **Percentage of Compliance** | **77%** | **72.00%** | **74.14%** | **74.49%** |

As shown in the table above, 75% of rooms meet the minimum recommendations set out in the BRE guidelines. Additionally, the figures below demonstrate that the majority of windows exceed the minimum values outlined in the BRE guidance document.

Windows that fall short of the BRE criteria are primarily associated with north, north-east, and north-west facing orientations, which naturally receive reduced sunlight due to the path of the sun, resulting in greater solar exposure for other orientations.

In addition, BS8206 states that "the degree of satisfaction is related to the expectation of sunlight. If a room is necessarily north facing or if the building is in a densely built urban area, the absence of sunlight is more acceptable than when its exclusion seems arbitrary".

The following images illustrate the sunlight levels achieved within the proposed development showing a colour scale which identifies the percentage of sunlight for the annual period.

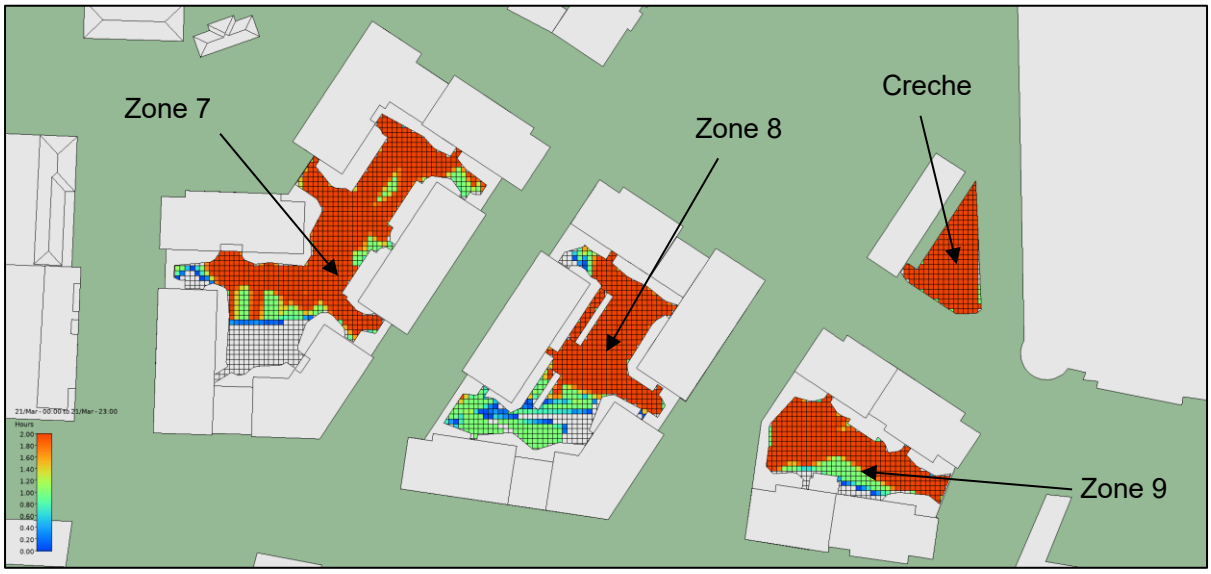
*Sunlight to Amenity Spaces*

The analysis undertaken for the communal open spaces is illustrated in **Figures 16.14**. The red squares illustrated in the images represent the areas that will receive two or more hours of sunlight on the 21st March. **Table 16.14** outlines the percentage of each amenity area that will receive at least two hours of sunlight on March 21st. All communal amenity spaces will receive the recommended values, with more than 50% of the areas achieving adequate sunlight, therefore, compliance with BRE Guidelines is achieved in this respect.

Table 16.14 Amenity Space Sunlight Results

| Unit Ref. | Portion of Amenity Space receiving ≥ 2 hours Sunlight on 21st March (%) |
|---|---|
| **Zone 7** | 72.7% |
| **Zone 8** | 52.8% |
| **Zone 9** | 75.2% |
| **Creche** | 99.1% |
| **Overall Total** | 69.8% |

Figure 16.14 Amenity Spaces - Hours of Sunlight on March 21st




*Summary of Effects and EPA Significance*

As shown in Table 16.13, 75% of assessed rooms achieve the minimum APSH recommendations set out within the BRE Guide, Third Edition (2022). The majority of assessed windows exceed the BRE recommended sunlight criteria. The windows that do not achieve the target values are primarily associated with north, north-east, and north-west facing orientations, which inherently receive lower levels of direct sunlight due to the sun path and building orientation.

In addition, all communal amenity spaces achieve compliance with the BRE guidance, with more than 50% of the assessed amenity areas receiving the recommended sunlight levels, as summarised in Table 16.14.

Accordingly, the proposed development is considered to achieve an appropriate level of sunlight provision for both the proposed residential units and communal amenity spaces. The resulting effects are therefore considered to be ***Imperceptible / Not Significant*** in accordance with the EPA Guidelines and ***Negligible*** in terms of the BRE impact classification.

## 16.6 Mitigation Measures

### 16.6.1 Construction Phase

Since no impacts are predicted in relation to daylight/sunlight during the construction phase, mitigation measures are not required for this phase.

### 16.6.2 Operational Phase

As outlined in Section 16.5.3.1, the internal daylight assessment demonstrates that approximately 98.9% of assessed rooms within the proposed development achieve compliance with the BRE Guide, Third Edition (2022) daylight recommendations. Only a limited proportion of rooms (approximately 1.1%) do not achieve the recommended criteria. Accordingly, an ***imperceptible/ Not Significant***, ***neutral, long-term effect*** is anticipated for small number of rooms that fall below the BRE recommendations in terms of daylight provision for future occupants. For the remaining 98.9% of assessed rooms, a ***Neutral,***

***long-term effect*** is anticipated, with an appropriate level of internal daylight achieved throughout the proposed development.

As a small number of rooms that do not meet internal daylight compliance in accordance with BRE guidelines, the following mitigation measures have been incorporated into the proposed development.

Table 16.15 Rooms provided with mitigation measures.

| S. No. | Space name | Mitigation measures |
|---|---|---|
| 1 | BLK.7E 1-3 Liv/Din | The unit is approximately 10% oversized relative to minimum floor area standards, providing enhanced internal spatial amenity and improved occupant comfort. In addition, the unit benefits from a larger private terrace at first floor level, which improves external amenity provision and overall residential quality, helping to offset the limited daylight shortfall identified within the living/dining area. |
| 2 | BLK.8E 0-1 Liv/Din | The unit is approximately 10% oversized, providing increased internal living space and enhanced residential amenities. The unit also benefits from an enlarged ground floor private terrace, offering improved access to external amenity space and compensating for the limited daylight non-compliance identified within the assessed room. |
| 3 | BLK.8E 0-2 Liv/Din | The unit is approximately 10% oversized compared to minimum standards and benefits from a larger private ground floor terrace. These measures improve the overall quality of residential amenity and usability of the dwelling, thereby helping to mitigate the limited daylight shortfall identified within the living/dining space. |
| 4 | BLK.8B 1-1 Liv/Din | The unit is dual-aspect, allowing improved daylight penetration and natural light distribution from multiple orientations. In addition, the unit benefits from a larger first floor private terrace, enhancing external amenity provision and overall residential quality, which assists in offsetting the limited daylight shortfall identified within the living/dining area. |
| 5 | BLK.8B 1-9 Bedroom | The bedroom forms part of a unit that is approximately 10% oversized relative to minimum standards, providing enhanced internal residential amenity. The unit also benefits from a larger private terrace at first floor level, contributing positively to the overall quality and usability of the dwelling and helping to offset the limited daylight shortfall identified. |
| 6 | BLK.8B 2-10 Liv/Din | The unit is approximately 10% oversized, providing increased internal floor area and enhanced residential amenity for future occupants. The additional internal space assists in mitigating the limited daylight shortfall identified within the living/dining area. |
| 7 | BLK.8D 1-1 Bedroom | The unit is dual-aspect and approximately 10% oversized, providing improved daylight distribution, enhanced outlook, and increased internal spatial amenity. The unit also benefits from a larger first floor private terrace, which further enhances overall residential amenity and assists in offsetting the identified daylight shortfall. |
| 8 | BLK.8E 1-6 Bedroom | The unit is approximately 10% oversized relative to minimum standards, providing enhanced internal living conditions and increased residential amenity, which assists in compensating for the limited daylight non-compliance identified within the bedroom |
| 9 | BLK.8E 1-7 Bedroom | The unit is approximately 10% oversized, resulting in enhanced internal spatial quality and improved residential amenity for future occupants, thereby helping to offset the identified daylight shortfall. |
| 10 | BLK.8E 1-8 Liv/Din | The unit is approximately 10% oversized, providing additional internal living space and enhanced residential amenity, which assists in |

| | | |
|---|---|---|
| | | mitigating the limited daylight shortfall identified within the living/dining area. |
| 11 | BLK.8E 2-7 Bedroom | The unit is approximately 10% oversized relative to minimum standards, improving the overall quality and usability of the dwelling and helping to compensate for the limited daylight shortfall identified within the bedroom. |
| 12 | BLK.9B 1-4 Bedroom | The unit is approximately 10% oversized and benefits from a larger first floor private terrace. These measures enhance both internal and external residential amenity provision and assist in offsetting the identified daylight shortfall within the bedroom |
| 13 | BLK.9B 1-4 Bedroom | The unit is approximately 10% oversized and benefits from a larger first floor private terrace, providing enhanced internal spatial quality together with improved external amenity provision, which assists in mitigating the identified daylight shortfall. |
| 14 | BLK.9B 2-4 Liv/Din | The unit is approximately 10% oversized, providing enhanced internal living accommodation and improved residential amenity, thereby helping to offset the limited daylight shortfall identified within the living/dining area. |
| 15 | BLK.9B 3-4 Liv/Din | The unit is approximately 10% oversized relative to minimum standards, resulting in enhanced internal residential amenity and assisting in mitigating the limited daylight shortfall identified within the living/dining area. |

## 16.7 Residual Impacts

An ***imperceptible impact*** with a ***neutral, long-term effect*** is expected for approximately 1.1% of rooms within the apartment blocks of the proposed development as per the daylight results outlined in section 16.5.3.1, in relation to daylight levels experienced by future occupants. A ***non-significant*** impact with a ***neutral, long-term effect*** is expected for the remaining 98.9% of rooms.

Supplementary mitigation measures have been incorporated for the affected rooms, as outlined in Section 16.6.2. Therefore, no significant residual impacts are anticipated during the operational phase in respect of daylight.

## 16.8 Monitoring

No on-going monitoring is required in relation to daylight during the Construction Phase or the Operational Phase.

## 16.9 Reinstatement

Reinstatement is not pertinent to the assessment of impacts on daylight in the case of the proposed development.

## 16.10 Interactions

The interactions between the proposed development and its environs and human health have been evaluated within the assessment. The modelling has included the proposed design, the proposed passive strategy, in conjunction with the existing buildings surrounding the development. The combination of all interactions has resulted in a comfortable environment for resident within the proposed development.

## 16.11 Indirect and/or Secondary Impacts

Imperceptible impacts are expected in relation to the sunlight levels experienced by the future inhabitants of the proposed Development. No remedial or reductive measures are required.

## 16.12 Cumulative Impacts

The cumulative assessment has considered the proposed development in combination with the existing environment together with relevant permitted and surrounding developments within the wider area. The assessment demonstrates that the vast majority of daylight and sunlight effects remain compliant with the BRE Guide, Third Edition (2022) recommendations, with the overall effects generally remaining ***Imperceptible / Not Significant*** in accordance with the EPA Guidelines and ***Negligible*** in terms of the BRE impact classification.

## 16.13 Difficulties Encountered

No difficulties were encountered in relation to the daylight or sunlight assessment. OCSC has confidence the three-dimensional model used in the assessment of the impact of the proposed development on daylight access and sunlight access achieves a high degree of accuracy.

## 16.14 References

- BRE “Site Layout Planning for Daylight and Sunlight: A Good Practice Guide” by PJ Littlefair, 2022
- BS 8206 2 2008_Lighting for Buildings Part 2
- IS EN 17037 2018_Daylight in Buildings
- Dublin City Development Plan 2022-2028
- EIAR Guideline 2022
- Sustainable Urban Housing Design Standards for New Apartments

# 17 Microclimate – Wind

## 17.1 Introduction

The purpose of this chapter is to outline the predicted microclimate wind conditions experienced within and surrounding the proposed Clongriffin residential development located in Dublin 13.

The development will consist of the construction of a residential development set out in 3 no. blocks (identified as Zone 7, 8 & 9), ranging in height from 5 to 10 storeys, to accommodate 711 no. apartments including café/restaurant/retail units, community/cultural spaces, a standalone creche building and the completion of Market St.

The 3 no. residential buildings are arranged around podium courtyards accommodating communal amenity spaces for future residents. Zone 7 is a 5 to 7 storey block onto Main St, Friar's St, Park St and Market St containing 280 apartments. Zone 8 is a 6 to 8 storey block between Main St and Market Street containing 263 apartments. Zone 9 is a 6 to 10 storey block located on Main St, Station Square and Market Street containing 168 units.

Car and cycle parking for both residents and visitors is provided below podium and at surface level throughout the scheme. The proposed development includes all site landscaping works, open space, green roofs, lighting, servicing and utilities, signage, and associated and ancillary works, including site development works above and below ground.

The proposed development sits as part of a Masterplan for a wider Clongriffin landbank which includes the under-construction Block 5 & 6 to the north of Market Street.

For a more detailed description please refer to the Statutory Notices.

The proposed method for compliance validation is via the industry best practice standard for pedestrian comfort (Lawson Criteria). The Lawson Criteria sets acceptable levels of wind speed and velocity for various human activities.

Given the specific location of the buildings and recorded metrological data available for the area, and standard interpolation calculation procedures, it is possible to predict the expected wind speeds and their annual occurrence.

This chapter was completed by: Ashish Nautiyal, a Senior Sustainability Engineer with OCSC (M&E). He has a B.Tech. (Hons) in Mechanical Engineering and over 10 years' experience in the design and supervision of sustainability and energy services for a wide range of projects within the residential, healthcare, commercial, residential and educational sectors. He has worked on a range of projects focusing on Part L, overheating, wind, daylight and LEED energy assessment.

## 17.2 Method

The section outlines the methodology used in the assessment of the pedestrian wind comfort conditions within and surrounding the proposed development.

### 17.2.1 Pedestrian Comfort Compliance

The Lawson criteria give guidance to quantify the effect of wind velocity on pedestrian comfort and safety. The Lawson recommended guidance indicates that for the comfort and safety assessment of the wind environment, it is not only the velocity of wind that is considered but also the frequency of

occurrence of these velocities. The frequency of occurrences is used here as an indicator of the likely duration of certain wind speeds. The Lawson criteria indicates that the threshold mean hourly wind speed for each pedestrian activity should not be exceeded for more than 5% of the time to maintain pedestrian comfort as outlined in **Table 17.1**.

Table 17.1 Lawson Criteria for Pedestrian Comfort

| Pedestrian activity | Threshold mean hourly wind speed not to be exceeded for more than 5% of the time [m/s] |
|---|---|
| Business Walking | 10 |
| Leisurely Walking | 8 |
| Standing | 6 |
| Sitting | 4 |

There are 2 No. additional classes to quantify the safety conditions for typical or sensitive (e.g. frail or a cyclist) pedestrians which are summarised in **Table 17.2**.

Table 17.2 Lawson Criteria for Safety Assessment

| Pedestrian activity | Threshold mean hourly wind speed not to be exceeded for more than 0.023% of the time [m/s] |
|---|---|
| Typical Pedestrian | 20 |
| Sensitive Pedestrian | 15 |

### 17.2.2 Assessment Methodology

The methodology adopted for the study combines the use of Computational Fluid Dynamics (CFD) to predict air flow patterns and wind velocities around the proposed development, the use of wind data from the nearest suitable meteorological station and the recommended comfort and safety standards (The Lawson Criteria).

The study considered the following factors:

- The effect of the geometry, height and massing of the proposed development and existing surroundings on local wind speed and direction;
- The wind speed as a function of the local environment such as topography, ground roughness and nearby obstacles (buildings, bridges, etc.);
- The effects of site location (open field, inner city, etc.);
- Orientation of the building's relative to the prevailing wind direction; and
- The pedestrian activity to be expected (long-term sitting, standing or short-term sitting, leisure and business walking).

### 17.2.3 Extent of CFD Study Area

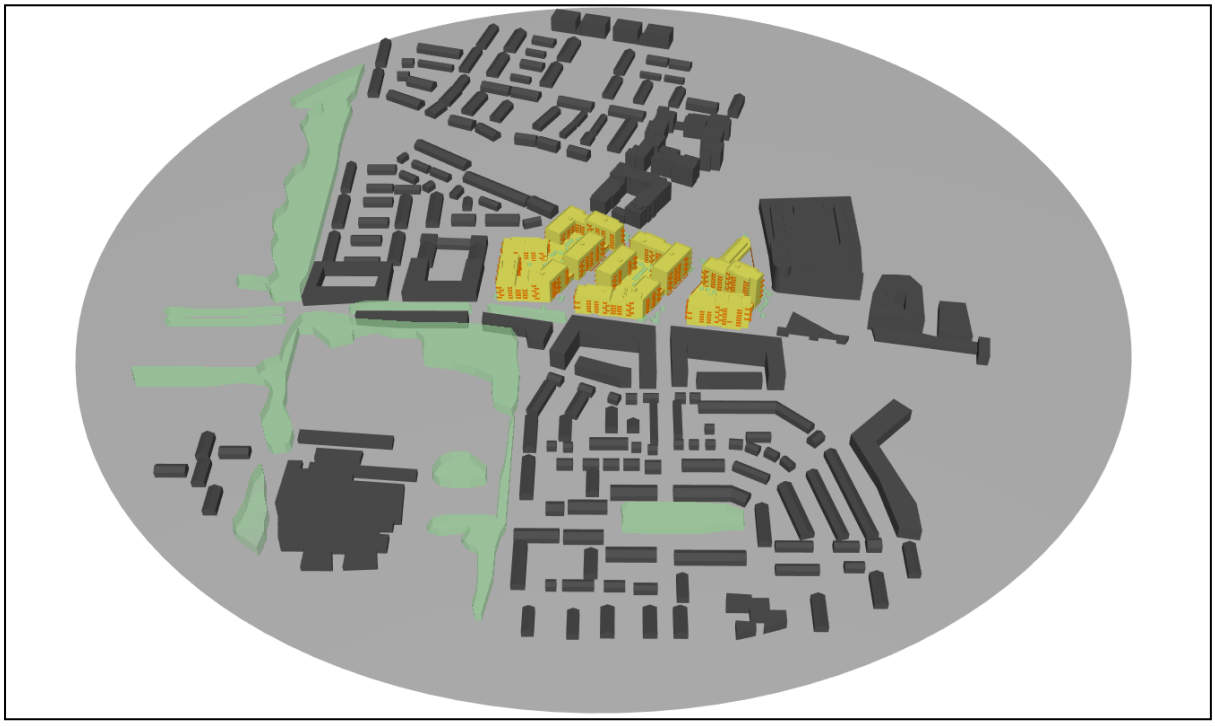
The extent of the built area that is represented in the computational domain is dependent on the influence of the features on the region of interest which includes the site and its nearby surroundings. The analytical CFD model analyses the proposed development. It also includes existing buildings surrounding the development with the extent of the buildings included in the study area illustrated in **Figure 17.1**. The analytical CFD model is assessed against the full Lawson Criteria to identify the pedestrian comfort and safety conditions within and surrounding the development.

The analytical CFD model has been constructed based on the information provided below:

- 3D Revit model and drawings received from HJL;

- Landscape drawings received from the Paul Hogarth Company;
- Available aerial photographic data via Google Maps;
- Meteorological wind data for Dublin Airport.

Figure 17.1 Extent of CFD Study Area



### 17.2.4 Wind Profile

A cylindrical computational domain was created to simulate the effect of the atmospheric boundary layer surrounding the region of interest. The height of the computational domain is 6 times the height of the highest building in the domain.

An atmospheric boundary layer wind profile is applied to the boundaries of the computational model. To incorporate the effect of small height differences and small objects at street level, which are not explicitly included in the model, a roughness has been applied to the ground surface of the detailed CFD model. For the wind profile a roughness length (z0) of 1.6 m has been estimated.

Based on the reference velocity, reference height, and power coefficient, a wind profile can be defined. The wind profile U(z) is defined as follows.

$$U(z) = U_{ref}\left(\frac{z}{z_{ref}}\right)^{\alpha}$$

Where

| | | |
|---|---|---|
| U(z) | Wind velocity | [m/s] |
| $U_{ref}$ | Reference velocity | [m/s] |
| z | Height above the ground | [m] |
| $z_{ref}$ | Roughness length | [m] |
| α | power coefficient | [m] |

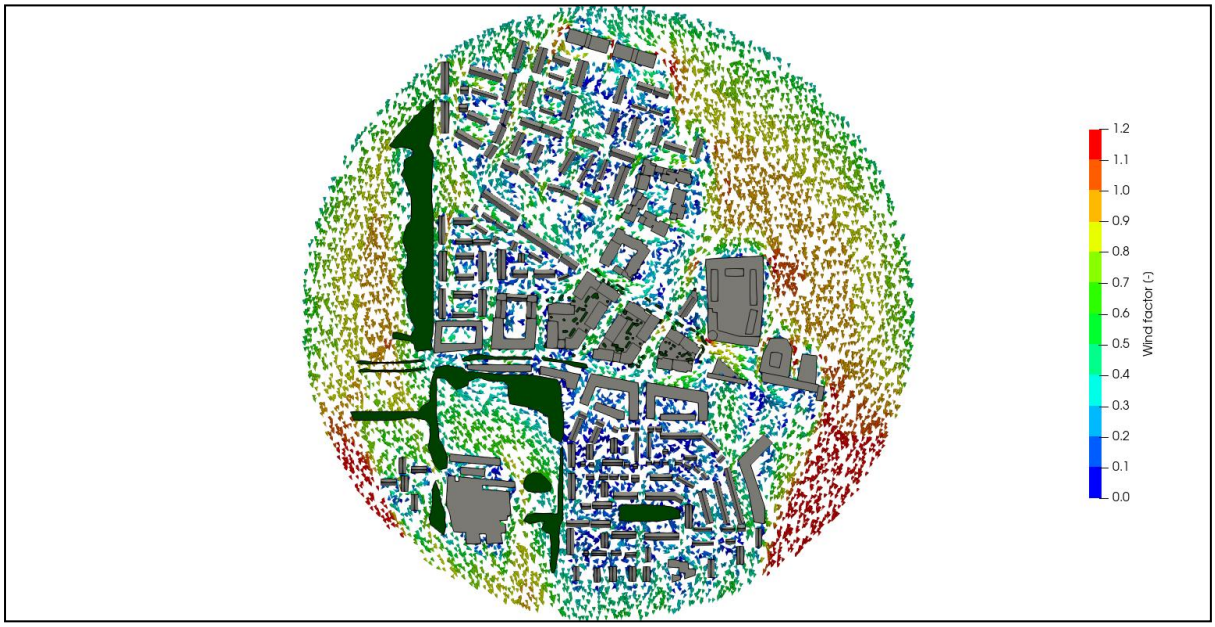
### 17.2.5 Wind Factor

CFD simulations are used to calculate the wind factor. The wind factor is a factor which indicates if the wind speed is locally increased (wind factor > 1.0) or decreased (wind factor < 1.0) due to buildings (or other geometry), relative to the applied reference wind speed at 10m height. The wind factor is independent of the magnitude of the reference wind speed at 10m height, making the obtained wind factor valid for all wind speeds in a specific wind direction range. Hence, one simulation can be applied per wind direction covering all wind speeds in this direction.

To explain the wind factor in more detail, the wind factor results for the 0-degree wind direction (i.e. North) are illustrated in **Figure 17.2**. The wind factor vectors that are coloured green, cyan, dark blue or yellow indicate that the local wind speed has been reduced (wind factor < 1.0), while wind factor arrows which are coloured orange or red indicate the local wind speed has increased (wind factor > 1.0). Using the wind factors, the quantity of hours that a wind speed is exceeded can be calculated (per wind direction) which is then used to assess compliance against the Lawson Criteria.

The wind factor results for all 12 No. wind directions are included in Section 17.4.3.4.

Figure 17.2 Wind Factor – 0 Degree (N) Wind Orientation (At Ground Floor)




### 17.2.6 CFD Modelling

CFD Simulations are performed using the software package Helyx version 4.4.1, which is based on OpenFOAM. The software package is widely used for several applications and has been validated for applications like wind micro-climate assessments. A full 3D CFD model of the proposed development and surrounding buildings was created and split into a large number of control volumes or cells. The standard equations for fluid motion are applied to each cell. The equations are then solved using numerical techniques.

Table 17.3 Summary of CFD Model Settings

| CFD Settings | Description |
|---|---|
| Grid type | Snappy hex mesh (hexahedra and split hexahedra) |
| Cell size | Dynamic, ranging from 0.25 up to 1m at the building surfaces and streets, growing to 2m in the volume |
| Number of cells | 71.6 million elements |
| Simulation type | Steady state |
| Convergence | 1e-4 |
| Number of Iterations | 1500 |
| Fluid | Air fixed properties |
| Turbulence model | Realizable k-ε model |
| Wind volume | Profile for velocity and turbulence |

### 17.2.7 Assumptions and Limitations

Computational Fluid Dynamic (CFD) is a widely recognised method for modelling airflow problems and as computer power develops, it increasingly improves its applicability. However, there are some limitations with CFD in relation to the modelling of wind environments. The method uses mean hourly wind values and presents a limitation to capture gusts.

The Lawson criteria for pedestrian comfort focuses on the effect of wind and do not factor in other environmental variables such as air temperature, solar radiation and relative humidity. However, overlaying all these factors would be a complex process and Lawson's simplified method presents the best available methodology for anticipating wind effects in the built environment on pedestrian comfort.

The buildings were modelled as blocks, i.e. with smooth surfaces and sharp corners, which is generally sufficient detail to represent buildings in airflow modelling. This assumption is industry accepted as further detail to the model such as the window reveals and façade texture would add an impractical and unnecessary complexity to the model without adding greater quality in the results. Furthermore, the large existing and proposed trees which would have an impact on the assessment have been modelled with a different loss coefficient assigned to the deciduous trees which takes account of the loss of foliage during the winter months. Landscaping features such as pergolas and trellis structures were not modelled within the simulation as they would provide an extra level of complexity to an otherwise large and complex CFD model.

## 17.3 Baseline Environment

This section examines the wind conditions on the existing receiving environment prior to the construction of the proposed development. Wind climate data over an 80-year period has been analysed to provide a statistical assessment of the expected wind conditions and resultant pedestrian comfort conditions within the existing site.

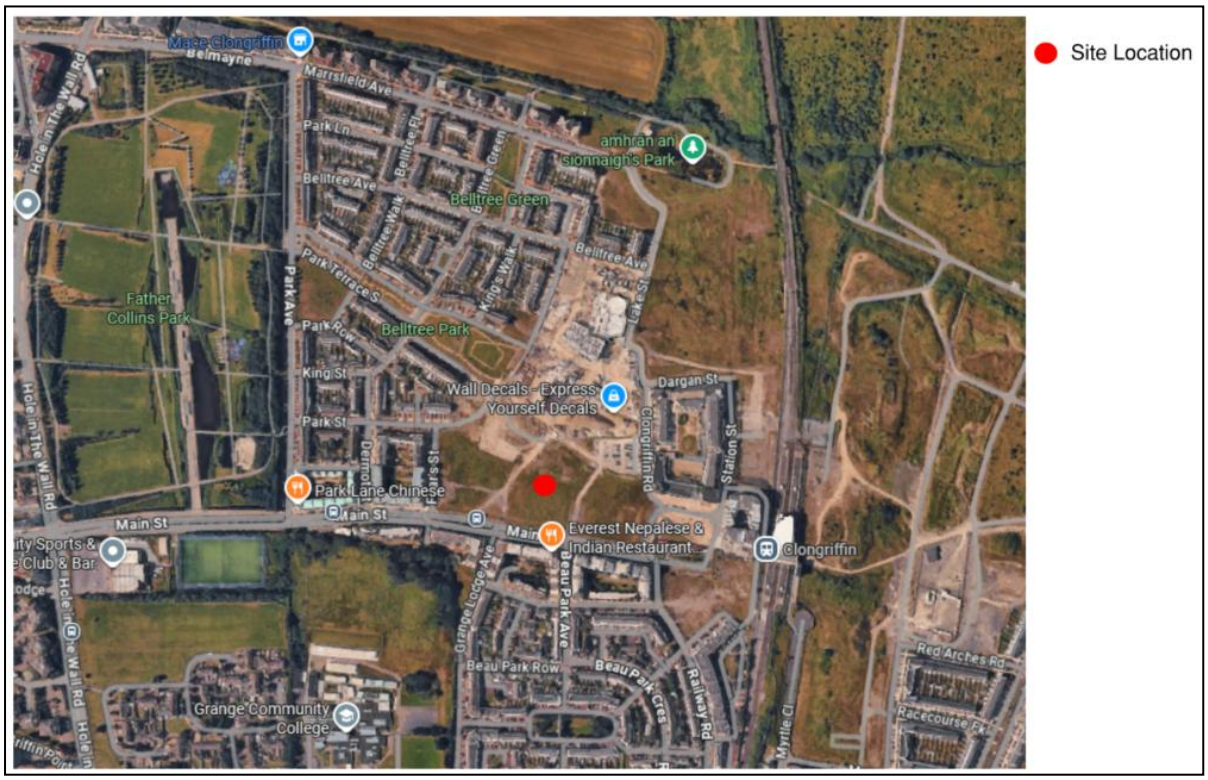
### 17.3.1 Site Locations

The proposed site is located at Main Street, Clongriffin, Dublin 13, as illustrated in **Figure 17.3**. From the image, it is clear that the site sits within a predominantly residential context, characterized by a range of housing densities alongside a mix of supporting uses, including retail outlets, educational facilities, and commercial buildings. This blend of functions contributes to a well-established and active urban environment.

In terms of microclimate, the prevailing wind direction is from the south-west. Notably, there are extensive open sports fields in this direction, associated with Grange Community College and Father Collins Park, which may allow for increased wind exposure across the site. Despite this, the immediate surroundings of the site particularly the relatively dense arrangement of adjacent buildings along its boundaries provide a degree of shelter, helping to mitigate direct wind impact at ground level.

Additionally, the site is situated approximately 3 km inland from the coast, on its eastern side. While this proximity suggests potential exposure to maritime climatic influences, such as higher humidity and occasional strong coastal winds, the intervening urban fabric likely reduces the intensity of these effects before they reach the site.

Figure 17.3 Site Location




## 17.3.2 Existing Site

The existing site is illustrated in **Figure 17.4** with the approximate site boundary outlined in red. At present, the site is predominantly open in character, although it benefits from a substantial belt of mature trees, particularly along the south-western boundary. These trees play an important role in modifying local wind conditions by providing a degree of filtering and attenuation of the prevailing south-westerly winds.

Surrounding the site, there are a number of established buildings located to the south, west, and north-east. In addition, an approved development scheme (Zones 5 and 6) is situated immediately to the north of the site, which will further influence the local wind environment once constructed. The presence of these existing and permitted structures contributes to a relatively enclosed urban form.

Overall, the site can be considered moderately sheltered in its current condition. This is primarily due to the combined effect of the mature vegetation and the surrounding built development, particularly

along Main Street and Friar's Street, which act as barriers to prevailing winds and help reduce wind speeds at pedestrian level.

Figure 17.4 Existing Site




## 17.3.3 Wind Climate

The wind climate analysis is based on the wind data obtained from the Dublin Airport weather station (approximately 7 km from the proposed site) which incorporates hourly wind data over an 80-year period (1946 to 2026).

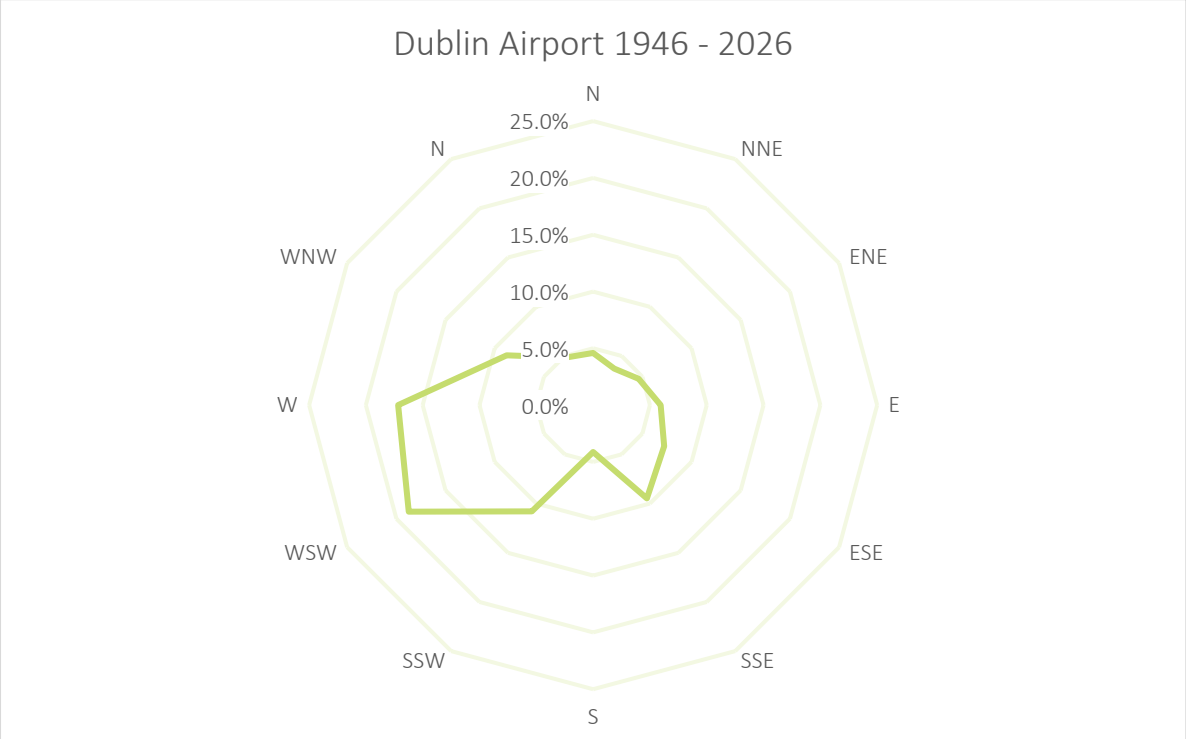
Table 17.4 Frequency of Wind Velocity Occurrence per Wind Direction

| Velocity min | Velocity max | N | NNE | ENE | E | ESE | SSE | S | SSW | WSW | W | WNW | N |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Dir_0 | Dir_30 | Dir_60 | Dir_90 | Dir_120 | Dir_150 | Dir_180 | Dir_210 | Dir_240 | Dir_270 | Dir_300 | Dir_330 |
| 0 | 1 | 12470 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 |
| 1 | 2 | 2224 | 2348 | 1930 | 3110 | 3920 | 3667 | 2202 | 2468 | 2722 | 3213 | 3129 | 2548 |
| 2 | 3 | 3705 | 3678 | 3278 | 5517 | 7157 | 6943 | 3904 | 5281 | 6861 | 6896 | 5768 | 4224 |
| 3 | 4 | 3485 | 4393 | 4962 | 7567 | 8991 | 9348 | 4166 | 8318 | 13170 | 13361 | 9141 | 5155 |
| 4 | 5 | 2980 | 3900 | 5637 | 6946 | 8824 | 9882 | 3757 | 9949 | 17384 | 17448 | 11491 | 5787 |
| 5 | 6 | 2254 | 3389 | 4981 | 5303 | 7134 | 9687 | 3402 | 10709 | 18625 | 18365 | 10084 | 5192 |
| 6 | 7 | 1798 | 2711 | 3982 | 3989 | 5084 | 8504 | 3130 | 10252 | 17626 | 16480 | 7693 | 4018 |
| 7 | 8 | 1283 | 2029 | 2846 | 2996 | 3425 | 6468 | 2704 | 8893 | 15525 | 13031 | 5254 | 2820 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 8 | 9 | 827 | 1426 | 1964 | 2196 | 2353 | 4612 | 2060 | 7105 | 12884 | 10292 | 3738 | 1834 |
| 9 | 10 | 492 | 882 | 1224 | 1544 | 1420 | 2815 | 1426 | 4808 | 9206 | 7547 | 2218 | 1036 |
| 10 | 11 | 332 | 571 | 809 | 1073 | 939 | 1991 | 981 | 3385 | 6829 | 5250 | 1348 | 598 |
| 11 | 12 | 184 | 356 | 415 | 627 | 596 | 1118 | 561 | 1976 | 4358 | 3518 | 742 | 325 |
| 12 | 13 | 118 | 229 | 245 | 401 | 377 | 679 | 327 | 1168 | 2742 | 2147 | 460 | 200 |
| 13 | 14 | 52 | 108 | 104 | 204 | 210 | 382 | 152 | 699 | 1702 | 1325 | 278 | 123 |
| 14 | 15 | 27 | 33 | 59 | 115 | 101 | 206 | 64 | 361 | 867 | 704 | 125 | 46 |
| 15 | 16 | 15 | 11 | 28 | 73 | 83 | 123 | 29 | 221 | 551 | 447 | 77 | 24 |
| 16 | 17 | 4 | 5 | 10 | 27 | 33 | 35 | 6 | 79 | 254 | 210 | 38 | 14 |
| 17 | 18 | 2 | 8 | 1 | 12 | 19 | 15 | 2 | 38 | 122 | 124 | 17 | 0 |
| 18 | 19 | 0 | 0 | 0 | 1 | 1 | 5 | 3 | 6 | 53 | 39 | 9 | 2 |
| 19 | 20 | 1 | 2 | 0 | 2 | 1 | 2 | 0 | 5 | 37 | 43 | 8 | 0 |
| 20 | 21 | 0 | 0 | 0 | 2 | 0 | 2 | 1 | 2 | 31 | 17 | 4 | 0 |
| 21 | 22 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 6 | 13 | 13 | 0 | 0 |
| 22 | 23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | 5 | 2 | 0 |
| 23 | 24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 6 | 0 | 0 |
| 24 | 25 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| 25 | 26 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

**Figure 17.5** graphically illustrates the data in **Table 17.4** above and illustrates the percentage of hours per wind direction over the 80-year period (1946– 2026) for the 12 no. wind directions. It is evident from the figure below the predominant wind directions are SSW, WSW and W.

Figure 17.5 Percentage of Hours per Wind Direction (Dublin Airport 1946– 2026)



The hourly wind data is the basis for the wind climate analysis. The number of hours that wind occurs from a given wind direction and velocity influences the local wind climate. The CFD simulation is used to calculate the wind-factor (local wind velocity relative to reference wind velocity). The wind-factor is a measure to calculate the number of hours that a given threshold wind velocity is exceeded based on statistical wind data.

### 17.3.4 Summary

Based on the assessment carried out on the existing site and the statistical analysis of 80 years of climate data from the nearby Dublin airport, the existing site can be considered sheltered from the prevailing wind directions and is considered a comfortable environment for pedestrians with wind speeds not exceeding the business walking class as per the Lawson criteria.

## 17.4 Predicted Impacts of the proposed development

### 17.4.1 Do-Nothing Impact

In a Do-Nothing scenario, no buildings will be constructed on the Site and, therefore, the impact will be ***imperceptible*** and ***neutral*** on the adjoining properties and surrounding properties, with existing wind levels remaining unchanged.

### 17.4.2 Construction Phase

The assessment of the wind microclimate during the construction phase has been based on professional judgement by reviewing the existing site conditions and the expected conditions once the development is in place via the CFD modelling. It is expected the wind microclimate will gradually adjust from the existing conditions to the final modelled scenario as construction progress develops.

### 17.4.3 Operational Phase

The impact during the operational phase has been determined using CFD modelling with the methodology used in the assessment outlined in Section 17.2.

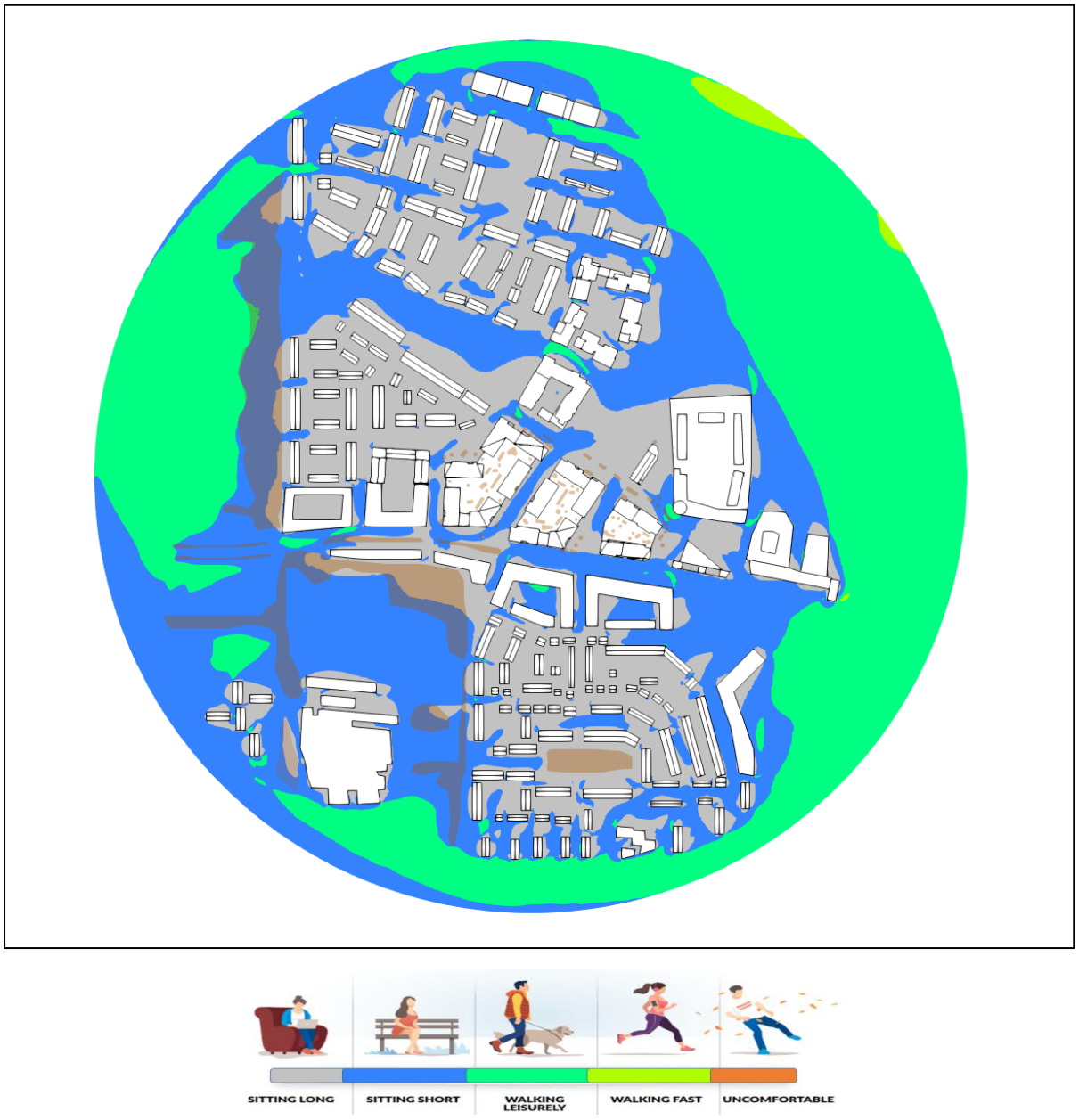
The number of hours for all wind directions are summed to calculate the total number of hours that a given pedestrian activity class exceeds the 5% yearly threshold with the Lawson results presented in the following sections.

#### 17.4.3.1 Ground / Street Level

The pedestrian wind comfort results at ground/street level (1.5m above ground level) are included in this section and are summarised as follows:

- As illustrated in **Figure 17.6**, most areas at street level are suitable for sitting (areas highlighted in grey).
- The majority of the remaining areas that do not comply with the “Sitting” class but suitable for “Standing” (areas highlighted in blue).
- The area highlighted in green represent good enough for leisurely walk but not for sitting.
- The pedestrian comfort at ground/street level is excellent throughout the development with the layout of the buildings and the existing and proposed trees having a significant positive effect in terms of mitigating excessive wind speeds.
- Based on the results presented, the proposed development will have an imperceptible impact on the pedestrian wind comfort at street level.

Figure 17.6 Pedestrian Wind Comfort Results – Ground/Street Level




*Note: Areas under Trees Hatched in Dark Brown, Adjacent Buildings Hatched in White*

### 17.4.3.2 Shared Amenity Spaces

Shared amenity spaces are located at the podium level and have been evaluated against established pedestrian wind comfort criteria. The assessment indicates that all podium-level amenity areas meet the comfort thresholds for both sitting and walking activities, as shown in **Figure 17.7**.

Figure 17.7 Pedestrian Wind Comfort Results – Shared Amenity Spaces (Podium)




### 17.4.3.3 Private Balconies & Terraces

Private balconies are not considered common pedestrian areas. As such, they have not been assessed against the typical comfort classes for pedestrian comfort. However, they have been assessed based on the safety criteria with the most stringent condition being considered, i.e. “sensitive”. Based on the sensitive class, all private balconies are currently considered safe as illustrated in Figure 17.8 to 17.10. There are no amenity spaces provided on terraces.

Figure 17.8 Pedestrian Wind Comfort Results – Private Balconies Zone 7

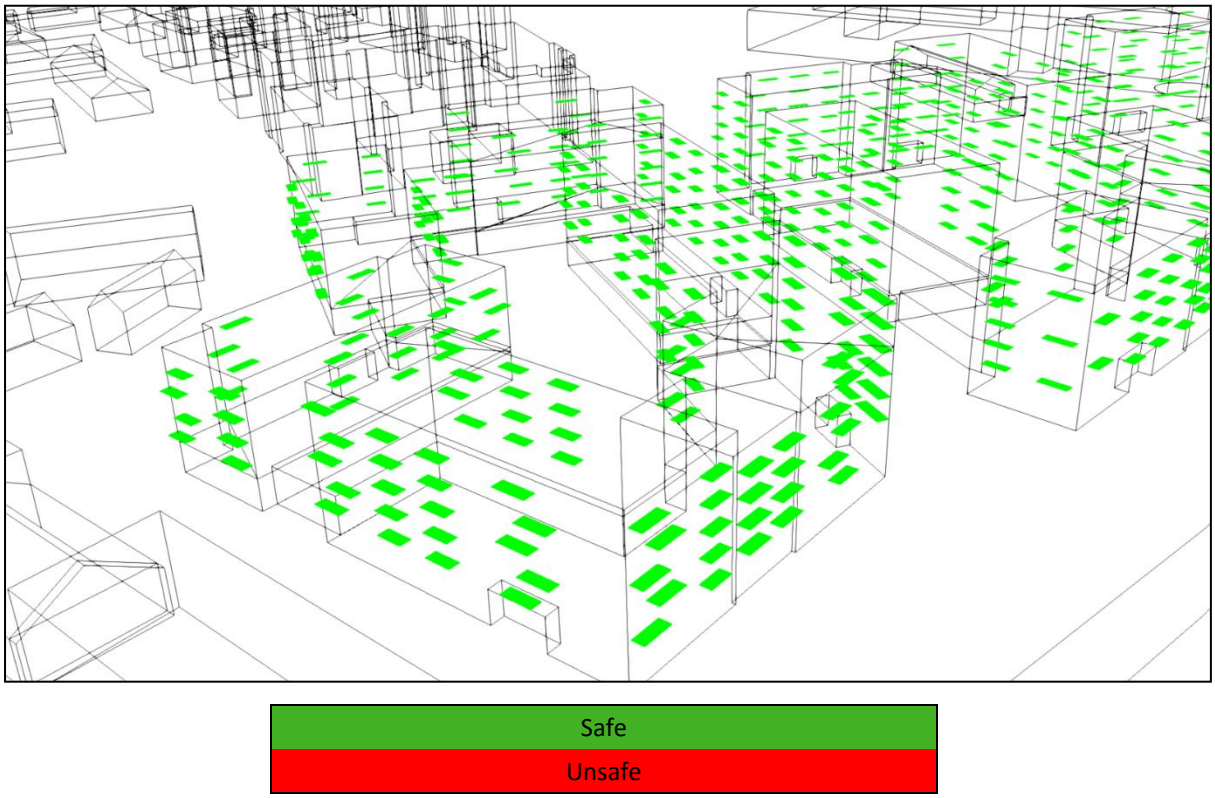



Figure 17.9 Pedestrian Wind Comfort Results – Private Balconies Zone 8

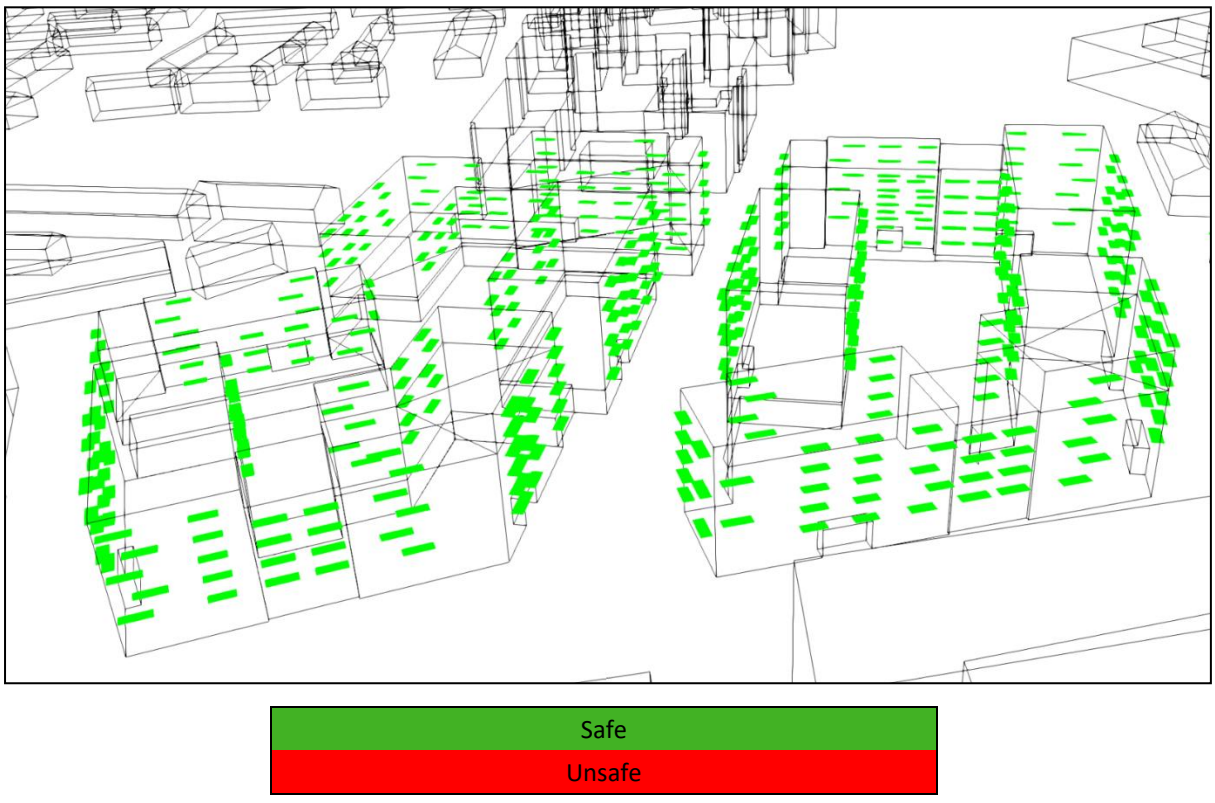
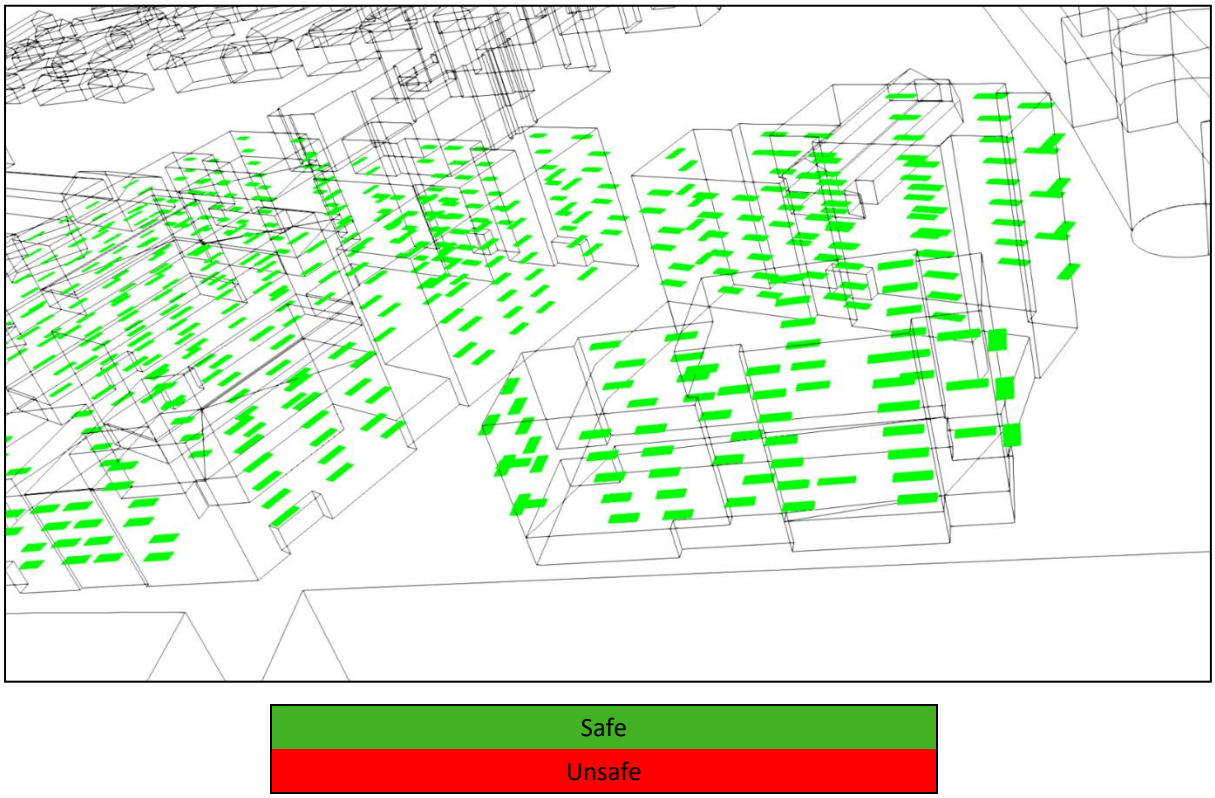


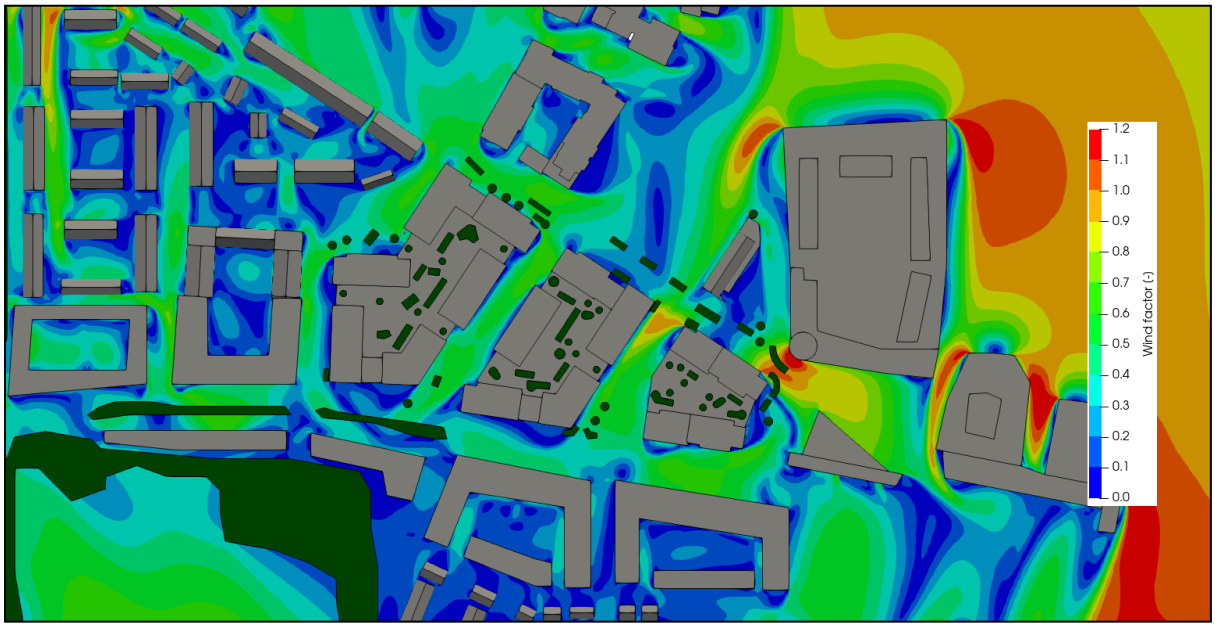
Figure 17.10 Pedestrian Wind Comfort Results – Private Balconies Zone 9




#### 17.4.3.4 CFD Wind Factor Results

The CFD wind factor (WF) velocity vectors and contours for each wind direction, which the Lawson results are based upon, are illustrated in this section. Refer to Section 17.4.3.1 on how to interpret the images. Note, the contours (bottom image) is a graphical representation of the velocity vectors (top image).

Figure 17.11 Wind Factor – 0 Degree (N) Wind Direction – Ground Level



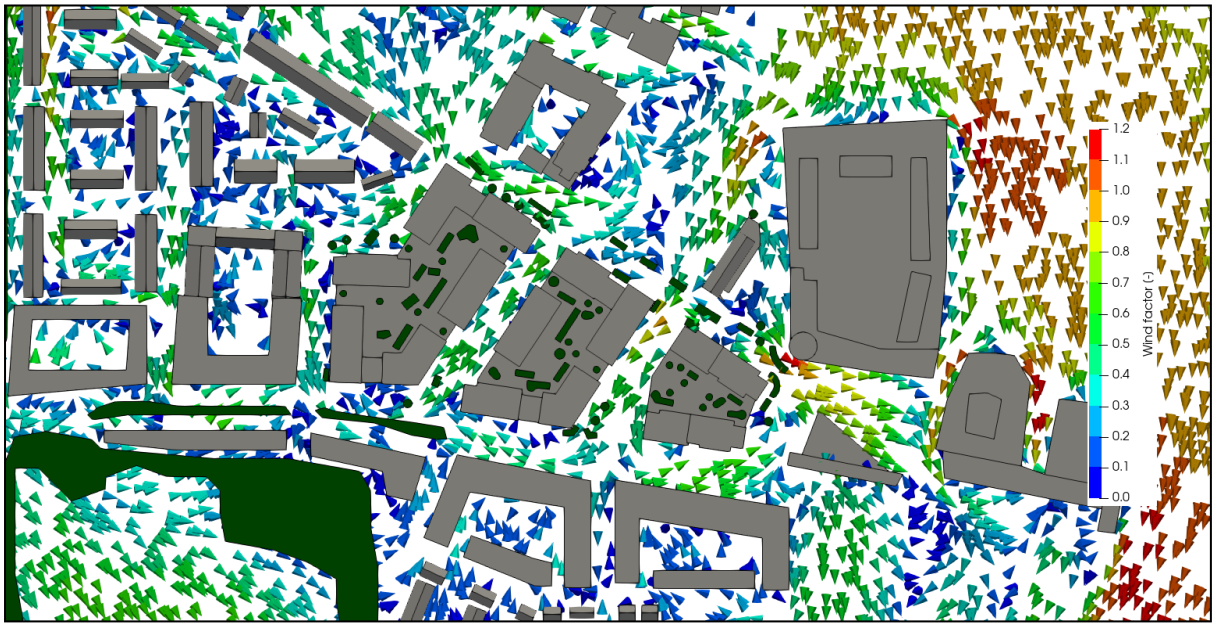
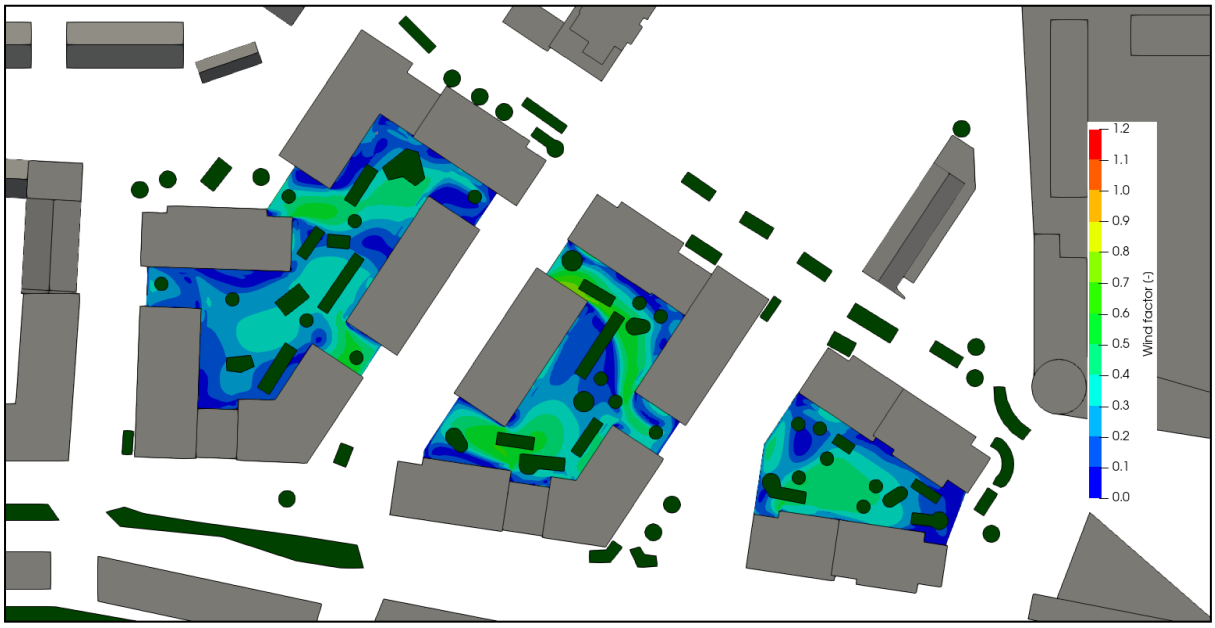



Figure 17.12 Wind Factor – 0 Degree (N) Wind Direction – Podium Level



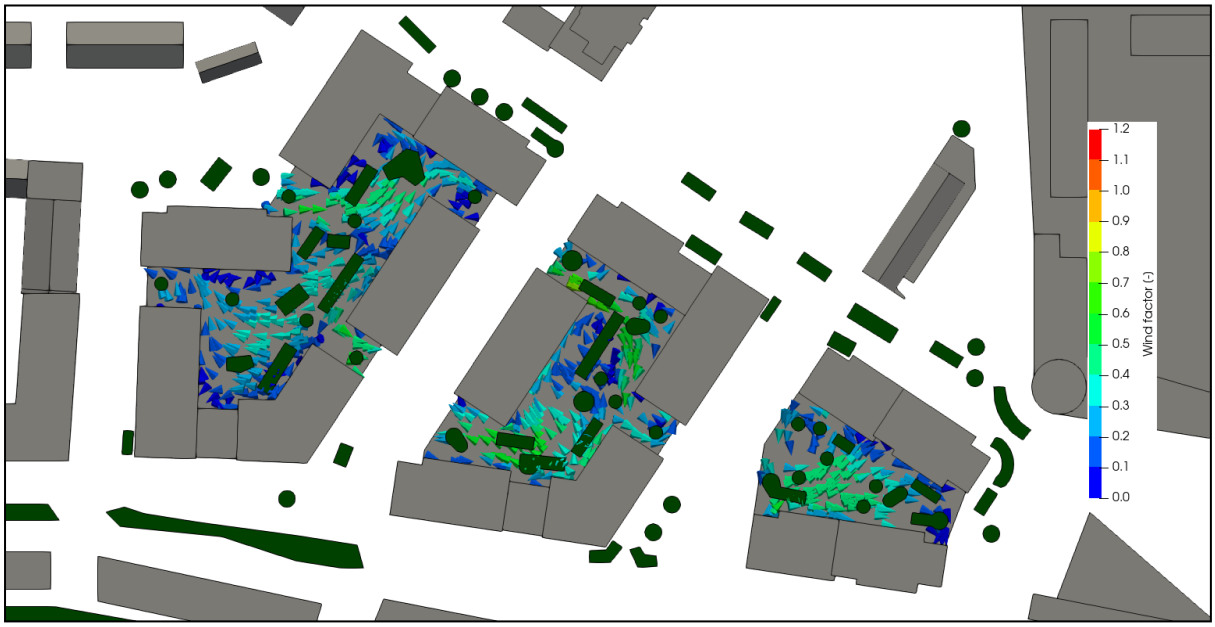
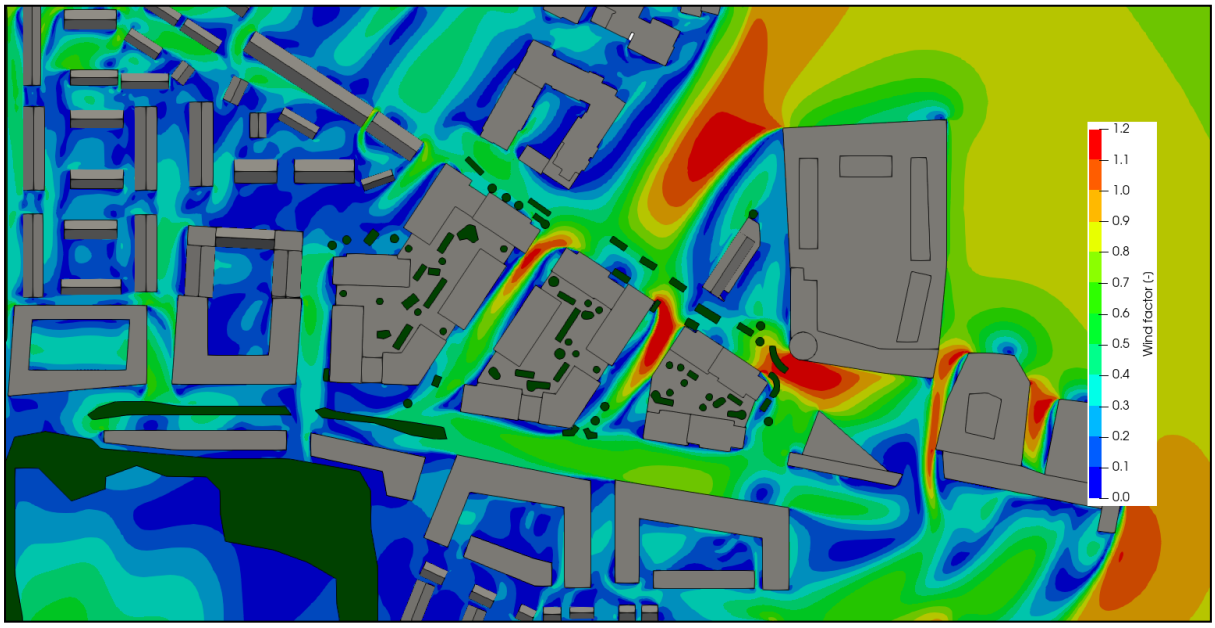



Figure 17.13 Wind Factor – 30 Degree (N) Wind Direction – Ground Level



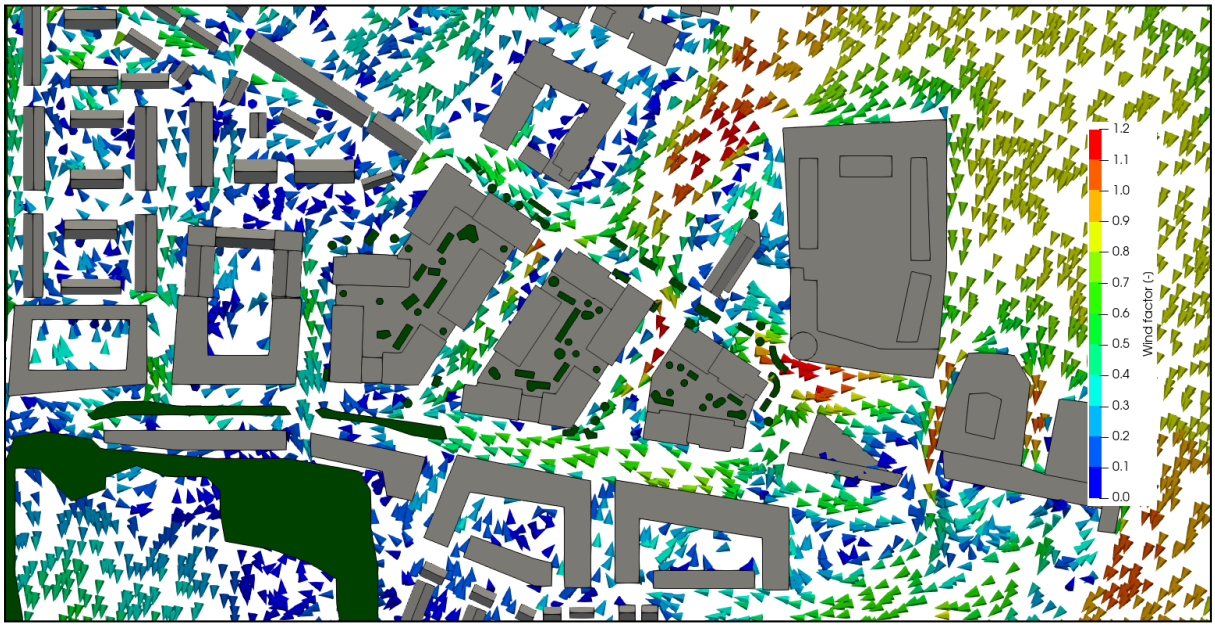



Figure 17.14 Wind Factor – 30 Degree (N) Wind Direction – Podium Level

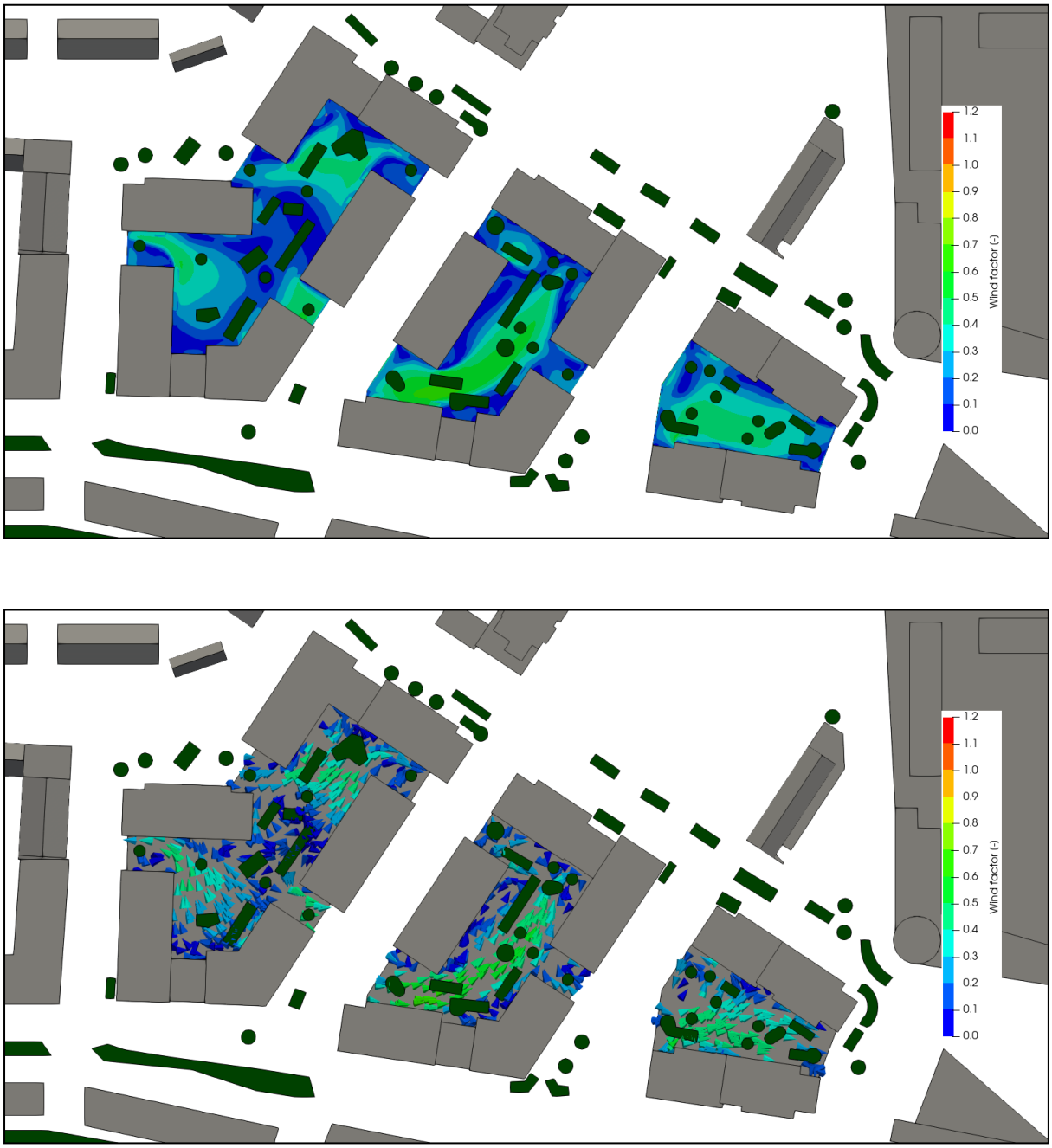
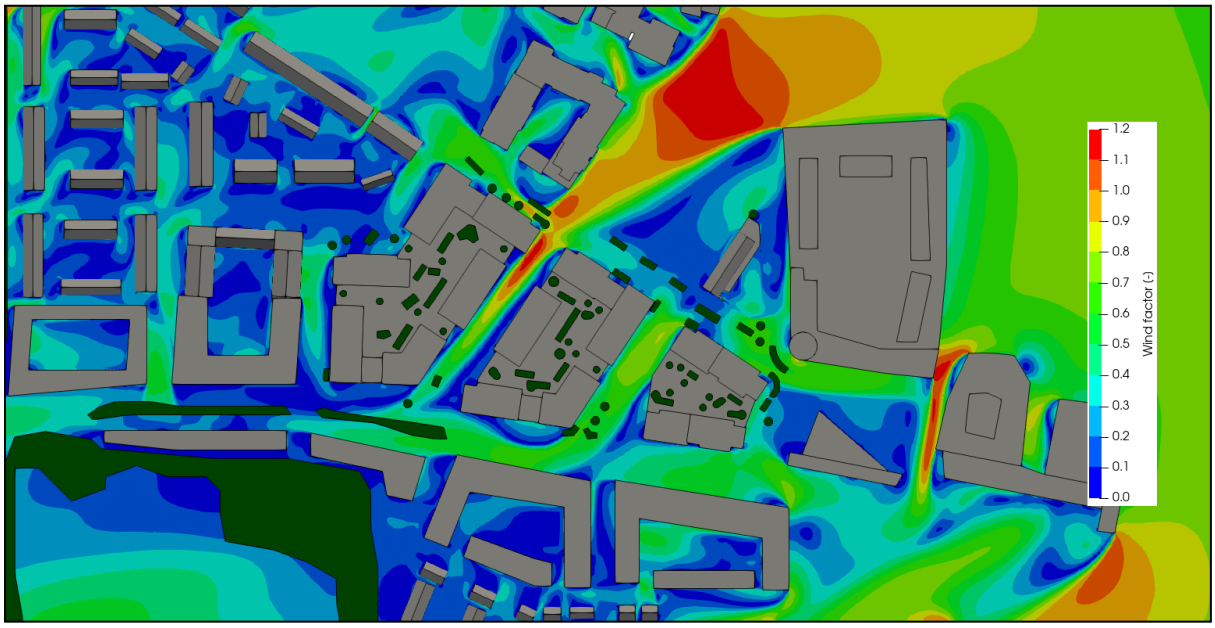


Figure 17.15 Wind Factor – 60 Degree (N) Wind Direction – Ground Level



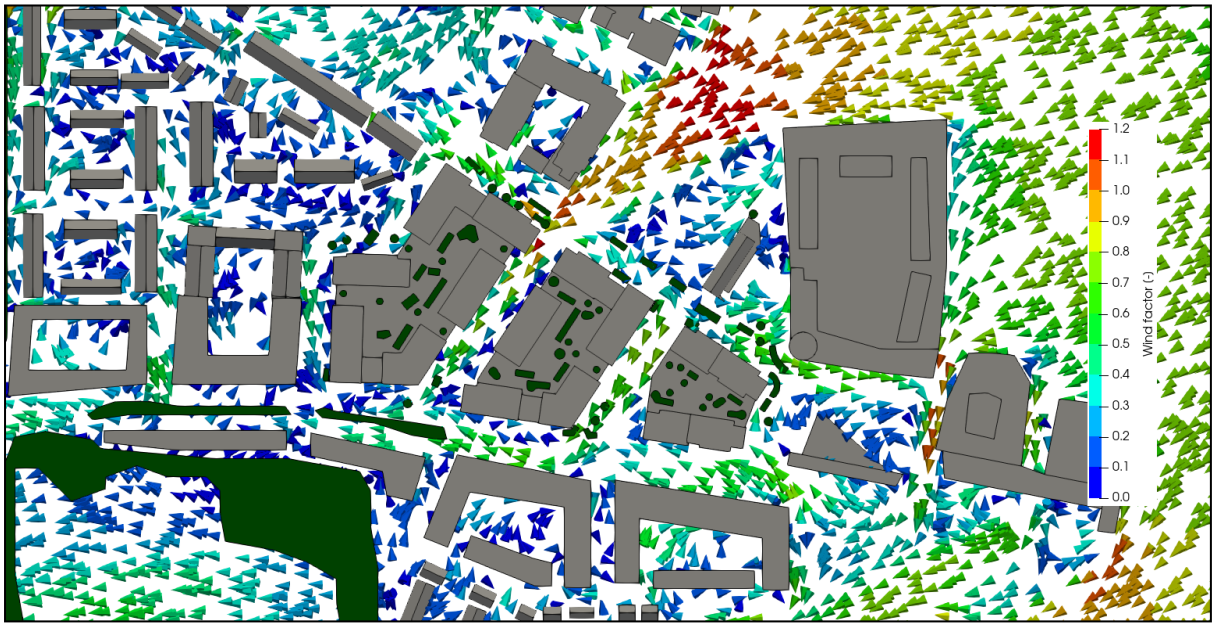



Figure 17.16 Wind Factor – 60 Degree (N) Wind Direction – Podium Level

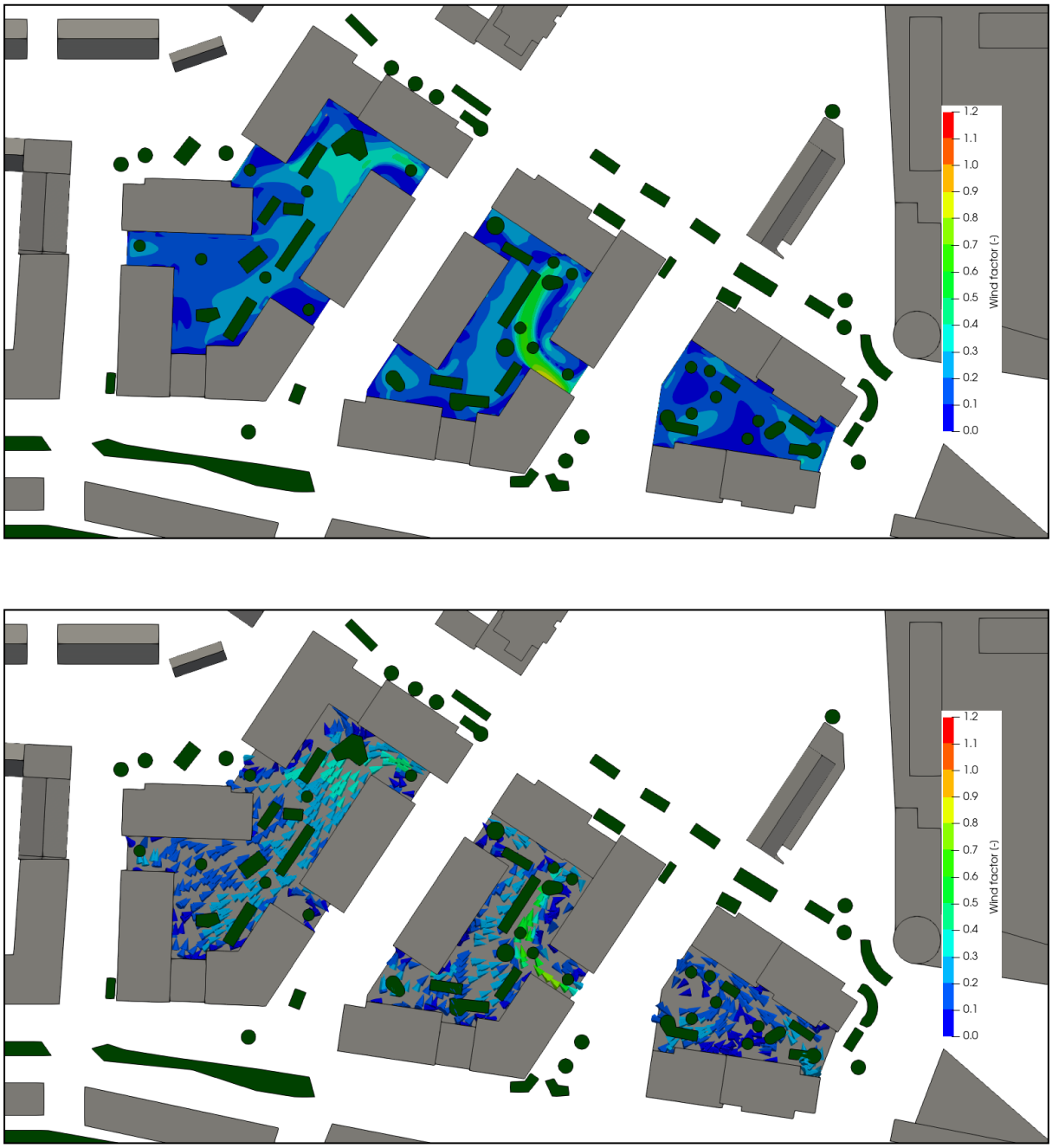
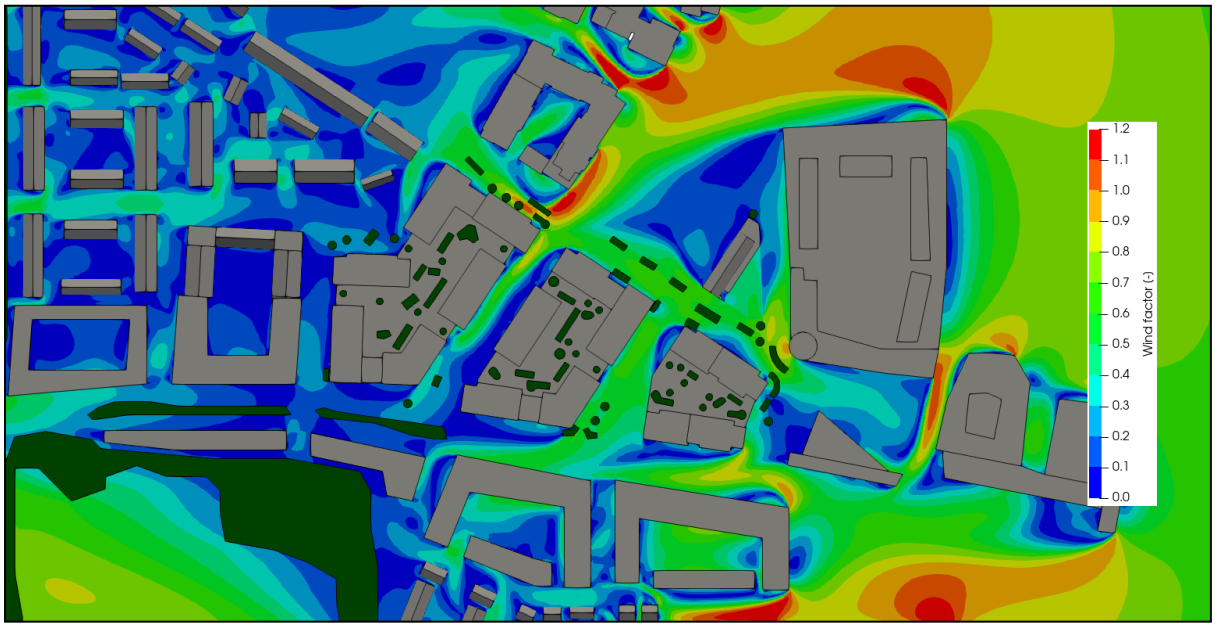


Figure 17.17 Wind Factor – 90 Degree (N) Wind Direction – Ground Level



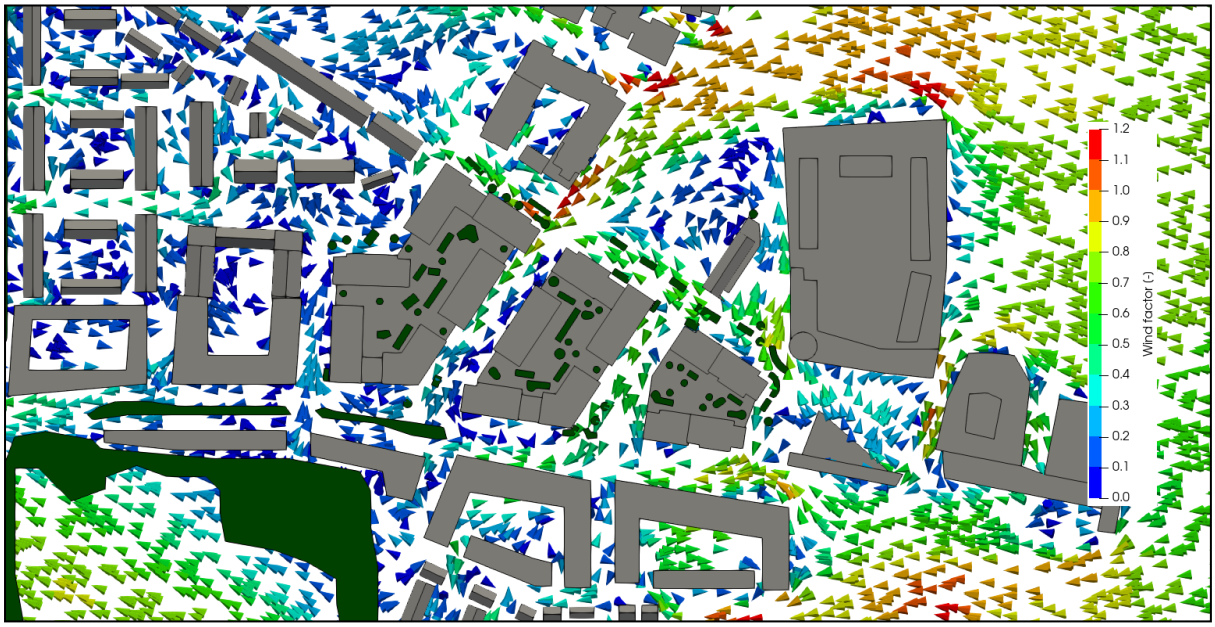



Figure 17.18 Wind Factor – 90 Degree (N) Wind Direction – Podium Level

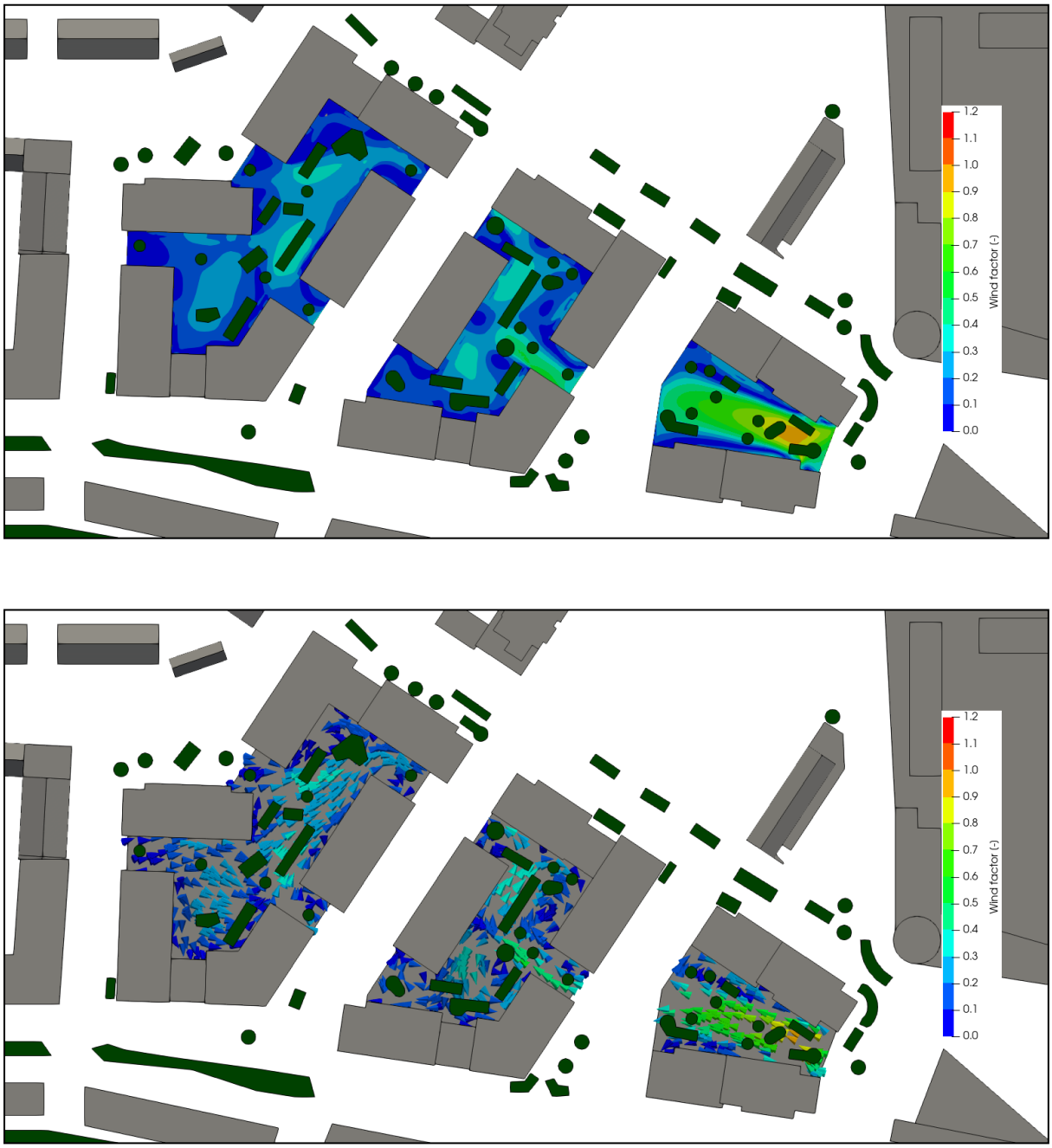
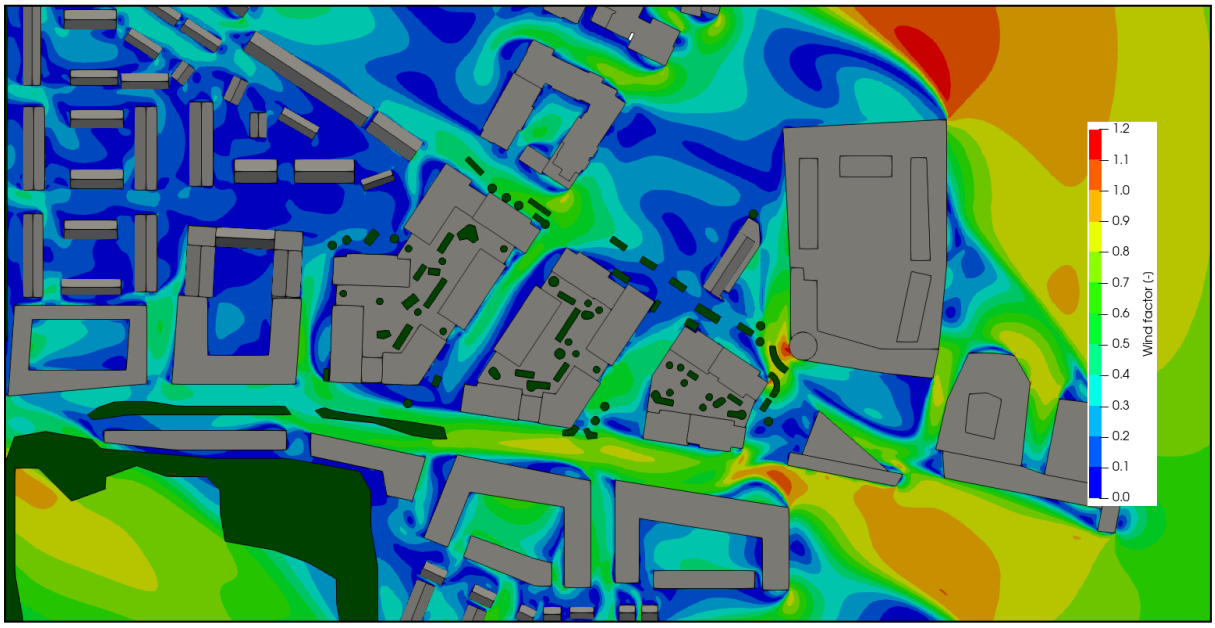


Figure 17.19 Wind Factor – 120 Degree (N) Wind Direction – Ground Level



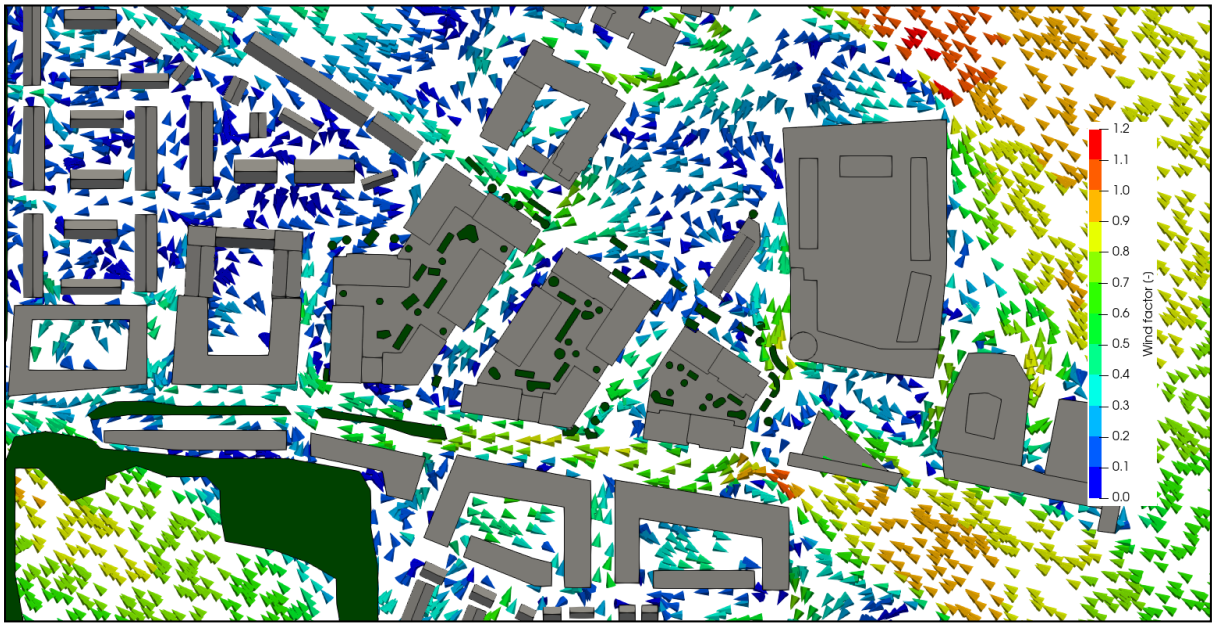
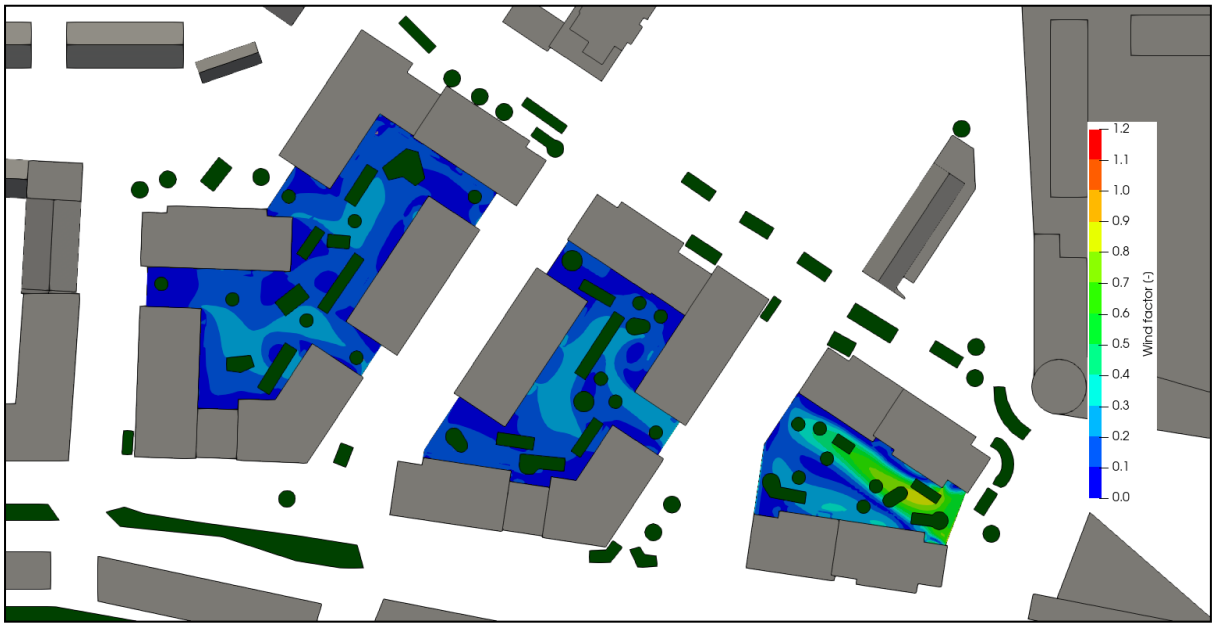



Figure 17.20 Wind Factor – 120 Degree (N) Wind Direction – Podium Level



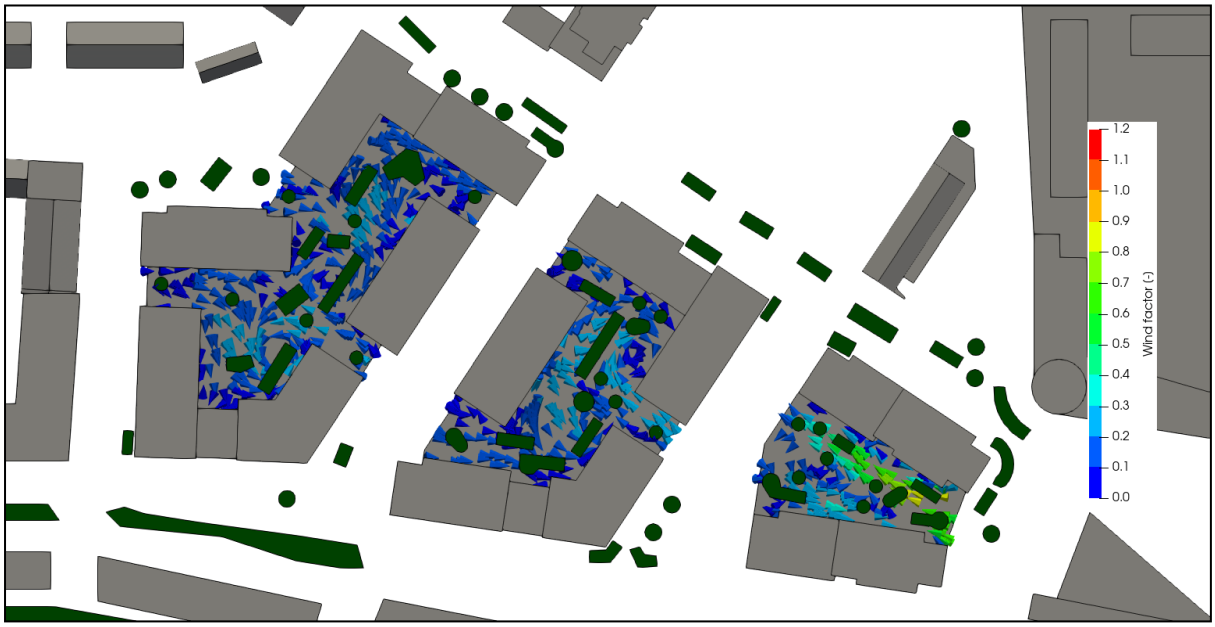
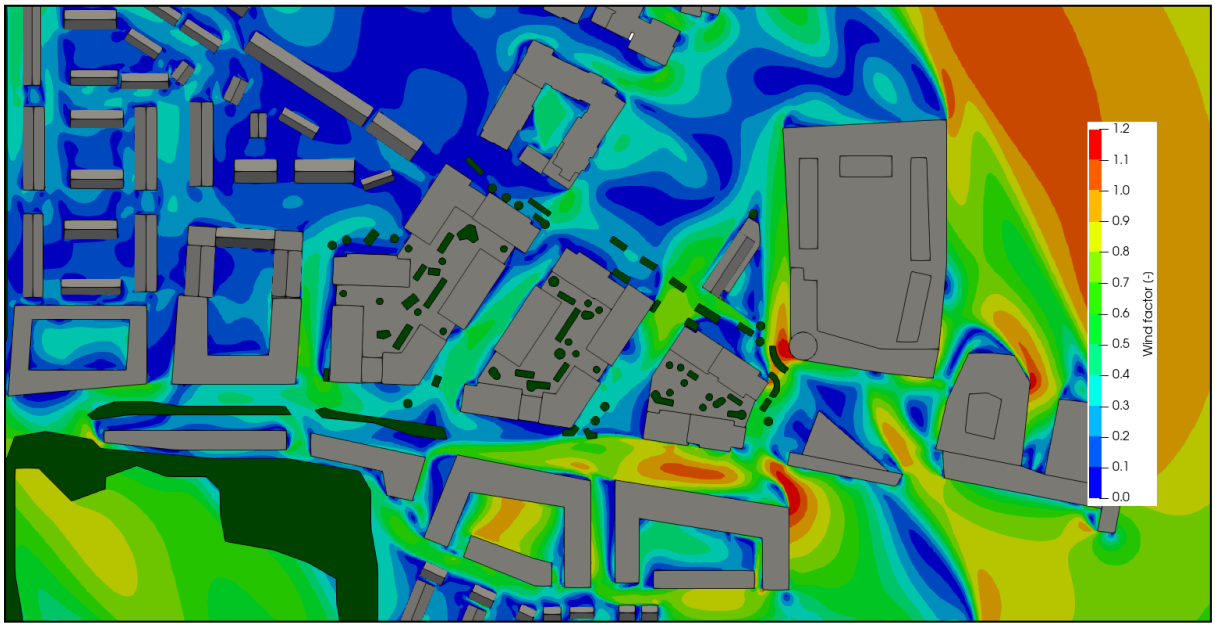



Figure 17.21 Wind Factor – 150 Degree (N) Wind Direction – Ground Level



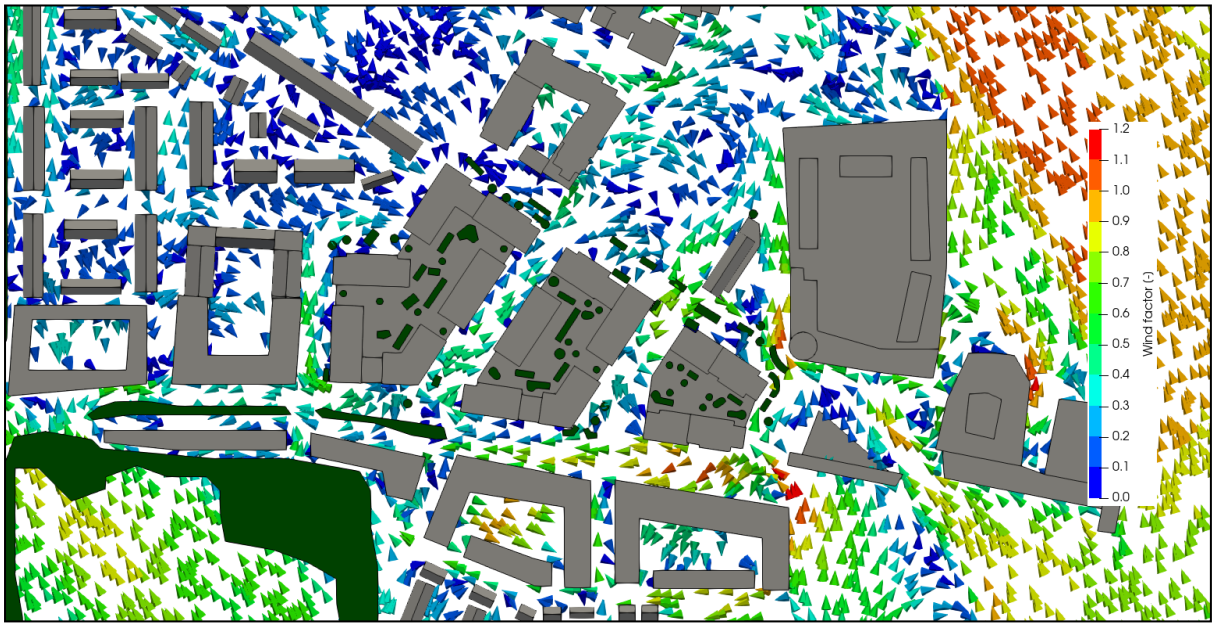



Figure 17.22 Wind Factor – 150 Degree (N) Wind Direction – Podium Level

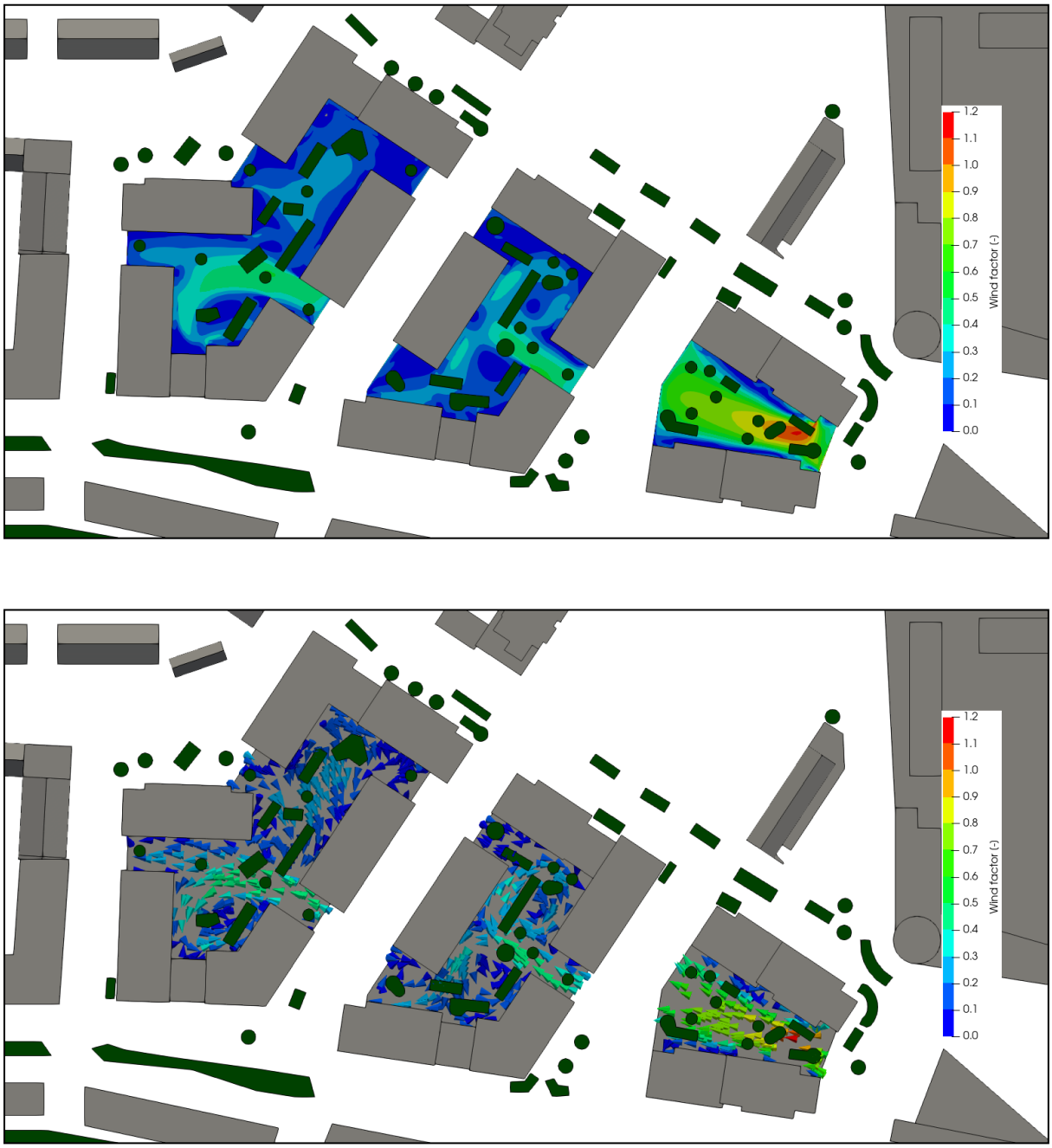
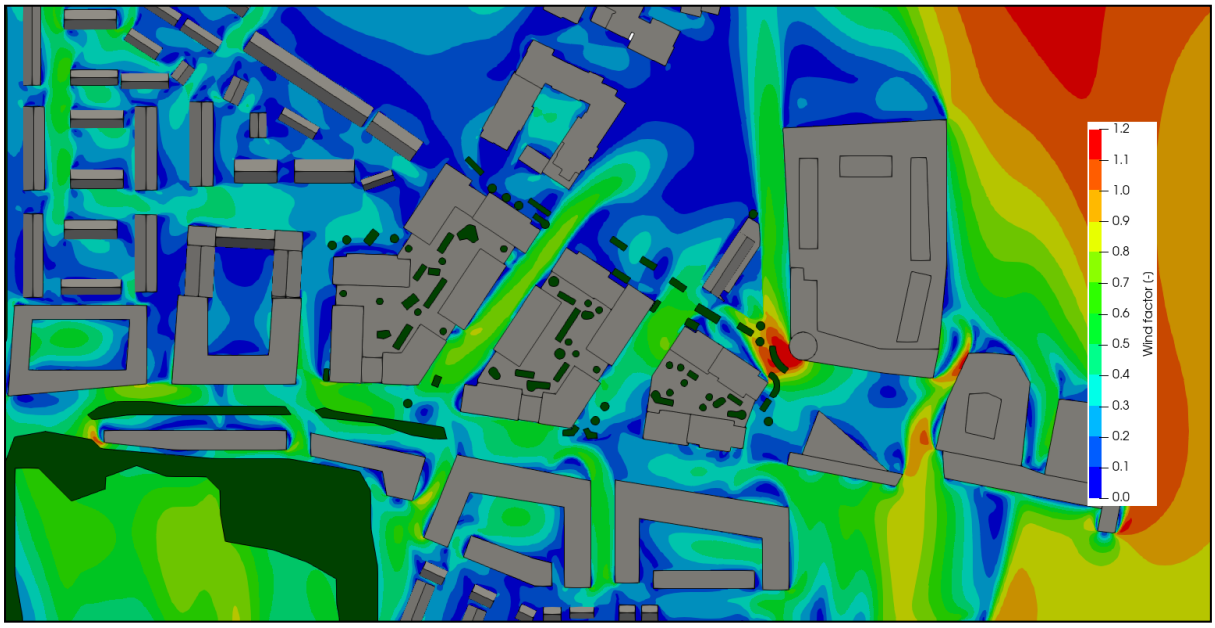


Figure 17.23 Wind Factor – 180 Degree (N) Wind Direction – Ground Level



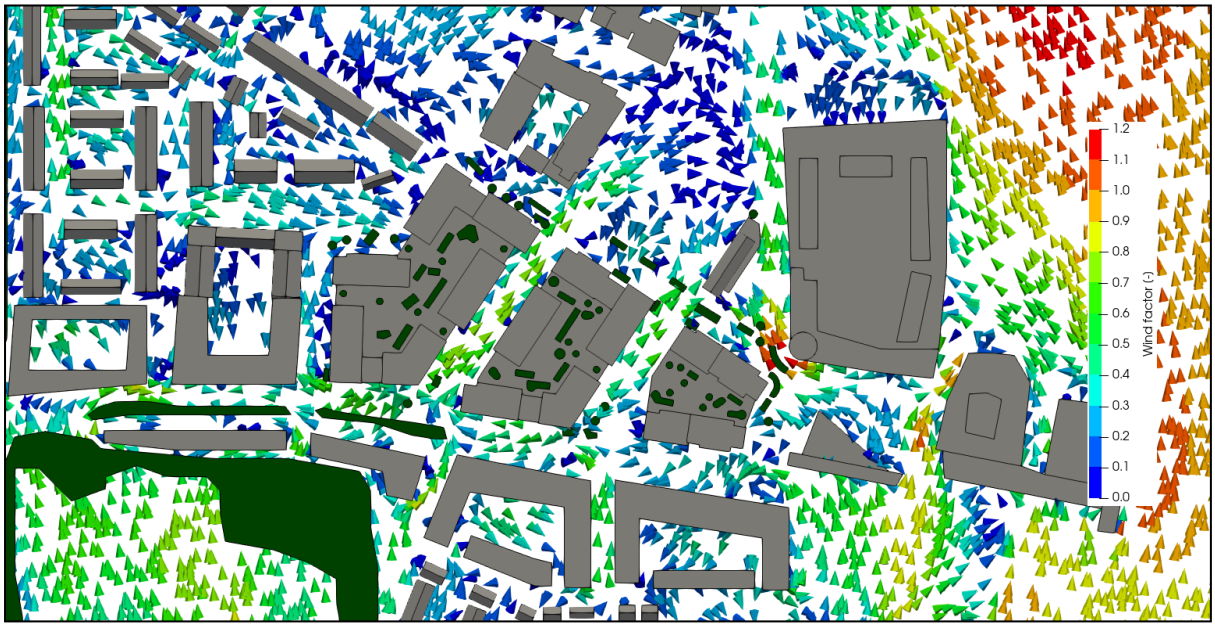



Figure 17.24 Wind Factor – 180 Degree (N) Wind Direction – Podium Level

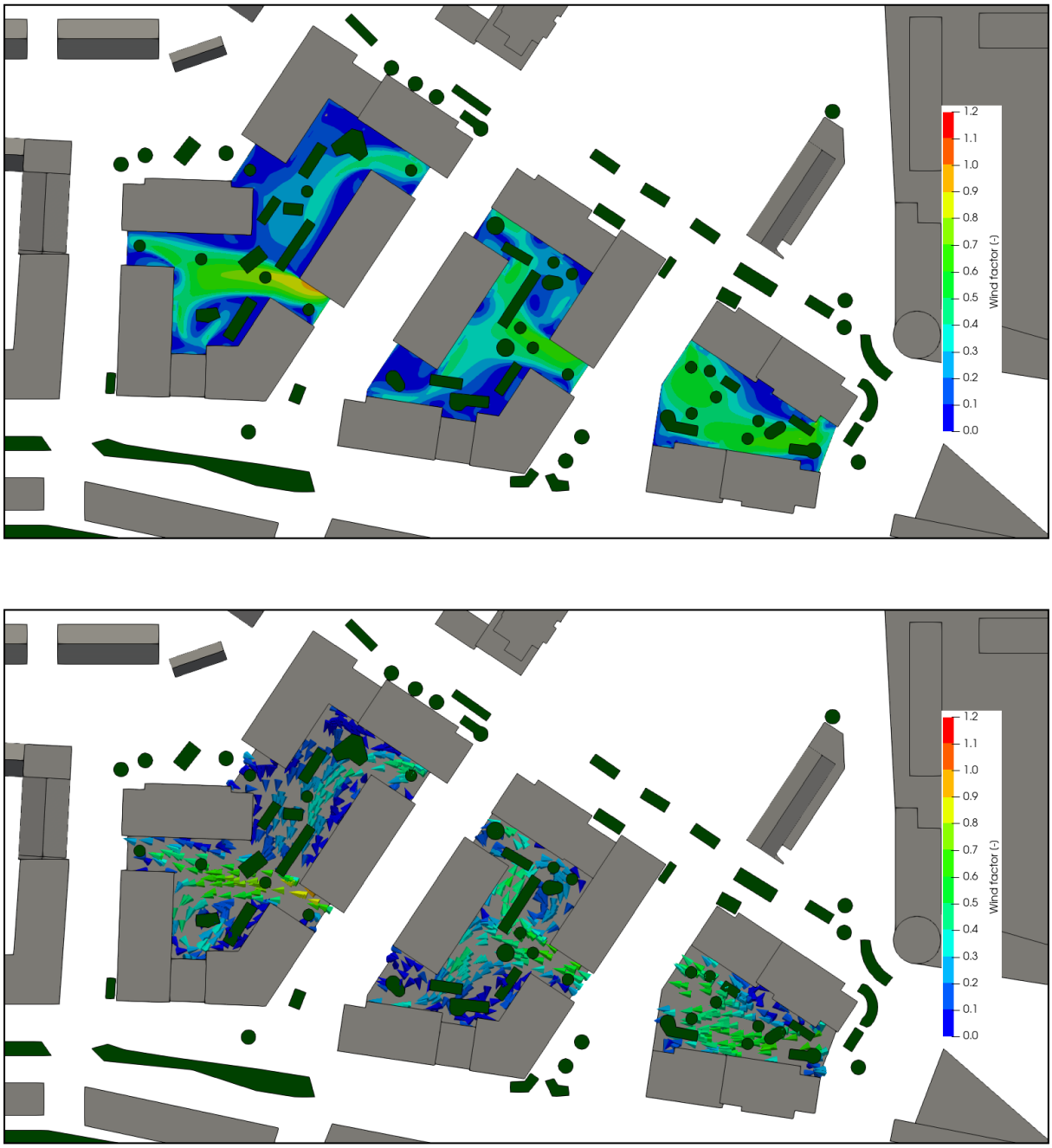


Figure 17.25 Wind Factor – 210 Degree (N) Wind Direction – Ground Level

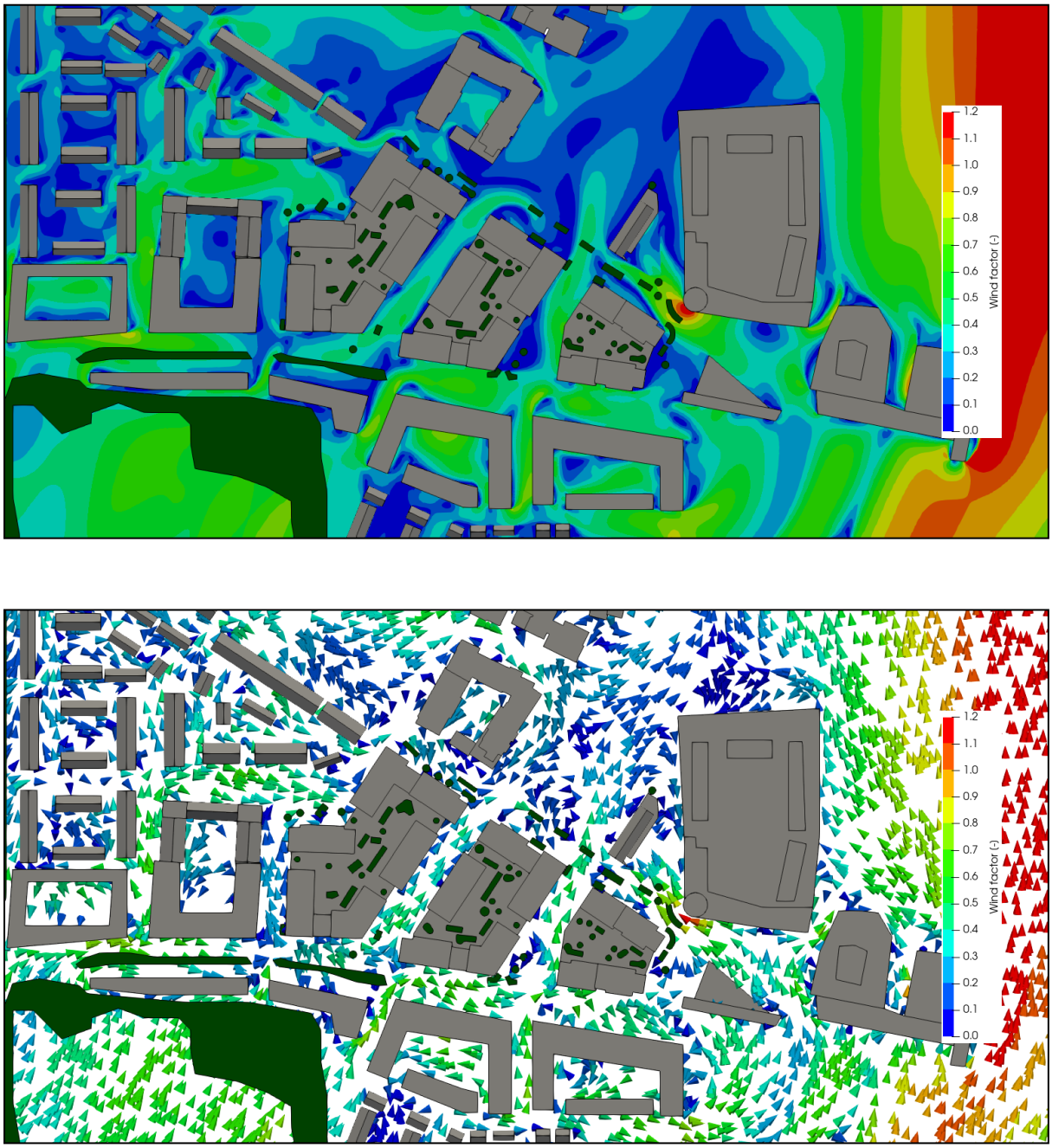


Figure 17.26 Wind Factor – 210 Degree (N) Wind Direction – Podium Level

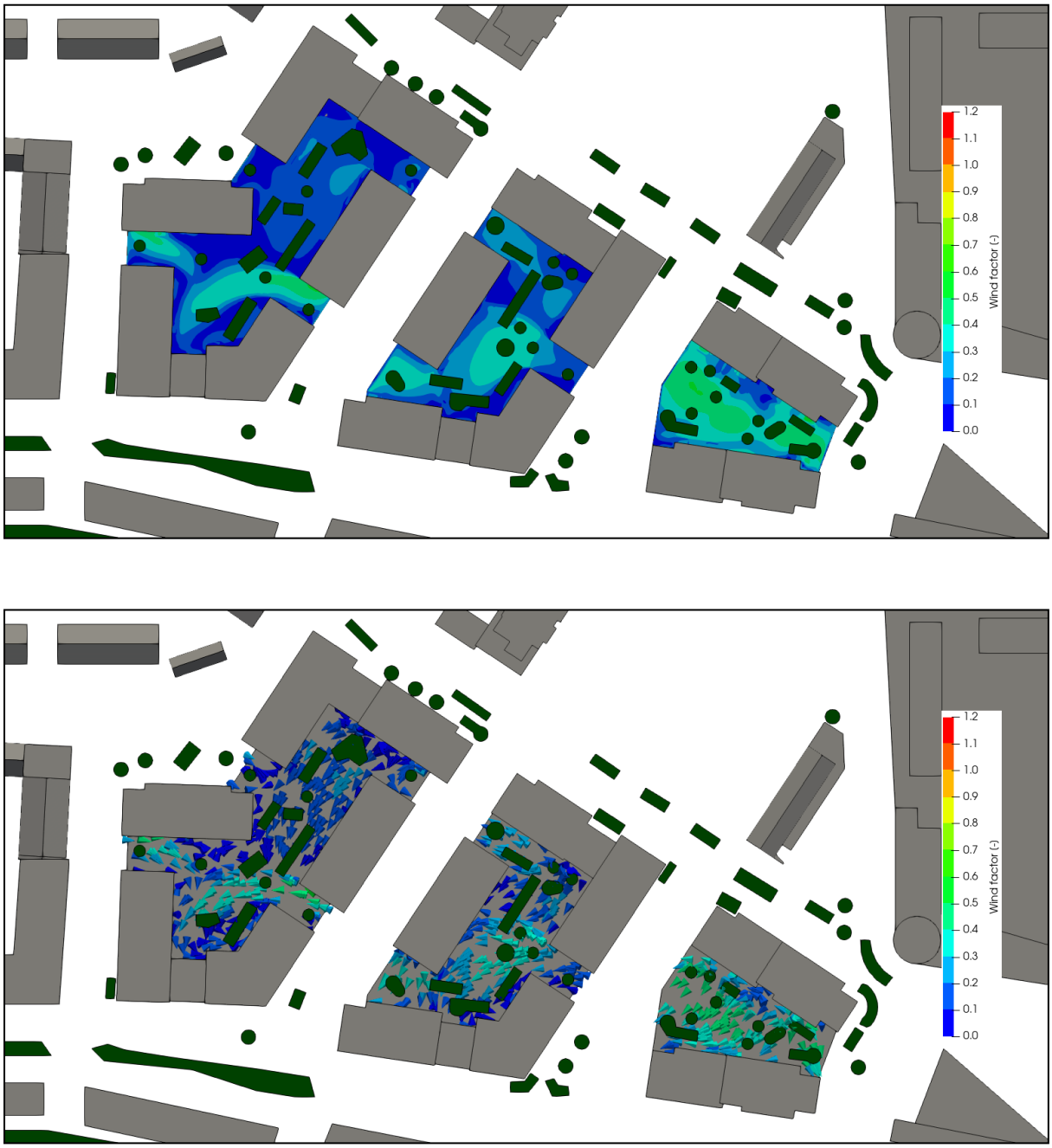


Figure 17.27 Wind Factor – 240 Degree (N) Wind Direction – Ground Level

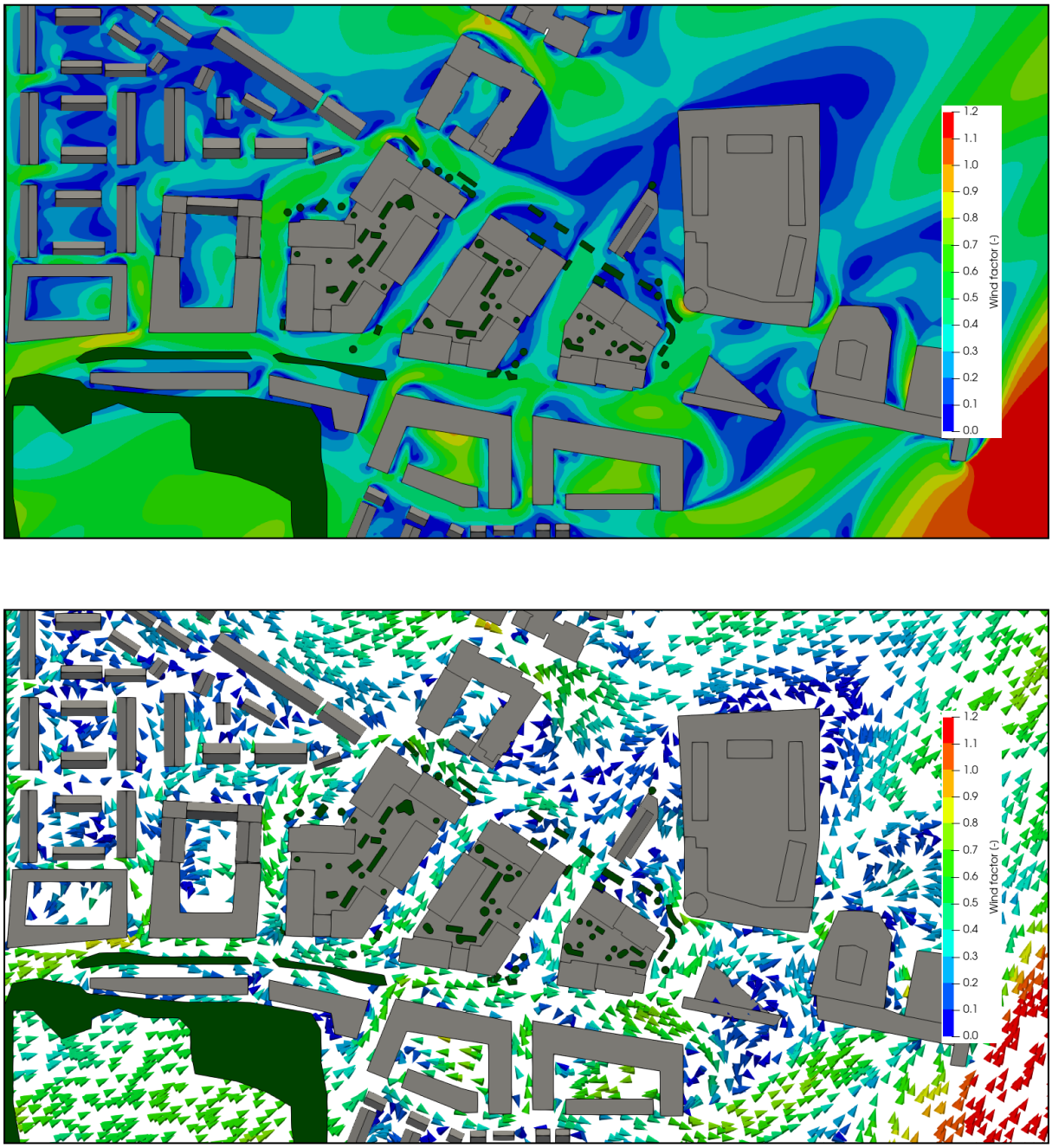
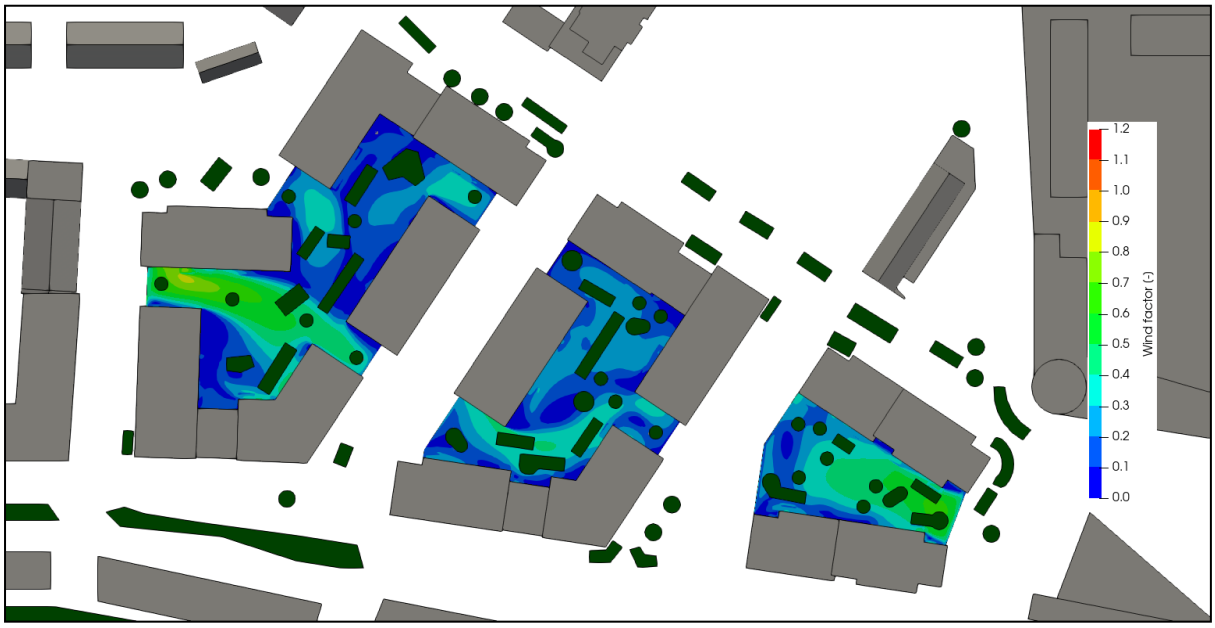


Figure 17.28 Wind Factor – 240 Degree (N) Wind Direction – Podium Level



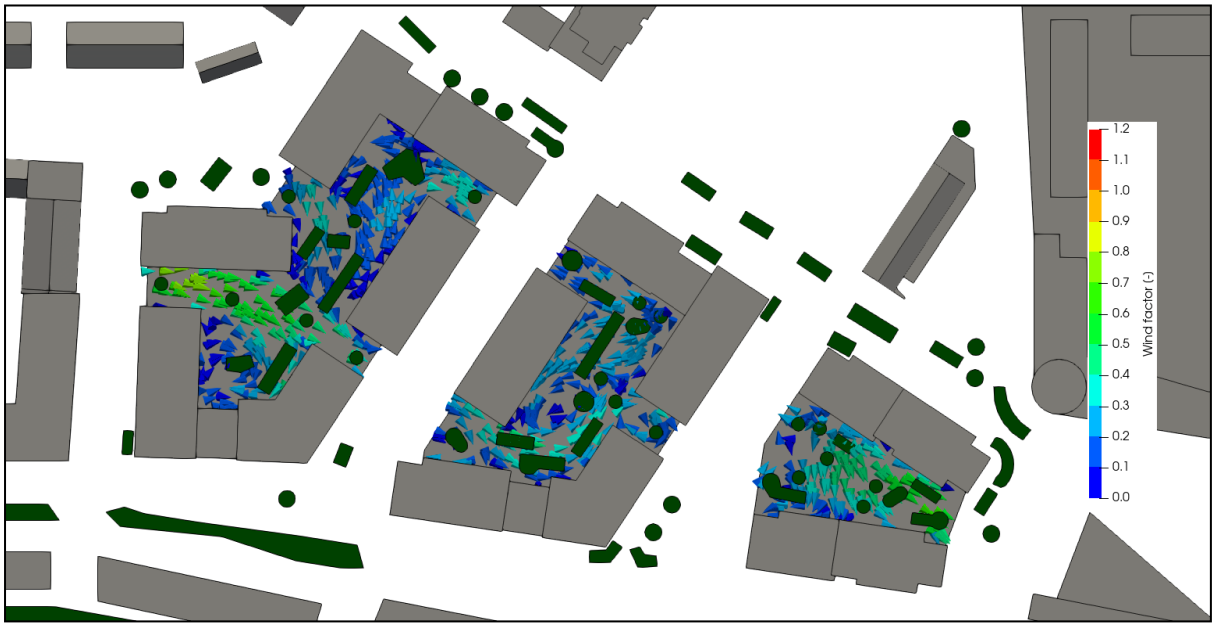
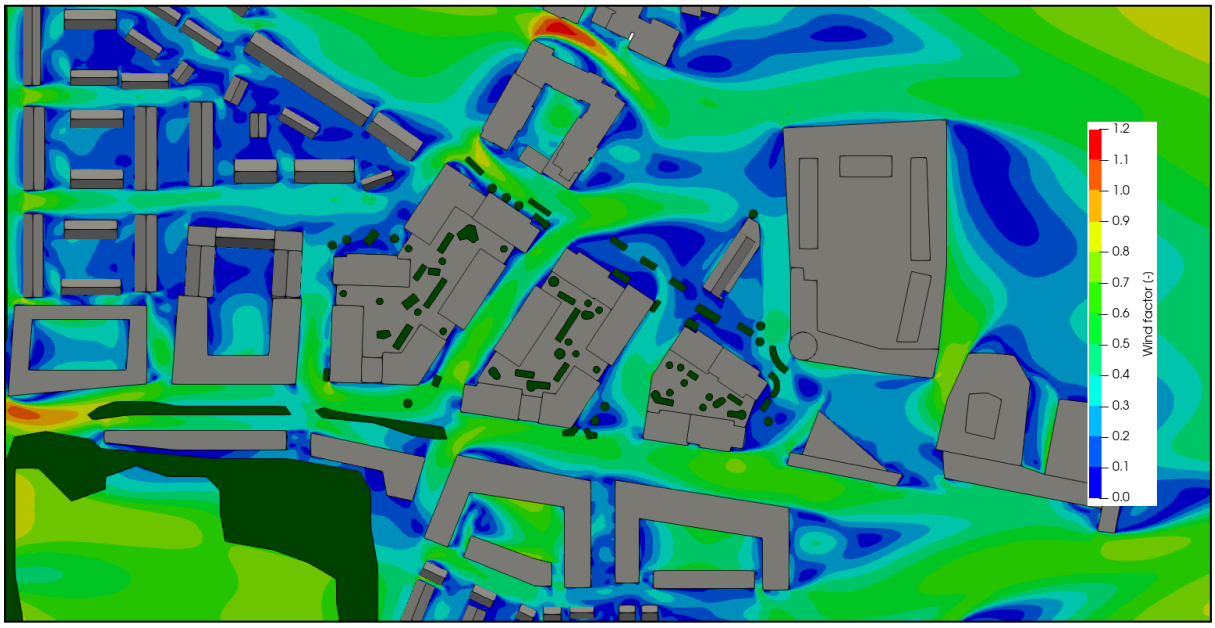



Figure 17.29 Wind Factor – 270 Degree (N) Wind Direction – Ground Level



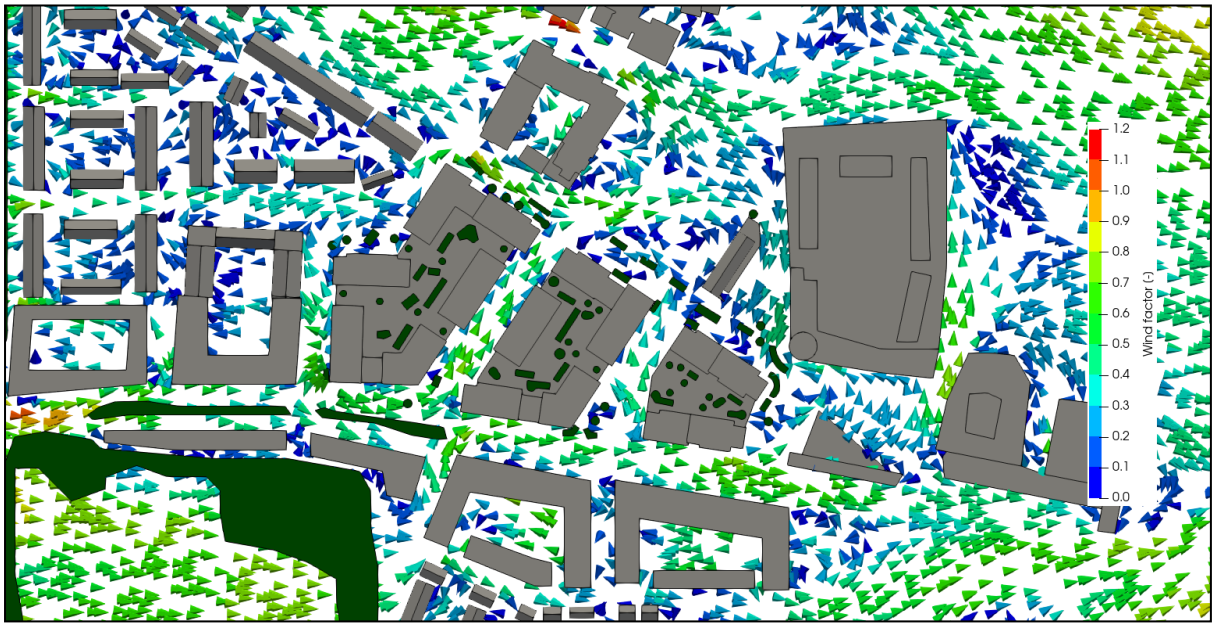
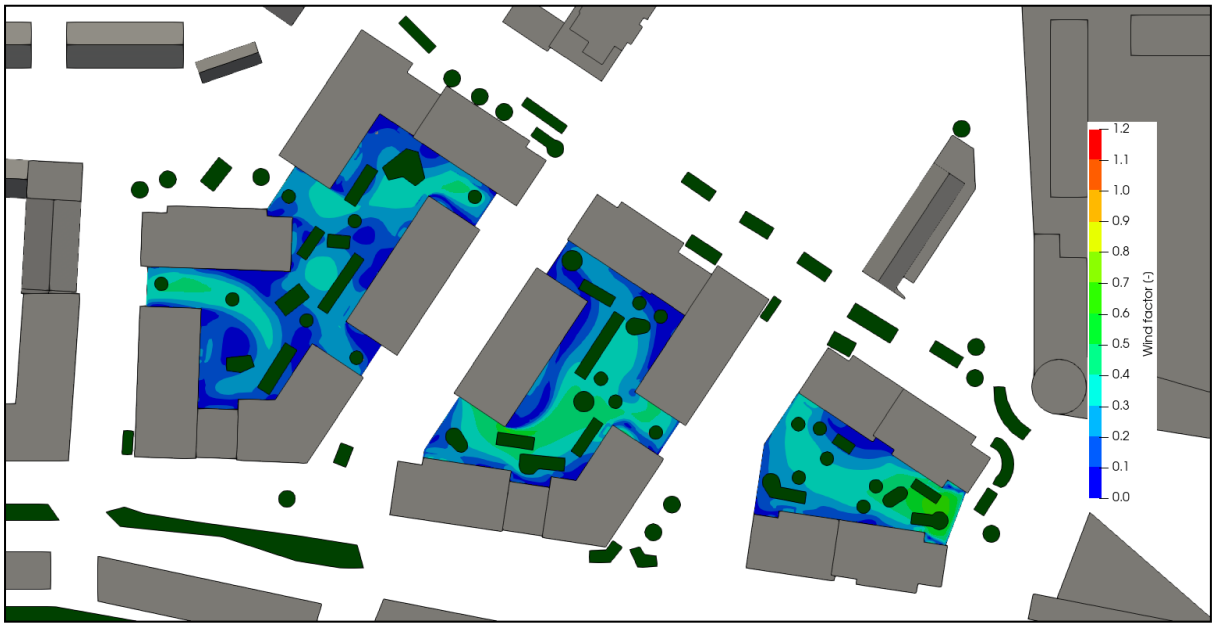



Figure 17.30 Wind Factor – 270 Degree (N) Wind Direction – Podium Level



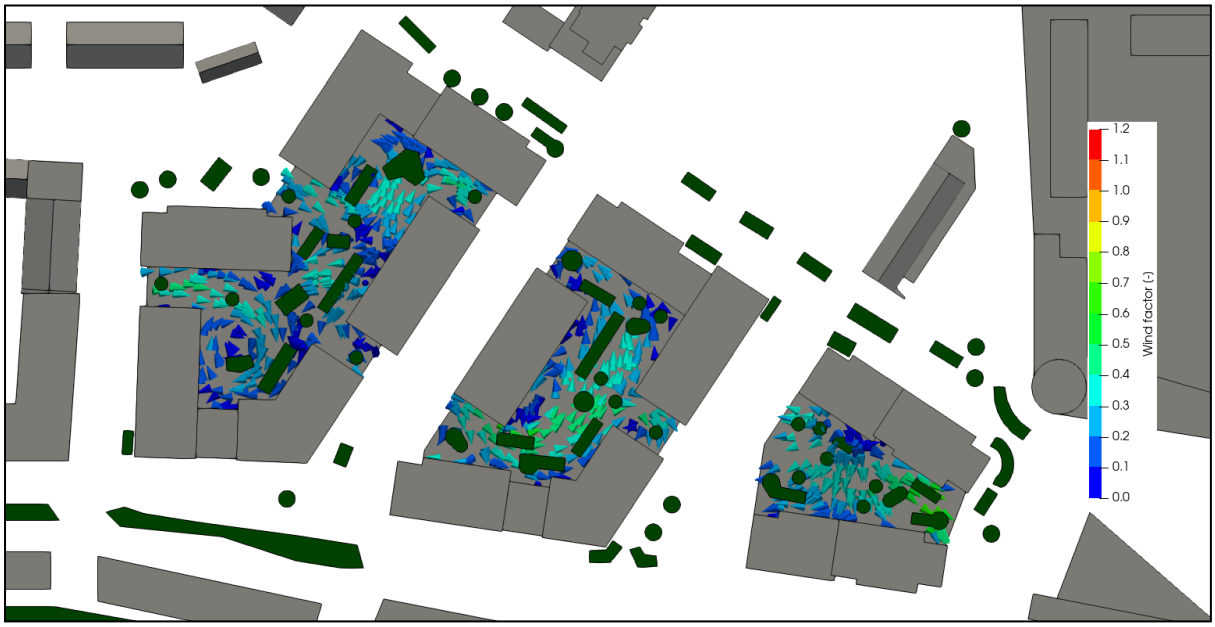
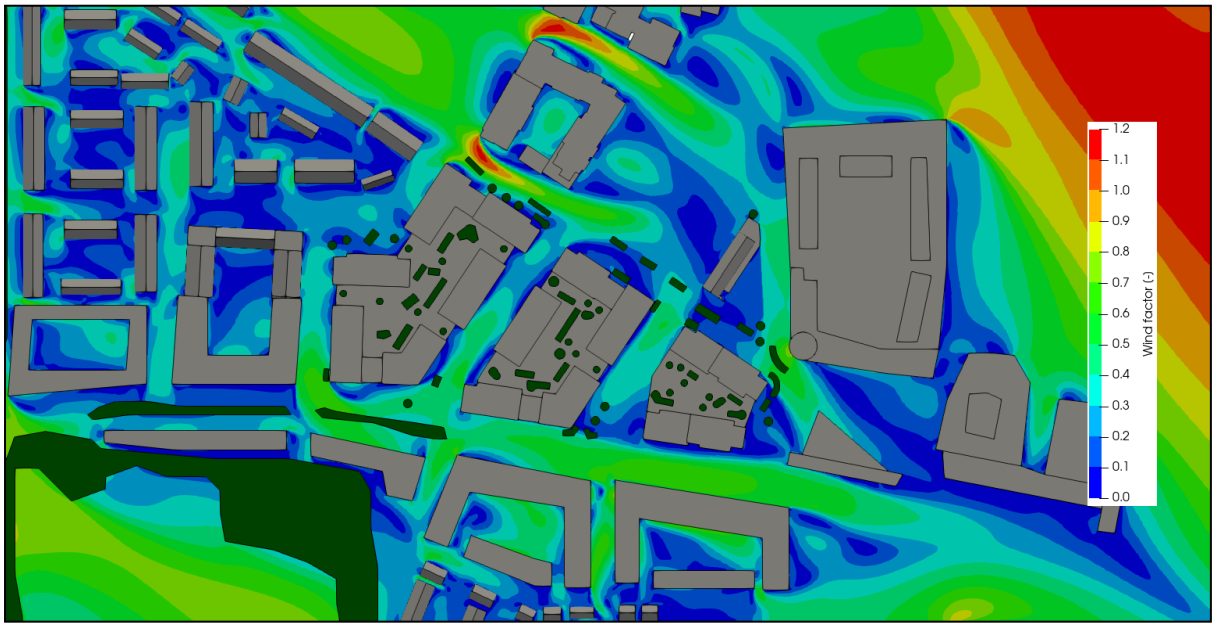



Figure 17.31 Wind Factor – 300 Degree (N) Wind Direction – Ground Level



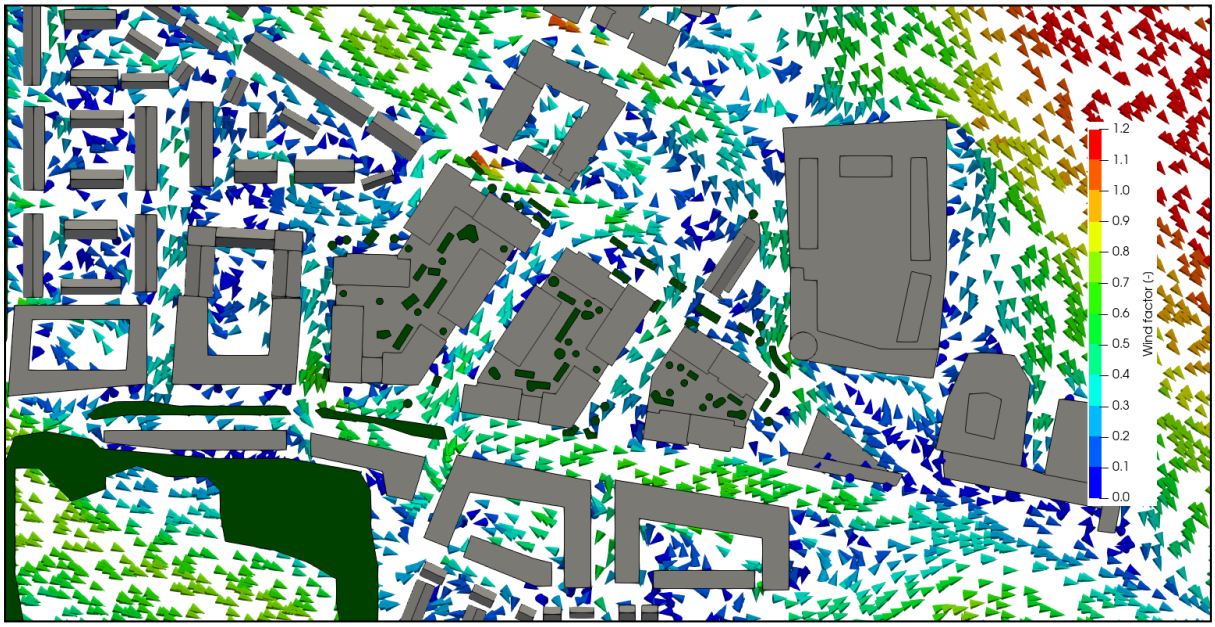
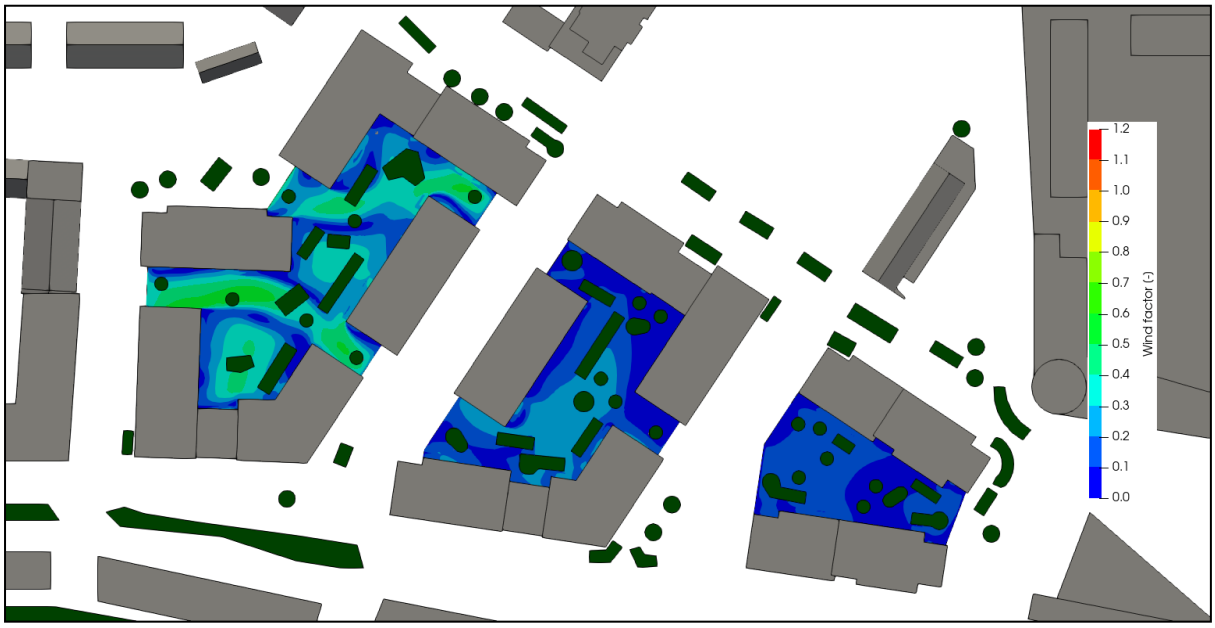



Figure 17.32 Wind Factor – 300 Degree (N) Wind Direction – Podium Level



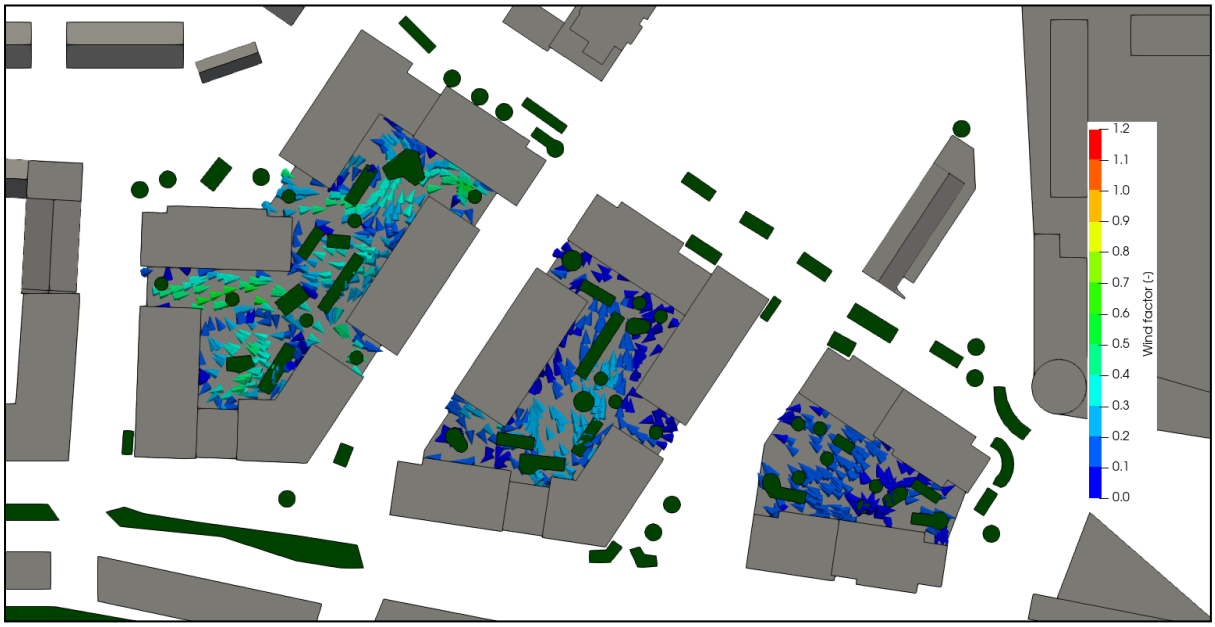
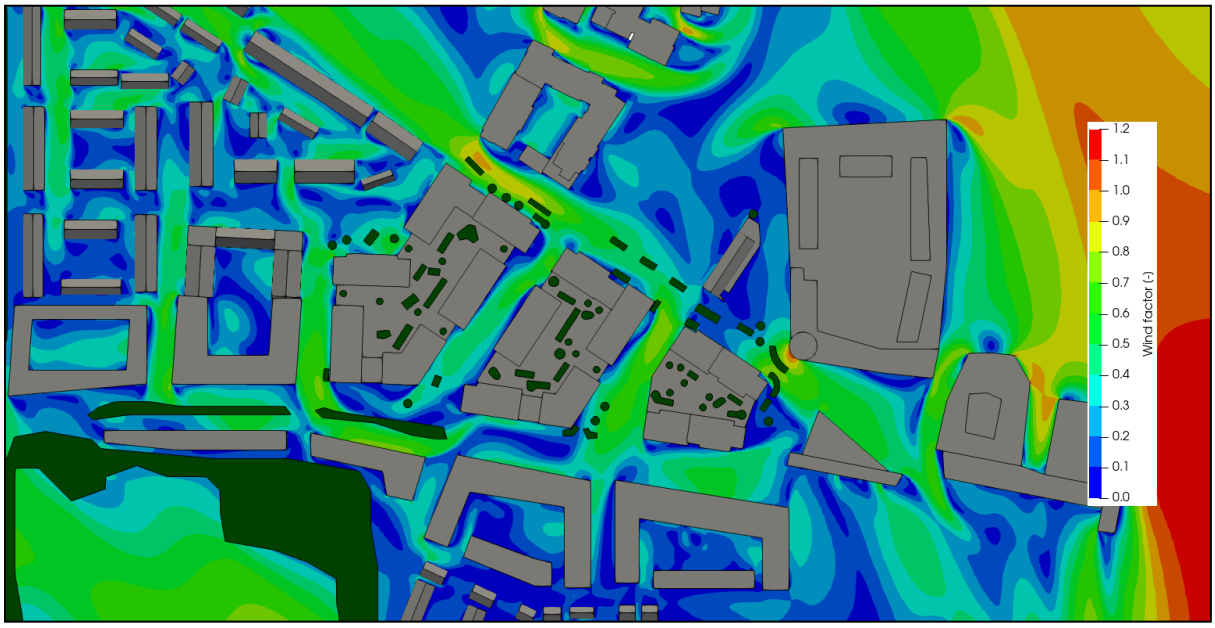



Figure 17.33 Wind Factor – 330 Degree (N) Wind Direction – Ground Level



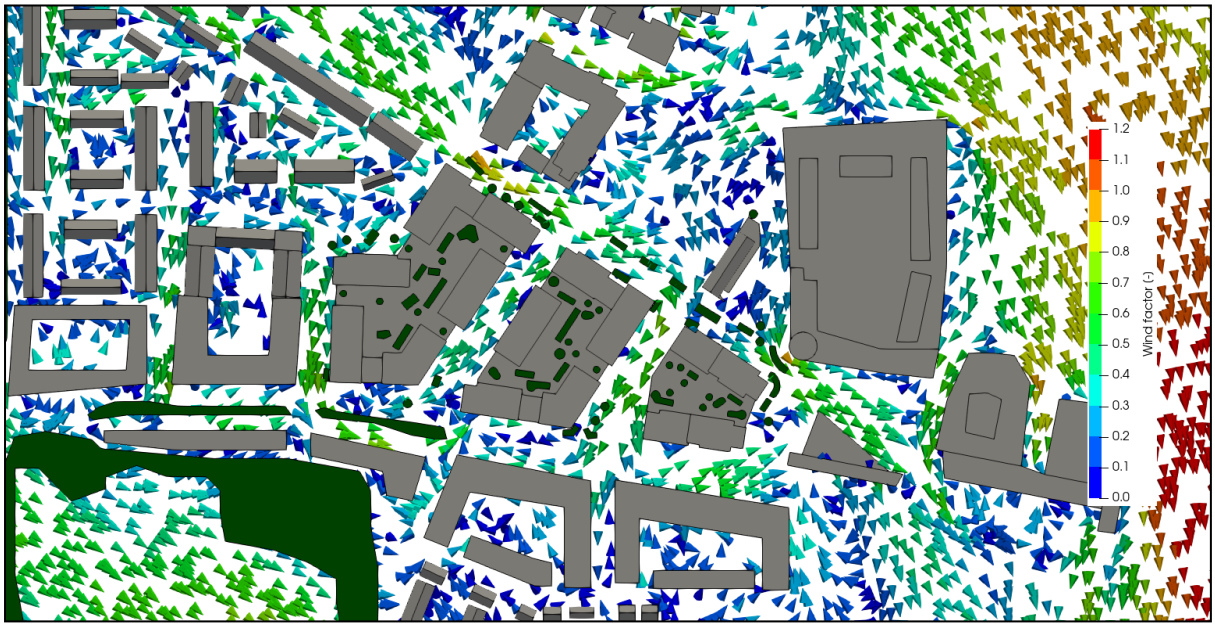
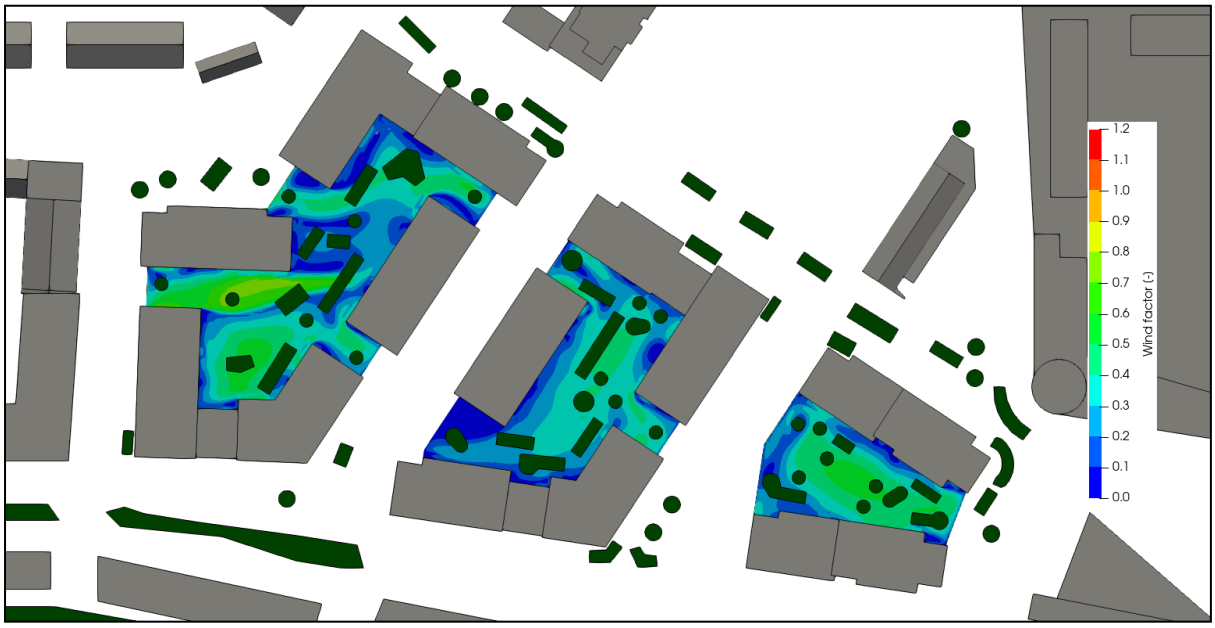
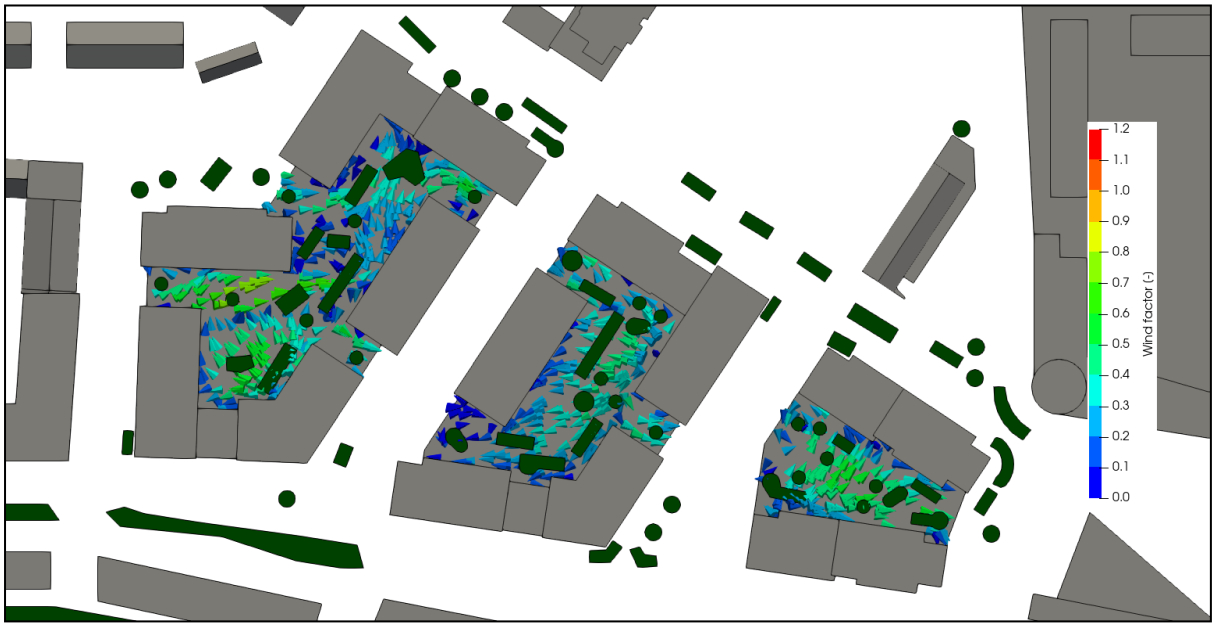



Figure 17.34 Wind Factor – 330 Degree (N) Wind Direction – Podium Level




## 17.5 Mitigation Measures

### 17.5.1 Construction Phase

The assessment of the wind microclimate during the construction phase has been based on professional judgement by reviewing the existing site conditions and the expected conditions once the development is in place via the CFD modelling.

It is expected the wind microclimate will gradually adjust from the existing conditions to the final modelled scenario as construction progress develops. However, the mitigation measures outlined in the following sections will need to be implemented before completion to ensure comfortable conditions once the proposed development becomes operational.

### 17.5.2 Operational Phase

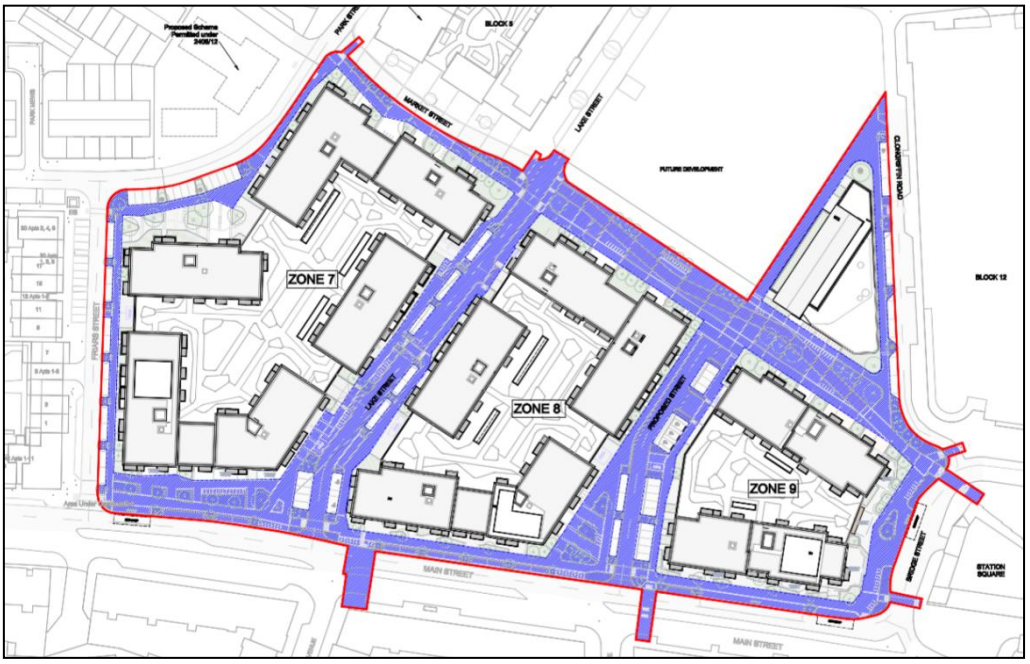
The following specific mitigation measures have been incorporated into the proposed design to prevent excessive wind speeds during the operational phase of the development.

#### 17.5.2.1 Apartment Block Arrangement

The layout and orientation of the proposed buildings have been designed to minimise adverse wind effects across the site. The arrangement provides effective shielding of amenity areas from the prevailing south-westerly winds, primarily through the positioning of buildings within Zones 7 and 8 along the south-western boundary. Zone 9 benefits from protection due to the intervening built form of Zone 7, which acts as a wind buffer from the same prevailing direction.

The inclusion of internal courtyard amenity spaces within each zone contributes to the creation of sheltered microclimates, offering reduced wind exposure and improved pedestrian comfort throughout the year.

Figure 17.35 Wind Mitigation Measure – Apartment Block Arrangement




#### 17.5.2.2 Private Balconies

Private balconies are not classified as publicly accessible or communal pedestrian areas and, therefore, are not required to be assessed against standard pedestrian wind comfort criteria. Notwithstanding this, an assessment has been undertaken with respect to wind safety, adopting the most conservative ("sensitive") safety classification. On this basis, all private balconies are considered to meet the relevant wind safety criteria, as detailed in Section 17.4.3.3.

Although a pedestrian comfort assessment is not mandatory for these spaces, a supplementary analysis has been carried out. This indicates that a small proportion of balconies fall within the "sitting (short duration)" comfort category.

The majority of balconies within Zones 7, 8, and 9 are expected to be suitable for their intended use, with wind conditions generally falling within the 'long sitting' comfort range.

A small number of balconies in Zone 7, 8 and 9, particularly those facing south-east, are expected to experience higher wind exposure. This is likely due to the absence of existing development to the east of Zone 9, combined with the coastal exposure in that direction. As a result, these south-east corner balconies may meet the 'long sitting' criterion less frequently than typically desirable. However, they are still expected to remain suitable and attractive for use for more than 85% of the year.

The windiest conditions will likely coincide with the most adverse weather events when residents are unlikely to use the balconies.

Figure 17.36 Wind Mitigation Measure – Inset Balconies (Zone 7)

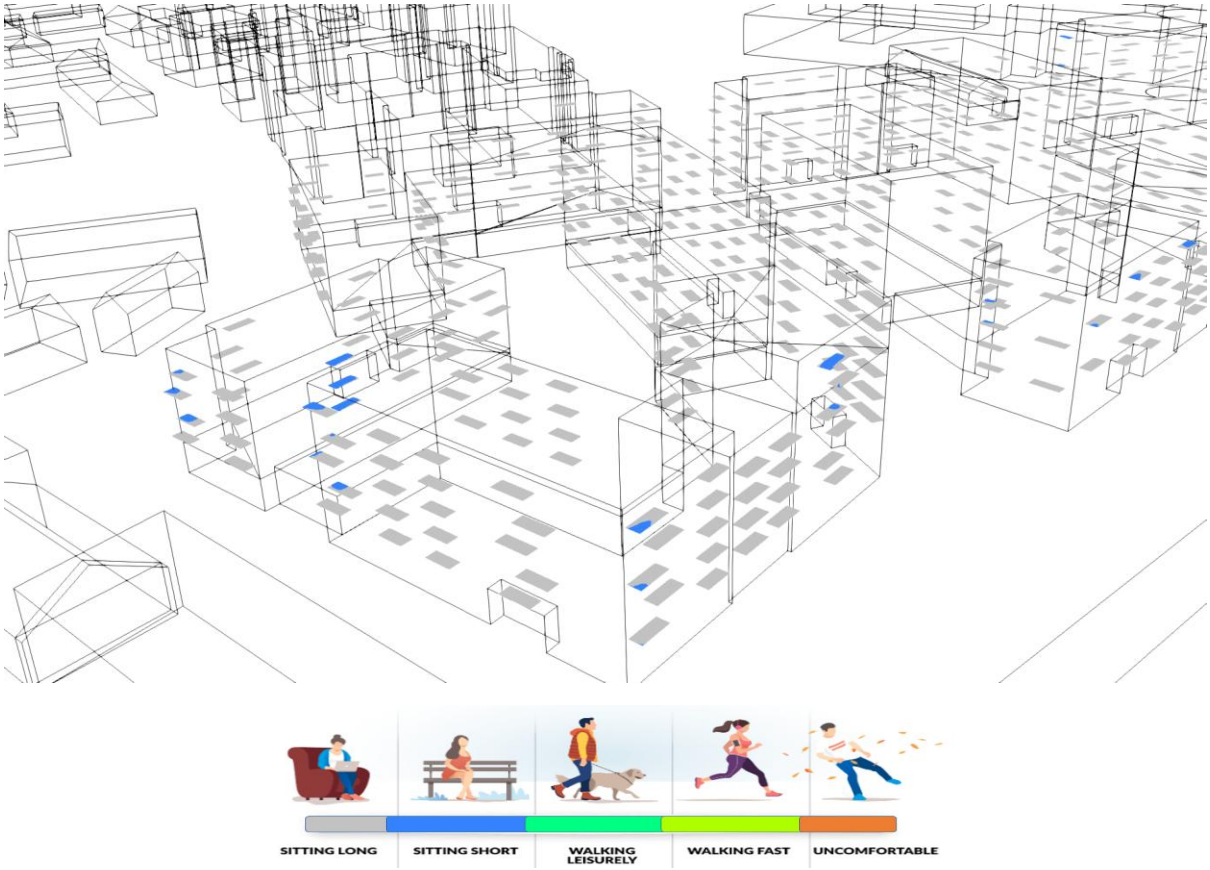


Figure 17.37 Wind Mitigation Measure – Inset Balconies (Zone 8)

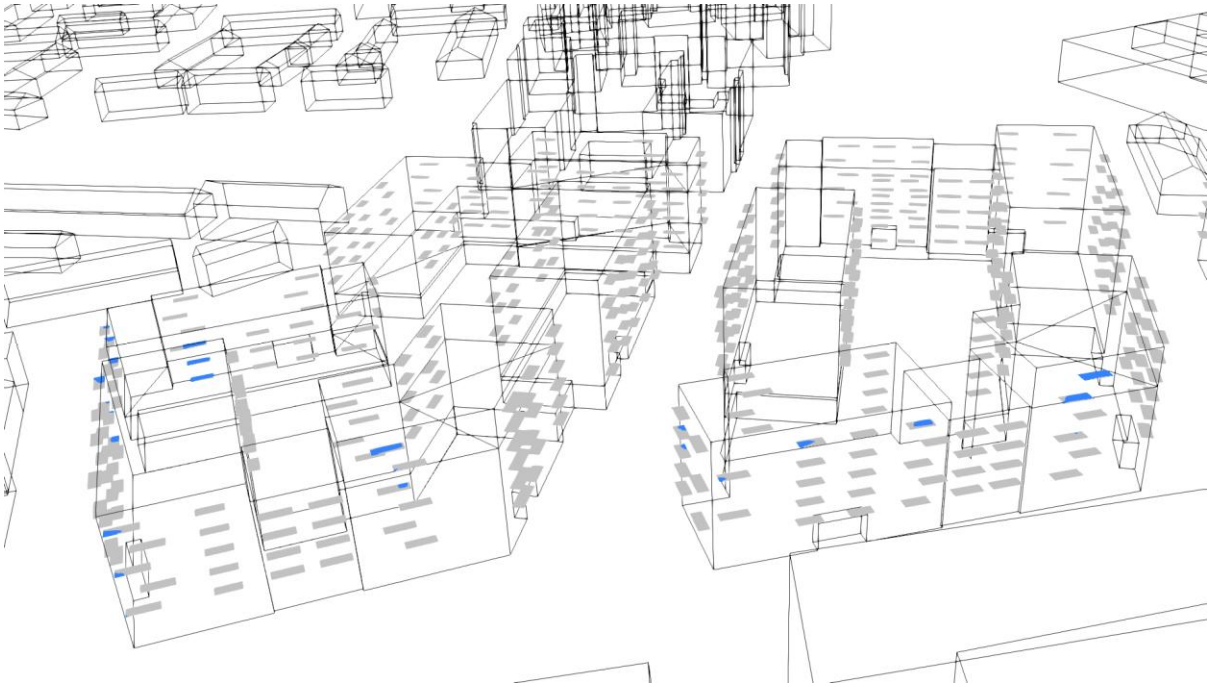
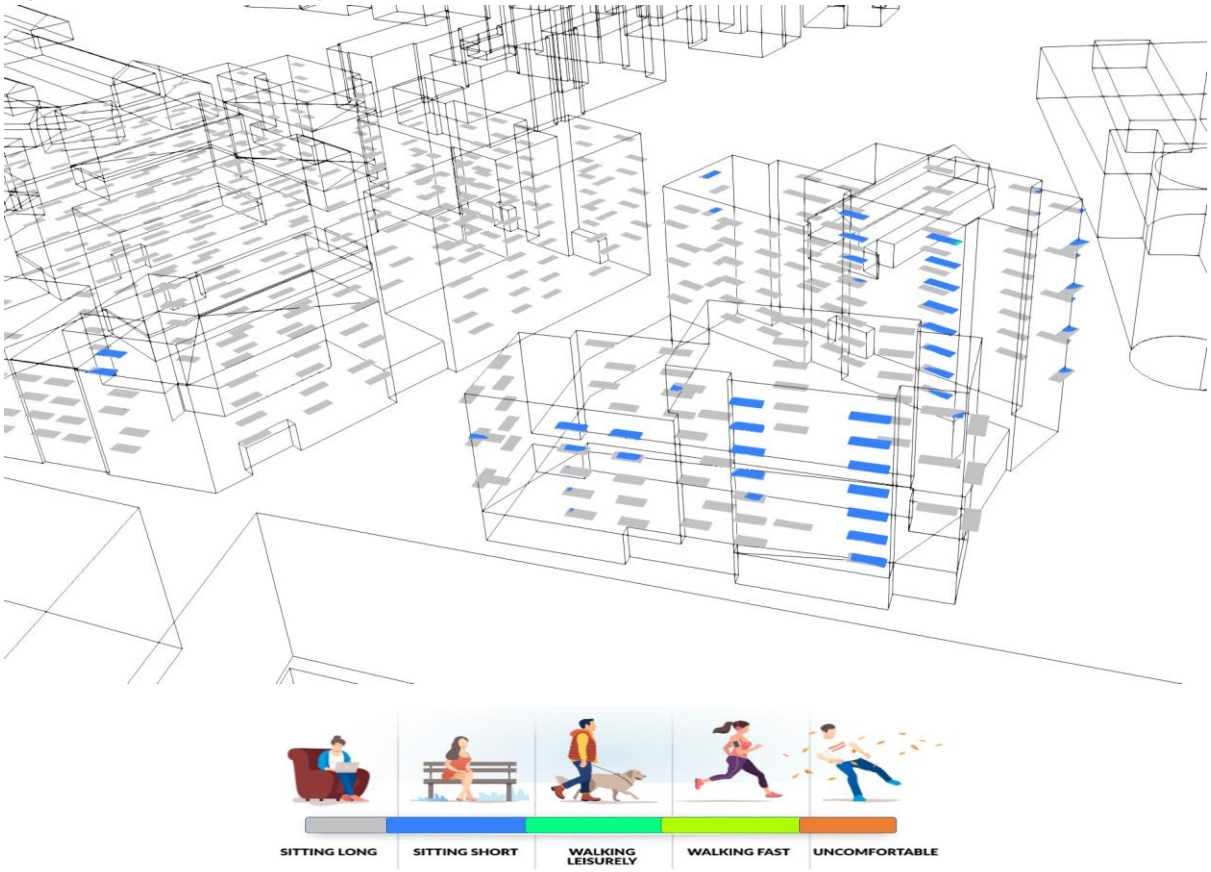


Figure 17.38 Wind Mitigation Measure – Inset Balconies (Zone 9)



#### 17.5.2.3 Landscaping

The landscaping has been strategically designed to mitigate increased wind speeds and to provide shelter for pedestrians at ground level and within the central courtyard spaces on the podium level. The landscaping design incorporates trees, raised planters and seating benches & tables which all act as wind mitigation measures.

The proposed landscaping strategy across all levels is illustrated in **Figures 17.39 to 17.41**, with imagery provided to demonstrate the landscape design for each amenity area at podium level. Tree planting is proposed in proximity to primary entrance points and along the streetscape, where it will contribute to the attenuation of elevated wind speeds and enhance pedestrian comfort at ground level.

The incorporation of trees and low-level shrub planting provides additional surface roughness, assisting in the localised reduction of wind velocities and improving overall microclimatic conditions within the public realm and amenity spaces.

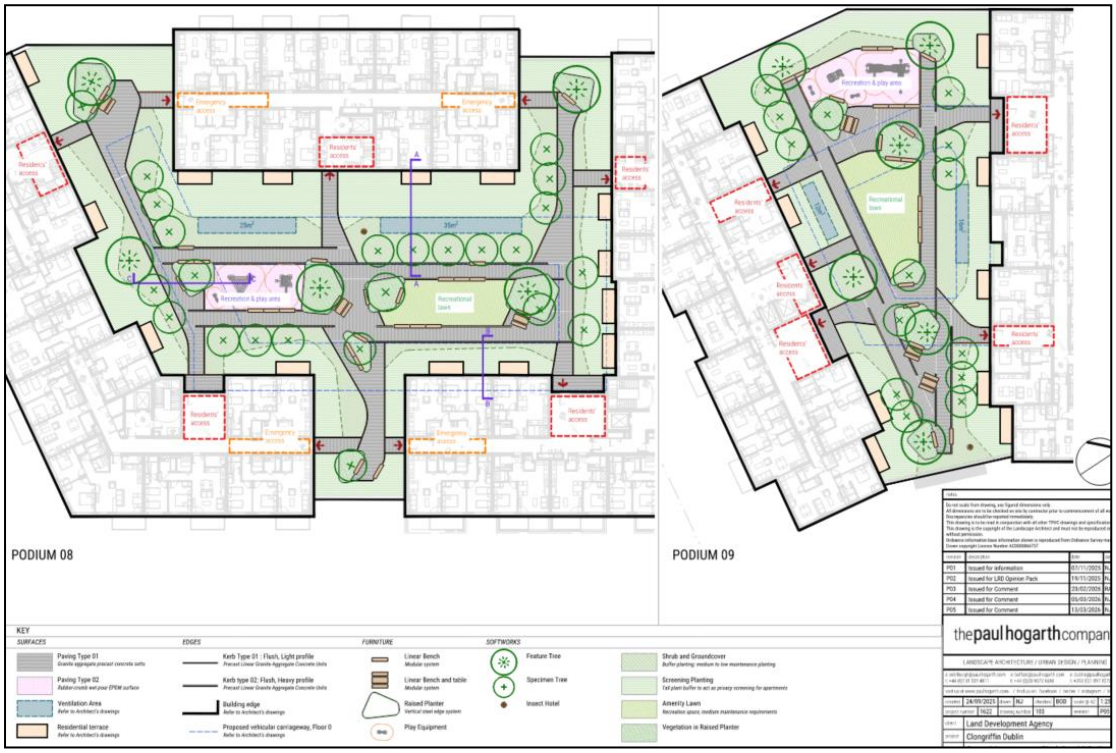
Figure 17.39 Wind Mitigation Measure – Landscaping Design (Ground Level)



Figure 17.40 Wind Mitigation Measure – Landscaping Design (Podium Level – Zone 7)




Figure 17.41 Wind Mitigation Measure – Landscaping Design (Podium Level – Zone 8 & 9)



## 17.6 Residual Impacts

The trees and planting associated with the landscape design will continue to grow and develop after the proposed mitigation measures have been implemented, thus providing increased protection from the wind resulting in increased pedestrian comfort conditions in these areas which will be a positive impact.

## 17.7 Monitoring

### 17.7.1 Construction Phase

During the construction phase the wind conditions will gradually change from the conditions experienced in the existing environment to the conditions experienced during the operational phase. As wind comfort conditions are comfortable in both phases and no issues have been identified, no monitoring is required.

### 17.7.2 Operational Phase

The proposed development has been designed to have acceptable pedestrian wind comfort conditions during the operational phase; therefore, no monitoring is required.

## 17.8 Reinstatement

### 17.8.1 Construction Phase

No reinstatement works are required during the construction phase.

### 17.8.2 Operational Phase

No reinstatement works are required during the operational phase.

## 17.9 Interactions

The interactions between the proposed development and its environs and human health have been evaluated within the assessment. The modelling has included the proposed design, the proposed landscaping strategy, in conjunction with the existing buildings surrounding the development. The combination of all interactions has resulted in a comfortable environment for pedestrians within the proposed development.

## 17.10 Indirect and/or Secondary Impacts

Imperceptible impacts are expected in relation to the wind experienced by the future inhabitants of the proposed Project. No remedial or reductive measures are required.

## 17.11 Cumulative Impacts

The CFD assessment has accounted for the cumulative impact associated with the existing site and the proposed development. The analysis has shown that even with the proposed development in place, the wind speeds will still be comfortable for pedestrians with no areas of concern highlighted.

A list of granted developments surrounding the proposed project has been listed in Table 22.1 . The table outlines only those applications located in closest proximity to the proposed site. Due to the

substantial distance from the proposed project and the extent of those granted applications, a neutral cumulative impact will be perceived.

## 17.12 Difficulties Encountered

There were no difficulties encountered during the course of the assessment.

## 17.13 References

- Lawson, T.V., 2001, 'Building Aerodynamics', Imperial College Press, London

# 18 Traffic & Transportation

## 18.1 Introduction

This chapter of the Environmental Impact Assessment Report (EIAR) has been prepared by Fionnán Burke of Cronin & Sutton Consulting Engineers (CS Consulting). Fionnán holds BSc and ME degrees in Civil, Structural, and Environmental Engineering from University College Dublin, and is a Chartered Engineer, accredited by the Institute of Engineers of Ireland. His relevant professional experience includes the preparation of Traffic and Transport Assessments, Travel Plans, and Environmental Impact Assessment Report chapters for a broad range of residential, commercial, cultural, and institutional developments.

## 18.2 Methodology

Alongside the legislation, policy, and guidance outlined in Chapter 1, the following relevant legislation, policy, and guidance has informed the preparation of this Chapter:

- Environmental Protection Agency (EPA) Guidelines on the Information to be Contained in Environmental Impact Assessment Reports (2022)
- Transport Infrastructure Ireland (TII) Traffic and Transport Assessment Guidelines (2014)
- Transport Infrastructure Ireland (TII) Project Appraisal Guidelines (2011)
- Uisce Éireann (Irish Water) Code of Practice for Water Infrastructure (2020)

The preparation of this chapter has also been informed by desktop studies of relevant data sources including:

- Site-specific traffic survey data
- The Trip Rate Information Computer System (TRICS) database
- Central Statistics Office (CSO) 2016 and 2022 Census data

The EPA *Guidelines*, 2022, state that:

*"each* [environmental] *factor is typically explored by examining a series of headings and / or topics relevant to that factor".*

[and]

*"The relevant topics for any given EIAR should be established during scoping".*

The methods employed for scoping and identification of the relevant environmental topics for this Chapter have been:

- Analysis thresholds set out in the TII *Traffic and Transport Assessment Guidelines* (2014)
- The headings and/or topics scoped into this Chapter's assessment are:
- Road network performance

The analysis of the predicted impacts of the proposed development on surrounding road network performance during construction and operation are presented in this Chapter. The assessment considered road and traffic features within the project site and the surrounding vicinity, in accordance with the methodology outlined above and below, to determine the significance of the impacts. Where likely significant impacts are highlighted, mitigation and monitoring are proposed, and any residual impacts are assessed.

The impact assessment for this Chapter has been undertaken in accordance with the *EPA Guidelines on the Preparation of an EIAR* (EPA, May 2022) and all other documents outlined above.

Assessment methods quantify and predict the magnitude and significance of impacts.

The methods employed for assessment and evaluation of the environmental topics for this Chapter are as follows:

1. A multi-modal development trip generation assessment was carried out using data extracted from the Trip Rate Information Computer System (TRICS) database of traffic surveys, in conjunction with CSO national census data. This quantifies potential trips to and from the proposed development site, across several modes of transport. The site's projected trip generation during the proposed development's construction phase has also been established.
2. Based upon existing traffic characteristics and the surrounding road network structure, appropriate distributions were applied to the vehicular trips that shall be generated by the proposed development (in both construction and operational phases). At each surveyed junction, the projected net changes in construction phase and operational phase vehicular traffic flows were calculated to determine the nature and significance of the development's influence on junction operation.
3. At locations where the proposed development is projected to result in increases of more than 10% in total peak hour vehicular traffic flows (under any assessment scenario) junction performance was assessed using suitable microsimulation modelling software, under 'Do-Nothing', construction phase, and operational phase conditions for the future years 2028 and 2043.
4. Results of the microsimulation models have been assessed with respect to the baseline environment and corresponding significance of effects have been determined in accordance with Table 18.5.

## 18.3 Baseline Environment

The steps involved in the baseline scenario analysis are as follows:

A desktop study of the area surrounding the development site was conducted, examining the nature of the surrounding existing transport infrastructure, the development site's accessibility on foot and by bicycle, the existing public transport services nearby, and proposed future improvements to public transport services and transport infrastructure.

Full turning movement classified traffic counts were carried out by IDASO Ltd, on behalf of CS Consulting, over a 14-hour period (06:00–20:00) on Thursday the 11th of April 2024. This traffic survey encompassed 10 no. existing junction sites.

The traffic movements recorded in 2024 were scaled up to 2026 levels using TII background traffic growth factors and were adjusted to reflect traffic generated by nearby developments completed in the intervening period.

Baseline year traffic flows were applied to PICADY and TRANSYT computer models comprising 3no. junctions along Clongriffin Main Street and Marrsfield Avenue, and the current operational performance of these junctions assessed.

Full turning movement classified traffic counts were carried out by IDASO Ltd, on behalf of CS Consulting, over a 14-hour period (06:00–20:00) on Thursday the 11th of April 2024. The Traffic Survey Information has been included within Appendix 18.1. Count information was obtained at the following 10no. sites on Malahide Road, Clongriffin Main Street, Hole in the Wall Road, Marrsfield Avenue and Grange Road (see **Figure 18.1**):

1. R107 / R139
   (4-arm signal-controlled junction)
2. R107 Malahide Road / Mayne River Avenue
   *(3-arm priority-controlled junction with 4th arm under construction)*
3. R107 Malahide Road / Belmayne
   *(3-arm signal-controlled junction)*
4. R139 Clarehall Avenue / Belmayne Avenue / Clare Hall
   *(4-arm roundabout)*
5. Belmayne Avenue / Main Street
   *(3-arm signal-controlled junction with 4th arm under construction)*
6. R139 / R809 / Hole in the Wall Road
   *(4-arm roundabout)*
7. Hole in the Wall Road / Main Street
   *(4-arm signal-controlled junction)*
8. Hole in the Wall Road / Clongriffin Avenue / Marrsfield Avenue
   *(4-arm signal-controlled junction)*
9. Main Street / Park Avenue
   *(3-arm priority-controlled junction)*
10. Marrsfield Avenue / Park Avenue
    *(3-arm priority-controlled junction)*

The peak hour traffic flows across all ten survey sites were found to occur between 08:00 and 09:00 (AM peak hour) and between 17:00 and 18:00 (PM peak hour). The recorded traffic movements at each of the surveyed junctions during the peak hours have been isolated from the count data and converted to Passenger Car Units. TII expansion factors have also been used to derive the Annual Average Daily Traffic (AADT) total traffic movements at each surveyed junction. Both the weekday peak hour totals and the AADT totals are given in **Table 18.4.**

Figure 18.1 Traffic survey sites (sources: OSM Contributors, NTA, Google)




Table 18.1 TII Central Growth Rates

| NTpM[3] Zone No. | Vehicle Type | Annual Background Traffic Growth Factor | | |
|---|---|---|---|---|
| | | 2016-2030 | 2030-2040 | 2040-2050 |
| 8612 | Light / PCU | 1.0247 | 1.0092 | 1.0038 |
| | **Heavy** | **1.0549** | **1.0230** | **1.0197** |

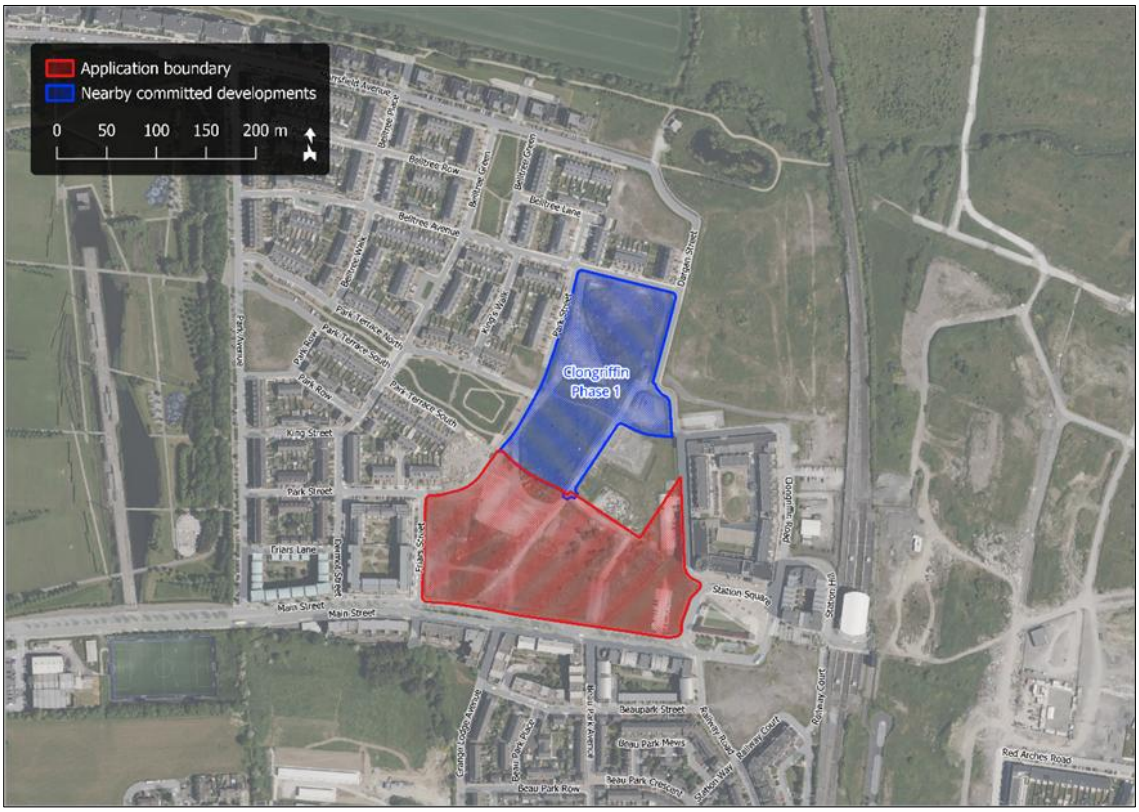
Table 18.2 Predicted Cumulative Background Traffic Increases Over 2024 Surveyed Levels

| Vehicle Type | 2026 Baseline Year | 2027 Construction Peak | 2043 Design Year |
|---|---|---|---|
| Light / PCU | +5.0% | +7.6% | +28.3% |
| **Heavy** | +11.4% | +17.5% | +83.5% |

Since the traffic surveys conducted in 2024, 1 no. nearby developments is now nearing completion which is likely to have materially influenced traffic flows at the surveyed junctions. Details of this development are provided below, and its locations is shown in **Figure 18.2**.

- Reg. Ref. LRD6064/24-S3. – mixed use development comprising of two Blocks (i.e. Blocks 5 and 6) providing a total of 408 no. apartment units.

Figure 18.2 Interim developments (sources: DoHPLG, NTA, OSM Contributors, Google)




The vehicular trips predicted to be generated by the committed development have been incorporated into the background traffic flows for the future assessment year.

Table 18.3 Committed Development Peak Hour Vehicular Traffic

| Committed Development | Peak Period | Arrivals | Departures | Total |
|---|---|---|---|---|
| Clongriffin Phase 1 | AM | 37 | 86 | 123 |
| | PM | 66 | 42 | 108 |

The total survey year peak hour flows at each surveyed junction given in **Table 18.4**.

Table 18.4 Total Traffic Movements at Surveyed Junctions

| Junction Ref. | Weekday Peak Hours | | AADT | | |
|---|---|---|---|---|---|
| | AM Peak (08:00-09:00) | PM Peak (17:00-18:00) | Light Vehicles | Heavy Vehicles | TOTAL |
| J1 | 4,528 | 4,676 | 56,404 | 3,076 | 59,480 |
| J2 | 2,079 | 2,010 | 23,685 | 967 | 24,652 |
| J3 | 2,200 | 2,159 | 24,258 | 1,006 | 25,264 |
| J4 | 2,706 | 2,637 | 30,822 | 1,490 | 32,312 |
| J5 | 698 | 597 | 5,811 | 342 | 6,153 |
| J6 | 3,299 | 3,329 | 38,755 | 1,555 | 40,310 |

| Junction Ref. | Weekday Peak Hours | | AADT | | |
|---|---|---|---|---|---|
| | AM Peak (08:00-09:00) | PM Peak (17:00-18:00) | Light Vehicles | Heavy Vehicles | TOTAL |
| J7 | 1,023 | 1,287 | 13,034 | 412 | 13,446 |
| J8 | 1,310 | 1,155 | 12,009 | 193 | 12,202 |
| J9 | 516 | 628 | 5,797 | 276 | 6,073 |
| J10 | 420 | 308 | 3,010 | 39 | 3,049 |

To determine the baseline operational performance of the surrounding street network, industry standard PICADY and TRANSYT software has been used to undertake AM peak hour and PM peak hour capacity assessments of the following 2no. junctions adjacent to the development site (see **Figure 18.2**):

- J7. Hole in the Wall Road / Main Street

  *(4-arm signal-controlled junction)*

- J9. Main Street / Park Avenue

  *(3-arm priority-controlled junction)*

Only these 2 no. junctions have been modelled, as these are the only locations at which the proposed development shall result in increases of more than 10% in total peak hour vehicular traffic flows in either the construction phase or the operational phase. Please refer to **Table 18.21** for details of proportional traffic increases at nearby junctions.

Figure 18.3 Junctions assessed through micro-assessment modelling (sources: OSM, NTA, Google)



Junction performance is assessed based upon the following four metrics. Microsimulation modelling outputs are provided as Appendix 18.2.

Degree of Saturation:

- The ratio of current traffic flow to ultimate capacity (also known as RFC) on a link or traffic stream. Effective capacity for a junction approach (or a junction as a whole) is reached at a DoS of 90%, beyond which a junction will not operate efficiently. A DoS of 100% represents ultimate capacity, beyond which significant operational problems will be experienced.

Mean Maximum Queue (MMQ):

- The highest estimated mean number of Passenger Car Units (PCU) queued in any lane of a junction approach, averaged over the entire analysis period.

Mean Delay per Vehicle:

- The average delay incurred by a vehicle on a junction approach link or traffic stream, as a result of having to wait at signals or having to give way at a priority junction.

Practical Reserve Capacity:

- The percentage by which the arrival rate on a traffic stream could increase before the stream would be at practical capacity (i.e. 90% saturation).

Table 18.6 gives the TRANSYT modelling results, for the 2 no. junctions assessed, under the calculated weekday AM peak and PM peak traffic flows for the baseline year of 2026. The traffic flows applied for this assessment scenario are those surveyed in 2024, scaled up to 2026 levels using TII growth factors, and adjusted to account for interim development.

### 18.3.1 Description of Effects

Table 18.5 EPA EIAR Guidelines Effects Description Terminology (EPA, 2022)

| Term | Description |
|---|---|
| **Quality of Effects** | |
| Positive Effects | A change which improves the quality of the environment (for example, by increasing species diversity, or improving the reproductive capacity of an ecosystem, or by removing nuisances or improving amenities). |
| Neutral Effects | No effects or effects that are imperceptible, within normal bounds of variation or within the margin of forecasting error. |
| Negative/Adverse Effects | A change which reduces the quality of the environment (for example, lessening species diversity or diminishing the reproductive capacity of an ecosystem, or damaging health or property or by causing nuisance). |
| **Significance of Effects** | |
| Imperceptible | An effect capable of measurement but without significant consequences. |
| Not Significant | An effect which causes noticeable changes in the character of the environment but without significant consequences. |
| Slight Effects | An effect which causes noticeable changes in the character of the environment without affecting its sensitivities. |
| Moderate Effects | An effect that alters the character of the environment in a manner that is consistent with existing and emerging baseline trends. |
| Significant Effects | An effect which, by its character, magnitude, duration or intensity, alters a sensitive aspect of the environment. |
| Very Significant | An effect which, by its character, magnitude, duration or intensity, significantly alters most of a sensitive aspect of the environment. |
| Profound Effects | An effect which obliterates sensitive characteristics. |
| **Duration of Effects** | |
| Momentary Effects | Effects lasting from seconds to minutes. |
| Brief Effects | Effects lasting less than a day. |
| Temporary Effects | Effects lasting less than a year. |
| Short-term Effects | Effects lasting one to seven years. |
| Medium-term Effects | Effects lasting seven to fifteen years. |
| Long-term Effects | Effects lasting fifteen to sixty years. |
| Permanent Effects | Effects lasting over sixty years. |
| Reversible Effects | Effects that can be undone, for example through remediation or restoration. |

Throughout this chapter, the quality, significance, and duration of the proposed development's effects on the surrounding road network are described using the terminology given in **Table 18.5,** which is taken from Table 3.4 of the 2022 EPA Guidelines on the Information to be Contained in Environmental Impact Assessment Reports.

Table 18.6 Baseline Year 2026 Microsimulation Modelling Results

| Junction Arm | Stream Direction | Degree of Saturation (%) | | Mean Max. Queue (PCU) | | Mean Delay per Vehicle (s) | | Practical Reserve Capacity (%) | |
|---|---|---|---|---|---|---|---|---|---|
| | | AM | PM | AM | PM | AM | PM | AM | PM |
| Junction 7 | | | | | | | | | |
| A | S/L | 45 | 59 | 5.45 | 6.68 | 31.77 | 39.67 | 101 | 52 |
| | R | 21 | 18 | 2.28 | 1.69 | 27.73 | 31.07 | 335 | 412 |
| B | L | 33 | 45 | 4.81 | 6.47 | 20.13 | 25.29 | 170 | 101 |
| | S/R | 35 | 69 | 2.93 | 4.8 | 21.2 | 20.47 | 159 | 30 |
| C | S/L | 10 | 4 | 0.36 | 0.15 | 44.12 | 43.32 | 826 | 2060 |
| | R | 18 | 14 | 0.69 | 0.53 | 45.76 | 44.82 | 398 | 548 |
| D | S/L | 36 | 54 | 5.35 | 8.33 | 20.6 | 27.28 | 147 | 66 |
| | R | 1 | 1 | 0.08 | 0.05 | 12.42 | 6.69 | 6433 | 7112 |
| Junction 9 | | | | | | | | | |
| A | L | - | - | - | - | - | - | 235 | 220 |
| | S | - | - | - | - | - | - | | |
| B | R/L | 21 | 18 | 0.26 | 0.22 | 8.83 | 9.25 | | |
| C | S | - | - | - | - | - | - | | |
| | R | 4 | 5 | 0.04 | 0.05 | 4.92 | 5.19 | | |

These results show that all three modelled junctions operate well within effective capacity on all approaches during both the AM and PM peak periods. Junction 7 operates at peak times with minimal vehicle queueing and acceptable vehicle delays, while Junction 9 experiences no discernible vehicle queueing and minimal delays.

## 18.4 Predicted Impacts of the proposed development

### 18.4.1 Do-Nothing Impact

The do-nothing impact would be equal to the Baseline Assessment outlined in Section 18.3.

### 18.4.2 Construction Phase

Subject to planning permission, construction of the proposed development is expected to commence in 2026 and to be completed by 2028, with vehicular construction traffic to and from the site reaching a peak in the year 2027.

The following assumptions have been made regarding construction-phase vehicular trip generation, based upon current construction activity at Clongriffin Phase 1 and the Main Contractor's projections for management of the subject development's construction:

- Site working hours shall be 07:00-18:00, Monday to Friday.
- The maximum frequency of HGV trips to and from the site shall be 12 vehicles per hour.
- The maximum frequency of LGV trips to and from the site shall be 4 vehicles per hour.
- No onsite car parking will be provided for construction personnel.

The maximum potential construction traffic vehicular trip generation calculated from these assumptions is given in Table 18.9.

Table 18.7 Maximum Construction Phase Vehicular Trip Generation as Total Vehicles

| Time Period | Arrivals | Departures | Total Trips |
|---|---|---|---|
| **Light Vehicles** | | | |
| AM Peak (07:15-08:15) | 4 | 4 | 8 |
| PM Peak (17:15-18:15) | 4 | 4 | 8 |
| Full Day (24hr) | 44 | 44 | 88 |
| **Heavy Vehicles** | | | |
| AM Peak (07:15-08:15) | 12 | 12 | 24 |
| PM Peak (17:15-18:15) | 12 | 12 | 24 |
| Full Day (24hr) | 132 | 132 | 264 |
| **Total Vehicles** | | | |
| AM Peak (07:15-08:15) | 16 | 16 | 32 |
| PM Peak (17:15-18:15) | 16 | 16 | 32 |
| Full Day (24hr) | 176 | 176 | 352 |

The above vehicular trip generation figures include all motorised vehicles, including cars, vans, and HGVs (though excluding motorcycles). For analysis purposes, these trips have also been converted to Passenger Car Units (PCU), as given in **Table 18.8**. The conversion of vehicles to Passenger Car Units has been carried out on the following basis:

- 1 car = 1 PCU
- 1 LGV = 1 PCU
- 1 OGV = 2 PCU

Table 18.8 Maximum Construction Phase Vehicular Trip Generation as Passenger Car Units

| Time Period | Arrivals (as PCU) | Departures (as PCU) | Total Trips (as PCU) |
|---|---|---|---|
| **Light Vehicles** | | | |
| AM Peak (07:15-08:15) | 4 | 4 | 8 |
| PM Peak (17:15-18:15) | 4 | 4 | 8 |
| Full Day (24hr) | 44 | 44 | 88 |
| **Heavy Vehicles** | | | |
| AM Peak (07:15-08:15) | 24 | 24 | 48 |
| PM Peak (17:15-18:15) | 24 | 24 | 48 |
| Full Day (24hr) | 264 | 264 | 528 |
| **Total Vehicles** | | | |
| AM Peak (07:15-08:15) | 28 | 28 | 56 |

| Time Period | Arrivals (as PCU) | Departures (as PCU) | Total Trips (as PCU) |
|---|---|---|---|
| PM Peak (17:15-18:15) | 28 | 28 | 56 |
| Full Day (24hr) | 308 | 308 | 616 |

All vehicular traffic to and from the site will travel to/from the west, via Clongriffin Main Street. An indicative designated route for construction traffic is shown in **Figure 18.3**; this allows for access via surrounding lands also in the applicant's ownership. It is noted that the existing configuration of Main Street allows left turns only for any traffic turning onto Main Street at any point between Park Avenue and Station Square. Traffic arriving from the north and heading west must therefore first follow Main Street to the east and then make a loop around Station Square before continuing westward back along Main Street. To minimise departing construction traffic's travel distance around Station Square, it is instead proposed to route this traffic via Clongriffin Road, approaching Station Square directly from the north. An alternative departure route (also shown in **Figure 18.3**) would follow Park Street and Park Avenue; this would however require greater travel distance along residential streets with perpendicular parking and with more numerous pedestrian crossing points.

Figure 18.4 Construction phase vehicle arrival & departure routes (sources: OSM, Google)




**Table 18.9** shows the absolute and proportional changes in weekday peak hour traffic flows (excluding Luas trams) at each of the 10no. surveyed junctions that shall result from construction-phase vehicular traffic generated by the proposed development.

The TII *Traffic and Transport Assessment Guidelines* (PE-PDV-02045), with reference to the *Traffic Management Guidelines*, advise that Transport Assessments should automatically be required where

traffic to and from a development is predicted to exceed 10% of the existing background traffic on the adjoining road. While other criteria also determine whether a Traffic and Transport Assessment should be conducted, these traffic increase thresholds are taken as a trigger for the inclusion of road or junction capacity assessment (i.e. operational modelling) within a TTA.

Table 18.9 Changes in Peak Hour Traffic Flows at Surrounding Junctions – Construction Phase

| Total Vehicle Movements (as PCU) | Junction Site: | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | J1 | J2 | J3 | J4 | J5 | J6 | J7 | J8 | J9 | J10 |
| **AM Peak Hour** | | | | | | | | | | |
| 2027 Background Flows | 4872 | 2237 | 2367 | 2912 | 751 | 3550 | 1101 | 1410 | 555 | 452 |
| Construction Traffic Generated by proposed development | 61 | 0 | 16 | 61 | 0 | 99 | 99 | 24 | 99 | 24 |
| Increase in Flows as Proportion of Background | 1% | 0% | 1% | 2% | 0% | 3% | **9%** | 2% | **18%** | 5% |
| **PM Peak Hour** | | | | | | | | | | |
| 2027 Background Flows | 5031 | 2163 | 2323 | 2837 | 642 | 3582 | 1385 | 1243 | 676 | 331 |
| Construction Traffic Generated by proposed development | 54 | 0 | 14 | 54 | 0 | 86 | 86 | 20 | 86 | 20 |
| Increase in Flows as Proportion of Background | 1% | 0% | 1% | 2% | 0% | 2% | **6%** | 2% | **13%** | 6% |

The preceding table shows that the proposed development – in its construction phase – shall result in increases of more than 5% in total peak hour vehicular traffic flows at only 3 surveyed junctions

- J9. Main Street / Park Avenue
  *(3-arm priority-controlled junction)*

The other existing surveyed junctions are considered at negligible risk of detrimental effects from construction traffic generated by the proposed development, given that this shall result in only minor increases in peak hour vehicular traffic flows at these locations. However, junction J7 has been included within the assessment undertaken as this junction approaches the 10% threshold in the AM peak hour.

- J7. Hole in the Wall Road / Main Street
  *(4-arm signal-controlled junction)*

Table 18.10 gives microsimulation modelling results under the calculated weekday AM peak and PM peak traffic flows for the year 2027, with the inclusion of construction traffic generated by the subject proposed development. The traffic flows applied for this assessment scenario are those surveyed in 2024, adjusted to account for interim development between 2024 and 2026, scaled up to 2027 levels using TII growth factors, and including the construction phase traffic detailed in Table 18.9.

These results show that all three modelled junctions operate well within effective capacity on all approaches during both the AM and PM peak periods. Junction 7 operates at peak times with minimal vehicle queueing and acceptable vehicle delays, while Junction 9 experiences no discernible vehicle queueing and minimal delays.

Table 18.10 Peak Construction Year 2027 Microsimulation Modelling Results – Construction Phase

| Junction Arm | Traffic Type | Degree of Saturation (%) | | Mean Max. Queue (PCU) | | Mean Delay per Vehicle (s) | | Practical Reserve Capacity (%) | |
|---|---|---|---|---|---|---|---|---|---|
| | | AM | PM | AM | PM | AM | PM | AM | PM |
| **Junction 7** | | | | | | | | | |
| A | S/L | 48 | 69 | 7.02 | 8.5 | 26.69 | 42.66 | 86 | 31 |
| | R | 17 | 18 | 2.14 | 1.8 | 21.76 | 30.38 | 426 | 394 |
| B | L | 42 | 50 | 5.68 | 7.05 | 26.75 | 28.42 | 116 | 101 |
| | S/R | 55 | 73 | 5.03 | 10.6 | 34.43 | 36.85 | 62 | 30 |
| C | S/L | 10 | 4 | 0.36 | 0.15 | 44.12 | 43.32 | 826 | 2060 |
| | R | 19 | 14 | 0.75 | 0.53 | 46.07 | 44.82 | 363 | 548 |
| D | S/L | 47 | 60 | 6.49 | 9.11 | 27.74 | 31.09 | 93 | 49 |
| | R | 2 | 1 | 0.1 | 0.08 | 16.8 | 10.45 | 5331 | 8282 |
| **Junction 9** | | | | | | | | | |
| A | L | - | - | - | - | - | - | 104% | 143% |
| | S | - | - | - | - | - | - | | |
| B | R/L | 39 | 27 | 0.62 | 0.37 | 12.02 | 10.78 | | |
| C | S | - | - | - | - | - | - | | |
| | R | 4 | 5 | 0.04 | 0.05 | 5 | 5.33 | | |

Table 18.11 Peak Construction Year 2027 – Construction Phase Development Influence

| Junction Arm | Traffic Type | Degree of Saturation (%) | | Mean Max. Queue (PCU) | | Mean Delay per Vehicle (s) | | Practical Reserve Capacity (%) | |
|---|---|---|---|---|---|---|---|---|---|
| | | AM | PM | AM | PM | AM | PM | AM | PM |
| Junction 7 | | | | | | | | | |
| A | S/L | 1 | 0 | 0.23 | 0.37 | 0.31 | -0.79 | -6 | 0 |
| | R | 0 | 0 | 0.04 | 0.07 | 0.04 | -0.75 | -9 | -4 |
| B | L | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | S/R | 4 | 5 | 0.51 | 0.74 | 1.82 | 3.29 | -14 | 0 |
| C | S/L | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | R | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| D | S/L | 1 | 0 | 0.09 | 0.05 | 0.12 | 0.1 | -3 | -1 |
| | R | 0 | 0 | 0 | 0 | 0 | 0.46 | 0 | -270 |
| Junction 9 | | | | | | | | | |
| A | L | - | - | - | - | - | - | -3% | -4% |
| | S | - | - | - | - | - | - | | |
| B | R/L | 1 | 0 | 0.01 | 0 | 0.17 | 0.12 | | |
| C | S | - | - | - | - | - | - | | |
| | R | 0 | 0 | 0 | 0 | 0.03 | 0.03 | | |

The influence of the proposed development in its construction phase on the operation of the surrounding road network may be quantified by subtracting the 2027 'Do-Nothing' TRANSYT modelling results from the construction phase results. This comparison, given in **Table 18.9** shows that construction phase traffic generated by the proposed development shall have a negligible influence on the operation of the modelled junctions, resulting in no discernible increase in vehicle queueing and a maximum increase of 3 second in average delay on any junction approach.

The likely construction-phase impact of the proposed development on the operation of the surrounding road network is thereby shown to be **negative** in nature, **short-term** in duration, but **not significant**.

### 18.4.3 Operational Phase

To establish baseline modal splits for existing residents of the area surrounding the subject lands, reference has been made to CSO data derived from the 2022 Census, in the form of Small Area Population Statistics (SAPS) that give modal splits for residents' trips to places of work or study. The masterplan lands are primarily within Census Small Area (SA) nos. 268072013/01 and 268072013/02 (see **Figure 18.4**), which are bordered by 10no. other relevant SAs. The aggregate 2022 census modal splits for these 12no. SAs, which have a total combined 2022 census population of 3,042 people, are given in **Table 18.12**. These represent residents' usual mode of transport for regular trips to places of

work or study. For comparison, modal split data from the 2016 Census for the equivalent area are also given.

Figure 18.5 Census Small Areas (SAs) (Sources: CSO, Microsoft)




These census data show a 2022 car driving modal share of 29%, but also indicate that this modal share has decreased significantly since 2016. Bus use, walking, and cycling have all increased in modal share between 2016 and 2022, as has travel as a car passenger, but the modal share of train use has decreased.

It should be noted that these modal shares refer to the greatest proportion (by distance) of each journey. A bus journey, for example, is likely to involve walking or cycling at one or both ends of the trip but will not be classified as a walking or cycling journey.

Table 18.12 Local Area Census Modal Share

| Transport Mode | Local Area Census Modal Shares [34] | |
|---|---|---|
| | 2016 Census | 2022 Census |
| Driving a Car or Van | 35% | 29% |
| Passenger in a Car | 12% | 18% |
| Bicycle | 4% | 6% |
| Motorcycle | 1% | 1% |
| Bus | 11% | 13% |
| Train or Tram | 26% | 20% |
| Walking | 11% | 13% |

[34] Excluding 'not stated' responses and those who work mainly from home.

The proposed development comprises 711 no. apartment units with a total of 1,074 no. bedrooms, distributed as follows:

- 280 no. dwellings (with 444 no. bedrooms) in Block 7.
- 263 no. dwellings (with 391 no. bedrooms) in Block 8.
- 168 no. dwellings (with 239 no. bedrooms) in Block 9.

Trip generation factors from the Trip Rate Information Computer System (TRICS) database have been used to predict the total trip generation to and from the proposed development (across all modes) for the weekday AM and PM peak hour periods, as well as for an average full day (AADT). The TRICS survey database is maintained by a consortium of English County Councils but covers the entirety of Great Britain and Ireland. Full details of the TRICS information used are provided in Appendix 18.3.

The TRICS sub-category '03 Residential / C - Flats Privately Owned' has been employed, being the most appropriate to the proposed development. This is described in the TRICS land use category definitions as follows:

"*Housing developments where at least 75% of households are privately owned. Of the total number of units, 75% must also be flats (sum of flats in blocks and "split" houses), with no more than 25% of the total units being "non-split" houses. The TRICS definition of a privately owned dwelling is a dwelling at which residents have any degree of equity, or a dwelling that is owned by a private landlord and rented at market rates. Trip rates are calculated by Site Area, Dwellings, Housing Density, or Total Bedrooms.*"

The TRICS trip rates for the proposed development have been selected from the above category, restricted insofar as possible to similar locations, and further refined with reference to 2022 CSO census data on the basis of:

- The population within 1 mile of the development site (26,000 approx.).
- The population within 5 miles of the development site (200,000 approx.).
- The mean car ownership rate within 5 miles of the development site (1.2 cars per household).

The selected TRICS person-trip rates for apartments are given in **Table 18.13**. These account for all trips to and from the proposed development's dwellings, the majority of which shall be made by residents and their visitors.

### Table 18.13 TRICS Person-Trip Generation Rates for Apartments

| Time Period | Arrivals per bedroom | Departures per bedroom |
|---|---|---|
| Weekday AM Peak | 0.089 | 0.383 |
| Weekday PM Peak | 0.281 | 0.123 |
| AADT35 | 2.110 | 2.110 |

The total residential person-trip generation figures obtained for the proposed development are given in **Table 18.14**.

### Table 18.14 Development Residential Person-Trip Generation from TRICS

| Time Period | Arrivals | Departures | Total Trips |
|---|---|---|---|
| Weekday AM Peak | 95 | 410 | 505 |

[35] Annual Average Daily Traffic

| Time Period | Arrivals | Departures | Total Trips |
|---|---|---|---|
| Weekday PM Peak | 301 | 132 | 433 |
| AADT36 | 2258 | 2258 | 4516 |

The local modal splits given in **Table 18.12** have been applied to all weekday peak hours and AADT person-trips to be generated by the proposed development, as given in **Table 18.14**. This produces the distribution of development trips across transport modes that is presented in **Table 18.15**.

### Table 18.15 Development Trip Generation by Mode

| Transport Mode | Direction and time Period | | | | | |
|---|---|---|---|---|---|---|
| | Arrivals | | | Departures | | |
| | Weekday AM Peak | Weekday PM Peak | AADT | Weekday AM Peak | Weekday PM Peak | AADT |
| Driving a Car or Van | 28 | 87 | 655 | 119 | 38 | 655 |
| Passenger in a Car | 17 | 54 | 406 | 74 | 24 | 406 |
| Bicycle | 6 | 18 | 135 | 25 | 8 | 135 |
| Motorcycle | 1 | 3 | 23 | 4 | 1 | 23 |
| Bus | 12 | 39 | 294 | 53 | 17 | 294 |
| Train or Tram | 19 | 60 | 452 | 82 | 26 | 452 |
| Walking | 12 | 39 | 294 | 53 | 17 | 294 |

In addition to trips made to and from the site by residents and visitors, the proposed development shall also generate vehicular trips by servicing vehicles. These shall be required for operations such as deliveries, maintenance works, and refuse collection, and shall be made by either Ordinary Goods Vehicles (rigid or articulated lorries over 7.5t) or Light Goods Vehicles (vans).

To separate these trips from those made by development residents and visitors, specific OGV and LGV trip generation rates have been sourced from the TRICS database (also from the sub-category '03 Residential / C - Flats Privately Owned'); these are given in **Table 18.16**.

### Table 18.16 TRICS Residential Servicing Vehicle Trip Generation Rates

| Time Period | Arrivals Per bedroom | | Departures Per Bedroom | |
|---|---|---|---|---|
| | OGVs | LGVs | OGVs | LGVs |
| Weekday AM Peak (08:00-09:00) | 0.000 | 0.005 | 0.000 | 0.008 |
| Weekday AM Peak (17:00-18:00) | 0.000 | 0.003 | 0.002 | 0.000 |
| AADT (24-hour period) | 0.002 | 0.069 | 0.002 | 0.069 |

The development's resultant predicted servicing vehicle trip generation is given in **Table 18.15**.

It must be noted that the total person-trip generation figures already established for the development's residential component (**Table 18.14**) technically already include residential servicing trips, although

[36] Annual Average Daily Traffic

these have not been removed from the trip numbers calculated for residents and visitors. It is further noted that some of the LGV trips accounted for by the TRICS rates under this vehicle category will in fact be made by residents or visitors driving their own vans, rather than representing additional servicing trips. As such, the trip generation methodology employed will very slightly overestimate the number of servicing vehicle trips to and from the proposed development. This effect does however contribute to a more robust traffic assessment of the development and has therefore not been corrected for.

### Table 18.17 Development Residential Servicing Trips from TRICS

| Time Period | Arrivals | | Departures | | Total Trips | |
|---|---|---|---|---|---|---|
| | OGVs | LGVs | OGVs | LGVs | OGVs | LGVs |
| Weekday AM Peak | 0 | 5 | 0 | 9 | 0 | 14 |
| Weekday PM Peak | 0 | 3 | 2 | 0 | 2 | 3 |
| AADT (24hr) | 2 | 74 | 2 | 74 | 4 | 148 |

In addition to the 711 no. residential units, the proposed development also includes a crèche facility with the capacity for 120 no. childcare places. This crèche is located in a standalone building in the east of the development site.

Crèche-specific trip generation factors for cars (including taxis), LGVs, and OGVs have been sourced from the TRICS database under the sub-category '04 Education / D – Nursery'. This is described in the TRICS land use category definitions as follows:

*"Pre-school centres. Trip rates are calculated by Gross Floor Area, Pupils, or Employees."*

The selected TRICS vehicle trip rates for the crèche are given in **Table 18.18**. These account for crèche users (i.e. parents), crèche staff, and servicing vehicles.

### Table 18.18 TRICS Creche Vehicle Trip Generation Rates

| Time Period | Arrivals Per pupil | | | Departures Per pupil | | |
|---|---|---|---|---|---|---|
| | Cars | LGVs | OGVs | Cars | LGVs | OGVs |
| Weekday AM Peak | 0.176 | 0.002 | 0.000 | 0.109 | 0.002 | 0.000 |
| Weekday PM Peak | 0.117 | 0.000 | 0.000 | 0.176 | 0.002 | 0.000 |
| AADT (24hr) | 0.835 | 0.017 | 0.000 | 0.835 | 0.017 | 0.000 |

### Table 18.19 Crèche Vehicle Trip Generation from TRICS

| Time Period | Arrivals | | | Departures | | |
|---|---|---|---|---|---|---|
| | Cars | LGVs | OGVs | Cars | LGVs | OGVs |
| Weekday AM Peak | 21 | 0 | 0 | 13 | 0 | 0 |
| Weekday PM Peak | 14 | 0 | 0 | 21 | 0 | 0 |
| AADT (24hr) | 100 | 2 | 0 | 100 | 2 | 0 |

The proposed crèche is intended to serve the proposed development itself, as well as the immediately adjacent existing residential areas. This is a small catchment area, and the majority of crèche users are expected to live within easy walking or cycling distance. The true rates of car trip generation to and from the crèche are therefore likely to be markedly less than those obtained from the TRICS database.

As for residential servicing vehicle trips, however, these higher TRICS car trip rates contribute to a more robust traffic assessment and have therefore not been reduced.

**Table 18.20** gives the total projected maximum vehicular trip generation of the proposed development, obtained by combining the trip generation figures derived above. Car passengers (as listed in **Table 18.14**) are assumed not to represent separate vehicle trips; these are already accounted for by corresponding car driver trips.

### Table 18.20 Maximum Potential Development Vehicular Trip Generation

| Time Period | Arrivals (PCU) | Departures (PCU) | Total Trips (PCU) |
|---|---|---|---|
| **Weekday AM Peak (08:00-09:00)** | 59 | 150 | 209 |
| **Weekday PM Peak (17:00-18:00)** | 107 | 61 | 168 |
| **AADT (24-hour period)** | 907 | 907 | 1814 |

The above vehicular trip generation figures include all motorised vehicles. For analysis and comparison purposes, all vehicle trips have been converted to Passenger Car Units (PCU) on the following basis:

- 1 car or LGV = 1 PCU
- 1 OGV = 2 PCU

**Table 18.21** shows the absolute and proportional changes in weekday peak hour traffic flows that shall result from operational-phase vehicular traffic generated by the proposed development at each of the 10 no. surveyed junctions.

### Table 18.21 Changes in Peak Hour Traffic Flows at Surrounding Junctions – Operational Phase

| Total Vehicle Movements (as PCU) | Junction Site: | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | J1 | J2 | J3 | J4 | J5 | J6 | J7 | J8 | J9 | J10 |
| **AM Peak Hour** | | | | | | | | | | |
| 2026 Baseline Flows | 4754 | 2183 | 2310 | 2841 | 733 | 3464 | 1074 | 1398 | 542 | 476 |
| Operational Traffic Generated by proposed development | 104 | 0 | 27 | 104 | 0 | 170 | 170 | 40 | 170 | 40 |
| Increase in Flows as Proportion of Baseline | 2% | 0% | 1% | 4% | 0% | 5% | **16%** | 3% | **32%** | 8% |
| **PM Peak Hour** | | | | | | | | | | |
| 2026 Baseline Flows | 4910 | 2111 | 2267 | 2769 | 627 | 3495 | 1351 | 1213 | 659 | 351 |
| Operational Traffic Generated by proposed development | 85 | 0 | 22 | 85 | 0 | 135 | 135 | 32 | 135 | 32 |
| Increase in Flows as Proportion of Baseline | 2% | 0% | 1% | 3% | 0% | 4% | **10%** | 3% | **21%** | 9% |

The preceding table shows that the proposed development – in its operational phase – shall result in increases of more than 10% in total peak hour vehicular traffic flows at only three junction sites;

- J7. Hole in the Wall Road / Main Street
  *(4-arm signal-controlled junction)*
- J9. Main Street / Park Avenue
  *(3-arm priority-controlled junction)*

The other existing surveyed junctions are considered at negligible risk of detrimental effects from operational-phase traffic generated by the proposed development, given that this shall result in only minor increases in peak hour vehicular traffic flows at these locations.

Table 18.20 gives microsimulation modelling results under the calculated weekday AM peak and PM peak traffic flows for the year 2043, with the inclusion of operational traffic generated by the subject proposed development. The traffic flows applied for this assessment scenario are those surveyed in 2019, adjusted to account for interim development between 2019 and 2024, scaled up to 2043 levels using TII growth factors, and including the operational phase traffic.

These results show that Junction 7 shall operate within its effective capacity on all approaches during the AM peak period, but shall exceed its effective capacity within the PM peak period. Junction 7 shall remain within its ultimate capacity on all approaches. Junction 9 shall experience no discernible vehicle queueing and negligible delays.

Table 18.22 Design Year 2043 Microsimulation Modelling Results – Operational Phase

| Junction Arm | Traffic Type | Degree of Saturation (%) | | Mean Max. Queue (PCU) | | Mean Delay per Vehicle (s) | | Practical Reserve Capacity (%) | |
|---|---|---|---|---|---|---|---|---|---|
| | | AM | PM | AM | PM | AM | PM | AM | PM |
| Junction 7 | | | | | | | | | |
| A | S/L | 76 | 93 | 13.27 | 15.13 | 36.92 | 76.32 | 18 | -3 |
| | R | 20 | 21 | 2.56 | 2.07 | 22.81 | 31.57 | 342 | 323 |
| B | L | 50 | 72 | 7.05 | 10.13 | 28.42 | 40.35 | 81 | 26 |
| | S/R | 73 | 93 | 7.49 | 19.29 | 45.11 | 63.95 | 24 | -3 |
| C | S/L | 11 | 4 | 0.42 | 0.15 | 44.34 | 43.32 | 710 | 2060 |
| | R | 22 | 17 | 0.86 | 0.64 | 46.7 | 45.45 | 305 | 440 |
| D | S/L | 55 | 87 | 7.97 | 14.35 | 29.54 | 53.95 | 65 | 4 |
| | R | 2 | 1 | 0.13 | 0.1 | 16.35 | 10.1 | 3959 | 6747 |
| Junction 9 | | | | | | | | | |
| A | L | - | - | - | - | - | - | 72% | 98% |
| | S | - | - | - | - | - | - | | |
| B | R/L | 45 | 33 | 0.82 | 0.49 | 14.16 | 12.59 | | |
| C | S | - | - | - | - | - | - | | |
| | R | 5 | 6 | 0.05 | 0.06 | 5.14 | 5.66 | | |

The influence of the proposed development in its operational phase on the operation of the surrounding road network may be quantified by subtracting the 2043 'Do-Nothing' microsimulation modelling results from the operational phase results given in Table 18.22. This comparison, given in Table 18.23, shows that operational phase traffic generated by the proposed development in its design year shall have a moderate influence on the operation of Junction 7, resulting in a maximum increase

of 6 PCU in mean vehicle queue length on any junction approach and a maximum increase of 19 seconds in average delay. Impacts on Junction 9 is negligible, resulting in an increase of less than 1 PCU in average max queue length and an increase in average delay per vehicle of max 6 seconds.

The likely operational-phase impact of the proposed development on the overall operation of the surrounding road network is thereby shown to be **negative** in nature, **long-term** in duration, and of **moderate** significance.

Table 18.23 Design Year 2043 – Operational Phase Development Influence

| Junction Arm | Traffic Type | Degree of Saturation (%) | | Mean Max. Queue (PCU) | | Mean Delay per Vehicle (s) | | Practical Reserve Capacity (%) | |
|---|---|---|---|---|---|---|---|---|---|
| | | AM | PM | AM | PM | AM | PM | AM | PM |
| Junction 7 | | | | | | | | | |
| A | S/L | 21 | 13 | 5.07 | 4.76 | 7.95 | 25.13 | -45 | -16 |
| | R | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| B | L | 0 | 13 | 0 | 1.18 | 0 | 9.54 | 0 | -75 |
| | S/R | 14 | 9 | 1.8 | 5.91 | 8.15 | 17.18 | -27 | -33 |
| C | S/L | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | R | 0 | 0 | 0 | 0 | 0 | 0 | 0 | -108 |
| D | S/L | 0 | 15 | 0 | 2.66 | 0 | 18.61 | 0 | -21 |
| | R | 0 | 0 | 0 | 0 | 0 | -0.01 | 0 | 608 |
| Junction 9 | | | | | | | | | |
| A | L | - | - | - | - | - | - | -12% | -17% |
| | S | - | - | - | - | - | - | | |
| B | R/L | 2 | 1 | 0.06 | 0.03 | 1.01 | 0.88 | | |
| C | S | - | - | - | - | - | - | | |
| | R | 0 | 0 | 0 | 0 | 0.07 | 0.19 | | |

## 18.5 Mitigation Measures

### 18.5.1 Construction Phase

Heavy Goods Vehicle traffic (vehicles 3.5t or over) to and from the construction site shall comprise primarily 3-axle and 4-axle lorries for the removal of spoil and construction waste, and the delivery of large structural elements or plant. All HGV construction traffic to and from the site will follow a designated route, ensuring that heavy construction vehicles avoid sensitive streets to the greatest extent possible and travel as little as possible within the city centre. Subject to final agreement between the lead Contractor and DCC (as part of the Contractor's Construction Management Plan), this designated route will require heavy construction vehicles travelling to and from the site to arrive and depart from/to the M50 motorway via R139 and Clongriffin Main Street, as shown in **Figure 18.3**.

The lead Contractor appointed for the construction of the development will be required to prepare a site-specific Construction Management Plan (CMP), including a plan for the scheduling and management of construction traffic, which will outline measures to be taken to mitigate the effects of construction traffic on the surrounding road network. A Designated Community Liaison Officer (DCLO) will be nominated for the proposed development, who will act as a point of contact for local residents, Dublin City Council, and An Garda Síochána.

The final site-specific CMP will include the following measures for minimising construction traffic and mitigating its effects:

- Limiting onsite car parking for construction operatives.
- Restricting all heavy construction traffic to a designated route, ensuring that heavy construction vehicles avoid sensitive streets to the greatest extent possible and travel as little as possible within the city centre.
- Conducting all loading and unloading operations within the site.
- Scheduling deliveries outside of peak hour periods to avoid disturbance to surrounding pedestrian and vehicular traffic.
- Staggering HGV movements to/from site to avoid site queues.
- Preventing haulage vehicles travelling in convoys of more than two vehicles at any time and spacing haulage vehicles by a minimum of 250m at all times.
- Installation of a wheel wash at exit from the site to prevent any dirt being carried out onto surrounding roads.
- Deployment of a road sweeper as necessary to keep roads around the site clean.

The following specific traffic control and marshalling measures will be included in the CTMP, to minimise the potential for obstruction of surrounding streets:

- At no time will construction associated vehicles be stopped or parked along haulage routes.
- Haulage vehicles will not travel in convoys of greater than two vehicles at any time.
- Haulage vehicles will be spaced by a minimum of 250m at all times.
- At no time will haulage vehicles be parked or stopped at the entrance to the site.
- All loading of excess material will occur within the site boundary.
- All off-loading of deliveries will take place within the site, away from the public road and will access via the construction site access.

Construction vehicle movements will be minimised through:

- Consolidation of delivery loads to/from the site and management of large deliveries on site to occur outside of peak periods.
- Use of precast/prefabricated materials where possible.
- Reuse on site of any 'cut' material generated by the construction works, where possible, through various accommodation works.
- Provision of adequate storage space on site.
- Development of a strategy to minimise construction material quantities as much as possible.

Construction personnel will be encouraged to make use of the available high-quality public transport links to the area and/or to commute by bicycle, to minimise private car trips to and from the site. To avoid problems of parking overspill on surrounding streets, parking restrictions and management measures on surrounding streets will be reviewed and implemented as necessary in agreement with local residents and Dublin City Council.

### 18.5.2 Operational Phase

Development occupant and visitors' use of sustainable travel modes (public transport, walking, and cycling) constitutes the primary means by which the development will avoid the excessive generation of motor vehicle trips. As described in the Travel Plan Framework prepared in support of this planning

application and provided separately, a Travel Plan Coordinator shall be appointed for the proposed development, with the remit to implement and oversee an ongoing Travel Plan.

In conjunction with the development's intrinsic mitigation measures (reduced car parking, significant bicycle parking, and ancillary facilities), this shall assist development occupants and visitors in making the most of sustainable transport opportunities and in avoiding single-occupant car journeys to and from the development site, which shall in turn reduce the likelihood of overspill parking on surrounding streets.

The development's facilities management will prepare and implement a Development Servicing Management Plan that will specifically aim to ensure that servicing of the development can be carried out efficiently, whilst minimising both:

- Conflicts between vehicular servicing traffic and internal pedestrian and cyclist traffic, and
- Any effects on the operational performance of the surrounding road network.

Delivery scheduling

Peak hour deliveries will be discouraged throughout the development. On the basis that the AM peak is often the busiest hour for servicing, the operation of the development will spread deliveries throughout the day wherever possible. The majority of postal deliveries will be made to grouped mailboxes or to reception areas, reducing delivery time in this instance.

Waste management

The development shall provide sufficient facilities for storage and collection of segregated waste. Refuse collection will be undertaken outside of peak hours where possible, with the specific collection times being arranged with the private waste contractors to minimise the impacts on the operation of the site and of the surrounding street network.

Operational coordination, restrictions, and enforcement

Facilities management shall be responsible for establishing and enforcing restrictions on the nature and scheduling of permitted vehicular servicing operations relating to the development. Facilities management shall maintain records of all large deliveries and shall coordinate with development occupants to ensure that regular scheduled servicing operations are conducted at suitable times and do not conflict with one another. Facilities management shall take enforcement measures where such operations are conducted without its approval.

Accommodating special deliveries

Any special deliveries to the subject development will need to be arranged with facilities management in advance. Special deliveries are defined as unusually large items which would arrive on an infrequent basis. The delivery time and duration will be agreed with facilities management to minimise the impact upon the routine daily servicing requirements of the development and the operation of the surrounding street network. All special deliveries should be arranged for off-peak periods, where possible.

## 18.6 Residual Impacts

The proposed development includes intrinsic traffic generation mitigation measures as part of its design. These include a reduced car parking provision and significant high-quality bicycle parking. Additional construction phase and operational phase mitigation measures shall be implemented under

the development's Travel Plan, Development Servicing Management Plan, and Construction Traffic Management Plan, as previously described.

As is standard practice in the evaluation of a development's traffic impacts, all mitigation measures to be implemented have been accounted for when determining the proposed development's projected construction phase and operational phase vehicular traffic generation. The proposed development's residual impacts are therefore equivalent to its predicted impacts.

Residual Construction Phase Impacts:

- **Negative** in nature
- **Short-term** in duration
- **Not significant**

Residual Operational Phase Impacts:

- **Negative** in nature
- **Long-term** in duration
- **Moderate** significance.

## 18.7 Monitoring

The site-specific CMP to be prepared by the lead Contractor shall include measures for monitoring the impact of construction traffic on the operation and condition of the surrounding street network, including remedial actions to be taken in the event of construction traffic causing damage to road infrastructure. The lead Contractor will also be required to monitor the travel habits of construction personnel and to tailor supports for public and shared transport use accordingly. Surrounding streets will be monitored to ensure that no nuisance parking associated with construction activity takes place.

Post-development monitoring of the surrounding street network's performance is not required or proposed in this case.

Within the scope of the Travel Plan to be implemented for the development, a Travel Plan Coordinator shall be responsible for monitoring the travel habits of development occupants and visitors. A Travel Plan is a dynamic process whereby a package of measures and campaigns is identified, piloted, and then monitored on an ongoing basis. The Travel Plan will identify specific targets against which the effectiveness of the plan can be assessed at each review; these will typically take the form of target modal splits for journeys to and from a site. The Travel Plan Coordinator shall gather data on travel patterns, for instance by conducting periodic travel surveys of development occupants.

## 18.8 Interactions

The changes in vehicular traffic flows that shall be affected by the subject development (in both its construction and operational phases) may result in corresponding changes to air quality and noise levels in the vicinity of the development site. The natures, extents, and consequences of these changes are examined in Chapters 11 and 13 of this EIAR.

No environmental impacts or mitigation measures described in other chapters of this EIAR are capable of inducing inverse effects on the proposed development's traffic generation and the resultant surrounding road network performance.

## 18.9 Indirect and/or Secondary Impacts

The vehicular traffic flows that shall be generated by the proposed development may contribute to changes in air quality, noise levels, and waste disposal in the vicinity of the surrounding road network. These constitute indirect effects, which are described in the 2022 EPA Guidelines (with reference to the 1999 European Commission Guidelines for the Assessment of Indirect and Cumulative Impacts as well as Impact Interactions) as "Impacts on the environment, which are not a direct result of the project, often produced away from (the site) or as a result of a complex pathway".

The traffic assessment addresses the interaction with Chapter 19 (Material Assets – Waste) and includes assessment of any increase in traffic volumes due to transport of waste material during the construction and operational phase. There are no further interactions with Chapter 19 (Material Assets – Waste) other than already captured in this Chapter.

The natures, extents, and consequences of any other changes are assessed in Chapters 11 (Air Quality) 12 (Climate) 13 (Noise & Vibration) and 7 (Population and Human Health) of this EIAR. A summary of the interactions is also addressed in Chapter 21 Interactions.

## 18.10 Cumulative Impacts

The permitted and proposed developments to which regard has been had in the assessment of potential cumulative impacts is provided in Chapter 22 of this EIAR. Only one development (Reg. Ref. LRD6064/24-S3) was ultimately included within the cumulative assessment as this was the only scheme identified that was considered to have potential to generate a material change in traffic conditions at the junctions assessed. It should be noted that there is limited vehicular access between the Clongriffin and Baldoyle lands, which are separated by the railway line running in a north-south orientation between Dublin City Centre and Drogheda/Belfast.

Other developments reviewed were excluded on the basis that they were of limited scale, were not expected to generate significant additional vehicular trips, or were located such that their traffic would not interact with the same junctions or network links as the proposed development. In several cases, developments were either too small to meaningfully influence peak-hour flows, were predominantly non-car-based in nature, or were situated outside the effective zone of influence for the junctions assessed.

The cumulative impact of the subject development and the following development has been considered within this section.

- Reg. Ref. LRD6064/24-S3. – mixed use development comprising of two Blocks (i.e. Blocks 5 and 6) providing a total of 408 no. apartment units.

Weekday peak hour vehicular trip generation for this committed development has been extracted from the Traffic Impact Assessment submitted for this development application (Reg. Ref. LRD6064/24-S3). The TRICS trip generation figures are given in Table 18.21.

Table 18.24 Committed Development Weekday Peak Hour Vehicle Trip Generation

| Time Period | Arrivals | Departures | Total Trips |
|---|---|---|---|
| AM Peak | 37 | 86 | 123 |
| PM Peak | 66 | 42 | 108 |

As for the subject proposed development, vehicular traffic to and from this committed development is assumed to be distributed according to the relevant existing baseline directional splits at surrounding junctions.

Figure 18.6 Committed development (sources: OSM Contributors, NTA, Google)




Table 18.25 gives TRANSYT and PICADY modelling results under the calculated weekday AM peak and PM peak traffic flows for the year 2043, with the inclusion of operational traffic generated both by the subject proposed development and by the adjacent committed development. The traffic flows applied for this assessment scenario are those surveyed in 2024, scaled up to 2043 levels using TII growth factors, and including the above-mentioned operational phase traffic.

These results show that Junction 9 shall operate well within effective capacity on all approaches during both the AM and PM peak period and shall experience no discernible vehicle queueing and negligible delays. Junction 7 shall operate within its effective capacity within the AM peak hour but shall exceed its effective capacity within the PM peak hour. However, the junction shall remain within its ultimate capacity at peak times with moderate vehicle queueing and vehicle delays.

The cumulative influence of the proposed development and the committed development on the operation of the surrounding road network may be quantified by subtracting the 2043 'Do-Nothing' TRANSYT and PICADY modelling results from the cumulative assessment results given in Table 18.25. This comparison, given in Table 18.26, shows that these cumulative effects shall have a negligible influence on the operation of Junction 9, resulting in a maximum increase of less than 1 PCU in mean vehicle queue length and a maximum increase of 6 seconds in average delay on any junction approach. The cumulative influence of the proposed development and the committed development shall have a moderate impact on the operation of Junction 7 which is expected to experience a maximum increase of 8 PCU in mean vehicle queue length and a maximum increase of 30 seconds in mean delay per vehicle.

The cumulative impacts of the proposed and committed developments on the operation of the overall surrounding road network are thereby shown to be **negative** in nature, **long-term** in duration, and of **moderate** significance.

Table 18.25 Design Year 2043 Microsimulation Modelling Results – Cumulative Assessment Scenario

| Junction Arm | Traffic Type | Degree of Saturation (%) | | Mean Max. Queue (PCU) | | Mean Delay per Vehicle (s) | | Practical Reserve Capacity (%) | |
|---|---|---|---|---|---|---|---|---|---|
| | | AM | PM | AM | PM | AM | PM | AM | PM |
| Junction 7 | | | | | | | | | |
| A | S/L | 76 | 93 | 13.27 | 15.13 | 36.92 | 76.32 | 18 | -3 |
| | R | 20 | 21 | 2.56 | 2.07 | 22.81 | 31.57 | 342 | 323 |
| B | L | 50 | 72 | 7.05 | 10.13 | 28.42 | 40.35 | 81 | 26 |
| | S/R | 73 | 93 | 7.49 | 19.29 | 45.11 | 63.95 | 24 | -3 |
| C | S/L | 11 | 4 | 0.42 | 0.15 | 44.34 | 43.32 | 710 | 2060 |
| | R | 22 | 17 | 0.86 | 0.64 | 46.7 | 45.45 | 305 | 440 |
| D | S/L | 55 | 87 | 7.97 | 14.35 | 29.54 | 53.95 | 65 | 4 |
| | R | 2 | 1 | 0.13 | 0.1 | 16.35 | 10.1 | 3959 | 6747 |
| Junction 9 | | | | | | | | | |
| A | L | - | - | - | - | - | - | 85% | 428% |
| | S | - | - | - | - | - | - | | |
| B | R/L | 43 | 14 | 0.75 | 0.16 | 13.08 | 7.04 | | |
| C | S | - | - | - | - | - | - | | |
| | R | 5 | 13 | 0.05 | 0.15 | 5.07 | 5.35 | | |

Table 18.26 Design Year 2043 – Cumulative Development Influence

| Junction Arm | Traffic Type | Degree of Saturation (%) | | Mean Max. Queue (PCU) | | Mean Delay per Vehicle (s) | | Practical Reserve Capacity (%) | |
|---|---|---|---|---|---|---|---|---|---|
| | | AM | PM | AM | PM | AM | PM | AM | PM |
| Junction 7 | | | | | | | | | |
| A | S/L | 33 | 14 | 7.23 | 5.59 | 11.3 | 23.46 | -92 | -17 |
| | R | 0 | -2 | 0.08 | -0.06 | 0.73 | -1.88 | -12 | 36 |
| B | L | 0 | 26 | 0 | 2.76 | 0 | 19.35 | 0 | -75 |
| | S/R | 19 | 11 | 2.77 | 7.58 | 9.93 | 19.71 | -42 | -33 |
| C | S/L | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | R | 0 | 0 | 0 | 0 | 0 | 0 | 0 | -108 |
| D | S/L | 0 | 31 | 0 | 4.83 | 0 | 30.96 | 0 | -57 |
| | R | 0 | -1 | 0 | 0 | -0.6 | 0.87 | 202 | 1215 |
| Junction 9 | | | | | | | | | |
| A | L | - | - | - | - | - | - | -102% | -65% |
| | S | - | - | - | - | - | - | | |
| B | R/L | 19 | 10 | 0.47 | 0.19 | 4.51 | 2.44 | | |
| C | S | - | - | - | - | - | - | | |
| | R | 0 | 0 | 0 | 0 | 0.12 | 0.29 | | |

## 18.11 Difficulties Encountered

No particular difficulties were encountered in the preparation of this EIAR chapter.

## 18.12 References


- Environmental Protection Agency (EPA) (2022): Guidelines on the Information to be Contained in Environmental Impact Assessment Reports
- Transport Infrastructure Ireland (TII) (2014): Traffic and Transport Assessment Guidelines
- Transport Infrastructure Ireland (TII) (2011): Project Appraisal Guidelines
- Dublin City Council (DCC) (2022): Dublin City Development Plan 2022–2028
- TRICS Consortium: Trip Rate Information Computer System (TRICS) database
- Central Statistics Office (CSO): 2016 and 2022 Census data
- Uisce Éireann (2020): Code of Practice for Water Infrastructure
- Department of Housing, Local Government and Heritage (2022): Sustainable Urban Housing: Design Standards for New Apartments (Guidelines for Planning Authorities)
- Homes & Community Agency (UK) (2015): Employment Density Guide (3rd Edition)

# 19 Material Assets – Waste

## 19.1 Introduction

This chapter evaluates the impacts, if any, which the proposed development may have on Material Assets - Waste as defined in the EIA Directive (Directive 2011/92/EU as amended by Directive 2014/52/EU) and the EPA 2022 Guidelines on the information to be contained in Environmental Impact Assessment Reports during the construction and operational phases of the proposed development, as described in Chapter 5 (Description of proposed development).

This chapter has been prepared by Laura Griffin (MSc, BA), Senior Environmental Consultant of AWN Consulting. She holds an MSc in Climate Change and has over five years' experience in the environmental consultancy sector. Laura specialises in Operational Waste Management Plans, Resource & Waste Management Plans and Construction Environmental Management Plans, as well as EIA Screening and the preparation of EIAR chapters for a range of residential, commercial and mixed-use developments.

This chapter was reviewed and approved Chonaill Bradley (Bsc ENV, PG Dip Circ Econ, AssocCIWM) of AWN Consulting. Chonaill Bradley is an Associate in the Environment Team at AWN. He holds a BSc in Environmental Science from Griffith University, Australia and a Postgraduate Diploma in Circular Economy Leadership for the Built Environment from the Atlantic Technological University, Galway. He is an Associate Member of the Institute of Waste Management (AssocCIWM). Chonaill has over 10 years' experience in the environmental consultancy sector and specialises in sustainability, resource and waste management.

A site-specific Resource Waste Management Plan (RWMP) has been prepared by AWN to guide and manage the waste generated during the construction phase of the proposed development and will be included as Appendix 19.1. The RWMP was prepared in accordance with the Environmental Protection Agency's (EPA) document *Best Practice Guidelines for the Preparation of Resource and Waste Management Plans for Construction & Demolition Projects* (2021).

The RWMP is a live document and will be regularly reviewed throughout the lifecycle of the proposed development to maximise waste reduction and ensure that waste data is collected and updated as accurately as possible. The RWMP will ensure that waste arising at the site is managed in accordance with legislative requirements and best practice standards.

A separate Operational Waste Management Plan (OWMP) has been prepared by AWN for the operational phase of the proposed development and is included Appendix 19.2.

This chapter has been prepared in accordance with European Commissions Guidelines, Guidance on the preparation of the Environmental Impact Assessment Report (2017), the EPA Guidelines on the Information to be contained in EIAR (2022). It should be read in conjunction with Chapter 5 (Description of proposed development) and the relevant environmental chapters, including Chapter 7 (Population and Human Health), Chapter 8 (Biodiversity), Chapter 9 (Land, Soils, Geology and Hydrogeology), Chapter 10 (Hydrology), Chapter 12 (Climate) and Chapter 18 (Traffic and Transportation) of the EIAR.

## 19.2 Method

The assessment of the impacts of the proposed development, arising from the consumption of resources and the generation of waste materials, was carried out with reference to the methodologies set out in relevant guidance documents, together with an extensive desktop review to identify current and future requirements for waste management. This review included national and regional waste policy, waste strategies, management plans, legislative requirements and other relevant published reports.

This chapter was undertaken in accordance with the EPA *Guidelines on the Information to be Contained in Environmental Impact Assessment Reports* (2022). The methodology applied is consistent with the overarching EIA framework described in Chapter 1 of this EIAR.

The assessment addresses the construction and operational phases of the proposed development and, where relevant, considers the potential for direct, indirect and residual effects on the receiving environment.

Study Area

The assessment of waste has utilised two geographically distinct study areas to examine the use of materials and the generation and management of waste:

The first study area comprises the site boundary including any areas required for temporary access, site compounds and other enabling activities, where materials will be consumed and waste will be generated.

The second study area extends to the availability of appropriate waste management infrastructure, suitably permitted for waste type and volume, to accept arisings generated by the proposed development. This includes the Eastern-Midlands Region (EMR) at a regional level and Ireland as a whole at a national level, where relevant, to capture the potential impacts associated with recovery, recycling or disposal of the waste generated from the proposed development at facilities outside the immediate vicinity of the site.

The impact assessment methodology applied within this chapter comprises the following stages:

This chapter is based on the proposed development, as described in Chapter 5 (Description of proposed development) and considers the following aspects:

- Legislative context;
- Construction phase (including excavation and site preparation); and
- Operational phase.

A desktop study was carried out, which included the following:

- Review of applicable policy and legislation which creates the legal framework for resource and waste management in Ireland;
- Description of the typical waste materials that will be generated during the construction and operational phases; and
- Identification of mitigation measures to prevent waste generation and promote management of waste in accordance with the waste hierarchy.

Estimates of waste generation during the construction and operational phases of the proposed development have been calculated. The waste types and estimated quantities are based on published

EPA National Waste Reports and National Waste Statistics, data from comparable development, Irish and US EPA waste generation research, and other relevant published sources.

Mitigation measures are proposed to minimise the effect of the proposed development on the environment during the construction and operational phases, to promote efficient waste segregation, and to reduce the quantity of waste requiring disposal. This information is presented in Section 19.6.

A detailed review of the existing ground conditions on a regional, local and site-specific scale will be presented in Chapter 9 (Land, Soils, Geology & Hydrogeology). Chapter 9 will also discuss the environmental quality of any soils which will have to be excavated to facilitate construction of the proposed development.

### 19.2.1 Legislation and Guidance

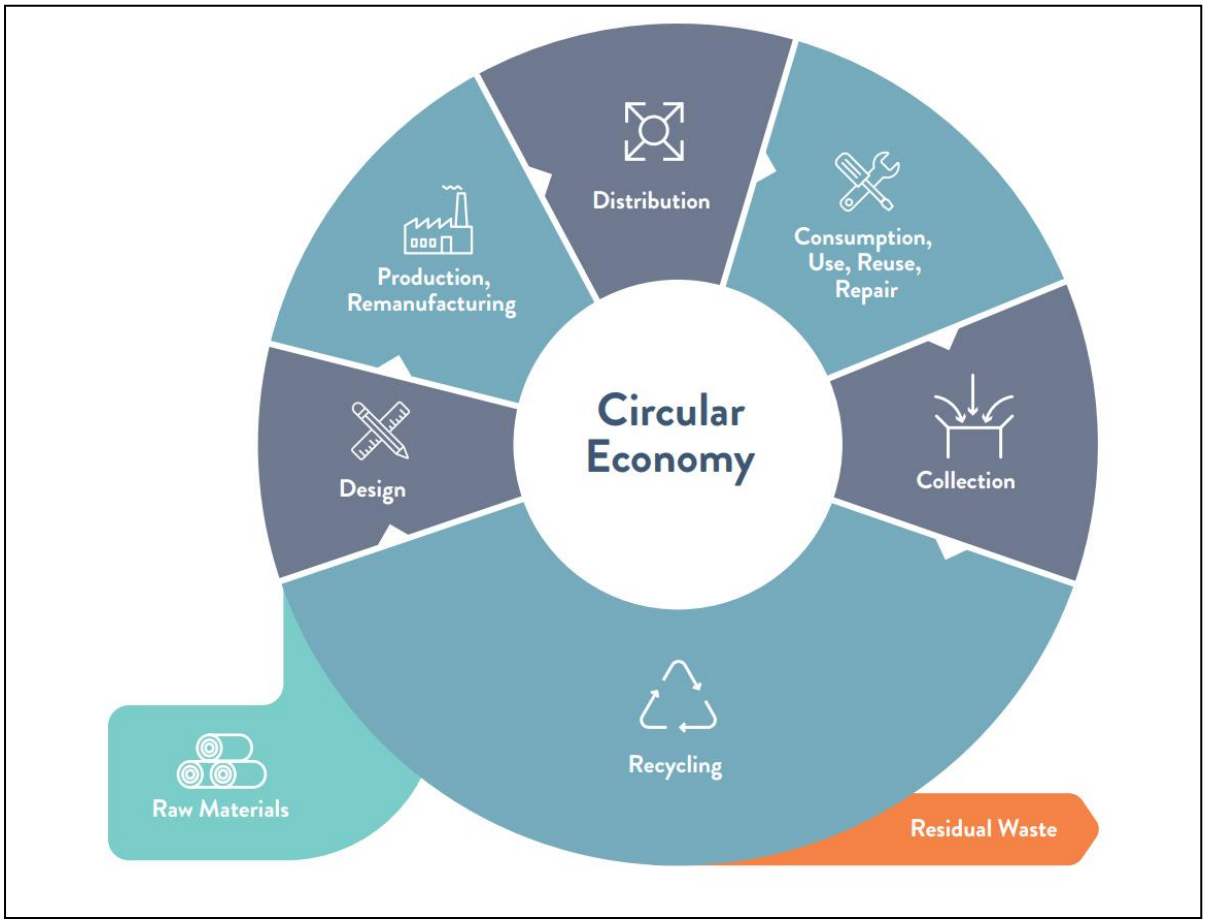
Waste management in Ireland is subject to EU, national and regional waste legislation, which defines how waste materials must be managed, transported and treated. The overarching EU legislation is the 'Waste Framework Directive (2008/98/EC)' as amended, which is transposed into national legislation in Ireland. The cornerstone of Irish waste legislation is the 'Waste Management Act 1996 (as amended)'. European and national waste management policy is based on the concept of 'waste hierarchy', which sets out an order of preference for managing waste (prevention > preparing for re-use > recycling > recovery > disposal) (**Figure 19.1**).

Figure 19.1 Waste Hierarchy (Source: European Commission, 2018)




EU and Irish national waste policy also aims to contribute to the circular economy by extracting high-quality resources from waste as much as possible. Circular Economy (CE) is a sustainable alternative to the traditional linear (take-make-dispose) economic model, reducing waste to a minimum by reusing, repairing, refurbishing and recycling existing materials and products (**Figure 19.2**).

Figure 19.2 Circular Economy (Source: EPA, 2021)




The Irish government issues policy documents which outline measures to improve waste management practices in Ireland and help the country to achieve EU targets in respect of recycling and disposal of waste. The most recent policy document, *Waste Action Plan for a Circular Economy (WAPCE) – Waste Management Policy in Ireland*, was published in 2020 and shifts focus away from waste disposal and moves it back up the production chain. The *WAPCE* reflects a shift in national waste policy towards upstream waste prevention and circular economy principles.

One of the first actions to be taken from the *WAPCE* was the development of the *Whole of Government Circular Economy Strategy 2022-2023 'Living More, using Less' (2021)* to set a course for Ireland to transition across all sectors and at all levels of Government toward circularity and was issued in December 2021. This strategy set out a framework to support Ireland's transition towards a circular economy across all sectors and levels of Government.

The Strategy has since been updated through the publication of the *Whole of Government Circular Economy Strategy 2026-2028: Accelerating Action* (2026). The core objective of the updated strategy document is to *increase the circular material use rate of Ireland to 12% by 2030* while supporting economic growth, improving resource productivity, and reducing reliance on virgin raw materials. The Strategy also seeks to enhance competitiveness and innovation, ensure social equity, empower sustainable choices, support local circular initiatives, and leverage digitalisation as a key enabler of the circular economy.

*The Circular Economy and Miscellaneous Provisions Act 2022* was signed into law in July 2022. The Act underpins Ireland's shift from a "take-make-waste" linear model to a more sustainable pattern of

production and consumption, that retains the value of resources in our economy for as long as possible and that will work to significantly reduce our greenhouse gas emissions. The Act defines Circular Economy for the first time in Irish law, incentivises the use of recycled and reusable alternatives to wasteful, single-use disposable packaging, introduces a mandatory segregation and incentivised charging regime for commercial waste, streamlines the national processes for End-of-Waste and By-Products decisions.

The strategy for the management of waste from the construction phase is in line with the requirements of the EPA's *Best Practice Guidelines for the Preparation of Resource and Waste Management Plans for Construction and Demolition Projects (2021)*. The following guidance document was also consulted in the preparation of this assessment:

- *Construction and Demolition Waste Management: A Handbook for Contractors and Site Managers* (FÁS and Construction Industry Federation, 2002).

There are currently no Irish guidelines on the assessment of operational waste generation, and guidance is taken from industry guidelines, plans and reports including:

- The National Waste Management Plan for a Circular Economy 2024 – 2030 (NWMPCE) (2024),
- BS 5906:2005 Waste Management in Buildings – Code of Practice;
- Dublin City Council (DCC) Waste Management (Storage, Presentation and Segregation of Household and Commercial Waste) Bye-Laws 2018)" (2018);
- EPA National Waste Database Reports 1998 – 2020, and
- The Circular Economy and National Waste Database Report 2021 (2023); and
- The EPA National Waste Statistics Web Resource.

Regulation 27 of the European Communities (Waste Directive) Regulations 2011 (SI No.126 2011) will be utilised as part of this development. Regulation 27 sets out the conditions for production residue to be classified as a by-product rather than a waste, the four conditions of being a by-product as defined under Article 27 are required to be met. These four conditions are:

- The further use of the substance or object is certain; (Article 27(1)(a));
- The substance or object can be used directly without any further processing other than normal industrial practice; (Article 27(1)(b));
- The substance or object is produced as an integral part of a production process; (Article 27(1)(c)); and
- The further use is lawful in that the substance or object fulfils all relevant product, environmental and health protection requirements for the specific use and will not lead to overall adverse environmental or human health impacts (Article 27(1)(d)).

### 19.2.2 Terminology

Note that the terminology used herein is generally consistent with the definitions set out in Article 3 of the Waste Framework Directive. Key terms are defined as follows:

- **Waste:** Any substance or object which the holder discards or intends or is required to discard.
- **Prevention:** Measures taken before a substance, material or product has become waste, that reduce:

  (a) the quantity of waste, including through the re-use of products or the extension of the life span of products;

(b) the adverse impacts of the generated waste on the environment and human health; or

(c) the content of harmful substances in materials and products.

- **Reuse:** Any operation by which products or components that are not waste are used again for the same purpose for which they were conceived.
- **Preparing for Reuse:** Checking, cleaning or repairing recovery operations, by which products or components of products that have become waste are prepared so that they can be re-used without any other pre-processing.
- **Treatment:** Recovery or disposal operations, including preparation prior to recovery or disposal.
- **Recovery:** Any operation the principal result of which is waste serving a useful purpose by replacing other materials which would otherwise have been used to fulfil a particular function, or waste being prepared to fulfil that function, in the plant or in the wider economy. Annex II of the Waste Framework Directive sets out a non-exhaustive list of recovery operations.
- **Recycling:** Any recovery operation by which waste materials are reprocessed into products, materials or substances whether for the original or other purposes. It includes the reprocessing of organic material but does not include energy recovery and the reprocessing into materials that are to be used as fuels or for backfilling operations.
- **Disposal:** Any operation which is not recovery even where the operation has, as a secondary consequence, the reclamation of substances or energy. Annex I sets out a non-exhaustive list of disposal operations.
- **Circular Economy:** A model of production and consumption, which involves sharing, leasing, reusing, repairing, refurbishing and recycling existing materials and products as long as possible.

## 19.3 Baseline Environment

In terms of waste management, the receiving environment is largely defined by DCC as the local authority responsible for setting and administering waste management activities in the area. This is governed by the requirements set out in the *National Waste Management Plan for a Circular Economy 2024 – 2030* (*NWMPCE*) (2024) and the *Waste Action Plan for a Circular Economy – Waste Management Policy in Ireland (WAPCE)*.

The national waste management plans set out the following targets relevant to waste management:

- *Achieve a recycling rate of 55% of managed municipal waste by 2025; and*
- *Reduce to 0% the direct disposal of unprocessed residual municipal waste to landfill (from 2016 onwards) in favour of higher value pre-treatment processes and indigenous recovery practices.*

The *NWMPCE 2024* – 2030, published in March 2024 by the Regional Waste Management Planning Offices, which supersedes the former regional waste management plans, including the three regional waste management plans, including the *Connacht-Ulster Region (CUR) Waste Management Plan 2015 – 2021*. While the Plan does not dissolve the three waste planning regions, it provides a single national policy and targets framework, with a stated ambition of 0% growth in waste generation per person over the lifetime of the Plan with particular emphasis on non-household waste streams, including waste from commercial activities and the construction and demolition sector.

The *Dublin City Development Plan 2022 – 2028* (2022) sets out the policies and objectives for the DCC area which reflect those sets out in the regional waste management plan.

In terms of physical waste infrastructure, DCC no longer operates any municipal waste landfills in the area. There are a number of waste permitted and licensed facilities located in the EMR, in the surrounding counties and over Ireland and Northern Ireland, for management of waste from the construction industry as well as municipal sources. These include soil recovery facilities, inert C&D waste facilities, hazardous waste treatment facilities, municipal waste landfills, material recovery facilities, waste transfer stations and two waste-to-energy facilities.

However, these sites may not be available for use when required or may be limited by the waste contractor selected to service the proposed development in the appropriate phase. In addition, there is potential for more suitably placed waste facilities or recovery facilities to become operational in the future, which may be more beneficial from an environmental perspective.

The ultimate selection of waste contractors and waste facilities would be subject to appropriate selection criteria proximity, competency, capacity and serviceability.

## 19.4 Characteristics of the proposed development

A full description of the proposed development can be found in Chapter 5 (Description of the proposed development). The characteristics of the proposed development that are relevant in terms of waste management are summarised below.

### 19.4.1 Construction Phase

During the construction phase, waste will be produced from surplus materials such as broken or off-cuts of timber, plasterboard, concrete, tiles, bricks, etc. Waste from packaging (cardboard, plastic, timber) and oversupply of materials may also be generated. The appointed Contractor will be contractually required to ensure that oversupply of materials is kept to a minimum and opportunities for reuse of suitable materials is maximised.

The proposed development will require excavation across the site to facilitate foundations, services, internal road networks, landscaped areas, and other infrastructural elements. CS Consulting Civil, Structural and Traffic Engineering ('CS Consulting') have estimated that approximately 1,550m$^3$ of material will be excavated as part of these works.

It is currently envisaged that all of this material will be removed from the site for appropriate offsite reuse, recovery, recycling and / or disposal in accordance with relevant waste management legislation and best practice guidance, due to limited viable reuse opportunities onsite.

During the construction phase there may be a surplus of building materials, such as timber off-cuts, broken concrete blocks, cladding, plastics, metals and tiles generated. There may also be excess concrete during construction which will need to be disposed of. Plastic and cardboard waste from packaging and supply of materials will also be generated. The Contractor will be required to ensure that oversupply of materials is kept to a minimum and opportunities for reuse of suitable materials is maximised.

If any material that requires removal from the site is deemed to be a waste, its removal and subsequent reuse / recycling / recovery / disposal will be carried out in accordance with the Waste Management Act 1996 (as amended), the Waste Management (Collection Permit) Regulations 2007 (as amended) and the Waste Management (Facility Permit & Registration) Regulations 2007 (as amended). The volume of waste requiring recovery / disposal will dictate whether a Certificate of Registration (COR),

permit or licence is required for the receiving facility. Alternatively, the material may be classed as by-product under Regulation 27 (By-products), as amended, of S.I. No. 323/2020 - European Union (Waste Directive) Regulations 2011-2020, (formerly Article 27 of the European Communities (Waste Directive)). For further information in relation to the envisaged management of by-products, refer to the RWMP (Appendix 19.1).

In order to establish the appropriate reuse, recovery and / or disposal route for the soils and stones requiring removal off-site as waste, the material will first need to be classified. Material deemed to be waste will initially be classified as hazardous or non-hazardous in accordance with the EPA publication Waste material *Waste Classification – List of Waste & Determining if Waste is Hazardous or Non-Hazardous* (2018). Environmental soil analysis will be undertaken prior to removal on a number of representative soil samples, in accordance with the Waste Acceptance Criteria (WAC) requirements set out in Council Decision 2003/33/EC. This legislation establishes limit values for the acceptance of waste at landfills, based on pollutant concentrations and leachability. It is anticipated that the surplus material will be suitable for acceptance at either inert or non-hazardous soil recovery facilities / landfills in Ireland. In the unlikely event that any hazardous material is encountered, such material will be transported to a suitable treatment / recovery facilities or exported abroad for disposal in appropriately licensed facilities.

Waste will also be generated from construction phase workers e.g. organic / food waste, dry mixed recyclables (wastepaper, newspaper, plastic bottles, packaging, aluminium cans, tins and Tetra Pak cartons), mixed non-recyclables and, potentially, sewage sludge from temporary welfare facilities provided on-site during the Construction phase. Waste printer / toner cartridges, waste electrical and electronic equipment (WEEE) and waste batteries may also be generated in small volumes from site offices.

Further detail on the waste materials likely to be generated during the excavation and construction works are presented in the project-specific RWMP (Appendix 19.1). The RWMP provides an estimate (of the main waste types likely to be generated during the construction phase of the proposed development. These are summarised in Table 19.1.

Table 19.1 Predicted On and Off Site Reuse, Recycling, and Disposal Rates for Construction Waste

| Waste Type | Tonnes | Reuse | | Recycle / Recovery | | Disposal | |
|---|---|---|---|---|---|---|---|
| | | % | Tonnes | % | Tonnes | % | Tonnes |
| Mixed C&D | 1361.5 | 10 | 136.2 | 80 | 1089.2 | 10 | 136.2 |
| Timber | 1155.2 | 40 | 462.1 | 55 | 635.4 | 5 | 57.8 |
| Plasterboard | 412.6 | 30 | 123.8 | 60 | 247.5 | 10 | 41.3 |
| Metals | 330.1 | 5 | 16.5 | 90 | 297.1 | 5 | 16.5 |
| Concrete | 123.8 | 30 | 37.1 | 65 | 80.5 | 5 | 6.2 |
| Other | 618.9 | 20 | 123.8 | 60 | 371.3 | 20 | 123.8 |

It should be noted that until final materials and detailed construction methodologies have been confirmed it is difficult to predict with a high level of accuracy the construction waste that will be generated from the construction of the proposed development as the exact materials and quantities may be subject to some degree of change and variation during the construction process. However, the above estimates are considered to be the worst-case scenario.

### 19.4.2 Operational Phase

As noted in Section 19.1, an OWMP has been prepared for the proposed development and is included as Appendix 19.2. The OWMP provides a strategy for segregation (at source), storage and collection of all wastes generated within the proposed development during the operational phase. This includes the main waste streams, Mixed Non-Recyclable Waste (MNR), Dry Mixed Recyclables (DMR), Organic Waste, Glass, Paper & Cardboard, Plastics, as well as a strategy for managing additional waste types such Deposit Return Scheme (DRS) drink cans and bottles, green / garden waste from landscaping, batteries (hazardous and non-hazardous), WEEE (hazardous and non-hazardous), printer / toner cartridges, chemicals (e.g., paints, adhesives, detergents), light bulbs, textiles, waste cooking oil, furniture and bulky waste, and abandoned bicycles.

The total estimated waste generation for the proposed development for the main waste types based on the AWN waste generation model is presented in **Table 19.2** and is based on the uses and areas as advised by the project architects (Henry J Lyons Architects). Further breakdowns can be found with in Appendix 19.2 OWMP.

Table 19.2 Estimated Waste Generation for the proposed development

| Waste Type | Waste Volume ($m^3$ / week) | |
|---|---|---|
| | Residential | Commercial |
| Organic Waste | 10.16 | 1.13 |
| DMR | 72.03 | 13.17 |
| Glass | 1.97 | 0.20 |
| MNR | 37.88 | 5.90 |
| **Total** | **122.04** | **20.40** |

Dedicated communal Waste Storage Areas (WSAs) have been allocated within the proposed development design at the ground floor level for the residential units and can be viewed in the drawings submitted with the application and in the OWMP (Appendix 19.2). Communal area waste will be accommodated in the closest shared residential WSAs and waste estimates are included as part of the overall residential waste figures provided in the previous tables.

The commercial units have their own commercial waste stores located in each zone in an internal location.

Locations of all Waste Storage Areas (WSAs) can be viewed on the drawings submitted with the planning application.

The waste receptacles from the residential WSAs and commercial WSAs will be collected by facilities management or the waste contractor (agreement dependant), at the time of collection and brought to one of the staging areas, within the development redline boundary.

The OWMP seeks to ensure the proposed development contributes to the targets outlined in the NWMPCE and the DCC waste Bye-laws, achieving maximum reuse, recycling, and recovery in line with the waste hierarchy and circular economy principles.

## 19.5 Predicted Impacts of the proposed development

### 19.5.1 Do-Nothing Impact

In the 'Do Nothing' scenario, the proposed development does not proceed and there would be no excavation, construction or operational waste generated at the site. There would, therefore, be no additional demand or loading on waste management infrastructure locally or nationally and thus there would be a neutral effect on the environment in terms of waste.

However, the demand for housing and associated infrastructure generated by the existing and projected population would persist. In the absence of development at this well-serviced and zoned site, this demand may be displaced to less sustainable, peripheral, or unserviced locations. This could result in greater environmental impacts due to increased land take, car dependency, and pressure on less serviced or less accessible infrastructure.

Given that the site is zoned for development and forms part of the wider Clongriffin strategic development lands, it is likely that a development of a similar nature would come forward in the future in line with national policy and development plan objectives. As such, the construction and operational phase effects outlined in this chapter would be expected to occur at some point, even in the absence of the proposed development.

### 19.5.2 Construction Phase

The proposed development will generate a range of non-hazardous and hazardous waste materials during site preparation, excavation and construction (see Appendix 19.1 for further detail). General housekeeping and packaging will also generate waste materials, as well as typical municipal waste generated by construction employees, including food waste. Waste materials will be required to be temporarily stored in the construction site compound or adjacent to it, on-site, pending collection by a waste contractor. If waste material is not managed and stored correctly, it is likely to lead to litter or pollution issues at the site and in adjacent areas. Such issues may attract vermin, creating additional nuisance and environmental risk. The indirect effect of litter issues is the presence of vermin in areas affected. In the absence of mitigation, the effect on the local and regional environment is likely to be ***indirect, short-term, significant*** and ***negative***.

The use of non-permitted waste contractors or unauthorised waste facilities could give rise to inappropriate management of waste, resulting in indirect negative environmental impacts, including pollution. It is essential that all waste materials are dealt with in accordance with regional and national legislation, as outlined previously, and that time and resources are dedicated to ensuring efficient waste management practices. In the absence of mitigation, the effect on the local and regional environment is likely to be ***indirect long-term, significant*** and ***negative***.

Wastes arising will need to be taken to suitably registered / permitted / licensed waste facilities for processing and segregation, reuse, recycling, recovery, and / or disposal, as appropriate. There are numerous licensed waste facilities in the SR which can accept hazardous and non-hazardous waste materials, and acceptance of waste from the site would be in line with daily activities at these facilities. At present, there is sufficient capacity for the acceptance of the likely C&D waste arisings at facilities in the region. The majority of construction materials are either recyclable or recoverable. However, in the absence of mitigation, the effect on the local and regional environment is likely to be ***indirect short-term, significant*** and ***negative***.

A quantity of topsoil and subsoil will need to be excavated to facilitate the proposed development. A detailed review of the existing ground conditions on a regional, local site-specific scale is presented in Chapter 9. It is currently envisaged that all excavated material will need to be removed off-site. Correct classification in accordance with the European Waste Catalogue (EWC) and segregation of the excavated material is required to ensure that any potentially contaminated materials are identified and handled in a way that will not impact negatively on workers as well as on water and soil environments, both on and off-site. However, in the absence of mitigation, the effect on the local and regional environment is likely to be ***indirect, short-term, significant*** and ***negative***.

### 19.5.3 Operational Phase

The potential impacts on the environment of improper, or a lack of, waste management during the operational phase would be a diversion from the priorities of the waste hierarchy, which would lead to unnecessary volumes of waste being sent to landfill rather than reused or recycled. In the absence of mitigation, the effect on the local and regional environment is likely to be ***long-term, significant*** and ***negative.***

The nature of the proposed development means the generation of waste materials during the operational phase is unavoidable. Networks of waste collection, treatment, recovery and disposal infrastructure are in place in the region to manage waste effectively from this type of development. Waste unsuitable for recycling is typically sent for energy recovery. There are also facilities in the region for segregation of municipal recyclables, many of which are subsequently exported as a raw materials for recycling processes (e.g. paper mills and glass recycling facilities).

If waste material is not managed and stored correctly, it is likely to lead to litter or pollution issues at the development site and in adjacent areas. Such issues may give rise to vermin, associated nuisance and potential health risks. In the absence of mitigation, the effect on the local and regional environment is likely to be ***long-term, significant*** and ***negative***.

Waste contractors will be required to service the proposed development on a regular basis to remove waste. The use of non-permitted waste contractors or unauthorised facilities could give rise to inappropriate management of waste and result in negative environmental impacts or pollution. It is essential that all waste materials are dealt with in accordance with regional and national legislation, as outlined previously, and that time and resources are dedicated to ensuring efficient waste management practices. In the absence of mitigation, the effect on the local and regional environment is likely to be ***indirect, long-term, significant*** and ***negative***.

## 19.6 Mitigation Measures

This section outlines the measures that will be implemented to reduce waste generation, manage waste responsibly and minimise environmental effects. All mitigation measures are guided by the principles of the 'Waste Hierarchy' and 'Circular Economy'. The waste hierarchy sets out waste management options in order of preference, from most to least preferred, based on environmental impact and compliance with EU and national policy: prevention and minimisation of waste, followed by preparing for reuse and recycling / recovery, energy recovery (i.e. incineration) and, as a last resort, disposal. The circular economy principle aims to keep materials, components, and products in-use for as long as possible, designing systems that create and retain value. These principles will be applied across the construction and operational phases of the proposed development.

The waste management objectives for the proposed development are as follows. These measures will facilitate material reuse and recycling, where possible, and seek to divert waste from landfill:

- Prevention (Construction Phase): The Main Contractor will prevent and minimise waste generation where possible by ensuring large surpluses of construction materials are not delivered to the site through coordination with the suppliers, operating a 'just-in-time' delivery scheme and ensuring sub-contractors conform to the Contractor(s) RWMP. The RWMP submitted with this application outlines the overarching principles, and a more detailed, site-specific version will be prepared by the Main Contractor prior to the commencement of the works;
- Reuse (Construction and Operational Phases): Surplus construction materials will be repurposed on-site where feasible. During the operational phase, reuse will be encouraged through appropriate segregation of waste streams to support recovery and minimise disposal;
- Recycle (Construction and Operational Phases): Recycling will be implemented during construction with segregated skips or containers provided for recyclable C&D waste streams such as metals, timber, plastic and cardboard. During operation, dedicated recycling facilities will be provided to support waste segregation in line with DCC requirements and national waste policy; and
- Disposal (Construction and Operational Phases): Where waste disposal is unavoidable, it will be carried out in accordance with the Waste Management Act 1996 (as amended) and relevant guidance. This applies to both construction waste and operational waste streams. Only licensed / permitted waste contractors will be used, and waste will be sent to authorised facilities. Disposal will remain a last resort in line with waste hierarchy principles.

### 19.6.1 Construction Phase

The primary waste management objective during construction will be to prevent waste from arising in the first place and to reuse, recycle or recover waste materials, where possible. The following mitigation measures will be implemented during the construction phase of the proposed development:

WM_1:

As previously stated, a project-specific RWMP will be prepared in line with the requirements of the EPA '*Best Practice Guidelines for the Preparation of Resource and Waste Management Plans for Construction & Demolition Projects'* (2021). The mitigation measures outlined in the RWMP will be implemented in full and form part of the mitigation strategy for the site. The mitigation measures presented in this RWMP will ensure effective waste management and minimisation, reuse, recycling, recovery and disposal of waste material generated during the excavation and construction phases of the proposed development.

- Prior to commencement, the appointed Contractor(s) will be required to refine / update the planning stage RWMP in agreement with DCC and in compliance with any planning conditions, or submit an addendum to the RWMP to DCC, detailing specific measures to minimise waste generation and resource consumption, and provide details of the proposed waste contractors and destinations of each waste stream.
- The Contractor will implement the RWMP throughout the duration of the proposed excavation and construction phases.

WM_2:

A quantity of topsoil and sub soil will need to be excavated to facilitate the proposed development. CS Consulting have estimated that all of this material will need to be removed off-site. Correct classification and segregation of the excavated material is required to ensure that any potentially contaminated materials are identified and handled in a way that will not impact negatively on workers as well as on water and soil environments, both on and off-site.

In addition, the following mitigation measures will be implemented:

WM_3:

- Building materials will be chosen to support circular economy objectives and 'design out waste';

WM_4:

- On-site segregation of waste materials will be carried out to increase opportunities for off-site reuse, recycling and recovery. The following waste types, at a minimum, will be segregated:
  - Clean Soil
  - Contaminated soil (if located onsite)
  - Concrete rubble (including ceramics, tiles and bricks);
  - Plasterboard;
  - Metals;
  - Glass;
  - Timber;
  - Asbestos (if encountered).

WM_5:

- Left over materials (e.g. timber off-cuts, broken concrete blocks / bricks) and any suitable construction materials shall be re-used on-site, where possible; where reuse is not feasible, the materials will be segregated to maximise recycling or recovery prior to disposal;

WM_6:

- All waste materials will be stored in skips or other suitable receptacles in designated areas of the site;

WM_7:

- Any hazardous wastes generated (such as chemicals, solvents, glues, fuels, oils) will also be segregated and will be stored in appropriate receptacles (in bunded, weather protected areas where required);

WM_8:

- A Resource Manager (RM) will be appointed by the main Contractor(s) to ensure effective management of waste during the excavation and construction works;

WM_9:

- All construction staff will be provided with training regarding the waste management procedures;

WM_10:

- All waste leaving site will be prioritised for reuse, recycling or recovery, where possible, to avoid material designated for disposal;

WM_11:

- All waste leaving the site will be transported by suitably permitted contractors and taken to suitably registered, permitted or licensed facilities;

WM_12:

- All waste leaving the site will be recorded and copies of relevant documentation maintained;

WM_13:

- Nearby sites requiring clean fill material will be contacted to investigate reuse opportunities for clean and inert material, if required. If any of the material is to be reused on another site as by-product (and not as a waste), this will be done in accordance with Regulation 27 (By-products), as amended, European Union (Waste Directive) Regulations 2011-2020. EPA approval will be obtained prior to moving material as a by-product.

These mitigation measures will ensure that the waste arising from the construction phase of the proposed development is dealt with in compliance with the provisions of the Waste Management Act 1996, as amended, associated Regulations and the Litter Pollution Act 1997, as amended and the *NWMPCE*. It will also ensure optimum levels of waste reduction, reuse, recycling and recovery are achieved and will promote more sustainable consumption of resources.

### 19.6.2 Operational Phase

The primary waste management objective during the operational phase will be to ensure that all waste generated within the proposed development is managed in accordance with the *Waste Management Act 1996, as amended*, associated Regulations and the *Litter Pollution Act 1997* and the *NWMPCE*. Measures will focus on segregation, reuse, recycling, and recovery, with disposal as a last resort, in line with the waste hierarchy and circular economy principles.

The following mitigation measures will be implemented during the operational phase of the proposed development:

WM_14:

All waste materials will be segregated into appropriate categories and will be temporarily stored in appropriate bins or other suitable receptacles in designated, easily accessible areas of the site.

WM_15:

As previously stated, a project specific OWMP has been prepared and is included as Appendix 19.2. The mitigation measures outlined in the OWMP will be implemented in full and form part of the mitigation strategy for the site. Implementation of this OWMP will ensure a high level of recycling, reuse and recovery at the proposed development. All recyclable materials will be segregated at source to reduce waste contractor costs and ensure maximum diversion of materials from landfill, thus achieving the targets set out in the *NWMPCE*, *Waste Action Plan for a Circular Economy – Waste Management Policy in Ireland* and the DCC *Waste Bye-Laws*.

Residents, tenants and facilities management of the site during the operational phase will be responsible for ensuring – allocating personnel and resources, as needed – the ongoing implementation

of the OWMP, ensuring a high level of recycling, reuse and recovery at the site of the proposed development.

WM_16:

In addition, the following mitigation measures will be implemented:

- On-site segregation of all waste materials into appropriate categories including (but not limited to):
  - Organic waste;
  - Dry Mixed Recyclables;
  - Mixed Non-Recyclable Waste;
  - Glass;
  - WEEE;
  - Batteries (non-hazardous and hazardous);
  - Cooking oil;
  - Light bulbs;
  - Cleaning chemicals (pesticides, paints, adhesives, resins, detergents, etc.);
  - Furniture (and from time-to-time other bulky waste); and
  - Abandoned bicycles.

WM_17:

- Residents, tenants and facilities management will ensure that all waste materials will be stored in colour coded bins or other suitable receptacles in designated, easily accessible locations. Bins will be clearly identified with the approved waste type to ensure there is no cross contamination of waste materials.

WM_18:

- Residents, tenants and facilities management will ensure that all waste collected from the site of the proposed development will be reused, recycled, or recovered, where possible, with the exception of those waste streams where appropriate facilities are currently not available.

WM_19:

- Residents, tenants and facilities management will ensure that all waste leaving the site will be transported by suitably permitted contractors and taken to suitably registered, permitted, or licensed facilities.

These mitigation measures will ensure the waste arising from the development is dealt with in compliance with the provisions of the *Waste Management Act 1996*, as amended, associated Regulations, the *Litter Pollution Act 1997*, as amended, the *NWMPCE* and the DCC *Waste Bye-Laws*. It will also ensure optimum levels of waste reduction, reuse, recycling and recovery are achieved.

## 19.7 Residual Impacts

### 19.7.1 Construction Phase

A carefully planned approach to waste management as set out in Section 19.6.1 and adherence to the RWMP (which includes mitigation) (Appendix 19.1) during the construction phase will promote resource efficiency and waste minimisation. With full implementation of the mitigation measures and achievement of high levels of waste prevention, reuse, recycling and recovery, the predicted impact of the construction phase on the environment will be ***short-term, imperceptible*** and ***neutral***.

### 19.7.2 Operational Phase

During the operational phase, a structured approach to waste management as set out in Section 19.6.2 and adherence to the OWMP (which includes mitigation) (Appendix 19.2) will promote resource efficiency and waste minimisation. With effective ongoing management and continued mitigation measures, and when a high rate of reuse, recycling and recovery is achieved, the predicted impact of the operational phase on the environment will be ***long-term, imperceptible*** and ***neutral***.

## 19.8 Monitoring

The management of waste during the construction phase will be monitored by the Contactor's appointed Resource Manager (RM) to ensure compliance with the above-listed mitigation measures, and relevant waste management legislation and local authority requirements, including maintenance of waste documentation. Monitoring proposals for the construction phase are summarised in Table 19.7.

The management of waste during the operational phase will be monitored by the facilities management team to ensure effective implementation of the OWMP internally and by the nominated waste contractor(s). Monitoring proposals for the operational phase are summarised in Table 19.8.

Table 19.7 Construction Phase Monitoring Proposals

| Likely Significant Effect | Monitoring Proposals |
|---|---|
| Litter Pollution | The Contractor will review and maintain waste records and site audits. |
| Unlicensed Waste Collection (Illegal Dumping) | A register will be maintained and reviewed.<br>A copy of all waste collection permits will be maintained. |
| Insufficient Waste Facilities | A register will be maintained and reviewed.<br>A copy of all waste collection permits will be maintained. |
| Lack of Waste Classification | An appointed RM will monitor all on-site waste segregation and classification. |

Table 19.8 Operational Phase Monitoring Proposals

| Likely Significant Effect | Monitoring Proposals |
|---|---|
| Litter Pollution | Waste storage areas will be monitored by the facilities management team. |
| Unlicensed Waste Collection (Illegal Dumping) | The facilities management team will maintain waste receipts on-site for a period of 7 years and make them available to DCC as requested. |
| Poor Waste Segregation | Waste generation volumes and cross contamination will be monitored by the facilities management team and their selected waste management company. |

## 19.9 Interactions

### 19.9.1 Population and Human Health

#### 19.9.1.1 Construction Phase

During the construction phase, improper handling, storage or removal of construction waste has the potential to give rise to litter, attraction of vermin, and short-term odour or contamination risks, all of which could adversely affect construction workers on site and the local population if unmanaged.

These risks will be minimised through strict adherence to the project specific RWMP and the mitigation measures outlined in Chapter 7 (Population and Human Health). Waste will be segregated at source, stored in covered and appropriately labelled containers and collected by authorised waste contractors in accordance with the Waste Management Acts. No waste will be stockpiled in public areas and no on site burning or uncontrolled disposal will occur.

With these measures in place, the potential for human exposure to waste, litter or vermin is very low. Following mitigation, the construction phase effects on population and human health will be ***short-term***, ***imperceptible*** and ***neutral***.

#### 19.9.1.2 Operational Phase

If improperly managed, operational waste has the potential to affect human health through exposure to improperly stored or handled waste, particularly organic and hazardous materials. However, the implementation of the OWMP will ensure that waste is segregated, stored in appropriate receptacles and collected regularly by authorised waste contractors.

These measures will minimise risks associated with odours, pests and contamination, thereby protecting the health and wellbeing of future residents, workers and the surrounding community. Potential effects on Population and Human Health are addressed in Chapter 7. Following mitigation, the effects are expected to be ***long-term***, ***imperceptible*** and ***neutral.***

### 19.9.2 Biodiversity

#### 19.9.2.1 Construction Phase

During the construction phase, incorrect management of waste has the potential to result in littering, localised pollution or attraction of vermin, which could adversely affect local habitats and species if unmanaged.

Waste management during construction will be governed by the RWMP, which includes measures for segregation, covered storage and prompt removal of waste. If invasive alien species are identified during construction, an Invasive Species Management Plan (ISMP) will be implemented. Standard biosecurity measures, including inspection of imported materials and cleaning of all plant, will be applied to prevent the introduction or spread of invasive species.

Adherence to the mitigation measures set out in this chapter, the RWMP, and in Chapter 8 (Biodiversity) will ensure the associated effect is ***neutral, imperceptible*** and ***short-term***.

#### 19.9.2.2 Operational Phase

During the operational phase, poor waste management could similarly result in littering, pollution or pest attraction if not adequately controlled. However, ongoing implementation of the OWMP, including

segregation, enclosed storage and regular collection of waste, will prevent adverse interactions with biodiversity. The risk of introducing or spreading invasive species during operation is considered low; however, any occurrence of Third Schedule species will be managed in accordance with an approved ISMP to ensure no establishment or spread.

With continued adherence to mitigation measures set out in this chapter, and in Chapter 8 (Biodiversity) will ensure the associated effect is ***neutral***, ***imperceptible*** and ***long-term***.

### 19.9.3 Land, Soils, geology and Hydrogeology

#### 19.9.3.1 Construction Phase

During the construction phase, there will be soil excavated to facilitate the proposed development. CS Consulting have estimated that all of this material will need to be removed off-site.

The management of contaminated soil, if encountered, will be undertaken in accordance with the Land and Soils chapter and the RWMP. Proper classification and handling of soil waste will prevent degradation of land quality and avoid cross-contamination with clean materials. Potential effects on land and soils are addressed in Chapter 9. Adherence to the mitigation measures in Chapter 9 (Land, Soils, Geology and Hydrogeology), this chapter, and the requirements of the RWMP (Appendix 19.1), will ensure the effect is ***short-term, imperceptible*** and ***neutral***.

#### 19.9.3.2 Operational Phase

No significant interactions between waste and land, soils, geology or hydrogeology are anticipated during the operational phase. Accordingly, no operational phase effects are predicted.

### 19.9.4 Hydrology

#### 19.9.4.1 Construction Phase

Improper storage or disposal of waste, particularly hazardous substances or contaminated soils, has the potential to adversely affect surface water and groundwater quality during the construction phase.

The RWMP includes provisions for bunded storage of hazardous materials and protocols for managing contaminated soil. These measures will mitigate the risk of leachate or runoff entering watercourses and protect the hydrological environment.

Potential hydrological impacts are addressed in Chapter 10. Following implementation of mitigation measures, construction phase effects are expected to be ***short-term***, ***imperceptible*** and ***neutral***.

#### 19.9.4.2 Operational Phase

During the operational phase, the OWMP will ensure that waste, including cleaning products and liquid materials, is stored and disposed of in accordance with best practice and relevant legislation. These measures will prevent water contamination.

Potential effects on hydrology are addressed in Chapter 10 and, following the implementation of mitigation measures, are expected to be ***long-term***, ***imperceptible*** and ***neutral***.

### 19.9.5 Climate

#### 19.9.5.1 Construction Phase

Waste management contributes to greenhouse gas (GHG) emissions, particularly through landfill disposal and transport. The RWMP prioritises reuse, recycling, and recovery of materials, which will reduce the volume of waste sent to landfill and associated emissions.

Adherence to the mitigation measures in Chapter 12 (Climate), this chapter, and the requirements of the RWMP, will ensure the effect is ***short-term***, ***imperceptible*** and ***neutral***.

#### 19.9.5.2 Operational Phase

Similarly, the OWMP will promote recycling and minimise residual waste during operation, reducing indirect emissions from waste transport and disposal. The direct and indirect effects of the proposed development on climate, such as GHG are addressed in Chapter 12, and following implementation of mitigation measures, are expected to be ***long-term***, ***imperceptible*** and ***neutral***.

### 19.9.6 Traffic and Transportation

#### 19.9.6.1 Construction Phase

During the construction phase, the generation, handling and removal of waste will result in temporary additional vehicle movements, primarily related to the transport of excavated materials, construction waste and deliveries / collections of skips. These vehicle movements will occur alongside other construction related traffic and therefore will contribute to the overall short-term increase in traffic volumes in the vicinity of the works.

However, waste related traffic will be short-term and intermittent, confined to the active construction period and managed through the measures outlined in in Chapter 18 (Traffic and Transportation). Waste will be removed only by authorised waste contractors, using agreed haulage routes.

Provided the mitigation measures detailed in Chapter 18 (Traffic and Transportation). and this chapter are adhered to, the predicted effects are ***short-term***, ***imperceptible*** and ***neutral***.

#### 19.9.6.2 Operational Phase

During operation, waste arising from the proposed development will be managed through scheduled collections by authorised waste contractors. The OWMP will ensure efficient segregation, minimisation of residual waste and appropriately timed collections.

Provided the mitigation measures detailed in Chapter 18 and this chapter are adhered to, the predicted effects are ***long-term***, ***imperceptible*** and ***neutral***.

## 19.10 Indirect and/or Secondary Impacts

During construction, indirect impacts could occur off-site through the transport, recovery, treatment and disposal of waste materials at authorised facilities. These facilities operate within existing permitted capacities, and the volumes of construction waste arising from the proposed development are not anticipated to place additional pressure on regional waste infrastructure. Therefore, any indirect impacts associated with off-site waste treatment are expected to be neutral.

Indirect impacts may also arise where poor waste handling practices could lead to nuisances such as litter, odour or vermin, which in turn may affect human health, biodiversity or water quality. However, implementation of the RWMP, the mitigation measures outlined in Section 19.6.1, and adherence to best practice for storage, segregation and transport, will prevent such effects.

During the operational phase, the ongoing management of municipal and commercial waste streams will be governed by the OWMP and by DCC's waste storage and collection requirements. Indirect, off-site impacts may arise from the transport and processing of municipal waste; however, these activities will occur within established regional waste networks and will be small in scale relative to existing waste volumes. As such, no adverse secondary impacts are predicted.

Overall, following implementation of the construction and operational mitigation measures, indirect and/or secondary impacts associated with waste generation and management from the proposed development are expected to be ***long-term, imperceptible*** and ***neutral***.

## 19.11 Cumulative Impacts

This section assesses the potential cumulative effects of the proposed development in combination with other permitted or under-construction projects within the vicinity of the proposed development. A list of relevant planning permissions from the surrounding area is provided in Chapter 22 and has been considered in this assessment. The analysis focuses on cumulative impacts relating to waste arisings, segregation, reuse/recycling opportunities, and disposal routes during both the construction and operational phases.

### 19.11.1 Construction Phase

The proposed development is located within the Clongriffin/Baldoyle/Donaghmede growth area, where multiple large-scale residential, education and infrastructure projects are permitted, under construction or proposed, including LDA Blocks 5 & 6 (under construction) immediately adjacent, Griffin Point/Belmayne amendments, Baldoyle residential phases, BusConnects (Clongriffin to City Centre), DART+ Coastal North, and wastewater pumping/treatment upgrades. Overlaps in construction windows are therefore possible.

Given the scale and nature of these schemes, cumulative impacts could arise from concurrent excavation and construction activities, principally through:

i. Increased C&D waste volumes (e.g., excavated soils and stones, concrete, timber, metals, packaging);

ii. Booking and capacity management at authorised recovery/recycling/landfill outlets; and

iii. Aggregate HGV movements for off-site transfer.

In practice, these effects are mitigated by the distributed network of licensed/permitted facilities and collectors serving Dublin and surrounding counties, and by the common industry practice of programming multiple outlets rather than relying on a single facility, as reflected in the proposed development's RWMP and in regional construction norms for comparable schemes listed in the cumulatives schedule. On this basis, while short-term competition for capacity can occur during peak excavation periods, it is manageable through classification (EWC/WAC), early booking, phased haulage and on-site segregation controls. Residual cumulative effect: ***short-term, not significant*** and ***neutral***.

Other permitted developments in the area are individually required to manage waste in compliance with national and local legislation, policies and plans, and to use authorised collectors/facilities, which further reduces the risk of adverse cumulative effects. With these controls in place across projects, no significant negative cumulative impacts on waste infrastructure or management are predicted during the construction phase.

### 19.11.2 Operational Phase

During operation, cumulative effects relate to incremental municipal / commercial waste arisings from new populations and ground-floor uses across the wider Clongriffin/Baldoyle area (residential blocks, crèches, retail/community units). The pipeline of schemes identified in the cumulatives schedule will contribute additional mixed recyclables, food waste, glass, cardboard/plastics and occasional bulky/WEEE, all of which are anticipated and routinely managed within Dublin's established collection and treatment networks. Each development must provide on-site storage/segregation and engage permitted contractors under local bye-laws and planning conditions, ensuring that all operational waste is collected and treated through authorised recycling, recovery and disposal routes in accordance with national and local waste policy. Residual cumulative effect: ***long-term, imperceptible*** and ***neutral***.

For the proposed development, the OWMP (with management company oversight, periodic review, and record-keeping) provides an adaptive framework to accommodate contractor market changes or collection frequency adjustments over time, consistent with good practice across nearby operational schemes listed in Table 22.1. No pathway to significant adverse cumulative waste impacts is identified for the operational phase.

## 19.12 Difficulties Encountered

Until final materials and detailed construction methodologies have been confirmed, it is difficult to predict with a high level of accuracy the construction waste that will be generated, as exact materials and quantities may vary during the build process. While an initial licensed facility may be selected for soil disposal, there is potential to encounter contaminated material or naturally occurring variations in minerals and chemicals that necessitate routing to a different suitably licensed facility. Site Investigation (SI) sampling provides spot data; further testing may be required during excavation, as the true condition of all excavated materials cannot be verified until works commence.

There are numerous licensed, permitted, and registered waste facilities in Dublin, the surrounding counties, and across the former EMR, as well as other regions in Ireland and Northern Ireland. However, facility availability, capacity, and contractor service constraints may limit options at a given time. Licensed facilities operate under annual intake limits; therefore, it is not feasible to commit to a single receiving facility throughout the excavation phase. In practice, facilities may change over time as capacity becomes available or as more suitably located recovery facilities commence operations, which can be preferable from an environmental perspective.

Licensed waste facilities have annual limitations on material that they can import as part of their license agreements. Because of this it would not make it possible to commit to a singular specific receiving facility as it is not available throughout the excavation phase. It would not be viable to cease a development and wait until a receiving facilities annual receiving quotas are reset. In a normal development waste facilities would switch between facilities with available capacity.

There are a large number of available waste facilities that the proposed development may utilise. The materials used during the construction of the proposed development will be standard construction materials and it is anticipated that sufficient capacity will be available to accept the waste generated during the construction phase. A list of potential waste permitted sites in Dublin can be found in the appendix of Appendix 19.1.

During the operational phase, some uncertainty may arise due to variations in resident behaviour, segregation performance, waste contractor availability, or updates to DCC *Waste Bye-Laws* over the lifetime of the development. These factors may influence waste quantities and collection frequencies; however, the OWMP provides a framework that can be adapted to reflect operational requirements as they evolve.

## 19.13 References


- BS 5906:2005 Waste Management in Buildings – Code of Practice.
- Circular Economy and Miscellaneous Provisions Act 2022.
- Council Decision 2003/33/EC, establishing criteria and procedures for the acceptance of waste at landfills pursuant to Article 16 of and Annex II to Directive 1999/31/EC.
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- Department of Environment and Local Government (DoELG) *Waste Management – Changing Our Ways, A Policy Statement* (1998).
- Department of Environment, Heritage and Local Government (DoEHLG) *Preventing and Recycling Waste - Delivering Change* (2002).
- Department of Communications, Climate Action and Environment (DCCAE), *Waste Action Plan for the Circular Economy - Ireland's National Waste Policy 2020-2025* (2020).
- Department of Environment, Heritage and Local Government, *Best Practice Guidelines on the Preparation of Waste Management Plans for Construction and Demolition Projects* (2006).
- Directive (EU) 2018/2001 *The Promotion of the Use of Energy from Renewable Sources* (2018).
- DoELG, *Making Ireland's Development Sustainable – Review, Assessment and Future Action (World Summit on Sustainable Development)* (2002).
- DoEHLG, *Taking Stock and Moving Forward* (2004).
- DoHLGH, *Design Manual for Urban Roads and Streets* (2019).
- Dublin City Council (DCC), Dublin City Development Plan 2022-2028 (2022).
- *Dublin City Council (Storage, Presentation and Segregation of Household and Commercial Waste) Bye-Laws* (2018).
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- EPA *'Best Practice Guidelines for the Preparation of Resource and Waste Management Plans for Construction & Demolition Projects' ( 2021).*
- EPA, *National Waste Database Reports 1998 – 2020* and the Circular *Economy and National Waste Database Report 2021 – 2022.*

- EPA and Galway-Mayo Institute of Technology (GMIT), *EPA Research Report 146 – A Review of Design and Construction Waste Management Practices in Selected Case Studies – Lessons Learned* (2015).
- EPA, *European Waste Catalogue and Hazardous Waste List* (2002).
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- European Commission, *Guidelines for the waste audits before demolition and renovation works of buildings* (May 2018).
- European Waste Catalogue - Council Decision 94/3/EC (as per Council Directive 75/442/EC).
- FÁS and the Construction Industry Federation (CIF), *Construction and Demolition Waste Management – a handbook for Contractors and* site *Managers* (2002).
- Hazardous Waste List - Council Decision 94/904/EC (as per Council Directive 91/689/EEC).
- Litter Pollution Act 1997 as amended.
- Local Government Ireland, *the Best Practice Guidance for Handling Asbestos (2023).*
- Regional Waste Management Planning Offices, *The National Waste Management Plan for a Circular Economy 2024 - 2030* (2024).
- Waste Management Act 1996 as amended.
- Waste Management (Landfill Levy) Regulations 2015 (as amended).

# 20 Material Assets – Services

## 20.1 Introduction

Material assets are resources that are valued and intrinsic to the site of the proposed development and the surrounding area. These may be of either natural or human origin and the value may arise for economic or cultural reasons. This chapter considers and assesses the effects of the proposed development on the material assets, including the existing major utilities within and around the site, during the construction and operational phases.

In relation to material assets, the EPA guidelines state that:

> *"In Directive 2011/92/EU this factor included architectural and archaeological heritage. Directive 2014/52/EU includes those heritage aspects as components of cultural heritage. Material assets can now be taken to mean built services and infrastructure. Traffic is included because in effect traffic consumes transport infrastructure. Sealing of agricultural land and effects on mining or quarrying potential come under the factors of land and soils."*

As per the EPA guidelines, 'built services and infrastructure' addressed in this chapter include water supply infrastructure, sewerage (surface water drainage and foul water drainage), and utilities (electricity, telecommunications and gas) infrastructure in the receiving environment.

This chapter has been prepared by Namrata Kaile, Ecologist & Environmental Consultant at Brady Shipman Martin, with input from CS Consulting and EDC Engineers. A technical review was completed by Pauline Byrne, Partner at Brady Shipman Martin. Refer to **Table 1.4** in Chapter 1 (Introduction) for qualifications of authors and reviewers.

Traffic-related impacts have been addressed under the scope of Chapter 18 (Traffic & Transportation). Water quality, land / soils and other hydrological / hydrogeological impacts of the proposed development have been assessed under the scope of Chapters 9 (Land, Soils, Geology & Hydrogeology) and 10 (Hydrology). Waste management infrastructure has been addressed under Chapter 19 (Material Assets – Waste) and built historic environment is covered under Chapter 15 (Cultural Heritage – Archaeology & Architectural Heritage).

The proposed development is described in Chapter 5, and these details are reiterated in this chapter only insofar as is relevant to Material Assets – Services.

This leaves the following outstanding material assets to be addressed herein:

- Drainage and water supply;
- Gas supply;
- Electricity supply;
- Telecommunications and broadband.

## 20.2 Method

The potential impacts to material assets as a result of the proposed development were assessed through a desktop study of available information. The following principal sources were consulted:

- Engineering Services Report (CS Consulting, 2026);
- Uisce Éireann utility plans (for surface water drainage, foul water drainage and water supply);

- ESB Networks utility plans;
- Gas Networks Ireland (GNI) service plans;
- Eir e-maps; and
- Virgin Media maps.

The methodology is consistent with the following relevant guidance:

- EPA (2022). Guidelines on the information to be contained in Environmental Impact Assessment Reports; and
- National Roads Authority (NRA) (2008). Environmental Impact Assessment of National Road Schemes – A Practical Guide.

Effects and impacts have been characterised in accordance with the criteria set out in the EPA guidelines (as reproduced in Table 1.5 in Chapter 1 (Introduction)).

Surface water run-off, foul drainage discharge and water usage calculations have been carried out in accordance with the following guidelines:

- Greater Dublin Strategic Drainage Strategy (GDSDS);
- Uisce Éireann's Code of Practice for Wastewater Infrastructure 2020;
- Uisce Éireann's Code of Practice for Water Infrastructure 2020;
- The Planning System and Flood Risk Management, Guidelines for Planning Authorities (2009).

The proposed development is materially consistent with the DCC Development Plan 2022-2028 which was the subject of separate assessments under the SEA Directive (SEA), the Habitats and Birds Directives (AA), the Water Framework Directive and the Floods Directive (see SFRA), and this Plan and the results of those assessments have been considered in the preparation of this EIAR.

### 20.2.1 Consultation

As part of the design development and planning application processes, consultations have been held with Uisce Éireann in relation to utilities infrastructure. A pre-connection enquiry was submitted to Uisce Éireann in relation to the water and wastewater strategy for the proposed development. A confirmation of feasibility letter was received from Uisce Éireann (formerly Irish Water) on 6 May 2026, stating that the proposed water connection and wastewater connection to the Uisce Éireann network(s) can be facilitated at this moment in time. It was further stated that the connections were feasible without infrastructure upgrade by Uisce Éireann. A statement of design acceptance was received from Uisce Éireann on 6 May 2026 (Ref No. CD25001826), stating that Uisce Éireann has no objection to the proposed connections (see Appendix 20.1).

## 20.3 Baseline Environment

### 20.3.1 Drainage

#### 20.3.1.1 Existing Infrastructure – Masterplan Lands

As detailed in the Engineering Services Report (CS Consulting, 2026), development of the wider Clongriffin area has been carried out in accordance with a 10-year masterplan planning permission granted to Gannon Homes on 27th June 2003 (DCC Reg. Ref. 1302/02 (An Bord Pleanála ref. PL29N.131058)). This provided for development consisting of 3,576no. dwellings and 80,600m$^2$ of mixed retail, commercial, leisure and community use, associated car parking and engineering works

and provision for a railway station. Overall infrastructure completed as part of the aforementioned parent permission, or separate planning permissions for individual sites within the masterplan area, includes:

- Clongriffin Railway Station and its associated infrastructure.
- The 2no. access roads from the Hole in the Wall Road (Clongriffin Main Street and Marrsfield Avenue).
- The majority of the masterplan area's internal roads.
- Comprehensive internal foul drainage and surface water drainage networks, including a foul pumping station and a stormwater attenuation pond in the north-east corner of the masterplan area.
- A well-developed internal potable water supply network.

#### 20.3.1.2 Foul Water Drainage System

As detailed in the Engineering Services Report (CS Consulting, 2026), an Uisce Éireann trunk foul sewer runs along Marrsfield Avenue to the north section of the wider Clongriffin development lands. In the immediate vicinity of the proposed development site, the local foul drainage network includes foul sewers along the existing extents of Belltree Avenue, Lake Street, and Park Street.

#### 20.3.1.3 Surface Water Drainage System

As detailed in the Engineering Services Report (CS Consulting, 2026), within the Clongriffin masterplan area, a local surface water drainage network was designed and constructed under the masterplan parent permission (Reg. Ref. 0132/02). These local surface water sewers remain under private ownership. All runoff collected by this network drains to the Clongriffin attenuation pond, which is located adjacent to the Mayne River, at the northern boundary of the masterplan area. The attenuation pond discharges to the Mayne River and at a controlled rate of 249l/s, as permitted under the masterplan parent permission. The attenuation pond was designed and sized to accommodate rainfall events exceeding a 1% Annual Exceedance Probability (i.e. a 1-in-100-year storm event) and has over 6,400m$^3$ of attenuation storage on top of a permanent volume of approximately 2,500m$^3$. In the immediate vicinity of the subject development site, the local surface water drainage network includes surface water sewers along the existing extents of Belltree Avenue, Lake Street, and Park Street.

### 20.3.2 Water Supply

As detailed in the Engineering Services Report (CS Consulting, 2026), the North Fringe trunk watermain runs along Marrsfield Avenue. A local network of distribution watermains connects to the North Fringe trunk watermain and serves the Clongriffin masterplan lands north of Main Street. A secondary connection to this network is also provided from the Hole in the Wall Road trunk watermain, approx. 300m west of Park Avenue.

In the immediate vicinity of the subject development site, the watermain network includes a 100mm diameter watermain on Friars Street, along the site's western boundary; and a 100mm diameter watermain on Railway Court, along the site's southern boundary.

### 20.3.3 Utilities Infrastructure

Given the urban location of the site, existing gas, electricity, telecommunications and broadband infrastructure are situated in close proximity / at the periphery of the site.

Details of the existing electricity, gas, telecommunications and broadband infrastructure have been obtained from the various utility providers / authorities, as illustrated in **Figures 20.1 – 20.4**, below.

### 20.3.3.1 Electricity Supply

ESB Networks have been contacted and an existing network map for the area surrounding the proposed development has been obtained. Existing ESB Networks (ESBN) infrastructure is located in close proximity to the site, including medium-voltage (MV) and high-voltage (HV) underground power cables. Refer to **Figure 20.1**.

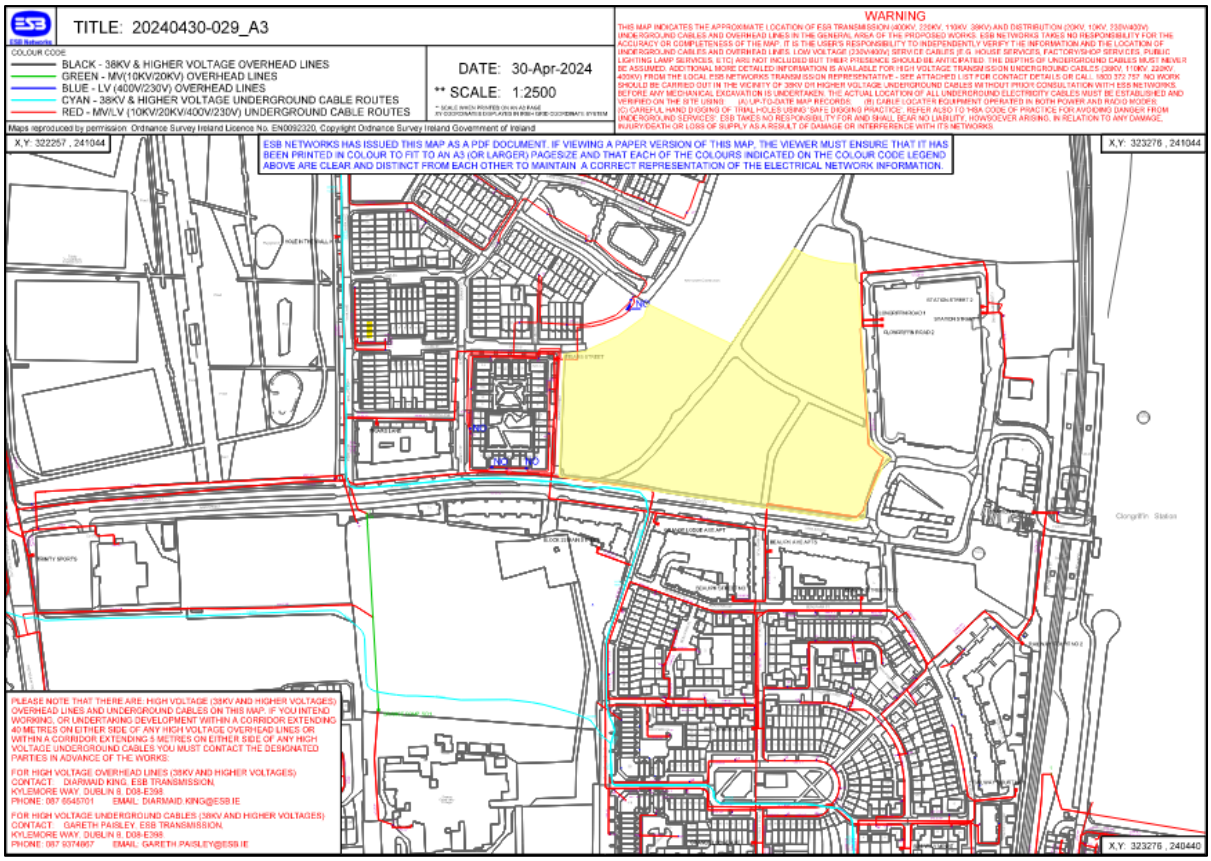



Figure 20.1 Existing Electricity Supply Infrastructure (Electricity Supply Board, 2026)

### 20.3.3.2 Gas Supply

Natural gas infrastructure is present in the vicinity of the development. An existing low-pressure (LP) natural gas distribution main is located adjacent to the site, in proximity to the proposed blocks. Refer to **Figure 20.2**.

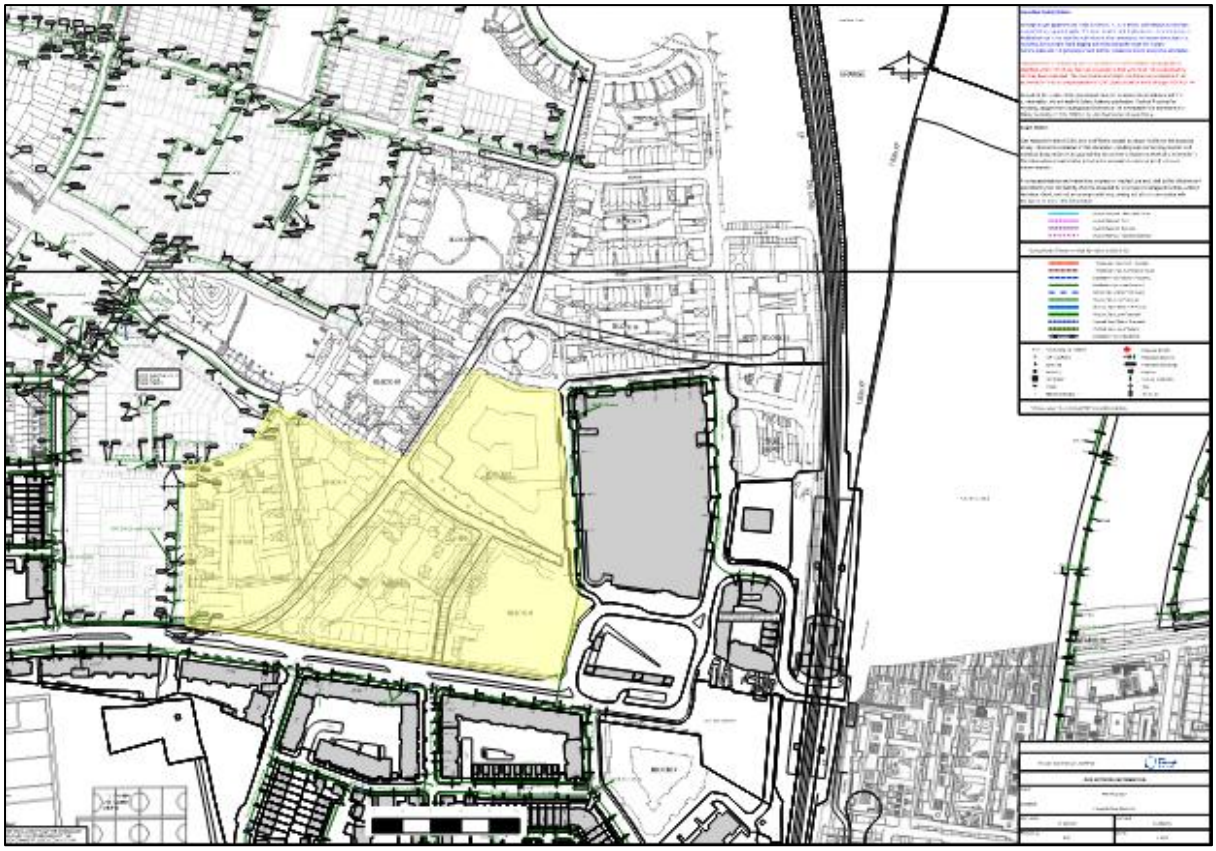


Figure 20.2 Existing Gas Supply Infrastructure (Gas Networks Ireland, 2026)

#### 20.3.3.3 Telecommunications

The two main telecommunication providers (Eir and Virgin Media) are available in the area. Both have been contacted and existing network maps for the area surrounding the proposed development have been obtained. Both providers will be brought to the new development along with SIRO to give homeowners more flexibility to choose providers that suit their needs.

There is an extensive Eir and Virgin Media telecommunications network in the roads surrounding the site, including along Main Street to the south.

SIRO will provide fibre-to-the-home (FTTH) broadband services to the development by utilising the newly installed ESB Networks infrastructure. SIRO's fibre-optic network will be routed through the new ESB ducts, chambers and service conduits, eliminating the need for additional dedicated telecommunications ductwork.

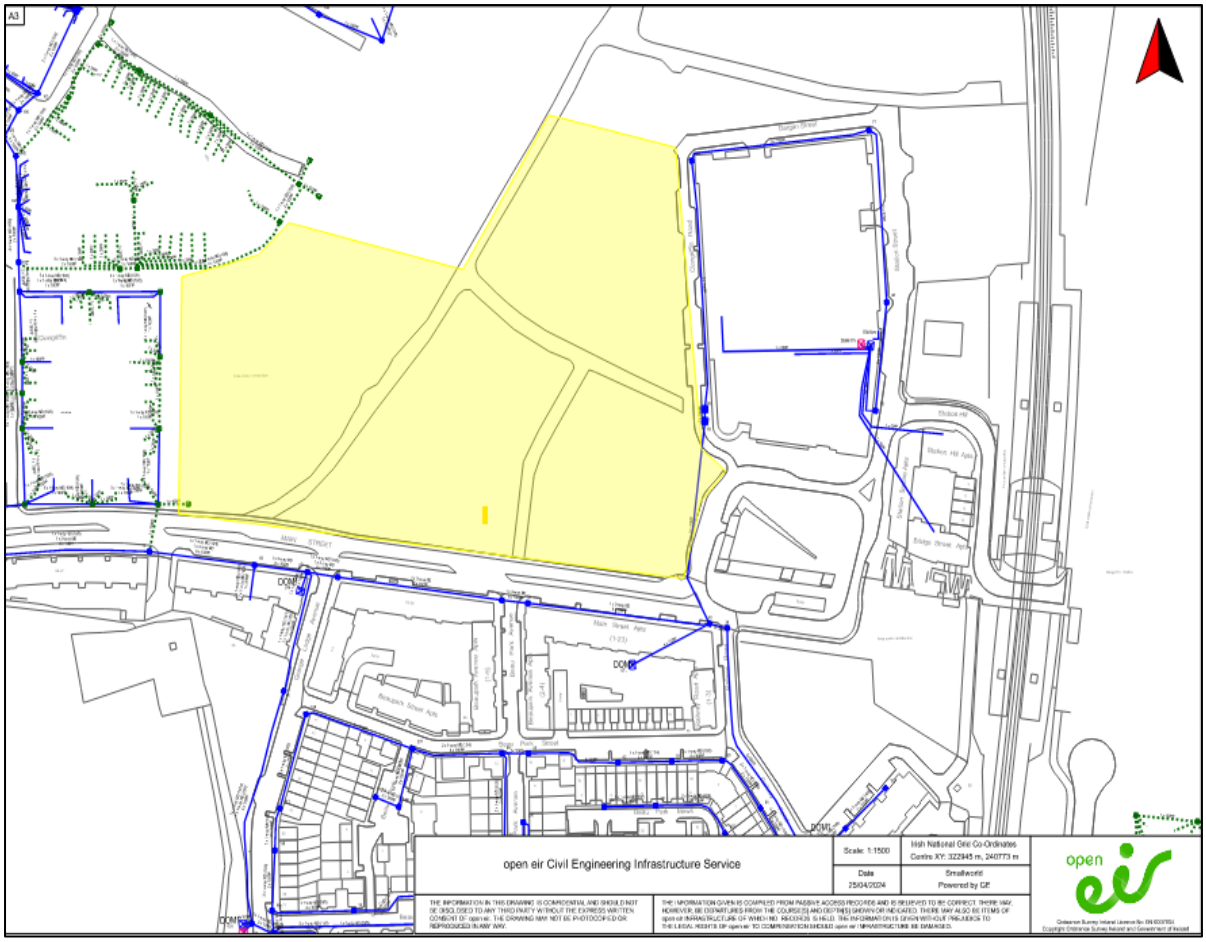



Figure 20.3 Existing Broadband Infrastructure (EIR, 2026)

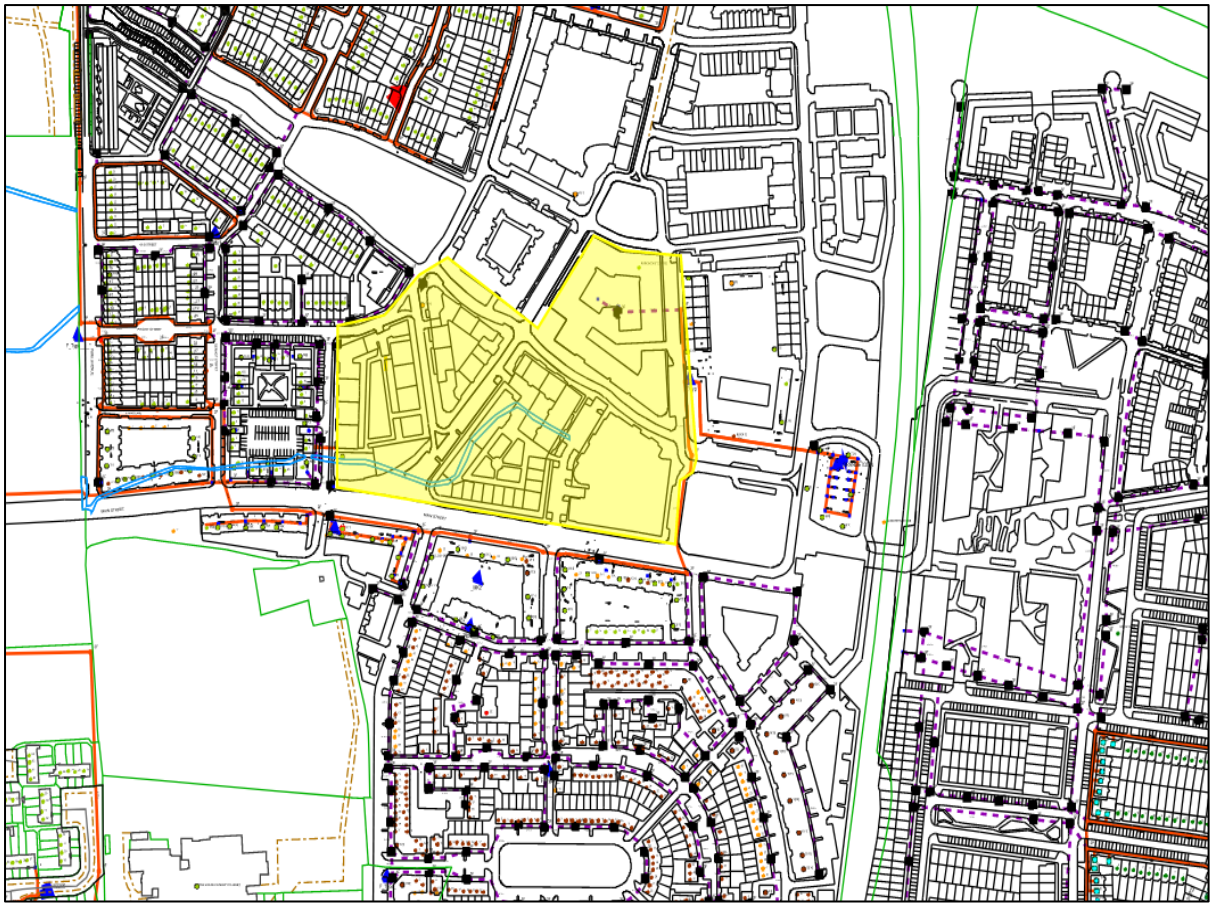


Figure 20.4 Existing Broadband Infrastructure (Virgin Media, 2026)

## 20.4 Predicted Impacts of the proposed development

### 20.4.1 Do-Nothing Impact

In the do-nothing scenario (i.e. assuming the proposed development were not progressed), the built services and infrastructure at the site of the proposed development would likely remain as they are at present (as described above). No likely significant effects would arise in relation to material assets in this scenario.

However, development (likely residential) under the scope of a separate application / proposal, at some point in the future is considered somewhat more likely, considering the nature of the lands, their zoning status, and the ongoing trends and policies in relation to housing and residential development at the national and regional levels. It is not possible to assess the likely impacts under this scenario, as the nature and scale of any potential future proposals for the site (in the absence of the proposed development) are not known.

### 20.4.2 Construction Phase

In order to facilitate the proposed development, new built services and infrastructure will need to be put in place at the site, tying in with existing infrastructure in the receiving environment.

On-site utilities works and diversions, if improperly executed, have the potential to result in:

- Damage to material assets;

- Accidental discharge of sediments and harmful substances, due to exposed soils or accidental spills of harmful substances can be flushed into the public wastewater network or the nearby surface water network;
- Interruptions to supply / services in neighbouring areas; and / or
- Human health impacts related to accidents (e.g. involving live power cables or gas mains).

However, all utilities works will be carried out in accordance with the relevant standards and codes of the respective service providers and authorities (i.e. Uisce Éireann, ESB, GNI, Eir, Virgin Media, Health and Safety Authority (HSA) and any others of relevance). Such works will be carried out in a strictly controlled manner that is safe, and which avoids or minimises interruptions of service that might affect local residents, businesses and adjacent development.

In the absence of mitigation measures ***negative, slight and short-term impacts*** are predicted in relation to built services or infrastructure during the construction phase.

### 20.4.3 Operational Phase

During the operational phase, the site will contain operational surface water drainage, foul water drainage, water supply, electrical, and telecommunications systems, serving the proposed residential units. These systems are being designed and specified in accordance with the applicable codes and standards of the respective service providers and authorities (i.e. Uisce Éireann, ESB, and Eir / Virgin Media/ Siro) and will be sufficient to provide for the operational demands of the proposed development. Demand from the proposed development is not predicted to negatively affect the existing networks in the receiving environment. Maintenance of built services and infrastructure on the site will be carried out on an ongoing basis during the operational phase, as per the relevant requirements of the respective service providers and authorities.

***No likely significant impacts*** are predicted in relation to built services or infrastructure during the operational phase.

The proposed drainage design is detailed in the Engineering Services Report (2026) and corresponding drawings prepared by CS Consulting, submitted under separate cover as part of this application.

The design of the drainage system will be detailed in accordance with Part H of the Building Regulations, Uisce Éireann's *Code of Practice for Wastewater*, and in accordance with all Dublin City Council Drainage Division and Uisce Éireann requirements.

#### 20.4.3.1 Foul Drainage System

The Uisce Éireann *Code of Practice for Wastewater Infrastructure* specifies an average foul effluent flow rate of 165 litres per person per day for domestic dwellings (150 litres per person per day, plus a 10% allowance for external infiltration) and an average occupancy of 2.7 persons per residential unit. The maximum design population is therefore 1,909 people (1,909 pe), and the maximum average effluent flow (dry weather flow or DWF) to be generated by the proposed development is 3.65l/s.

Surface water runoff from the proposed development shall be treated and attenuated within the site and shall not discharge to any foul sewer. In the wider Clongriffin masterplan area, a local foul drainage network was designed and constructed under the masterplan parent permission (Reg. Ref. 0132/02). These local foul sewers remain under private ownership and are not shown on Uisce Éireann records. All foul effluent collected by this network drains to the Clongriffin wastewater pumping station (WwPS);

this was likewise constructed under the masterplan parent permission but has since been transferred to Uisce Éireann's control. A short foul rising main (also in Uisce Éireann ownership) conveys the pumped effluent to the Uisce Éireann trunk foul sewer. To serve the development lands it is proposed to extend and connect to this existing infrastructure.

A Pre-Connection Enquiry has been lodged with UÉ for the phase 2 development lands and a CDS no. has been received (CDS25001824) acknowledging receipt of the enquiry.

#### 20.4.3.2 Surface Water Drainage System

As part of the proposed development, it is proposed to increase the permissible discharge rate from the existing pond to the river from 249 l/s to 268 l/s, as detailed in the Surface Water Management Plan (CS Consulting, 2026). Runoff from the building sites and plots shall be managed at source, limited to a rate of 4.6l/s/ha in accordance with QBAR. All new building plots shall be designed to attenuate runoff from a 1-in-100-Year storm event, with an additional 20% allowance for Climate Change.

Green roofs shall be incorporated in line with DCC policy standards, while blue roofs shall be implemented at podium level to provide source attenuation at a rate of 4.6 l/s/ha. Localised SuDS features will be introduced within individual plots to facilitate interception, treatment, and storage of runoff from parking areas, pavements, and internal roads. Additional SuDS elements shall be integrated into new roads and pavement areas to provide interception storage. Roads and pavements located outside the individual building plots will discharge directly into the existing stormwater network, which will subsequently outfall into the existing pond.

The proposed Sustainable Drainage Systems (SuDS) measures will be designed in accordance with the requirements of Dublin City Council and the Dublin City Development Plan objectives, to provide on-site first stage interception of surface water run-off, improving its overall quality prior to ultimate discharge.

#### 20.4.3.3 Water Supply

The Uisce Éireann *Code of Practice for Water Infrastructure* specifies an average potable water demand of 150 litres per person per day for domestic dwellings, and an average occupancy of 2.7 persons per residential unit. The proposed development comprises a total of 711 no. apartments and therefore has a design population of 1,919 people (1,919 pe), and the average potable water demand of the proposed development is 3.31l/s. It is proposed to connect to the existing watermain to the north of the site.

A Pre-Connection Enquiry has been lodged with UÉ for the Phase 2 development lands, and a CDS no. has been received (CDS25001824), acknowledging receipt of the enquiry.

#### 20.4.3.4 Electricity Supply

ESB Networks are currently developing a new 110 kV substation on nearby lands to serve the wider area. A new medium-voltage (MV) below-ground network will be extended into the proposed development and derived from this new ESB Networks infrastructure. On-site MV/LV substations will be distributed throughout the development to meet the electrical demand associated with the proposed blocks.

#### 20.4.3.5 Gas Supply

No gas connection is proposed for the residential development. Space heating and domestic hot water will be provided via electrically powered heat pumps. During detailed design, it will be confirmed whether any of the proposed commercial units require a gas connection. Gas Networks Ireland (GNI) have been contacted and have indicated no issues in facilitating a connection to serve these units, if required.

#### 20.4.3.6 Telecommunications

There is an extensive Eir telecommunications network in the roads surrounding the site, including along Main Street to the south. New connections will be made to the existing Eir network at the site boundary, and services will be distributed throughout the development as required. The extent and locations of the proposed connections will be agreed with Eir during the detailed design stage.

There is an extensive Virgin Media telecommunications network in the roads surrounding the site, including along Main Street to the south. New connections will be made to the existing Virgin Media network at the site boundary, and services will be distributed throughout the development as required. The extent and locations of the proposed connections will be agreed with Virgin Media during the detailed design stage.

SIRO will provide fibre-to-the-home (FTTH) broadband services to the development by utilising the newly installed ESB Networks infrastructure. SIRO's fibre-optic network will be routed through the new ESB ducts, chambers and service conduits, eliminating the need for additional dedicated telecommunications ductwork.

## 20.5 Mitigation Measures

### 20.5.1 Construction Phase

As stated above, no significant impacts are predicted in relation to material assets (services) as a result of the construction or operation of the proposed development. However, in order to avoid / minimise impacts insofar as practicable, the following mitigation measures shall be implemented during the construction phase:

- The precise locations of all existing on-site services (underground and overhead) will be confirmed prior to the commencement of works;
- The precise routing of electricity, gas and telecommunications infrastructure on the site are to be agreed with ESB, GNI and Eir / Virgin Media, respectively, prior to the commencement of on-site works;
- All reasonable precautions shall be taken to avoid unplanned disruptions to any services / utilities during the proposed works;
- Consultation with the relevant services providers shall be undertaken in advance of works. This will ensure all works are carried out to the relevant standards and ensure safe working practices are implemented;
- There will be an interface established between the contractor and the relevant utilities service providers / authorities during the construction phase of the proposed development. This interface will be managed in order to ensure a smooth construction schedule with no / minimal disruption to the local community;

- All new foul water drainage pipes will be pressure tested and subject to an internal CCTV survey in order to identify any possible defects prior to operation, under the supervision of Dublin City Council;
- CS Consulting Engineers Ltd. have prepared an Outline Construction Management Plan (2026) that is submitted separately under planning documentation. It contains best practice measures and protocols to be implemented during the construction phase of the proposed development to avoid / minimise environmental impacts, including in relation to surface water, foul water and services. These measures and those listed within Ch 10 Hydrology will be implemented in full;
- In planning and executing the proposed works, regard shall be had to the Gas Networks Ireland *Guidelines for Designers and Builders – Industrial and Commercial (Non-Domestic) Sites (2018),* the Health & Safety Authority (HSA) *Code of Practice for Avoiding Danger from Underground Services (2016)*, and the ESB Networks & Health and Safety Authority *Code of Practice for Avoiding Danger from Overhead Electricity Lines (2019);*
- Site-specific risk assessment and work method statement shall be prepared before works are undertaken on the site;
- Construction traffic will be limited to certain routes and times of day, with the aim of keeping disruption to existing traffic and residents to a minimum. To minimise disruption to the local areas, construction traffic volumes will be managed through the following measures. During peak morning and evening hours, ancillary, maintenance and other site vehicular movements will be discouraged. Daily construction programmes will be planned to minimise the number of disruptions to surrounding streets by staggering HGV movements to avoid site queues;
- Should a need arise to provide further temporary pedestrian/ vehicle access outside the hoarding line, a detailed temporary Traffic Management Plan will be developed in compliance with the requirements of the Department of Transport Chapter 8 Temporary Traffic Measures and Signs for Roadworks manual. This plan will be shared with DCC Roads/Traffic Section for acknowledgement prior to implementation with appropriate forward notice (in compliance with the Community Liaison Plan) shared with all development stakeholders.

### 20.5.2 Operational Phase

As stated above, no significant impacts are predicted in relation to material assets (services) as a result of the operation of the proposed development. However, in order to avoid / minimise impacts insofar as practicable, the following mitigation measures shall be implemented during the operational phase:

- Any necessary maintenance and / or upgrades of on-site utilities infrastructure during the operational phase of the proposed development, will be carried out in accordance with the specifications of the relevant service providers;
- Proposed drainage systems are to be maintained on a regular basis to reduce the risk of blockage and resulting flooding.

## 20.6 Residual Impacts

The mitigation measures that will be put in place at the proposed development will ensure that the proposed development complies with all the specifications and guidelines of the relevant service providers. ***No likely significant residual impacts*** in relation to built services and infrastructure are predicted as a result of the construction or operation of the proposed development.

## 20.7 Monitoring

Monitoring will be provided by each utility company with an overseeing responsibility by the appointed contractor during the construction phase. Any monitoring of the built services required during the operational phase will be as advised by the relevant services provider.

## 20.8 Interactions

Regard has been had to the following key interactions in the preparation of this chapter:

- Chapter 7 (Population & Human Health): In worst-case scenarios (e.g. where works are not carried out safely or in accordance with the applicable codes and standards), accidents during works (e.g. contact with live powerline or gas explosions) or water quality impacts resulting from works to utilities infrastructure, have the potential to result in human health impacts. Service outages resulting from works can temporarily affect the residential amenity of local residents and / or the operation of local businesses. The mitigation measures that will be put in place at the proposed development will ensure that the impact of the proposed development complies with all the specifications and guidelines of the relevant service providers. Therefore, the predicted impact ***no likely significant impact*** is envisaged with respect to population and human health during construction or operational phase.

No significantly likely impacts are predicted in relation to built services or infrastructure. Likewise, no interactions are predicted to occur in this regard such that significant impacts would arise in relation to other environmental / EIA topics.

## 20.9 Indirect and/or Secondary Impacts

It is not envisaged that there will be any indirect and/or secondary impacts outside of the items covered in this chapter.

## 20.10 Cumulative Impacts

The list of plans and projects set out in Chapter 22 has been considered in terms of the potential for significant negative cumulative impacts to arise as a result of one or more of these in combination with the proposed development. There are numerous permitted or proposed development in the receiving environment.

With the full and proper implementation of the mitigation measures set out herein there will be no residual impacts during construction or operational phases of the proposed development. In addition, given that the design, construction and operation of utilities infrastructure are strictly controlled by the respective utility provider and authorities (i.e. Uisce Éireann, ESB, GNI and so on); it is concluded that there are ***no likely significant cumulative impacts*** in this regard.

## 20.11 Difficulties Encountered

No particular difficulties were encountered in the preparation of this chapter.

## 20.12 References

- EPA (2022). Guidelines on the information to be contained in Environmental Impact Assessment Reports.

- NRA (2008). Environmental Impact Assessment of National Road Schemes – A Practical Guide.
- Dublin Drainage Consultancy (2005). Greater Dublin Strategic Drainage Study.
- ESB Networks and Health and Safety Authority (2019). Code of Practice for Avoiding Danger from Overhead Electricity Lines.
- Irish Water (2020). Code of Practice for Water Infrastructure (Revision 2).
- Gas Networks Ireland (2018). Guidelines for Designers and Builders – Industrial and Commercial (Non-Domestic) Sites.
- Health and Safety Authority (2016). Code of Practice for Avoiding Danger from Underground Services.

# 21 Interactions

## 21.1 Introduction

This chapter provides an overview of the key interactions identified and addressed in the foregoing chapters of the EIAR.

It is a requirement of the EIA Directive that, not only are the impacts in respect of the individual specialist topics (hydrology, biodiversity, air quality and climate, etc.) to be addressed in the EIAR, but so too must the interactions and inter-relationships between these topics be addressed. As stated in Article 3 of the amended Directive:

> "*The environmental impact assessment shall identify, describe and assess in an appropriate manner, in the light of each individual case, the direct and indirect significant effects of a project on the following factors:*
>
> *(a) population and human health;*
>
> *(b) biodiversity, with particular attention to species and habitats protected under Directive 92/43/EEC and Directive 2009/147/EC;*
>
> *(c) land, soil, water, air and climate;*
>
> *(d) material assets, cultural heritage and the landscape;*
>
> *(e) the* ***interaction*** *between the factors referred to in points (a) to (d)."*

The EPA guidelines state that interactions should be addressed, where relevant, in the corresponding specialist EIAR chapters, with an 'interactions matrix' and brief text provided by way of summary:

> *"The interactions between effects on different environmental factors should be addressed as relevant throughout the EIAR. For example, where it is established in the Hydrology section that there will be an increase in suspended solids in discharged surface waters during construction, then the Biodiversity section should assess the effect of that on sensitive aquatic receptors. […] It is general practice to include a matrix to show where interactions between effects on different factors have been addressed. […] This is typically accompanied by text describing the interactions." (Section 3, p. 56).*

A brief description of these interactions is presented below, as is an interactions matrix (Table 21.1).

Note that this chapter provides an overview of the potential impacts that may arise as a result of interactions between environmental topics, and as a direct or indirect result of the proposed development. It does not repeat the detailed characterisation of these impacts or reiterate any mitigation measures that have been prescribed in relation to them. These are addressed under the scope of the corresponding EIAR chapters, as referenced below.

Table 21.1 Interactions Matrix

| Source \ Receptor | Population & Human Health | Biodiversity | Land, Soils, Geology & Hydrogeology | Hydrology | Air Quality | Climate | Noise & Vibration | Landscape & Visual | Cultural Heritage | Microclimate – Daylight & Sunlight | Microclimate - Wind | Traffic & Transportation | Material Assets - Waste | Material Assets - Services |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Population & Human Health | | | | | | | ✓ | ✓ | | | | ✓ | ✓ | ✓ |
| Biodiversity | | | | ✓ | | | | ✓ | | | | | | |
| Land, Soils, Geology & Hydrogeology | ✓ | ✓ | | ✓ | ✓ | | | | | | | | ✓ | |
| Hydrology | | ✓ | ✓ | | | | | | | | | | | ✓ |
| Air Quality | ✓ | ✓ | | ✓ | | ✓ | | | | | | | | |
| Climate | ✓ | | ✓ | ✓ | ✓ | | | | | | | | | |
| Noise & Vibration | ✓ | | | | | | | | | | | | | |
| Landscape & Visual | ✓ | ✓ | | | | | | | | | | | | |
| Cultural Heritage | | | | | | | | | | | | | | |
| Microclimate – Daylight & Sunlight | ✓ | | | | | | | | | | | | | |
| Microclimate – Wind | ✓ | | | | | | | | | | | | | |
| Traffic & Transportation | ✓ | | ✓ | | ✓ | ✓ | ✓ | | | | | | | |
| Material Assets – Waste | ✓ | ✓ | ✓ | ✓ | | ✓ | | | | | | ✓ | | |
| Material Assets - Services | ✓ | | | ✓ | | | | | | | | | ✓ | |

## 21.2 Summary of Interactions

Interactions addressed in this EIAR are discussed under the headings of the corresponding receptor topics / media, below.

### 21.2.1 Population and Human Health

Population and human health is an EIA topic which tends to interact with numerous other environmental topics addressed elsewhere in the EIAR. Where the potential for impacts on population and human health has been identified as a result of such interactions, these have been addressed comprehensively above.

The noteworthy interactions with population and human health and other topics are summarised below. All of these interactions have been addressed above and, where feasible, appropriate mitigation measures have been prescribed in the corresponding specialist chapter.

Land, Soils, Geology & Hydrogeology (Chapter 9)

A reduction in soil quality via unmitigated pollutants in dust entering the soil has the potential to lead to negative impacts on human health and populations. Exposure to contaminated soils and potential gases during the construction phase may give rise to health impacts. However, mitigation measures during the construction phase of the proposed development will ensure that dust generation is minimised and the effect on Human Health will be **neutral, imperceptible, and short-term**.

There are no interactions identified between Land, Soils & Geology with Human Health and Population during the operational phase.

Air Quality (Chapter 11)

There is potential for nuisance impacts on the local receptors due to dust-generating activities of proposed development during construction phase. With appropriate mitigation measures in place the interaction will be **direct, short-term, negative, localised and not significant.** During operation phase of the proposed development the predicted impact on population and health due to air quality and climate will be **long-term, localised, direct, negative and not significant** from additional traffic in the area.

Noise & Vibration (Chapter 13)

The interaction between population and human health and noise and vibration during construction phase is due to potential nuisance and disturbance due to ground works, excavation and pilling, and ancillary construction works. Appropriate mitigation measures will be implemented as described in Section 13.5. The predicted impact for the demolition and construction period will be **negative, slight to significant and temporary**, and will vary depending on the proximity of the works to the site boundary. For the remainder of the construction work, structural development and general construction, the residual construction noise and vibration effects will be **negative, of slight to moderate significance and short-term** depending on the proximity of the works to the site boundary.

During the operational phase there is no potential for significant nuisance and potential disturbance due to additional operational phase traffic. **No significant impacts** are predicted in relation to this interaction.

Landscape & Visual (Chapter 14)

During the construction phase, there is potential for negative townscape and visual effects of construction to combine with noise and dust emissions from the construction site to negatively impact the residential amenity of residential neighbourhoods / receptors near the site. The predicted effects will be **significant to slight, negative and short-term**.

The operational phase will introduce a new, high density residential neighbourhood to the townscape, with a creche, a community, cultural and arts element, and retail and F&B units in the frontage to Station Square. These uses will occupy a large, currently vacant plot in Clongriffin town centre. This will strengthen the townscape character and improve the appearance of the area. The proposed development will also improve the spatial definition, appearance, and permeability / navigability. The predicted visual effect will be **significant, positive in the long-term.**

Microclimate- Daylight & Sunlight (Chapter 16)

There are potential impacts due to changes to daylight and sunlight availability on the population and human health e.g. overshadowing of neighbouring buildings, can negatively or positively affect residential amenity in the receiving environment. As described in Section 7.4, **no significant effects** to neighbouring residential areas are predicted, and the proposed development itself will provide well-lit homes and amenity areas.

Microclimate – Wind (Chapter 17)

There is a potential interaction between Chapter 7 (Population & Human Health) and Chapter 17 (Microclimate – Wind), since the wind conditions at the proposed development site can affect the amenity and safety of residents and visitors. The proposed development will deliver a wind microclimate that is either suitable for all intended pedestrian uses, or calmer than required for the intended uses. In a number of instances, the proposed development will result in an improved (i.e., calmer) wind microclimate relative to the baseline scenario. Therefore, **no significant effects** on population and human health are predicted as a result of the wind effects of the proposed development.

Traffic & Transportation (Chapter 18)

There is potential for impacts on population and human health during the construction phase due to negative impacts on journey characteristics due to additional (construction) traffic on road network and the potential for nuisance and disturbance due to construction traffic noise. With appropriate mitigation measures in place such as warning signage and designated haul route for HGVs the predicted effects will be **negative**, **of slight to moderate significance**, over the **short term**.

During the operational phase there is potential for negative impacts on population and human health due to journey characteristics and additional traffic on road network during the operational phase. However, the proposed development will create additional road network and enhance connectivity in the area with the provision of active travel measures. With appropriate mitigation measures in place the predicted effects will be **positive, of slight significance and long-term**.

Material Assets- Waste (Chapter 19)

During the construction and operational phase there is potential for impacts on human beings in relation to the generation of waste and if wastes are not managed correctly and in accordance with the RWMP or the OWMP could result in fly-tipping, littering and reduced recycling, and re-use

opportunities which could cause a nuisance to the public and attract vermin. The implementation of the RWMP and the OWMP, will ensure appropriate the impact of waste arisings on the local population and human health are **neutral**, **imperceptible and long-term**.

**Material Assets- Services (Chapter 20)**

In worst-case scenarios (e.g. where works are not carried out safely or in accordance with the applicable codes and standards), accidents during works (e.g. contact with live powerline or gas explosions) or water quality impacts resulting from works to utilities infrastructure, have the potential to result in human health impacts. Service outages resulting from works can temporarily affect the residential amenity of local residents and / or the operation of local businesses. The mitigation measures that will be put in place at the proposed development will ensure that the impact of the proposed development complies with all the specifications and guidelines of the relevant service providers. Therefore, the predicted impact **no likely significant effects** are envisaged with respect to population and human health during construction or operational phase.

### 21.2.2 Biodiversity

At the proposed development site, the main interactions of importance to biodiversity relate to Land, Soils, Geology & Hydrogeology (Chapter 9), Hydrology (Chapter 10) and Landscape and Visual (Chapter 14). The mitigation measures for the proposed development have been designed to minimise the potential impact that the demolition, construction and operational phases may have on the receiving environment, including the River Mayne.

**Land, Soils, Geology & Hydrogeology (Chapter 9)**

During the construction phase, in the absence of standard mitigation measures to control the construction activities there is potential for silt laden material or pollution to enter nearby surface waterbodies (and impact on local biodiversity and European sites downstream from the works). Furthermore, dust emissions from exposed earthworks have the potential to settle on plants causing impacts to local ecology.

Thereby, taking into account the mitigation measures outlined in Section 9.6, there still remains a residual negative interaction between Land, Soils & Geology with Biodiversity during the construction phase. The interaction is considered to be **negative, imperceptible, and short-term.**

The proposed work is expected to have no significant impact on the local designated areas and their conservation objectives in the operational phase. The interaction is considered to be **neutral, imperceptible, and long-term.**

**Hydrology (Chapter 10)**

The proposed development design includes hardstand cover across the site and the proposed surface water drainage system for this development therefore incorporates significant SuDS features. It is proposed to use a SUDS approach to stormwater management throughout the site where possible. The overall strategy aims to provide an effective system to mitigate the adverse effects of urban stormwater runoff on the environment by reducing runoff rates, volumes and frequency, reducing pollutant concentrations in stormwater. The design of the attenuation storage system has been carried out for the 1 in 100-year event with a 20% allowance for climate change.

There is no discharge to ground proposed as part of the surface water drainage strategy. Surface water will ultimately discharge to the Mayne River located north of the site. Foul water will be discharged to the proposed foul sewer system which will eventually be treated at Ringsend WWTP.

Taking into consideration potential impacts from construction, the discharge of surface and foul water to the combined sewer network, and the mitigation measures outlined in Section 10.6 the impact on biodiversity is anticipated to be minimal. The interaction between Hydrology and Biodiversity is considered to be **neutral, imperceptible, and short-term.**

**Air Quality (Chapter 11)**

As noted in Chapter 11 (Air Quality), dust generation can occur during extended dry weather periods due to construction traffic along haul routes and construction activities such as excavations and infilling works. Dust emissions can coat vegetation leading to a reduction in the photosynthesising ability as well as other effects. There are no designated ecological sites within 250 m of the proposed development site area. Significant dust impacts are not predicted beyond this distance. Dust mitigation measures will be implemented on site as set out in Section 11.5. The interaction between Biodiversity and Air Quality is considered to be **neutral, imperceptible, and short-term.**

**Landscape and Visual (Chapter 14)**

The landscape design for the proposed development takes into account the requirements to maximise the benefits to biodiversity, both locally and within the wider landscape. The landscape scheme (refer to Chapter 14 and the Landscape Architecture Design Report, prepared by TPHC and submitted as part of this application under separate cover) proposes significant ecologically sensitive planting to provide for potentially diverse habitats. The interaction between Biodiversity and Landscape & Visual is anticipated to be **permanent, neutral to slight positive, and long term at the local level**.

### 21.2.3 Land, Soils, Geology & Hydrology

The main interactions of importance to land, soils, geology, and hydrogeology relate to Population & Human Health (Chapter 7), Biodiversity (Chapter 8), Hydrology (Chapter 10), Air Quality (Chapter 11), Traffic and transportation (Chapter 18) and Material Assets – Waste (Chapter 19) as follows:

**Population & Human Health (Chapter 7)**

A reduction in soil quality via unmitigated pollutants in dust entering the soil has the potential to lead to negative impacts on human health and populations. Exposure to contaminated soils and potential gases during the construction phase may give rise to health impacts. However, mitigation measures during the construction phase of the proposed development will ensure that dust generation is minimised and the effect on Human Health will be **neutral, imperceptible, and short-term**.

There are no interactions identified between Land, Soils & Geology with Human Health and Population during the operational phase.

**Biodiversity (Chapter 8)**

During the construction phase, in the absence of standard mitigation measures to control the construction activities there is potential for silt laden material or pollution to enter nearby surface waterbodies (and impact on local biodiversity and European sites downstream from the works). Furthermore, dust emissions from exposed earthworks have the potential to settle on plants causing impacts to local ecology.

Thereby, taking into account the mitigation measures outlined in Section 9.6, there still remains a residual negative interaction between Land, Soils & Geology with Biodiversity during the construction phase. The interaction is considered to be **negative, imperceptible, and short-term.**

The proposed work is expected to have no significant impact on the local designated areas and their conservation objectives. The interaction is considered to be **neutral, imperceptible, and long-term.**

### Hydrology (Chapter 10)

Earthworks also have the potential to interact with hydrological and hydrogeological receptors through the disturbance of soils and subsoils and the potential mobilisation of sediments into nearby watercourses which would interact negatively on surface or groundwater quality. Standard construction management practices, including the implementation of surface water management measures and sediment control, will be employed to minimise the risk of sediment-laden runoff entering nearby watercourses. Further mitigation measures are set out in the Hydrology and Hydrogeology Chapter 10 of the EIAR. The interaction is considered to be **neutral, imperceptible and short-term.**

The operational phase of the proposed development has the potential to interact negatively on surface water or groundwater quality via the proposed surface water network. The proposed operation phase mitigation outlined in Chapter 10 – Hydrology and Hydrogeology of the EIAR, means that the proposed development will not result in significant negative impact on surface water quality in the local area. The interaction is considered to be **neutral, imperceptible and long-term.**

### Air Quality (Chapter 11)

Excavation works and the movement of soils may also give rise to the temporary generation of dust and particulate matter, particularly during dry or windy conditions. Mitigation measures implemented during the demolition and construction phases will ensure that the deposition of dust is minimised. With the appropriate mitigation measures to prevent fugitive dust emissions, it is predicted that there will be no significant interactions between air quality and land, soils and hydrogeology. The interaction is considered to be **neutral, imperceptible, and short-term.**

There are no interactions identified between Land, Soils & Geology with Air Quality & Climate during the operational phase.

### Traffic and Transportation (Chapter 18)

Excavation and earthworks associated with the proposed development will involve the removal, temporary storage and reuse or off-site removal of soils and subsoils. Where surplus materials require off-site transport to licensed or authorised facilities, this will generate construction traffic movements which may interact with the receiving road network. These measures are assessed within the Traffic and Transportation Chapter 17 of the EIAR. The interaction is considered to **be neutral, imperceptible, and short-term.**

There are no interactions identified between Land, Soils & Geology with Traffic and Transportation during the operational phase.

### Material Assets – Waste (Chapter 19)

During the construction phase, excavated soil (c. 1,550 m3) will be generated from the excavations required to facilitate site levelling, construction of new foundations and installations of site services.

The material that will be taken off-site will be sent for reuse or recovery, where practical, with disposal as a last resort. Adherence to the mitigation measures in Chapter 18 (Material Assets- Waste), Chapter 5 (Land, Soils and Geology) and the requirements of the RWMP (Appendix 18.1), will ensure the effect is **neutral, imperceptible and long-term.**

There are no potentially significant interactions identified between Land, Soils & Geology and Material Assets- Waste during the operational phase.

### 21.2.4 Hydrology

The main interactions of importance to hydrology relate to Biodiversity (Chapter 8), Land, Soil, Geology, Hydrogeology (Chapter 9), Climate (Chapter 12) and Material Assets – Waste (Chapter 19) as follows.

**Biodiversity (Chapter 8)**

Dust emissions have the potential to settle on plants causing impacts to local ecology. Mitigation measures during the construction phase of the proposed development will ensure that dust generation is minimised.

Taking into consideration the discharge of surface and foul water to the combined sewer network and the mitigation measures outlined in Section 10.9 the impact on biodiversity should be minimal.

Taking into account the design and mitigation measures set out in this chapter (Hydrology and Hydrogeology) and Chapter 8 (Biodiversity) of this EIA Report, the interaction between Hydrology & Hydrogeology and Biodiversity is considered to be **neutral, imperceptible, and short-term.**

The proposed development design includes hardstand cover across the site and the proposed surface water drainage system for this development has been designed SUDS. It is proposed to use a SUDS approach to stormwater management throughout the site where possible. The overall strategy aims to provide an effective system to mitigate the adverse effects of urban stormwater runoff on the environment by reducing runoff rates, volumes and frequency, reducing pollutant concentrations in stormwater. The design of the attenuation storage system has been carried out for the 1 in 100-year event with a 20% allowance for climate change.

There is no discharge to ground proposed as part of the surface water drainage strategy. Surface water will discharge to the existing ditches that run into the Mayne River located north of the site. Foul water will be discharged to the proposed foul sewer system which will eventually be treated at Ringsend WWTP.

Taking into account the design and mitigation measures set out in Section 10.9 of this EIA Report, the interaction between Hydrology & Hydrogeology and Biodiversity during the operational phase is considered to be **neutral, imperceptible, and long-term**.

**Land, Soil, Geology, and Hydrogeology (Chapter 9)**

The construction phase of the proposed development has the potential to result in increased sediment runoff, due to excavation works. This has the potential to interact on surface or groundwater water quality. The proposed construction phase mitigation outlined in Section 10.9, means that the proposed development will not result in significant negative impact on groundwater water quality in the local area. Surface water runoff can also have an effect on soil quality in the area, with chemicals or suspended solids having an effect on soil fertility and contamination.

Taking into account the design and mitigation measures set out in this chapter (Hydrology and Hydrogeology) & Chapter 9 (Land, Soils and Geology) of this EIA Report, means that the proposed development will not result in significant negative impact on the Hydrology and Hydrogeology in the local area. The interaction is considered to be **neutral, imperceptible and short-term**.

There are no potentially significant interactions identified between Land, Soils and, Hydrogeology and Hydrology during the operational phase.

**Air Quality (Chapter 11)**

Construction phase activities such as site clearance, excavation works, movement of construction traffic, and stockpiling of materials have the potential to result in interactions between air quality and hydrology, primarily through the generation of dust which may deposit in nearby surface waters.

The implementation of appropriate mitigation measures during the construction phase will ensure that dust generation and subsequent deposition are minimised. With these measures in place to control fugitive dust emissions, it is predicted that there will be no significant adverse interactions between air quality and hydrology. The resulting interaction is therefore characterised as **neutral**, **imperceptible**, **and short-term**.

There are **no potentially significant interactions** identified between hydrology and air quality during the operational phase.

**Climate and Flood Risk (Chapter 12)**

Construction phase activities such as site clearance, excavation works, movement of construction traffic, and stockpiling of materials have the potential to result in interactions between air quality and hydrology, primarily through the generation of dust which may deposit in nearby surface waters.

The implementation of appropriate mitigation measures during the construction phase will ensure that dust generation and subsequent deposition are minimised. With these measures in place to control fugitive dust emissions, it is predicted that there will be no significant adverse interactions between air quality and hydrology. The resulting interaction is therefore characterised as **neutral**, **imperceptible**, **and short-term**.

There are no potentially significant interactions identified between hydrology and air quality and climate during the operational phase.

**Material Assets – Waste (Chapter 19)**

During the construction phase, excavated soil (c. 1,550 m3) will be generated from the excavations required to facilitate site levelling, construction of new foundations and installations of site services.

The material that will be taken off-site will be sent for reuse or recovery, where practical, with disposal as a last resort. Adherence to the mitigation measures in Chapter 19 (Material Assets Waste Management), Chapter 10 (Hydrology and Hydrogeology) and the requirements of the RWMP (**Appendix 19.1**), will ensure the effect is **neutral, imperceptible and long-term**.

There are no potentially significant interactions identified between Waste and Hydrology during the operational phase.

### 21.2.5 Air Quality

**Population & Human Health (Chapter 7)**

Air quality does not interact with most other topics. The most significant interactions are between Population and Human Health and Air Quality. An adverse air quality impact during the construction phase can cause health and dust nuisance issues. There is a low risk of dust-related human health impacts during the construction phase of the proposed development. Best practice mitigation measures will be implemented during the construction phase to ensure that the impact of the proposed development complies with all ambient air quality legislative limits. Therefore, the predicted impact is **direct, short-term, negative, localised and not significant** with respect to Population and Human Health during the construction phase.

Vehicles accessing the site will emit pollutants which may impact Air Quality and Human Health. However, the increased number of vehicles associated with the proposed development will not cause a significant change in air pollutant emissions in the locality. It has been assessed that emissions will be in compliance with the ambient air quality standards which are set for the protection of human health. Impacts will be **long-term, localised, direct, negative and not significant**.

### Biodiversity (Chapter 8)

Dust generation can occur during extended dry weather periods due to construction traffic along haul routes and construction activities such as excavations and infilling works. Dust emissions can coat vegetation leading to a reduction in the photosynthesising ability as well as other effects. There are no designated ecological sites within 250 m of the proposed development site area. Significant dust impacts are not predicted beyond this distance. Dust mitigation measures will be implemented on site as set out in Section **Error! Reference source not found.**. With the implementation of these mitigation measures dust emissions will be minimised and impacts will be **direct, short-term, negative, localised and not significant** with respect to biodiversity.

There are no potentially significant interactions identified between Air Quality, and Biodiversity during the operational phase.

### Land, Soils, Geology & Hydrogeology (Chapter 9)

Construction phase activities such as land clearing, excavations, stockpiling of materials etc. have the potential for interactions between Air Quality and Land & Soils in the form of dust emissions. With the appropriate mitigation measures to prevent fugitive dust emissions, it is predicted that there will be **no significant interactions** between air quality and land and soils during the construction phase.

There are **no potentially significant effects** are identified between Air Quality, and Land & Soils during the operational phase.

### Climate (Chapter 12)

Air Quality and Climate have interactions as the emissions from the burning of fossil fuels (in relation to construction vehicles and equipment) during the construction and operational phases generate both air quality and climate impacts. There is no impact on climate due to air quality. However, the sources of impacts on air quality and climate are strongly linked.

### Traffic & Transport (Chapter 18)

Interactions between Air Quality and Traffic can be significant. With increased traffic movements and reduced engine efficiency, i.e. due to congestion, the emissions of vehicles increase. The impacts of the proposed development on air quality are assessed by reviewing the change in annual average daily traffic on roads close to the site. In this assessment, the impact of the interactions between Traffic and

Air Quality are linked but there is no potential for significant impacts from traffic on air quality. The effects are considered to be **direct, short-term, neutral, localised and not significant** during the construction phase.

The impact of the interactions between Traffic and Air Quality are considered to be **long-term, direct, neutral and not significant** during the operational phase.

### 21.2.6 Climate

Climate has the potential to interact with several other environmental attributes.

**Land, Soils, Geology and Hydrology (Chapter 9)**

The impact of flood risk has been assessed, and the surface water drainage network will be designed to cater for increased rainfall in future years as a result of climate change. The effect of the interactions between climate and land, soils, geology and hydrology are **direct, short-term, negative and imperceptible** during the construction phase and **direct, long-term, negative and imperceptible** during the operational phase, which is overall not significant in EIA terms.

**Air Quality (Chapter 11)**

Air quality and climate have interactions due to the emissions from the burning of fossil fuels during the construction and operational phases generating both air quality and climate impacts. Air quality modelling outputs are utilised within the Climate Chapter. There is **no impact** on climate due to air quality. However, the sources of impacts on air quality and climate are strongly linked.

**Traffic and Transportation (Chapter 18)**

During the construction and operational phase, there is the potential for interactions between climate and traffic. Vehicles accessing the site will result in emissions of CO2, a greenhouse gas. The effects of the proposed development on climate are assessed by reviewing the change in annual average daily traffic on roads close to the site. In this assessment, the effects of the interactions between traffic and climate are considered to be **direct, short-term, negative and not significant** during the construction phase and **direct, long-term, negative and not significant** during the operational phase.

**Material Assets – Waste (Chapter 19)**

Waste management measures will be put in place to minimise the amount of waste entering landfill, which has higher associated embodied carbon emissions than other waste management such as recycling. The effect of the interactions between waste and climate are considered to be **direct, short-term, negative and not significant** during the construction phase and **direct, long-term, negative and not significant** during the operational phase, which is overall not significant in EIA terms.

### 21.2.7 Noise & Vibration

There are interactions between the noise and vibration assessment, traffic assessment and the population and human health assessment. With increased traffic movements, the noise levels in the surrounding area increase. The impacts of the proposed development on the noise environment are assessed by reviewing the change in traffic flows on roads close to the site. In this assessment, the impact of the interactions between traffic and noise are considered to be **not significant** due to the low-level changes in traffic flows associated with the proposed development.

### 21.2.8 Landscape & Visual

The landscape and visual assessment has been prepared having regard to the interaction between environmental factors. In particular, interactions arise with:

**Population and Human Health (Chapter 7)**

During the construction phase, there is potential for negative townscape and visual effects of construction to combine with noise and dust emissions from the construction site to negatively impact the residential amenity of residential neighbourhoods / receptors near the site.

During the operational phase:

- The proposed development would introduce a new, high density residential neighbourhood to the townscape, with a creche, a community, cultural and arts element, and retail and F&B units in the frontage to Station Square. These uses would occupy a large, currently vacant plot in Clongriffin town centre. This would strengthen the townscape character and improve the appearance of the area.
- The proposed development would complete the formation of Main Street (by the introduction of built frontage and active uses along the street) and contribute to the completion of Station Square and Market Street. This would improve the spatial definition, appearance and functionality of these spaces, as well as providing new areas of public realm.
- The proposed development would provide new streets and pedestrian routes across the site, improving the area's permeability / navigability.

These townscape changes would have **significant, long-term, positive effects** for the new resident community and the established population of Clongriffin.

**Climate (Chapter 12)**

The new homes would be located minutes' walk from Clongriffin DART station and the bus stops in Station Square and on Main Street, and walking distance from various local and district level public open spaces / green infrastructure (e.g. Belltree Park, Father Collins Park, Mayne River Greenway, Station Square, etc.). The high density residential use adjacent to public transport and public open space would encourage sustainable mobility. This would have **positive public health and climate change effects**, by minimising the requirement for use of private cars.

### 21.2.9 Cultural Heritage – Archaeological and Architectural Heritage

No impacts have been identified upon the archaeological, architectural and cultural heritage resource as a result of the construction nor operation of the development. As such, no cumulative interactions have been identified.

### 21.2.10 Microclimate – Daylight & Sunlight

The interactions between the proposed development and its environs and human health have been evaluated within the assessment. The modelling has included the proposed design, the proposed passive strategy, in conjunction with the existing buildings surrounding the development. The combination of all interactions has resulted in a comfortable environment for resident within the proposed development. **No significant effects** are predicted during either the construction or operational phase.

### 21.2.11 Microclimate - Wind

The principal interactions between this Environmental Impact Assessment topic and others addressed herein is with Chapter 7 (Population & Human Health), as wind conditions have the potential to affect human health and amenity in the receiving environment, as discussed above. **No likely significant effects** on human health or amenity are predicted to result from changes to the wind microclimate due to the proposed development with the proposed mitigations and landscaping plan.

### 21.2.12 Traffic & Transportation

The changes in vehicular traffic flows that shall be affected by the subject development (in both its construction and operational phases) may result in corresponding changes to air quality and noise levels in the vicinity of the development site. The natures, extents, and consequences of these changes are examined in Chapters 11 (Air Quality) and 13 (Noise and Vibration) of this EIAR.

No environmental impacts or mitigation measures described in other chapters of this EIAR are capable of inducing inverse effects on the proposed development's traffic generation and the resultant surrounding road network performance.

#### Air Quality (Chapter 11)

Interactions between Air Quality and Traffic can be significant. With increased traffic movements and reduced engine efficiency, i.e. due to congestion, the emissions of vehicles increase. The impacts of the proposed development on air quality are assessed by reviewing the change in annual average daily traffic on roads close to the site. In this assessment, the impact of the interactions between Traffic and Air Quality are linked but there is no potential for significant impacts from traffic on air quality. The effects are considered to be **direct, short-term, neutral, localised and not significant** during the construction phase.

The impact of the interactions between Traffic and Air Quality are considered to **be long-term, direct, neutral and not significant** during the operational phase.

#### Noise & Vibration (Chapter 13)

With increased traffic movements, the noise levels in the surrounding area increase. The impacts of the proposed development on the noise environment are assessed by reviewing the change in traffic flows on roads close to the site. In this assessment, the impact of the interactions between traffic and noise are considered to be **not significant** due to the low-level changes in traffic flows associated with the proposed development.

### 21.2.13 Material Assets – Waste

#### Population & Human Health (Chapter 7)

During the construction phase, improper handling, storage or removal of construction waste has the potential to give rise to litter, attraction of vermin, and short-term odour or contamination risks, all of which could adversely affect construction workers on site and the local population if unmanaged.

These risks will be minimised through strict adherence to the project specific RWMP and the mitigation measures outlined in Chapter 7 (Population and Human Health). Waste will be segregated at source, stored in covered and appropriately labelled containers and collected by authorised waste contractors

in accordance with the Waste Management Acts. No waste will be stockpiled in public areas and no on site burning or uncontrolled disposal will occur.

With these measures in place, the potential for human exposure to waste, litter or vermin is very low. Following mitigation, the construction phase effects on population and human health will be **short-term**, **imperceptible** and **neutral**.

If improperly managed, operational waste has the potential to affect human health through exposure to improperly stored or handled waste, particularly organic and hazardous materials. However, the implementation of the OWMP will ensure that waste is segregated, stored in appropriate receptacles and collected regularly by authorised waste contractors.

These measures will minimise risks associated with odours, pests and contamination, thereby protecting the health and wellbeing of future residents, workers and the surrounding community. Potential effects on Population and Human Health are addressed in Chapter 7. Following mitigation, the effects are expected to be **long-term**, **imperceptible** and **neutral.**

### Biodiversity (Chapter 8)

During the construction phase, incorrect management of waste has the potential to result in littering, localised pollution or attraction of vermin, which could adversely affect local habitats and species if unmanaged.

Waste management during construction will be governed by the RWMP, which includes measures for segregation, covered storage and prompt removal of waste. If invasive alien species are identified during construction, an Invasive Species Management Plan (ISMP) will be implemented. Standard biosecurity measures, including inspection of imported materials and cleaning of all plant, will be applied to prevent the introduction or spread of invasive species.

Adherence to the mitigation measures set out in this chapter, the RWMP, and in Chapter 8 (Biodiversity) will ensure the associated effect is **neutral, imperceptible** and **short-term**.

During the operational phase, poor waste management could similarly result in littering, pollution or pest attraction if not adequately controlled. However, ongoing implementation of the OWMP, including segregation, enclosed storage and regular collection of waste, will prevent adverse interactions with biodiversity. The risk of introducing or spreading invasive species during operation is considered low; however, any occurrence of Third Schedule species will be managed in accordance with an approved ISMP to ensure no establishment or spread.

With continued adherence to mitigation measures set out in this chapter, and in Chapter 8 (Biodiversity) will ensure the associated effect is **neutral**, **imperceptible** and **long-term**.

### Land, Soils, Geology & Hydrogeology (Chapter 9)

During the construction phase, there will be soil excavated to facilitate the proposed development. CS Consulting have estimated that all of this material will need to be removed off-site.

The management of contaminated soil, if encountered, will be undertaken in accordance with the Land and Soils chapter and the RWMP. Proper classification and handling of soil waste will prevent degradation of land quality and avoid cross-contamination with clean materials. Potential effects on land and soils are addressed in Chapter 9. Adherence to the mitigation measures in Chapter 9 (Land,

Soils, Geology and Hydrogeology), this chapter, and the requirements of the RWMP (Appendix 19.1), will ensure the effect is **short-term, imperceptible** and **neutral**.

No significant interactions between waste and land, soils, geology or hydrogeology are anticipated during the operational phase. Accordingly, **no operational phase effects are predicted**.

### Hydrology (Chapter 10)

Improper storage or disposal of waste, particularly hazardous substances or contaminated soils, has the potential to adversely affect surface water and groundwater quality during the construction phase.

The RWMP includes provisions for bunded storage of hazardous materials and protocols for managing contaminated soil. These measures will mitigate the risk of leachate or runoff entering watercourses and protect the hydrological environment.

Potential hydrological impacts are addressed in Chapter 10. Following implementation of mitigation measures, construction phase effects are expected to be **short-term**, **imperceptible** and **neutral**.

During the operational phase, the OWMP will ensure that waste, including cleaning products and liquid materials, is stored and disposed of in accordance with best practice and relevant legislation. These measures will prevent water contamination.

Potential effects on hydrology are addressed in Chapter 10 and, following the implementation of mitigation measures, are expected to be **long-term**, **imperceptible** and **neutral**.

### Climate (Chapter 12)

Waste management contributes to greenhouse gas (GHG) emissions, particularly through landfill disposal and transport. The RWMP prioritises reuse, recycling, and recovery of materials, which will reduce the volume of waste sent to landfill and associated emissions.

Adherence to the mitigation measures in Chapter 12 (Climate), this chapter, and the requirements of the RWMP, will ensure the effect is **short-term**, **imperceptible** and **neutral**.

Similarly, the OWMP will promote recycling and minimise residual waste during operation, reducing indirect emissions from waste transport and disposal. The direct and indirect effects of the proposed development on climate, such as GHG are addressed in Chapter 12, and following implementation of mitigation measures, are expected to be **long-term**, **imperceptible** and **neutral**.

### Traffic & Transportation (Chapter 18)

During the construction phase, the generation, handling and removal of waste will result in temporary additional vehicle movements, primarily related to the transport of excavated materials, construction waste and deliveries / collections of skips. These vehicle movements will occur alongside other construction related traffic and therefore will contribute to the overall short-term increase in traffic volumes in the vicinity of the works.

However, waste related traffic will be short-term and intermittent, confined to the active construction period and managed through the measures outlined in in Chapter 18 (Traffic and Transportation). Waste will be removed only by authorised waste contractors, using agreed haulage routes.

Provided the mitigation measures detailed in Chapter 18 (Traffic and Transportation). and this chapter are adhered to, the predicted effects are **short-term**, **imperceptible** and **neutral**.

During operation, waste arising from the proposed development will be managed through scheduled collections by authorised waste contractors. The OWMP will ensure efficient segregation, minimisation of residual waste and appropriately timed collections.

Provided the mitigation measures detailed in Chapter 18 and this chapter are adhered to, the predicted effects are **long-term**, **imperceptible** and **neutral**.

# 22 Cumulative Impacts

## 22.1 Introduction

This chapter discusses the potential for cumulative impacts to arise as a result of the proposed development in combination with other projects.

Annex III (3)(g) of the EIA Directive requires the EIAR to include the potential for significant cumulative effects of projects on the environment and it states to include "*the cumulation of the impact with the impact of other existing and/or approved projects*." Annex IV (5)(e) of the EIA Directive states that EIAR should include "*the cumulation of effects with other existing and/or approved projects, taking into account any existing environmental problems relating to areas of particular environmental importance likely to be affected or the use of natural resources*."

The European Commission *Guidelines for the Assessment of Indirect and Cumulative Impacts as well as Impact Interactions* (1999) define cumulative impacts as "*Impacts that result from incremental changes caused by other past, present or reasonably foreseeable actions together with the project"* (p. iii).

Similarly, the EPA guidelines on the information to be contained in EIARs (2022) defines cumulative effects as *"The addition of many minor or insignificant effects, including effects of other projects, to create larger, more significant effects"* (Section 3, p. 52). The EPA guidelines further state that:

> *"While a single activity may itself result in a minor impact, it may, when combined with other impacts (minor or insignificant), result in a cumulative impact that is collectively significant. For example, effects on traffic due to an individual industrial project may be acceptable; however, it may be necessary to assess the cumulative effects taking account of traffic generated by other permitted or planned projects. It can also be prudent to have regard to the likely future environmental loadings arising from the development of zoned lands in the immediate environs of the proposed project."* (Section 3, p. 54)

## 22.2 Assessment of Cumulative Impacts

Cumulative impacts have been assessed by taking account of the baseline environment and the predicted impacts of the construction and operation of the proposed development in combination with those of any other existing and / or permitted projects in the zone of influence relevant to individual environmental factors.

Each of the specialist contributors to this EIAR have considered the potential for cumulative impacts to arise, with particular reference to the projects listed in this Chapter.

This EIAR has considered three categories of plans / projects in the vicinity of the proposed development based on the following:

- Existing or commenced projects with a valid planning permission within the vicinity of the proposed development that have the potential for significant cumulative effects with the proposed development;
- Approved projects with a valid planning permission that have not commenced construction but with the potential for significant cumulative effects with the proposed development; and

- Proposed projects that do not have planning permission but have the potential for significant cumulative effects with the proposed development.

## 22.3 Key Plans & Development

A search for other developments that may have the potential to result in cumulative impacts with the proposed development was carried out, and a list of key developments for consideration was developed (Table 22.1). In identifying these developments, the following principal sources were consulted (as of May 2026):

- Dublin City Council (DCC) planning portal;
- Fingal County Council (FCC) planning portal;
- DCC & FCC weekly lists of applications received;
- An Coimisiún Pleanála (ACP) website; (formerly An Bord Pleanála (ABP));
- Department of Housing, Local Government and Heritage EIA Portal;
- *Dublin City Development Plan 2022-2028.*

Projects within 1km that are pending approval or have been approved within the last five year from the time of writing were considered for potential cumulative effects. It is noted that the list of developments in this Chapter is non-exhaustive. There are a wide variety of other applications and permissions in the area. However, minor developments, such as one-off housing, erection of signage and other minor structures and extensions, have been excluded due to the absence of potential for significant cumulative impacts. Lapsed and refused permissions have also been excluded.

As detailed in Chapter Error! Reference source not found. (Planning & Development Context) the proposed development lies within the DCC administrative area, therefore, the site is subject to the land use policies and objectives of the Development Plan. The site is zoned Z14 '*Strategic Development and Regeneration Areas (SDRAs)*', which has the stated aim "*To seek the social, economic and physical development and/or regeneration of an area with mixed-use, of which residential would be the predominant use*." The area immediately east is zoned as '*Z4: Key Urban Villages/Urban Villages'* and the areas immediately west and south are zoned as '*Z1: Sustainable Residential Neighbourhoods'*. The area directly north has the same Z14 zoning as the site itself. As such, the use of the lands as proposed in this LRD application is in accordance with the zoning and envisaged future development for the lands, as set out in the Development Plan.

As required under Directive 2001/42/EC on the assessment of the effects of certain plans and programmes on the environment (the 'SEA Directive'), Council Directive 92/43/EEC and the Habitats Directive, a Strategic Environmental Assessment (SEA) and AA (AA) have been completed in respect of the Development Plan, respectively.

Table 22.1 provides a list of relevant permitted and proposed developments in the vicinity of the site, which have been given due consideration in the assessment of potential cumulative impacts.

Table 22.1 Permitted and proposed developments to be Assessed for Potential Cumulative Impacts.

| Ref. | Location | Description - overview | Cumulative Impacts Assessment |
|---|---|---|---|
| **Applicant:** Land Development Agency<br>**DCC Ref:** LRD6064/24-S3<br>**Permission granted** with conditions on the 27 November 2024 by DCC.<br>Currently under construction. | Plots 5 and 6 to the north of Main Street and bounded by Belltree Avenue to the north; Park Street, to the west and Lake Street to the, east at Clongriffin, Dublin 13 | **Proposed Block 5 & 6 of Clongriffin LRD, Dublin 13**<br>The proposed development includes a mixed-use development comprising of Blocks 5 and 6 providing a total of 408 no. units. Block 5 ranges 3- 6 no. storeys and 138 no. apartment units; Communal Open Space at podium level, including children's play space; at 4th floor roof terrace; a Community Arts and Cultural space. Block 5 also includes 79 no. car parking spaces; 34 no. on-street car parking spaces; 4 motorcycle spaces; 290 no. bicycle spaces. Other facilities provided at ground floor level include amenity and ancillary features. An on-street loading bay is provided along Lake Street.<br>Block 6 ranges between 4-7 no. storeys and provides for 270 no. units. Communal Open Space (including children's play space) is provided within a central courtyard at podium level. At ground floor level provision is made for 707 sq.m of Community/Arts and Cultural floorspace and a childcare facility of 413 sq.m (with an ancillary play area of 125 sq.m). Provision is made for 181 no. car parking spaces, comprising 118 no. on-site car parking spaces, accessed via a new vehicular access onto Lake Street and 63 no. on-street car parking; 9 no. motorcycle and 568 no. bicycle spaces are provided. Other facilities provided at ground floor level include refuse / bin stores and associated staging areas; energy centre, plant/tank rooms and 2 no. integrated ESB substations and associated switch rooms.<br>An on-street loading bay is provided along Dargan Street. Other works include: (a) the provision of road infrastructure, comprising the construction and/or extension of surrounding streets, including Dargan Street (located between Block 5 and Block 6), Market Street (to the south of Block 5) which includes an external multi-functional community / arts and cultural events space of 315 sq.m, and sections of Lake Street (to the east of Block 5); (b) green infrastructure provision in the form of a public open space / landscaped pocket park extending to 1,433 sq.m in area (i.e. Grant Park, that is located to the east of Lake Street at its junction with Dargan Street) together with street planting and public lighting throughout; and (c) all associated engineering and site works (including underground services and utility connections) necessary to facilitate the development. | This development directly north of the proposed development. Construction has commenced on this development, however it is possible the construction phases will overlap resulting in cumulative impacts.<br>The developments may have cumulative impacts on the following environmental receptors:<br>■ Population and Human Health<br>■ Biodiversity<br>■ Land, Soils, Geology & Hydrogeology<br>■ Hydrology<br>■ Air Quality<br>■ Climate<br>■ Noise & Vibration<br>■ Landscape & Visual<br>■ Daylight/Sunlight<br>■ Traffic & Transport<br>■ Material Assets – Waste<br>■ Material Assets – Services |

| Ref. | Location | Description - overview | Cumulative Impacts Assessment |
|---|---|---|---|
| | | This application was accompanied by an EIA Screening and AA Screening. | |
| **Applicant:** Gerard Gannon Properties<br>**DCC Ref:** 2332/25<br>**Permission granted** with conditions on 5 September 2025 by DCC. | Two separate sites located on the corners of Park Street and Park Terrace South, and the corner of Park Street and Park Terrace North Clongriffin, Dublin 13. | **Residential Development on lands at Belltree Park, Clongiffin, Dublin 13**<br>The proposed residential development exists across two sites and totals c. 0.39ha within the wider Clongriffin lands. This includes 14 no. houses with 14 no. off-street car parking spaces and 1 no. on-street visitor car parking space, as well as 24 no bike spaces. All other associated and ancillary works necessary to facilitate the development are included in the application as well.<br>This application was accompanied by an EIA Screening and AA Screening. | This development directly northwest to the proposed development. Construction has commenced on this development, however it is possible the construction phases will overlap resulting in cumulative impacts.<br>The developments may have cumulative impacts on the following environmental receptors:<br>▪ Population and Human Health<br>▪ Biodiversity<br>▪ Land, Soils, Geology & Hydrogeology<br>▪ Hydrology<br>▪ Air Quality<br>▪ Climate<br>▪ Noise & Vibration<br>▪ Landscape & Visual<br>▪ Daylight/Sunlight<br>▪ Traffic & Transport<br>▪ Material Assets – Waste<br>▪ Material Assets - Services |
| **Applicant:** The Shoreline Partnership<br>**ACP Ref:** ABP-311016-21<br>**FCC Ref:** SHD/016/21 | GA3 Lands at Baldoyle (adjacent lands formerly known as the Coast), Baldoyle, Dublin 13. | **10-Year Planning Permission for a Strategic Housing Development phasing of Stapolin Masterplan**<br>The proposed development will consist of 1,221 no. apartments and duplex dwellings (1 no. studio, 502 no. 1-bed, 636 no. 2-bed, 82 no. 3-bed) across 11 no. blocks. All blocks feature balconies and solar panels at roof level and range from 2-15 no. storeys.<br>Residential Tenant Amenity Facilities located in Blocks E3, E4, G3, G4 and GS and external communal amenity space provided at ground, podium and terrace levels | This development **c. 0.27 km east** from the proposed development. Construction has not yet commenced on this developed therefore there is possibility for the construction phases to overlap. |

| Ref. | Location | Description - overview | Cumulative Impacts Assessment |
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| Permission granted with conditions on 23 November 2021. | | throughout the scheme. A creche and outdoor play space is proposed for the ground floor of Block G4 and 1 no. restaurant/café unit is proposed on the ground floor of Block E3.<br><br>Car Parking is provided in a mix of under croft for Blocks E1-E2, F1 and F2 and at basement level for Blocks G1-G3 and G4-G5 with a total of 632 no. spaces for residential units and 8 no. spaces associated with the proposed creche. 2021 no. bicycle parking spaces are provided for residents and 312 no. for visitor and commercial uses, in secure locations and within the public realm throughout the scheme.<br><br>A new central public space between Blocks E1-E2 and E3 and E4 and a new linear space between Blocks G2-G3 and G4-G5 provides pedestrian and bicycle connectivity from Longfield Road to the proposed future Racecourse Park to the north.<br><br>Proposed new bus, bicycle, pedestrian and taxi ramp to the south of the site and north of Stapolin Square providing access from Longfield Road to Clongriffin Train Station. Proposed road connections to the site to the south via the extension of Longfield Road and eastward through the regrading of the existing road, providing access to the subject site via these two roads.<br><br>The development will also provide for all associated ancillary site development infrastructure and site works necessary to facilitate the development.<br><br>The proposed development is designed to integrate into the existing and permitted development on the southern GA01 Lands (as permitted under FCC Ref. F16A/0412, ABP 248970, and as amended by FCC Ref. F20A/0258 and FCC Ref. F21A/0046), and the current proposed alterations to the GA01 Lands (currently subject to a separate SHD Application ABP Ref. 310418-21) for which an overall total of 981 no. units are either under construction or proposed. The infrastructure and road elements of the F16A/0412, ABP Ref. 248970 (and as amended under F20A/0258 and F21A/0046) have commenced, along with 99 no. housing units at Blocks C4, C5 and C6, which will provide for both services and roads connectivity to the GA03 Lands along, and as proposed extended, Longfield Road, all located at lands at Baldoyle/Stapolin, referred to as GA03 Lands in the Baldoyle-Stapolin LAP 2013, as extended and which | The developments may have cumulative impacts on the following environmental receptors:<br><br>■ Population and Human Health<br>■ Biodiversity<br>■ Land, Soils, Geology & Hydrogeology<br>■ Hydrology<br>■ Air Quality<br>■ Climate<br>■ Noise & Vibration<br>■ Landscape & Visual<br>■ Traffic & Transport<br>■ Material Assets – Waste<br>■ Material Assets - Services |

| Ref. | Location | Description - overview | Cumulative Impacts Assessment |
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| | | forms part of the wider landholding of lands formerly known as the Coast, Baldoyle, Dublin 13.<br><br>This application was accompanied by an EIAR and NIS. | |
| **FCC Ref:** LRD0016/S3<br><br>**Permission was granted** on 25 May 2023. | | amend the SHD permitted under ABP Reg. Ref. 311016 resulting in an overall reduction of 97 no. units from 1,221 (as permitted) to 1,124 no. units (as proposed) within GA3 lands. The proposed amendments consist of:<br><br>■ Block G1 - reduction in height from 10-4 no. storey building (as permitted) to 7-4 no storey building.<br><br>■ Block G2 - reduction in height from 10-4 no. storey building (as permitted) to 7-4 no. storey building.<br><br>■ Block G3 - reduction in height from 15-7 no. storey building (as permitted) to 10-6 no. storey building.<br><br>■ Block G5 - reduction in height from 10-4 no. storey building (as permitted) to 7-4 no. storey building.<br><br>■ Block E1 - reduction in height from 8-5 no. storey building (as permitted) to 7-5 no. storey building.<br><br>Facade and building form enhancements are also proposed.<br><br>This results in an overall 830 no. units within the application site. All other elements of the GA3 lands remain as permitted under SHD ABP Reg. Ref. 311016. | |
| **FCC Ref:** LRD0015/S3<br>**Permission was granted** on 29 May 2023. | | The proposed development seeks to amend permitted SHD under ABP Reg. Ref. 310418 resulting in an overall reduction of 55 no. units from 882 (as permitted) to 827 no. units (as proposed) within GA1 lands. The proposed amendments consist of:<br><br>■ Reduction in building height of Block A1 from an 8-6 no. storey building (as permitted) to a 7-6 no. storey building | |

| Ref. | Location | Description - overview | Cumulative Impacts Assessment |
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| | | ■ Reduction in building height of Block D1 from an 9-6 no. storey building (as permitted) to a 7-6 no. storey building<br>■ Reduction in building height of Block D2 from an 8-6 no. storey building (as permitted) to a 7-6 no. storey building<br>■ Reduction in building height of Block D3 from an 15-5 no. storey building (as permitted) to a 10-5 no. storey building<br>Facade and building form enhancements are also proposed. This results in an overall 341 no. units within the application site. All other elements of the GA1 lands remain as permitted under SHD ABP Reg. Ref. 310418 | |
| **Applicant:** The Shoreline Partnership<br>**ACP Ref:** TA06F.310418<br>**FCC Ref:** SHD/011/20<br>**Permission granted** on 22 September 2021. | Lands at Baldoyle (Formerly known as the Coast), Dublin 13 | **Housing Development in Baldoyle, Dublin 13**<br>Alterations of previously permitted Fingal County Council Register Reference number F16A/0412 (An Bord Pleanàla Reference Number PL06F.248970) as amended by F20A/0258 and F221A0046) for 882 no. residential units (135 no. houses and 747 no. apartments), crèche and associated site works.<br>This application was accompanied by an EIAR and NIS. | This development **c. 0.27 km east** from the proposed development. Construction has not yet commenced on this developed therefore there is possibility for the construction phases to overlap.<br>The developments may have cumulative impacts on the following environmental receptors:<br>■ Population and Human Health<br>■ Biodiversity<br>■ Land, Soils, Geology & Hydrogeology<br>■ Hydrology<br>■ Air Quality<br>■ Climate<br>■ Noise & Vibration<br>■ Landscape & Visual<br>■ Traffic & Transport<br>■ Material Assets – Waste<br>■ Material Assets – Services |
| **Applicant:** The Shoreline Partnership<br>**FCC Ref:** LRD0007/S3<br>**Permission granted** with conditions on 20 | | **Amendments to Permitted Residential Block B at Stapolin, Baldoyle, Dublin 13**<br>Permission is sought for an amendment to Block B as part of the parent LRD application (FCC Ref. F16A/0412 (ABP Ref. 248970) and amended under FCC Ref. F20A/0258, F21A/0046 and F22A/0017) located within the lands at Baldoyle (formerly known as The Coast), Dublin 13. The site is bounded to the north by undeveloped lands, to the east by residential development of Red Arches Drive, to the south by residential development of Red Arches Road and to the west by undeveloped land, with the Dublin-Belfast railway line further beyond.<br>The proposed development will consist of amendments to Block B. The proposed amendments will consist of: The reconfiguration of permitted units omitting 28 no. | |

| Ref. | Location | Description - overview | Cumulative Impacts Assessment |
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| January 2023 by FCC.<br><br>Currently under Construction. | | apartments as permitted under F16A/0412 (as amended) and the addition of 26 no. houses resulting in the provision of 88 no. apartments (3-5 storey) and 54 no. houses (2-3 storey). This results in an overall total of 142 no. units, an overall reduction of 2 no. units on that permitted; The reconfiguration of the internal road layout as permitted under F16A/0412 (as amended); The removal of permitted basement below Blocks B1 and B2 and the provision of 170 no. car parking spaces and 262 no. cycle spaces at ground floor and surface; and The development of a linear park along Longfield Road.<br><br>This application was accompanied by an EIA Screening, EcIA, and NIS. | |
| **Applicant:** The Shoreline Partnership<br><br>**FCC Ref:** F22A/0434<br><br>**Permission was granted** with conditions on 23 November 2022 by FCC. | | **Amendment to Previously Permitted Block C1 at Baldoyle Lands**<br><br>The amendments to Block C1 (previously permitted under FCC Ref. F16A/0412 (ABP Ref. 248970) and amended under FCC Ref. F20A/0258, F21A/0046 and F22A/0017) consisting of reconfiguring units to omit 34 no. permitted units (28 no. 2-bed duplex apartment units over 2-bed apartments (3 storey), and 6 no. 2-bed apartment units over 2x2 bed duplex units (3 stories)). This will be replaced with the construction of 21 no. 4-bed terrace houses (2-3 no. storeys), resulting in an overall reduction of 13 no. units.<br><br>Amendments to landscaping include the removal of communal open space and play space to the west of the permitted units and the addition of private gardens to the rear and front of the houses, and a 2.4m boundary wall between the rear gardens and lands to the west for future track expansion identified by Iarnrod Éireann. The provision of 24 no. cycle parking spaces provides in 4 no. secure bicycle storage sheds; and a reduction in the width of Racecourse Close carriageway to a minimum width of 5.5m.<br><br>This development takes place at the lands at Baldoyle (formerly known as the Coast, Dublin 13). The site is bounded to the north by undeveloped lands, to the south by existing residential development on Myrtle Avenue, to the east by Longfield Road, residential development of red arches and Racecourse Park, and to the west by the Dublin-Belfast railway line. | |

| Ref. | Location | Description - overview | Cumulative Impacts Assessment |
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| **Applicant:** The Shoreline Partnership<br><br>**FCC Ref:** F22A/0017<br><br>**Permission was granted** with conditions on 8 April 2022 by DCC. | | **Amendment to Blocks C2 and C3 within Previously Permitted Stapolin**<br><br>The site is bounded to north by undeveloped lands, to the south by the residential development of Myrtle Close to the east by residential development of Red Arches, and to the west by undeveloped lands and the Dublin - Belfast railway line.<br><br>The development consists of minor alterations to permitted residential development (F16A/0412, ABP Ref: PL06F.248970 as amended under F20A/0258 and F21A/0046.) as related to Blocks C2 and C3 only; primarily to the alteration of external finishes and material of permitted housing units. This includes the omission of permitted fireplaces and chimneys; alterations to permitted fenestration including vertical frame sections, transoms and mullions, of windows and doors to front and rear of houses; alteration of permitted rear flat roof to pitched roof on building Types A & D; removal of permitted decorative balustrades; alteration of the permitted brickwork finish to the rear and side elevations of the houses with a render finish; alteration of permitted bin stores to include brick finishes; removal of permitted solar panels from Building Types A, B. D, E, G and M; conversion of Unit Type G from 3 bedroom to 4 bedroom; and minor amendments to the unit type areas as a result of the above amendments.<br><br>Proposed alterations to the permitted floor areas of each building typology with either a minor increase or decrease in floor areas from 0.5 sq.m. to 5 sq.m. varying across permitted typologies. | |
| **Applicant:** The Land Development Agency<br><br>**FCC Ref:** LRD0073/S3E<br><br>**Permission granted** on 11 December 2026. | | **LDA Amendment to Zone B**<br><br>The Land Development Agency, intend to apply for permission for a Large-scale Residential Development (LRD) for lands at Baldoyle (formerly known as The Coast), Dublin 13. The site is bounded to the north by undeveloped lands, to the east by residential development of Red Arches Drive, to the south by residential development of Red Arches Road and to the west by undeveloped land, with the Dublin-Belfast railway line further beyond.<br><br>The proposed development will consist of amendments to Zone B of GA01 lands as permitted under ABP Reg. Ref. ABP-310418-21 / FCC Reg. Ref. SHD/011/20. This will involve the amendment of permitted house units (the 2 no. eastern most units in Block B3 and 4 no. eastern most units in Block B4) to reconcile with as the built | |

| Ref. | Location | Description - overview | Cumulative Impacts Assessment |
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| | | condition. This includes the omission of 2 no. 3-bed housing unit, the alteration of 1. no 3-bed unit to a 2 bed-unit and the increase in rear garden and provision of rear access for 1 no. unit. This results in the overall loss of 2 units. There are no amendments to the rear gardens or constructed boundaries of the adjacent units on Stapolin Avenue.<br><br>A Natura Impact Statement has been prepared in respect of the proposed development.<br><br>The application may also be inspected online at the following website set up by the applicant: www. StapolinAmendment1LRD.ie | |
| **Applicant:** The Shoreline Partnership<br><br>**FCC Ref:** F23A/0611<br><br>**Permission granted** with conditions on the 18 January 2024 by FCC. | Lands at Baldoyle (Formerly known as the Coast), Dublin 13. | **Waste Pumping Station along Baldoyle Coast**<br><br>The site is located at the existing foul pumping/ lifting station ((FCC Ref. FO2A/0921 & ABP Ref. 201400) within the permitted Haggard Park (FCC Ref. F16A/0412, ABP Ref.2485970, as amended under F20A/0258, F21A/0046 and F22A/0017)). The proposed development includes the construction of a new, upgraded wastewater pumping station (WWPS) to include an extension of the existing access road, coordinated with landscaping design, to allow set down area; an underground wastewater pumping station, with a wet well arrangement; an underground emergency storage tank, with approx. capacity 790m$^3$; extension of the existing gravity networks to new WWPS; vent stack of c. 6m in height and hand operated penstock; valve and flowmeter chambers; a new rising main (to be confirmed based on condition survey); standoff manhole and control and washdown kiosks.<br><br>The proposed development works also includes all the necessary diversion of the existing utilities, power supply and water connection for the new WWPS. Decommissioning of the existing pump station to include demolition and removal of the existing wastewater pumping station buildings, removal of all associated pump equipment and infrastructure, and removal of associated hard works e.g., footpath, access yard, walls and fences. Temporary works and all associated above and below ground site works including underground ducting, landscaping, lighting, site development works and boundary treatments.<br><br>This application was accompanied by an NIS. | This development **c. 0.27 km east** from the proposed development. Construction has not yet commenced on this developed therefore there is possibility for the construction phases to overlap.<br><br>The developments may have cumulative impacts on the following environmental receptors:<br><br>- Biodiversity<br>- Land, Soils, Geology & Hydrogeology<br>- Hydrology<br>- Air Quality<br>- Climate<br>- Noise & Vibration<br>- Landscape & Visual<br>- Traffic & Transport<br>- Material Assets – Waste<br>- Material Assets – Services |

| Ref. | Location | Description - overview | Cumulative Impacts Assessment |
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| **Applicant:** Cairn Homes Properties Limited<br>**ACP Ref:** 312003<br>**DCC Ref:** LRD6014/22-S3<br>**Permission granted** on 11 April 2022. | Parkside 5B, Parkside, Dublin 13 | **Housing Development in Parkside, Dublin 13**<br>Planning permission at a site c. 3.8 hectares at "Parkside 5B", Parkside, Dublin 13. The development relates to a Large-Scale Residential Development (LRD) comprising an amendment to permitted Strategic Housing Development (SHD) granted under ABP Reg. Ref. 312003-21. In line with the permitted development this is an application of 7 year duration of planning permission. The alterations will consist of the following: amendments to the permitted car parking arrangement to provide an overall increase of 4 no. car parking spaces at basement level. Provision of a new binstore for the permitted retail unit and an extension of the permitted binstore to provide a bin storage for the permitted crèche. Increase in size of the permitted substations at ground floor level of blocks 1 and 5 including re-siting of the substations, alterations to the location of the permitted cycle parking and increase in the footprint of the buildings to accommodate same. Alterations to the internal layout and facades to accommodate amendment to unit types resulting in Block 5 providing a total of 1 no. studio; 101 no. 1 beds; 97 no. 2 beds and 5 no. 3 beds units. Block 1 providing a total of 79 no. 1 beds; 109 no. 2 beds and 7 no. 3 bed units. Block 2 providing a total of 2 no. studio; 76 no. 1 beds; 81 no. 2 beds and 14 no. 3 bed unit. The total number of units will remain 730 no. units throughout the development with a unit mix which includes 3 no. studio; 317 no. 1 beds (increase from 315 no.); 362 no. 2 beds (reduced from 376 no.) and 48 no. 3 beds (increase from 36). All other associated site development works, vehicular access points, services provision, bin stores, plant stores, open space, vehicular pedestrian access, landscaping and boundary treatment works will remain as permitted under ABP Reg. Ref. 312003-21.<br>This application was accompanied by and EIAR. | This development **c. 0.27 km west** from the proposed development. This development is now in the operational phase and will not have any cumulative impacts from the construction phase.<br>The developments may have cumulative impacts on the following environmental receptors:<br>▪ Population and Human Health<br>▪ Climate<br>▪ Traffic & Transport<br>▪ Material Assets – Waste<br>▪ Material Assets – Services |
| **Applicant:** Lismore Homes Limited<br>**ACP Ref:** TA06F.313177 | Stapolin, Baldoyle, Dublin 13 | **Baldoyle Strategic Housing Development**<br>1,007 no. apartments, childcare facilities and associated site works.<br>This application was accompanied by an EIAR and NIS. | This development **c. 0.39 km east** from the proposed development. Construction has not yet commenced on this developed therefore there is possibility for the construction phases to overlap. |

| Ref. | Location | Description - overview | Cumulative Impacts Assessment |
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| **Permission granted** 20 July 2022. | | | The developments may have cumulative impacts on the following environmental receptors:<br>■ Population and Human Health<br>■ Biodiversity<br>■ Land, Soils, Geology & Hydrogeology<br>■ Hydrology<br>■ Air Quality<br>■ Climate<br>■ Noise & Vibration<br>■ Landscape & Visual<br>■ Traffic & Transport<br>■ Material Assets – Waste<br>■ Material Assets – Services |
| **Applicant:** Córas Iompair Eireann<br>**ACP Ref:** ACP-320164-24<br>**Railway Order permitted** (with conditions) by ACP on 19 August 2025. | Dublin City Centre and Drogheda, located in counties Dublin, Meath and Louth | **DART + Coastal North Railway Order 2024 - Northern Line between Dublin City Centre and Drogheda including the Howth Branch**<br>The proposed development relates to existing and operational railway on the Dublin to Belfast main line and the Howth branch line. The works extends from Fairview, Dublin to Drogheda, Co. Louth on the mainline and to Howth, Co. Dublin on the branch line. The total length of the proposed development is approximately 56 km (6 km of which relate to the Howth Branch).<br>There is a mix of uses along site including, residential, retail and commercial, industrial, agricultural, community and social, village centres as well as amenity space. There are a number of landscape and built heritage features along and in the vicinity of the site which are identified in the relevant sections of the EIAR submitted with the application.<br>This application was accompanied by an EIAR and NIS. | This development **c. 0.14 km east** from the proposed development. Construction has not yet commenced on this developed therefore there is possibility for the construction phases to overlap.<br>The developments may have cumulative impacts on the following environmental receptors:<br>■ Population and Human Health<br>■ Biodiversity<br>■ Land, Soils, Geology & Hydrogeology<br>■ Hydrology<br>■ Air Quality<br>■ Climate<br>■ Noise & Vibration |

| Ref. | Location | Description - overview | Cumulative Impacts Assessment |
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| | | | ▪ Traffic & Transport<br>▪ Material Assets – Services |
| **Applicant:** Rondesere Ltd.<br>**ACP Ref:** ABP-319292-24<br>**FCC Ref:** LRD0019/S3<br>**Permission granted** with conditions on the 3 July 2024. | Grange Road, Baldoyle, Dublin 13 | **Permission LRD site along Grange Road**<br>Permission for a Large scale residential development (LRD) was applied for consisting of demolishing the existing structures on the subject site and constructing 120 no. apartments (15 no. studio units, 18 no. 1 bed units, 78 no. 2 bed units, 7 no. 3 bed units, 2 no. 4 bed penthouse units) within 1 block ranging in height from 4 to 12 storeys. The development also consists of a crèche (capable of holding 35 no. children and open play area) and café and all associated site works.<br>The construction of a basement will be accessed off Myrtle Road with provision of c. 47 no. car parking spaces, 360 no. 'long stay' residential bicycle parking spaces with additional 60 no. visitor bicycle parking spaces in secure locations at surface level. All apartments are provided with private terraces / balconies. Provision of c. 1877 $m^2$ of open space to serve the development including green roof garden terraces between 5th and 10th floor level. A Provision of associated gymnasium at ground and first floor level. Provision of Multipurpose Room and Residents Lounge at first floor level. The development will also provide for all associated ancillary site development infrastructure including: ESB sub-station, bike stores, bin stores, plant rooms, public lighting, new watermain connection and foul and surface water drainage; internal roads & footpaths; site landscaping, including boundary treatments; associated scheme signage, and all associated site development and excavation works above and below ground necessary to facilitate the development.<br>This application was accompanied by an EIA Screening and AA Screening. | This development **c. 0.53 km southeast** from the proposed development. Construction has not yet commenced on this developed therefore there is possibility for the construction phases to overlap.<br>The developments may have cumulative impacts on the following environmental receptors:<br>▪ Population and Human Health<br>▪ Biodiversity<br>▪ Land, Soils, Geology & Hydrogeology<br>▪ Hydrology<br>▪ Air Quality<br>▪ Climate<br>▪ Noise & Vibration<br>▪ Landscape & Visual<br>▪ Traffic & Transport<br>▪ Material Assets – Waste<br>▪ Material Assets – Services |
| **Applicant:** Uisce Éireann<br>**ACP Ref:** ABP-314663-22<br>**FCC Ref:**<br>F21A/0389 | Strand Road & Station Road, Maynetown & Burrow (townlands), Portmarnock, Co. Dublin | **Planning Permission for new wastewater pumping station and modification of Portmarnock Bridge pumping station**<br>The development will consist of a new wastewater pumping station with below ground emergency storage tank; below ground chambers and pumps; above ground control and welfare building and vent stack.<br>Modification of Portmarnock Bridge pumping station, including decommissioning of redundant above and below ground plant and equipment, including the demolition of the control building; provision of a below ground emergency overflow screening | This development **is 1.0 km north** from the proposed development. Construction has not yet commenced on this developed therefore there is possibility for the construction phases to overlap. |

| Ref. | Location | Description - overview | Cumulative Impacts Assessment |
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| **Permission granted** with conditions on 25 August 2022 by FCC. Decision appealed to ABP. Permission granted by ABP with revised conditions on 27 June 2024. | | chamber with mechanical screen; new control kiosk required to control the mechanical screen; retention of the existing wet well.<br><br>Gravity sewer connection beneath the Sluice River linking the proposed pumping station and the modified Portmarnock Bridge 'pumping' station.<br><br>Completion of rising main connection to North Fringe Sewer. Decommissioning of foul rising main within Strand Road and Coast Road.<br><br>Site entrances work for proposed pumping station, new and replacement boundary fencing, ground level alterations, landscaping and site drainage.<br><br>All other associated site development works as required to facilitate the development.<br><br>This application was accompanied by an NIS. | The developments may have cumulative impacts on the following environmental receptors:<br>■ Biodiversity<br>■ Land, Soils, Geology & Hydrogeology<br>■ Hydrology<br>■ Air Quality<br>■ Climate<br>■ Noise & Vibration<br>■ Traffic & Transport<br>■ Material Assets – Waste<br>■ Material Assets – Services |
| **Applicant:** Uisce Éireann<br><br>**ACP Ref:** PA06f.312131<br><br>**Permission granted** by An Coimisiún Pleanála on 09 July 2025. | New wastewater treatment plant in the townland of Clonshaugh and associated sludge hub centre, orbital sewer outfall pipeline and regional biosolids storage facility in various townlands in County Dublin | **Clonshaugh WWTP**<br><br>Greater Dublin Drainage Project consisting of a new wastewater treatment plant, sludge hub centre, orbital sewer, outfall pipeline and regional biosolids storage facility in County Dublin<br><br>The Proposed Project will comprise a new Wastewater Treatment Plant (WwTP) at Clonshaugh and associated infrastructure that will serve the projected wastewater treatment requirements of existing and future drainage catchments in the north and north-west of the Ringsend Agglomeration (i.e. catchments currently draining to Ringsend WwTP), up to the Proposed Project's 2050 design horizon. The Proposed Project will therefore protect public health, safeguarding the environment and facilitating social and economic growth to 2050 and beyond.<br><br>This application was accompanied by an EIAR and NIS. | This development **c. 1.0 km north** from the proposed development. Construction has not yet commenced on this developed therefore there is possibility for the construction phases to overlap.<br><br>The developments may have cumulative impacts on the following environmental receptors:<br>■ Population and Human Health<br>■ Biodiversity<br>■ Land, Soils, Geology & Hydrogeology<br>■ Hydrology |

| Ref. | Location | Description - overview | Cumulative Impacts Assessment |
|---|---|---|---|
| | | | ▪ Air Quality<br>▪ Climate<br>▪ Noise & Vibration<br>▪ Traffic & Transport<br>▪ Material Assets – Waste<br>▪ Material Assets – Services |
| **Applicant:** Education & Training Board<br>**DCC Ref:** 3355/23<br>**Permission granted** with conditions on the 11 December 2023 by FCC. | Site at Grange Community College, Grange Abbey Road, Donaghmede, Dublin 13 | **Permission for a Post Primary School in Grange, Donaghmede**<br>Construction of a 2-no. storey post primary school building (6,966 sq.m gross floor area) with 38 no. classrooms, 3 no. pastoral offices and associated external signage for Gaelcholaiste Reachran. The site will feature a 2 no. storey multi-use hall with associated changing/ storage/toilet/fitness room with ancillary areas and an installation of 208 no. PV Array on an east facing roof. Site development works include new vehicular/pedestrian and cycle infrastructure; car and bus set-down spaces; 38 no. standard car parking spaces; 3 no. accessible parking spaces and 200 no. cycle parking spaces; 4 no. outdoor hard play courts and an ESB substation opening onto Grange Abbey Road.<br>The proposed development also includes the removal of the existing temporary Gaelcholaiste Reachrann accommodation buildings at the rear of Grange Community College and replacement with 3 no. hard play courts, hard and soft landscaping (including boundary treatments, school garden and site attenuation) and associated site development and services works all on site at Grange Community College.<br>This application was accompanied by an AA Screening report. | This development **c. 0.23 km south** from the proposed development. This development is now in the operational phase and will not have any cumulative impacts from the construction phase.<br>The developments may have cumulative impacts on the following environmental receptors:<br>▪ Population and Human Health<br>▪ Noise & Vibration<br>▪ Traffic & Transport<br>▪ Material Assets – Waste<br>▪ Material Assets – Services |
| **Applicant:** Veni Vidi Vici Limited<br>**ACP Ref:** ABP 313307-22<br>**DCC Ref:** 3159/21<br>**Permission granted** with | Site adjoining form Columban Missionary's site at Junction of the R139 Road and The Hole in the Wall Road, Donaghmede, Dublin 13. | **Residential development at former Columban Missionary's Site, Dublin 13**<br>Planning permission is sought for a residential development on a c. 0.19ha site located at the junction of the R139 (Clarehall Avenue) and Hole in the Wall Road, Donaghmede, Dublin 13. The proposed development comprises of the construction of a 7 no. to 13 no. storey building with 72 no. apartments (30 no. 1 bedroom apartments, 38 no. 2 bedroom apartments and 4 no. 3 bedroom apartments) all with private balconies/terraces.<br>Associated ancillary works including landscaping and boundary treatment works; demolition of existing single storey structure on site (previously used a pump house) | This development **c. 0.58 km southwest** from the proposed development. Construction has commenced on this development, however it is possible the construction phases will overlap resulting in cumulative impacts.<br>The developments may have cumulative impacts on the following environmental receptors: |

| Ref. | Location | Description - overview | Cumulative Impacts Assessment |
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| conditions on 10 November 2023. | | and existing site boundary will be included as part of this development. Formation of new pedestrian and vehicular entrance to R139 Road and new pedestrian entrance to Hole in the Wall Road is included as well. The site will include 44 no. ground level car parking spaces with 2 no. accessible spaces and 162 no. ground level cycle parking spaces with 2 no. are cargo bicycle spaces.<br><br>This application was accompanied by an AA Screening report. | ▪ Population and Human Health<br>▪ Biodiversity<br>▪ Land, Soils, Geology & Hydrogeology<br>▪ Hydrology<br>▪ Air Quality<br>▪ Climate<br>▪ Noise & Vibration<br>▪ Traffic & Transport<br>▪ Material Assets – Waste<br>▪ Material Assets – Services |
| **Applicant:** Belwall Ltd.<br><br>**DCC Ref:** LRD6047/23-S3<br><br>**Permission granted** with conditions on 12 November 2021 | Griffin Point, Clarehall Avenue Dublin 13, (Previously known as Saint Columbans, The Hole in the Wall Road, Donaghmede, Dublin 13) and No. 25 hole in the Wall Road, Donaghmede | **Proposed Amendment to LRD at Griffith Point Clarehall Avenue, Dublin 13**<br><br>The proposed development seeks amendments to the previously granted Strategic Housing Development under ABP Ref. 310944-21 and amended under DCC Ref. LRD6017/22-S3.<br><br>The proposed amendments relate mainly to the previously permitted Blocks A&B and comprise of changes to the previously permitted mix of units which will see a reduction in the number of studio units and an increase in 1-bedroom and 2-bedroom units along with an increase in the height of Block A and Block B by 1 level, which would see the overall height increase from 6 storeys to 7 storeys.<br><br>Amendments to the previously permitted Block C will also see the provision of 1 no. 2-bedroom unit in lieu of the previously permitted residential amenity area at ground floor level. The proposed development will provide for an overall total of 213 no. apartments in Blocks AB and 211 no. in Block CD, providing a new overall total of 424 no. apartments (comprising 6 no. studio units, 204 no. 1-bedroom units and 214 no. 3-bedroom units) along with the previously permitted crèche, residential amenity areas and ESB sub stations.<br><br>The proposed development will also provide for a reduction in the previously permitted residential amenity area in Block AB, to now provide 131 sq. m (217 sq. previously permitted) of residential amenity area to accommodate the change in residential unit numbers. | This development **c. 0.55 km southwest** from the proposed development. This development is now in the operational phase and will not have any cumulative impacts from the construction phase.<br><br>The developments may have cumulative impacts on the following environmental receptors:<br><br>▪ Population and Human Health<br>▪ Traffic & Transport<br>▪ Material Assets – Waste<br>▪ Material Assets – Services |

| Ref. | Location | Description - overview | Cumulative Impacts Assessment |
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| | | The overall development will now provide for 424 no. units (previously 410 no. units were permitted under ABP Ref. 310944-21 and reduced to 397 no. units permitted under LRD 6017/22-S3) comprising of 6 no. studio units, 204 no. 1-bedroom units, and 214 no. 2-bedroom units and all associated elevational changes.<br><br>The proposed development will also provide for: reduction in size of permitted crèche by 0.9 sq. m, to accommodate the increase in residential floor area; reconfiguration of the bin store and ESB substation at the entrance of the car park at Block AB; changing basement area to accommodate an increase in the bin store area and parking areas with 50 no. car parking spaces, 5 no. motor cycle parking spaces and 218 no. bicycle storage spaces within the basement and 158 at ground floor level including 10 no. spaces for the crèche of Block AB with 68 no. external bicycle parking spaces serving Blocks AB.<br><br>The proposed development will now provide for 294 no. car parking spaces, 836 no. bicycle parking spaces, and 10 no. motorbike parking spaces across the overall site and all associated landscaping, green roof and PV equipment at roof level, and site development works, including increase in the footprint of the basement of Block AB, necessary to facilitate the proposed development.<br><br>Parent application was accompanied by an EIA Screening, EcIA, and AA Screening. | |
| **Applicant:** Fingal County Council<br><br>**ACP Ref:** ABP-311315<br><br>**Permission granted** with conditions on the 20 September 2022. | Former Baldoyle Racecourse | **Local Authority Own Park Development Project at the Racecourse Park**<br><br>FCC intends to create 4.5km of new walking and cycling routes including a bridge over the Mayne River and repair to the railway underpass; ago public lighting along key walking and cycling routes; expand the existing car park to cater for up to 161 no. car parking spaces; upgrading and expand the existing playground.<br><br>The development will provide a skate park, teenage adventure playground, a multi-use games area, a bowls green, a dog run, four grass football pitches, a viewing platform. A circular archelogy feature through soft landscaping and removal of existing fence is included in this project. Also, an extension of existing reedbed south of Mayne River and creation of new brackish grassland north of Mayne River.<br><br>This application was accompanied by an EIA Screening, EcIA, and NIS. | This development **c. 0.36 km northeast** from the proposed development. Construction has not yet commenced on this developed therefore there is possibility for the construction phases to overlap.<br><br>The developments may have cumulative impacts on the following environmental receptors:<br><br>- Population and Human Health<br>- Biodiversity<br>- Land, Soils, Geology & Hydrogeology |

| Ref. | Location | Description - overview | Cumulative Impacts Assessment |
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| | | | ▪ Hydrology<br>▪ Air Quality<br>▪ Climate |
| **Applicant:** Quintain Developments Ireland Ltd.<br>**FCC Ref:** F20A/0700<br>**Permission was granted** with conditions on 13 May 2021 by FCC. | Townlands of Maynetown and Drumnigh, Portmarnock, Co. Dublin | **Construction Haul Road for St. Marnocks Bay Residential Area**<br>The proposed development consists of the provision of a construction haul road (total length approx. 1,105m). The primary length of road extends eastwards from the eastern edge of the existing St. Marnocks Bay residential area (Phase 1A & 1B) turning south to connect with Moyne Road and is approx. 860m in length and 6.5m wide. An additional east-west spur of approx. 245m in length and 6.5m wide is also proposed from the eastern edge of the permitted residential development (Phase 1C - ABP Ref. 305619-19) which connects with the primary length of haul road running north-south to Moyne Road.<br>The roads infrastructure works includes: temporary road surface finish when required; new temporary junction onto Moyne Road; appropriate temporary landscaping generally required to facilitate the development, including erection of a 1.5m high temporary post and rail boundary fencing pending construction of future residential development and permanent vehicular road; and all ancillary and associated site development, infrastructural, landscaping and boundary treatment works.<br>The construction haul road overlaps where necessary with the future permanent residential road to connect with Moyne Road.<br>This application was accompanied by an NIS. | This development **c. 0.65 km northeast** from the proposed development. This development is now in the operational phase and will not have any cumulative impacts from the construction phase.<br>▪ Traffic & Transport |
| **Applicant:** North Irish Sea Array Windfarm Limited<br>**ACP Ref:** ABP-319866-24<br>**Awaiting decision.** Application lodged on 07 June | Off the coast of counties Dublin, Meath and Louth. The onshore infrastructure will be located in County Dublin | **North Irish Sea Array Offshore Wind Farm**<br>Offshore wind farm consisting of offshore wind turbine generators, offshore substation platform and subsea cables, landfall and associated infrastructure, grid facility and associated infrastructure, and onshore cables and grid connection.<br>This application was accompanied by an EIAR and NIS. | This development **c. 0.46 km west** from the proposed development. This application is awaiting a decision, therefore construction has not yet commenced and there is possibility for the construction phases to overlap. |

| Ref. | Location | Description - overview | Cumulative Impacts Assessment |
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| 2024 to An Coimisiún Pleanàla. | | | The developments may have cumulative impacts on the following environmental receptors:<br>■ Biodiversity<br>■ Land, Soils, Geology & Hydrogeology<br>■ Hydrology<br>■ Air Quality<br>■ Climate<br>■ Noise & Vibration<br>■ Landscape & Visual<br>■ Material Assets – Services |
| **Applicant:** Portmarnock Real Estate Developments Limited<br>**ACP Ref:** 312112<br>**FCC Ref:** SHD/006/21<br>**Permission granted with conditions on 9 May 2022.**<br><br>**Applicant:** Portmarnock Real Estate Developments Limited | Station Road, Portmarnock, Townland of Maynetown, Portmarnock, Dublin | **Portmarnock LRD**<br>Portmarnock Real estate Developments Limited Intends to apply for Permission for a Large-scale Residential Development at this site (c. 12.3 Ha) generally bounded by the existing 'St.Marnock's Bay' and 'Dún Sí' residential developments (Phases 1A, 1Band 1C), the permitted Phases 1D and 1E both now under construction (ABP Ref. ABP-312112-21, as amended by FCC Reg. Ref. LRD0037/S3 and FCC Reg. Ref. LRD0002/S3 refers respectively) to the west, and former agricultural lands to the south and east within the townlands of Portmarnock and Maynetown,<br>Portmarnock, Co. Dublin and is also partially located in the townland of Stapolin, Baldoyle, Dublin 13.<br>The development proposed (Phase 1F) will consist of: - 296no. residential units (254no. houses and 42no. duplexes), ranging from 1.5 - 3 storey's in height comprising the following: - 129no. 3-bed 2 storey houses, 46no. 4-bed 2 storey houses, 13no. 3-bed 1.5 storey houses , 14no. 4-bed 1.5 storey houses, 14no. 4- bed 3 storey houses, 38no. 2-bed 2 storey houses, 21no. 2-bed duplex / apartments and 21no. 3-bed duplex / apartments; Provision of public open space, including southern Monument Park (which also formed part of the Racecourse Park development | This development **c. 1.0 km north** from the proposed development. Construction has not yet commenced on this developed therefore there is possibility for the construction phases to overlap.<br>The developments may have cumulative impacts on the following environmental receptors:<br>■ Population and Human Health<br>■ Biodiversity<br>■ Land, Soils, Geology & Hydrogeology<br>■ Hydrology<br>■ Air Quality<br>■ Climate<br>■ Noise & Vibration<br>■ Landscape & Visual<br>■ Traffic & Transport<br>■ Material Assets – Waste |

| Ref. | Location | Description - overview | Cumulative Impacts Assessment |
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| **ACP Ref:** 324016<br>**FCC Ref:** LRD0058/S3E<br>**Permission granted** with conditions on 10 December 2025 by FCC.<br>Decision has been appealed to ACP. | | permitted under ABP Ref. JP06F.311315); Private rear gardens are provided for all houses. Private patios / terraces and balconies are provided for all duplex / apartments; Vehicular access to serve the development will be provided from Station Road via existing road serving St. Marnock's Bay ('Monument View') and 3no. permitted roads serving St. Marnock's Bay ('Skylark Park Court', 'Skylark Park Drive' and an extension of 'Monument View') permitted under ABP Ref. ABP-312112-21 as amended by FCC Reg. Ref. LRD0037/S3, and also a new existing permanent road to the south which connects to Moyne Road (permitted under Phase 1D - ABP Ref. ABP-312112-21, as amended by FCC Reg. Ref. LRD0037/S3). All associated and ancillary site development, infrastructural, hard and soft landscaping an boundary treatment works, including: - A new (temporary) rising main to serve this phase and previous development phases (1A to 1E inclusive) c. 1.7km long, running from the interim St. Marnock's Pumping Station at Station Road/The Avenue (constructed under ABP Reg. Ref. 300514-17 & upgraded under ABP Reg. Ref. 312112-21) passing through the Racecourse Park development permitted under ABP Ref. JP06F.311315 and connecting to the North Fringe Sewer at a point which is located south of Moyne Road and the Mayne River within the townland of Stapolin, Baldoyle, Dublin 13; Upgrade of interim St. Marnock's Pumping Station and storage at Station Road/The Avenue as required; and all associated and ancillary site development and reinstatement. The proposed temporary rising main and interim St. Marnock's Pumping Station will be decommissioned and these lands will then discharge by gravity to a proposed new Uisce Éireann Pumping Station adjacent to Portmarnock Bridge when same is operational; all other ancillary site development and landscape works, including 289no. car parking spaces; 1,455no. bicycle parking spaces; Bin stores and bicycle stores; 4no. ESB Sub-stations.<br>This application was accompanied by an EIAR and NIS. | ▪ Material Assets – Services |

## 22.4 Predicted Cumulative Impacts

### 22.4.1 Population & Human Health

#### 22.4.1.1 Construction Phase

Assuming the proper and full implementation of the mitigation measures in Section 7.5, the following significant, negative, cumulative impacts on population and human health are predicted during the construction phase:

- **Negative, slight to significant and temporary** cumulative effects from noise and vibration.
- **Negative, slight to significant and short-term** cumulative effects from landscape and visual.
- **Neutral, imperceptible and short-term** cumulative effects from Material Assets- Waste (construction waste).

#### 22.4.1.2 Operational Phase

It is considered that the potential cumulative impacts 1 on population and human health from the proposed development and developments listed in **Table 22.1** have been mitigated by the design of the proposed development, and mitigation measures set out in Section 7.5, such that significant negative cumulative impacts on population and human health are not likely to occur as a result of the proposed development in combination with one or more of the plans / projects. **No significant cumulative impacts** are expected.

### 22.4.2 Biodiversity

#### 22.4.2.1 Construction Phase

Each of the plans and projects in **Table 22.1** have been required to take nature conservation into account, and an iterative approach to the preparation of each plan and project has been undertaken, with a view to coordinating the plans and projects for maximum overall benefit and minimum impact. Each has been separately subject to stringent appraisal, both for their potential impacts on European sites and their Qualifying Interests / Special Conservation Interests as well as on non-European sites and ecological receptors. In each case it has been reasonably concluded, based on the best available scientific evidence, that there will be no significant effects on designated sites, habitats, species or water quality, either alone or in-combination with other plans or projects.

The Dublin City Development Plan 2022-2028 has a series of objectives intended to protect and enhance the natural environment. For example, the Development Plan includes policies for the protection of the county's flood plains, to prevent development in flood plains not satisfying the appropriate justification test and to require the use of sustainable drainage systems (SuDS) to minimise and limit the extent of hard surfacing and paving in order to reduce the potential impact of existing and predicted flooding risks. The objectives of the Development Plan have themselves been subject to Appropriate Assessment, which has concluded that their implementation would not adversely affect the integrity of European sites. The proposed development at Clongriffin, along with other developments in the vicinity will have to incorporate SuDS measures to protect surface water quality and hence, cumulative impacts on biodiversity are considered to be **neutral and not significant.**

#### 22.4.2.2 Operational Phase

The proposed development will result in the removal of existing habitats and their replacement with a new residential development and associated (significant, biodiversity-focussed) landscaping. All developments proposed in the wider area, including within the Fingal County Council Administrative area (to the north of the River Mayne), will be required to demonstrate a commitment to minimising biodiversity loss.

The implementation of mitigation and monitoring measures as part of the construction of all relevant developments will ensure there will be minimal cumulative potential for impacts on biodiversity during the operational phase of the proposed development. Cumulative impacts on biodiversity are therefore predicted to be **non significant**.

### 22.4.3 Land, Soils, Geology & Hydrogeology

#### 22.4.3.1 Construction Phase

In relation to the potential for cumulative impacts on land, soils, geology and hydrogeology during the construction phases, the construction works which would have potential cumulative impacts are as follows:

- Surface water run-off during the construction phase may contain increased silt levels or become polluted from construction activities. Run-off containing large amounts of silt can cause damage to surface water systems and receiving watercourses.
- Stockpiled material will be stored on hardstand away from surface water drains, and gullies will be protected during works to ensure there is no discharge of silt-laden water into the surrounding surface water drainage system.
- Contamination of local water sources from accidental spillage and leakage from construction traffic and construction materials is possible unless project-specific measures are put in place for each development and complied with.

With respect to mitigation measures for the proposed development in Section 9.6, **no significant cumulative impacts** are predicted to arise during the construction phase. The proposed development would not result in cumulative effects when considered in combination with other developments in the area.

#### 22.4.3.2 Operational Phase

During the operational phase, the proposed development would operate in accordance with the approved design and management measures. Based on the findings of the individual environmental assessments and consideration of other existing and reasonably foreseeable developments, **no cumulative impacts** are predicted.

### 22.4.4 Hydrology

#### 22.4.4.1 Construction Phase

In relation to the potential for cumulative impacts on hydrology during the construction phases, the construction works which would have potential cumulative impacts are as follows:

- Surface water run-off during the construction phase may contain increased silt levels or become polluted from construction activities. Run-off containing large amounts of silt can cause damage to surface water systems and receiving watercourses.
- Contamination of local water sources from accidental spillage and leakage from construction traffic and construction materials is possible unless project-specific measures are put in place for each development and complied with.

The OCMP and Section 10.6 describe mitigation measure prevent pollution during the construction of the proposed development. The proposed development would not result in cumulative effects when considered in combination with other developments in the area. **No significant cumulative impacts** are predicted to arise during the construction phase.

#### 22.4.4.2 Operational Phase

There is an indirect hydrological connection, to the Mayne River and Maybe Estuary Transitional Waterbody during the construction and operational phase. During the operational phase, surface water run-off from roads, car parking areas and other hardstanding surfaces may contain low levels of contaminants, primarily hydrocarbons associated with vehicular traffic.

The implementation of the mitigation and monitoring measures detailed in Section 10.6 and 10.8, will ensure that the potential impacts on surface water and groundwater quality from the proposed development are adequately mitigated, thus reducing the possibility for in-combination effects.

The cumulative impacts on surface water quality during the operational phase is considered to be **neutral, imperceptible and long-term**.

### 22.4.5 Air Quality

#### 22.4.5.1 Construction Phase

During overlapping construction phase, there is potential for dust emissions to accumulate from the proposed development and other surrounding developments as identified in **Table 22.1**. Mitigation measures for the proposed development have been described in Section 11.6 to reduce the predicted impacts. Cumulative air quality impacts are anticipated to be **short-term, direct, negative, localised** and **not significant** during the construction phase.

#### 22.4.5.2 Operational Phase

Given the nature of the proposed development, **no cumulative impacts** on air quality are expected during the operational phase.

### 22.4.6 Climate

The cumulative climate impacts for the proposed development has been assessed through the greenhouse gas (GHG) emissions assessment in relation to Ireland's national GHG emissions. For this assessment, construction and operational emissions have been considered together. It has been calculated that the total construction phase embodied carbon for the proposed development is 37,227 $tCO_2e$ (86% of total GHG emissions) as shown in **The results** of the GHGA are shown Error! Not a valid bookmark self-reference.. This includes both the outputs from the OneClick LCA tool and the TII Carbon Tool. Construction materials make up the majority of GHG emissions for the proposed development,

accounting for approximately 86% of the total construction phase GHG emissions. The second highest contribution comes from material transport at 6%.

It has been calculated that the total construction phase embodied carbon for the proposed development is 37,227 $tCO_2e$ (86% of total GHG emissions) as shown in Error! Not a valid bookmark self-reference..

. GHG emissions have been compared against the carbon budget for the industry, transport, and waste sectors in 2030, against Ireland's total GHG emissions in 2024, and against Ireland's EU 2030 target of a 42% reduction in non-ETS sector emissions based on 2005 levels (27.7 Mt CO2e) (set out in Regulation EU 2018/842). The proposed development represents 0.0012% of Ireland's 2024 Total GHG Emissions.

The construction stage development impact is determined to be ***direct*** due to the nature of emissions of GHG to the atmosphere, ***long-term*** due to the projected lifetime of the development and the lag periods between any emission reductions and measurable changes in climate, ***negative*** as all emissions of GHG are considered to have a negative effect on the climate and ***moderate*** due to the nature of the contribution of the development to Ireland's national and sectoral carbon budgets and that the mitigation measures do not extend beyond regulatory requirements. The suggested mitigation measures do not exceed regulatory requirements therefore the overall impact is considered to be ***significant*** in EIA terms and in accordance with the ISEP guidance.

### 22.4.7 Noise & Vibration

#### 22.4.7.1 Construction Phase

It is noted that DCC Application LRD6064/24-S3 bounds the site to the north and is currently under construction. The projects have the potential to be ongoing simultaneously. Assuming that construction noise levels will be similar to those predicted for this proposed development, then an increase of around 3 dB may be possible at surrounding receptors if works progress at both sites simultaneously. In this scenario the increase in elevated construction noise emissions due to cumulative construction activities are only likely to be just perceptible, however, the duration of construction impacts would be expected to increase. Cumulative impacts will need to be managed during the construction phase. It is recommended that liaison between both construction sites is on-going throughout the duration of the construction phase. Contractors should schedule work in a co-operative effort to limit the duration and magnitude of potential cumulative impacts on nearby sensitive receptors. For properties adjacent to the construction sites the cumulative construction noise impacts are expected to be **short-term, negative, slight to significant,** depending on the proximity of the works to the site boundary.

#### 22.4.7.2 Operational Phase

For the operational stage, traffic data provided for the assessment includes the cumulative flows from background plus additional flows from confirmed developments and local development plans. This includes the contribution from other phases of the wider development site of which the proposed development is part. Hence the cumulative impact of noise and vibration from additional traffic remains **not significant.**

### 22.4.8 Landscape & Visual

#### 22.4.8.1 Construction Phase

Where construction phases overlap, there is potential for cumulative impacts on landscape and visual amenity from increased construction machinery and ancillary features. The construction phase for the proposed development will last approximately 24 months and will be located entirely in an urban area.

Cumulative impacts on landscape and visual are anticipated to be **negative, moderately significant, and short term**.

#### 22.4.8.2 Operational Phase

Chapter 22 has assessed the townscape and visual impacts, taking account of all permitted developments in the vicinity of the site (see **Chapter 22**, **Table 22.1**). The cumulative photomontages accompanying Chapter 22 show the proposed development along with the most relevant permitted developments.

In combination, the proposed development and the nearby permitted schemes (and schemes under construction) are predicted to result in **significant positive cumulative townscape and visual effects**, by contributing to the realisation of the DCDP vision for SDRA 1 Clongriffin / Belmayne. Due to its large scale and prominent, central location, the proposed development would make a particularly important contribution to this vision.

### 22.4.9 Cultural Heritage, Archaeology & Architectural Heritage

#### 22.4.9.1 Construction Phase

No impacts have been identified upon the archaeological, architectural and cultural heritage resource as a result of the construction of the development. As such, **no cumulative impacts** have been identified.

#### 22.4.9.2 Operational Phase

No impacts have been identified upon the archaeological, architectural and cultural heritage resource as a result of operation of the development. As such, **no cumulative impacts** have been identified.

### 22.4.10 Microclimate – Daylight & Sunlight

#### 22.4.10.1 Construction Phase

Since no impacts are predicted in relation to daylight/sunlight during the construction phase, there will be **no cumulative impacts**.

#### 22.4.10.2 Operational Phase

The cumulative assessment has considered the proposed development in combination with the existing environment together with relevant permitted and surrounding developments within the wider area. The assessment demonstrates that the vast majority of daylight and sunlight effects remain compliant with the BRE Guide, Third Edition (2022) recommendations, with the overall effects generally remaining ***Imperceptible / Not Significant*** in accordance with the EPA Guidelines and ***Negligible*** in terms of the BRE impact classification.

## 22.4.11 Microclimate – Wind

### 22.4.11.1 Construction Phase

During the construction phase the wind conditions will gradually change from the conditions experienced in the existing environment to the conditions experienced during the operational phase. As wind comfort conditions are comfortable in both phases and no issues have been identified, there will be **no cumulative impacts**.

### 22.4.11.2 Operational Phase

The CFD assessment has accounted for the cumulative impact associated with the existing site and the proposed development. The analysis has shown that even with the proposed development in place, the wind speeds will still be comfortable for pedestrians with no areas of concern highlighted.

A list of granted developments surrounding the proposed project has been listed in has been assess for wind conditions in **Table 17.42**. Due to the substantial distance from the proposed project and the extent of those granted applications, a **neutral, non-significant cumulative impact** will be perceived.

## 22.4.12 Traffic & Transportation

### 22.4.12.1 Construction Phase

The construction phase of the proposed development is expected to last c. 24 months, during which it may overlap with the construction of the developments described in **Table 22.1**. Should overlap occur there may be higher total daily traffic, especially for HGV trips. However Chapter 18 has identified only one development as having the potential for significant cumulative impacts during the operational phase. **No likely significant cumulative effects** are expected during the construction phase.

### 22.4.12.2 Operational Phase

Chapter 18 (Traffic & Transportation) has identified only one development as having the potential for significant cumulative impacts during the operational phase: Ref. LRD6064/24-S3– mixed use development comprising of two Blocks (i.e. Blocks 5 and 6) providing a total of 408 no. apartment units. This cumulative impact was quantified using TRANSYT and PICADY modelling. This comparison, given in **Table 18.26**, shows that these cumulative effects shall have a negligible influence on the operation of Junction 9, resulting in a maximum increase of less than 1 PCU in mean vehicle queue length and a maximum increase of 6 seconds in average delay on any junction approach. The cumulative influence of the proposed development and the committed development shall have a moderate impact on the operation of Junction 7 which is expected to experience a maximum increase of 8 PCU in mean vehicle queue length and a maximum increase of 30 seconds in mean delay per vehicle.

The cumulative impacts of the proposed and committed developments on the operation of the overall surrounding road network are thereby shown to be **negative** in nature, **long-term** in duration, and of **moderate** significance.

## 22.4.13 Material Assets – Waste

### 22.4.13.1 Construction Phase

Chapter 19 assess the potential cumulative effects of the proposed development in combination with other permitted or under-construction projects within the vicinity of the proposed development.

Cumulative impacts could arise from concurrent excavation and construction activities, principally through: (1) Increased C&D waste volumes (e.g., excavated soils and stones, concrete, timber, metals, packaging); (2) Booking and capacity management at authorised recovery/recycling/landfill outlets; and (3) Aggregate HGV movements for off-site transfer.

In practice, these effects are mitigated by the distributed network of licensed/permitted facilities and collectors serving Dublin and surrounding counties, and by the common industry practice of programming multiple outlets rather than relying on a single facility. Other permitted developments in the area are individually required to manage waste in compliance with national and local legislation, policies and plans, and to use authorised collectors/facilities, which further reduces the risk of adverse cumulative effects. With these controls in place across projects, **no significant negative cumulative impacts** on waste infrastructure or management are predicted during the construction phase.

#### 22.4.13.2 Operational Phase

During operation, cumulative effects relate to incremental municipal / commercial waste arisings from new populations and ground-floor uses across the wider Clongriffin/Baldoyle area (residential blocks, crèches, retail/community units). The pipeline of schemes identified in the cumulatives schedule will contribute additional mixed recyclables, food waste, glass, cardboard/plastics and occasional bulky/WEEE, all of which are anticipated and routinely managed within Dublin's established collection and treatment networks. Each development must provide on-site storage/segregation and engage permitted contractors under local bye-laws and planning conditions, ensuring that all operational waste is collected and treated through authorised recycling, recovery and disposal routes in accordance with national and local waste policy. Residual cumulative effect will be **long-term, imperceptible** and **neutral**.

### 22.4.14 Material Assets – Services

#### 22.4.14.1 Construction Phase

The proposed development's construction phase is likely to overlap with the construction phase of other development as listed in **Table 22.1**. On-site utilities works and diversions from the proposed development and nearby developments, if improperly executed, have the potential to result in:

- Damage to material assets;
- Accidental discharge of sediments and harmful substances, due to exposed soils or accidental spills of harmful substances can be flushed into the public wastewater network or the nearby surface water network;
- Interruptions to supply / services in neighbouring areas; and / or
- Human health impacts related to accidents (e.g. involving live power cables or gas mains).

These effects are unlikely as mitigation measures have been implemented into the design of the proposed development, as outlined in Section 20.5. **No likely significant cumulative impacts** are anticipated during the construction phase.

#### 22.4.14.2 Operational Phase

During the operational phase, the site will contain operational surface water drainage, foul water drainage, water supply, electrical, and telecommunications systems, serving the proposed residential units. The systems of the proposed development are being designed and specified in accordance with the applicable codes and standards of the respective service providers and authorities (i.e. Uisce

Éireann, ESB, and Eir / Virgin Media/ Siro) and will be sufficient to provide for the operational demands of the proposed development. Demand from the proposed development is not predicted to negatively affect the existing networks in the receiving environment.

Developments identified in Table 22.1 will also be subject to the codes and standards of service providers in the area.

Maintenance of built services and infrastructure on the site will be carried out on an ongoing basis during the operational phase, as per the relevant requirements of the respective service providers and authorities.

No likely significant impacts are predicted in relation to built services or infrastructure during the operational phase.

## 22.5 Conclusion

For topic-specific assessments of the potential for cumulative impacts, please refer to the foregoing specialist EIAR chapters. Assuming the full and proper implementation of the mitigation measures set out in this EIAR, no significant negative cumulative impacts are likely to arise during the construction or operational phases of the proposed development.

# 23 Mitigation Measures & Monitoring

## 23.1 Introduction

This chapter collates the mitigation measures and monitoring set out in the preceding chapters of the EIAR. Note that this section does not include 'mitigation by design', i.e. features already integrated into the proposed development (as assessed) that mitigate environmental impacts.

## 23.2 General Mitigation Measures

Table 23.1 Mitigation Measures - General

| Ref. | Mitigation Measure |
|---|---|
| Construction Phase | |
| GE01 | Outline Construction Management Plan<br>An Outline Construction Management Plan (OCMP) has been prepared in respect of the proposed development by CS Consulting and has been submitted under a separate cover as part of this application. It contains best practice measures and protocols to be implemented during the construction phase of the proposed development to avoid / minimise environmental impacts.<br><br>The appointed contractor will be responsible for the implementation of the CMP. To ensure these documents remain fit for purpose, they will be maintained as live documents. The appointed contractor will be responsible for updating the CMP, as required; e.g. to reflect the publication of relevant new or revised guidelines and / or new statutory requirements. The full schedule of environmental commitments (i.e. all mitigation measures set out in the CMP and Environmental Impact Assessment Report as part of the planning application, as well as any applicable conditions of development consent) will be included in the CMP by the appointed contractor. |
| GE02 | The first sequence of works will establish the site perimeter in which all necessary accommodation, material handling, and secure storage facilities will be provided and maintained for construction site operations. These shall include:<br>■ Construction plant<br>■ Hoisting equipment and cranes<br>■ Scaffolding, platforms, access ladders, barriers, handrails<br>■ Barricades and hoardings<br>■ Temporary driveways, road crossovers and construction zone<br>■ 24/7 emergency vehicle access to site during working hours<br>■ On-site hardstand areas for vehicle loading and unloading<br>■ Storage sheds and compounds<br>■ Rubbish sorting areas<br>■ Site amenities with all required equipment and facilities<br>■ Construction worker accommodation<br>■ First aid facilities<br>■ Site administration accommodation |
| GE03 | Site Accommodation<br>Electricity will be provided to the site via the national grid, subject to the restrictions and requirements of ESB Networks. Water supply to the site will be provided by means of a temporary connection to the public watermain. Similarly, a temporary connection for foul water |

| Ref. | Mitigation Measure |
|---|---|
| | drainage will be made to the public network. The locations and sizes of these temporary connections will be determined through consultation with Uisce Éireann and DCC, and shall be subject to any restrictions and requirements they may impose. |
| GE04 | **Record Keeping**<br>Records will be kept by the main Contractor and/or by the PSCS (as appropriate) to satisfy the applicable legislation and best practice guidelines in relation to all activity on site. These records will be made available for review and audit as required by DCC, the Health & Safety Authority (HSA), the Environmental Protection Agency (EPA), and any other entities with a legitimate interest.<br>These records must include (but may not be limited to):<br>■ Records of all personnel working on site (including dates present).<br>■ Records of all visitors attending site.<br>■ Records of all training sessions conducted.<br>■ Records of all plant and machinery used on site (including dates of arrival, dates of operation, and dates of removal).<br>■ Records of all deliveries made to site.<br>■ Records of all potentially hazardous materials stored on site.<br>■ Records of all potentially hazardous materials encountered on site.<br>■ Records of all waste material leaving the site (whether for reuse, recycling, recovery, or disposal).<br>■ Records of any accidents or spills occurring on site.<br>■ Records of engagement with the Project Ecologist, Project Archaeologist, and Site Engineer.<br>■ Records of any site protocol breaches by construction personnel.<br>■ Records of all noise level, vibration level, and air quality monitoring. |
| GE05 | **Community Liaison Officer**<br>A Designated Community Liaison Officer (DCLO) shall be appointed as a point of contact with local residents, DCC, and An Garda Síochána. The DCLO shall also consult and coordinate with DCLOs on other nearby active sites and ensure that the CMP for the development speaks to the CMPs of the adjacent and interfacing sites.<br>The Designated Community Liaison Officer shall be responsible for ensuring that complaints are dealt with and shall do so in accordance with the Complaints Procedure System outlined above. The DCLO shall liaise with members of the public as required to provide updates on the status of complaints and to ensure complaints are treated fairly and transparently. Where record of complaints is required by the complainant this shall be provided to the complainant by the DCLO. Requests by DCC or by members of the public for complaint records shall be dealt with in accordance with the requirements of GDPR legislation.<br>A Complaints Procedure System shall be drawn up and administered by the main Contractor. A record of each complaint shall be logged (date and time, description of complaint, complainant details, etc.), including actions to be carried out and ultimately confirmation that the complaint has been closed out by both Contractor and complainant. Records shall be kept and made available to DCC upon request. Where a record of a complaint is requested by the complainant, this shall be made available to that complainant upon request. |
| GE06 | **Construction Traffic Management**<br>Prior to works commencing on site, the lead Contractor appointed to the project will develop a detailed works-specific Construction Traffic Management Plan (CTMP) within the Outline Construction Environmental Management Plan (submitted as a separate document in the planning application pack), reflecting the specifics of their final site management and |

| Ref. | Mitigation Measure |
|---|---|
| | construction methodologies. This plan shall be prepared in consultation with the Design Team, with Dublin City Council (DCC), and with An Garda Síochána, and shall be updated as required throughout the project.<br>The principal objective of the CTMP is to proactively manage the impacts of all construction traffic related to the proposed development, upon both the public (off-site) and internal (onsite) environments. As such, the CTMP will:<br>■ Be prepared in accordance and always comply with principles as published by TII, the HAS, Department of Transport and other relevant authorities.<br>■ Appoint a liaison officer as a point of contact for local residents, DCC, and An Garda Síochána.<br>■ Engage specific traffic control and marshalling measures to minimise the potential for obstruction of surrounding streets. |
| GE07 | The appointed lead Contractor will engage with the project archaeologist prior to the commencement of excavation on site. Excavation will be carried out under the supervision of the project archaeologist. |
| GE08 | **Construction Waste Management Plan**<br>The lead Contractor will prepare a Construction Waste Management Plan in accordance with the Best Practice Guidelines for the Preparation of Resource & Waste Management Plans for Construction & Demolition Projects (EPA, 2021) and must ensure that all material is disposed of at an appropriately licensed land fill site. Any materials identified as being hazardous will be removed and disposed of in strict accordance with the applicable legislation. |
| GE09 | **Construction Working Hours**<br>Construction works will be limited to the times below, as per the OCMP, unless otherwise stipulated in the conditions to the planning permission:<br>■ Monday to Friday 08:00 to 19:00 hrs<br>■ Saturdays 08:00 to 14:00 hrs<br>■ Sundays and Public Holidays No work on site*<br>*However, where required for specific circumstances (e.g. exceptional / emergency circumstances, such as connections to public service systems or utilities), it may be necessary for certain construction operations to be undertaken outside these times. The timing of such works will be agreed in advance with Dublin City Council as well as with any other affected neighbouring stakeholders. |
| GE10 | **Resource Waste Management Plan (RWMP)**<br>A Resource & Construction Waste Management Plan has been prepared as part of Chapter 19 (Material Assets – Waste) of this EIAR. The RWMP will be implemented during the construction phase, and is submitted as part of the planning application. This document shall be finalised by the appointed contractor, in agreement with Dublin City Council, prior to the commencement of the proposed works. |
| Operational Phase | |
| GE11 | **Residential Travel Plan**<br>A Residential Travel Plan (RTP) has been prepared by CS Consulting (2026) for the operational phase of the proposed development (refer to standalone document submitted under separate cover), to promote sustainable mobility among the residents of the proposed development through a range of measures. The appointed Mobility Management Coordinator of the site during the operational phase will be responsible for ensuring the implementation of the Plan. This is intended to be a live document, to be updated by the Applicant / Operator, where appropriate, e.g. to ensure the Plan remains fit for purpose and up-to-date with relevant policy. |
| GE12 | **Operational Waste Management Plan** |

| Ref. | Mitigation Measure |
|---|---|
| | An Operational Waste Management Plan (OWMP) has been prepared as part of Chapter 19 (Material Assets – Waste) of this EIAR. The OWMP contains measures to promote operational phase waste management in accordance with the waste hierarchy, i.e. high rates of reuse, recycling and recovery. The Operator / Facilities Management of the site during the operational phase will be responsible for ensuring – allocating personnel and resources, as needed – the ongoing implementation of this OWMP. This is intended to be a live document, to be updated by the Applicant / Operator, where appropriate, e.g. to ensure the Plan remains fit for purpose and up-to-date with relevant policy. |

## 23.3 Specific Mitigation & Monitoring Measures

### 23.3.1 Population & Human Health

Table 23.2 Mitigation Measures – Population & Human Health

| Ref. | Mitigation Measure |
|---|---|
| Construction Phase | |
| PHH01 | An OCMP has been prepared by CS Consulting for the proposed development (refer to standalone document submitted as part of the planning pack). It contains best practice measures and protocols to be implemented during the construction phase of the proposed development to avoid / minimise environmental impacts.<br>■ The appointed contractor will be responsible for the implementation of the CEMP & CMP. To ensure these documents remain fit for purpose, they will be maintained as live documents. The appointed contractor will be responsible for updating the CEMP & CMP, as required; e.g. to reflect the publication of relevant new or revised guidelines and / or new statutory requirements. The full schedule of environmental commitments (i.e. all mitigation measures set out in the CEMP and Environmental Impact Assessment Report as part of the planning application, as well as any applicable conditions of development consent) will be included in the CEMP & CMP by the appointed contractor. |
| PHH02 | A Community Liaison Officer (CLO) will be appointed by the contractor for the duration of the construction phase. They will be responsible for keeping the local community and businesses informed of the timing and duration of potentially disruptive works, and for receiving and addressing concerns of local residents and businesses in relation to the proposed works. |
| PHH03 | Air Quality & Dust<br>Chapter 11 (Air Quality) & Chapter 12 (Climate) include a suite of mitigation measures to minimise air quality (including dust) impacts during the construction phase. Dust minimisations measures are included in Chapter 11 and shall be finalised by the appointed contractor in agreement with Dublin City Council, and implemented during the proposed works. Other mitigation measures are included in relation to community liaison, site management, maintenance of site, control of construction machinery, waste management especially demolition works, earthworks and measures specific to dirt/debris on site. Further, as detailed in Chapter 5 & OCMP, adequate surface water drainage and management during construction phase shall be undertaken so as to avoid impacts on local population and human health. |
| PHH04 | Landscape & Visual Amenity<br>Chapter 14 (Landscape & Visual) includes a number of mitigation measures to minimise the impacts of the proposed works on landscape and visual amenity. These include measures in relation to visual impact of construction works, landscape character and existing vegetation. |
| PHH05 | Noise & Vibration |

| Ref. | Mitigation Measure |
|---|---|
| | Chapter 13 (Noise & Vibration) includes a suite of mitigation measures to minimise noise impacts during the construction phase. Mitigation measures are included in relation to selection of quiet plant, noise control at source, screening, adherence to noise limits and community liaison. |
| PHH06 | Traffic & Transportation<br>■ Chapter 18 (Traffic & Transportation) includes measures in relation to construction traffic and parking management to minimise the impacts of construction traffic on the local community and the operation of the existing road network in the area.<br>■ Additionally, each appointed contractor will ensure that their compound set up accounts for appropriate spatial provision for waste management segregation, logistical deliveries and day to day contractor car parking. Appropriate overflow contractor carparking can be made available in areas of client landholding. This area(s) may change subject to works phasing and ongoing construction activities. |
| PHH07 | Material Assets<br>■ Chapter 19 (Material Assets - Waste) includes a suite of measures in relation to management of construction waste to minimise the impacts of all site construction activities;<br>■ Chapter 20 (Material Assets – Services) includes a suite of measures in relation to management of services in the vicinity of the works and regard shall be had to the Gas Networks Ireland *Guidelines for Designers and Builders – Industrial and Commercial (Non-Domestic) Sites (2018),* the Health & Safety Authority (HSA) *Code of Practice for Avoiding Danger from Underground Services (2016)*, and the ESB Networks & Health and Safety Authority *Code of Practice for Avoiding Danger from Overhead Electricity Lines (2019).* |
| Operational Phase | |
| PHH08 | Traffic & Transportation<br>■ Chapter 18 (Traffic & Transportation) includes measures in relation to mobility management and car parking management during the operational phase. It requires the implementation of a Resident Travel Plan, to encourage sustainable travel patterns among residents of the proposed development. |
| PHH09 | Climate<br>Chapter 11 (Air Quality) & Chapter 12 (Climate) includes a suite of mitigation measures to minimise future climate change impacts during the operational phase. These measures have been incorporated into the design of the development to mitigate against the impacts of future climate change. For example, adequate attenuation and drainage have been incorporated into the design of the development to avoid potential flooding impacts as a result of increased rainfall events in future years. The proposed development has been designed to reduce the impact on climate as a result of energy usage during operation. |
| PHH10 | Material Assets<br>Chapter 19 (Material Assets- Waste) includes a suite of measures in relation to management of operational phase waste to minimise the impacts of the operational phase of the proposed development. Waste generated within the proposed development will be managed in accordance with the *Waste Management Act 1996, as amended*, associated Regulations and the *Litter Pollution Act 1997* and the *NWMPCE*. Measures will focus on segregation, reuse, recycling, and recovery, with disposal as a last resort, in line with the waste hierarchy and circular economy principles. |

Table 23.3 Monitoring – Population & Human Health

| Phase | Monitoring Measure |
|---|---|
| Construction | Monitoring and maintenance recommended in Chapters 11 (Air Quality), 13 (Noise & Vibration), 14 (Landscape & Visual), 18 (Traffic & Transportation), 19 (Material Assets - Waste) and 20 (Material Assets – Services) shall be implemented in full during the construction and / or operational phases of the proposed development, as specified in those respective chapters. Beyond that which has been recommended elsewhere in this EIAR, **no additional monitoring is considered necessary in respect of population and human health.** |
| Operational | Monitoring and maintenance recommended in Chapters 11 (Air Quality), 13 (Noise & Vibration), 14 (Landscape & Visual), 18 (Traffic & Transportation), 19 (Material Assets - Waste) and 20 (Material Assets – Services) shall be implemented in full during the construction and / or operational phases of the proposed development, as specified in those respective chapters. Beyond that which has been recommended elsewhere in this EIAR, **no additional monitoring is considered necessary in respect of population and human health.** |

### 23.3.2 Biodiversity

Table 23.4 Mitigation Measures - Biodiversity

| Ref. | Mitigation Measure |
|---|---|
| Construction Phase | |
| BIO01 | As set out in the Landscape Architecture Design Report, prepared by TPHC and submitted as part of this application under separate cover, a significant amount of new planting has been incorporated into the landscape design, and the planting has been designed with a view to maximising the new biodiversity resource at the proposed development site. The proposed planting/landscaping strategy includes a mix of appropriate species, incorporating species that will attract feeding invertebrates, including moths, butterflies and bees. It takes account of the All-Ireland Pollinator Plan (2021 – 2025)[37] as published by the National Biodiversity Data Centre. The proposed planting schedule as set out in the Landscape Architecture Design Report contains no invasive species and none will be introduced, either deliberately or inadvertently, to the proposed development site. Biosecurity measures will be included in the final CMP by the appointed contractor. |
| BIO02 | **Nesting Birds**<br>Where feasible and practicable, the clearance of scrub and other vegetation that may be suitable for use by nesting birds will be undertaken outside the bird nesting season (avoiding the period 1 March to 31 August). Should the construction programme require vegetation clearance between March and August, bird nesting surveys will be undertaken by suitably qualified ecologists. If no active nests are recorded, vegetation clearance will take place within 24 hours. In the event that active nests are observed, an appropriately sized buffer zone (up to 5 m radius around the nest) will be maintained around the nest until such time as all the eggs have hatched and the birds have fledged – a period that may be three weeks from the date of the survey. Once it is confirmed that the birds have fledged and no further nests have been built or occupied, vegetation clearance may take place immediately. |
| BIO03 | **Bat / Bird Boxes**<br>Notwithstanding the non-existent roosting potential of the site, it is proposed to install bat (and bird) boxes both within the proposed development. The reason for the installation of habitat boxes is not to provide replacement roosts/nesting; rather, it is to augment the overall ecological |

[37] NBDC (2021)

| Ref. | Mitigation Measure |
|---|---|
| | value of the site. This will contribute to maximising the ecological value of the proposed development.<br>To that end a number of bat and bird boxes will be erected, with advice from the Project Ecologist, in appropriate areas. The boxes proposed are as follows (this list is subject to revision based on the availability of suitable boxes in the future):<br>■ Bat boxes proposed by the bat specialist (see also Appendix 8.1)<br>□ 6 no. Schwegler 2F with double front panel or similar;<br>□ 2 no. Eco bat boxes (wooden);<br>■ Additional boxes proposed in this chapter:<br>□ 4 no. Schwegler 1MF combined bat and swift boxes or similar (to be located within the facades of four of the taller buildings proposed);<br>□ 6 no. assorted wooden or woodcrete bird boxes, suitable for use by robins, blue tits and tree creepers.<br>□ 10 no. insect hotels, to be distributed through the landscaped areas, as advised by the project ecologist during the construction phase.<br>□ The landscaping for the proposed development will include a dedicated series of 2m x 2m bare soil nesting habitat areas for mining solitary bees with locations to be confirmed by the project ecologist during the construction phase.<br>The installation of boxes that can accommodate swifts will increase the available nesting potential of the proposed development site for this species, which has not been recorded at the subject site, and which has undergone significant decline in recent years[38], and has now been placed on the red list of Birds of Conservation Concern in Ireland (BoCCI)[39]. |
| BIO04 | **Badgers**<br>No badger setts will be in any way affected by the proposed development, and no mitigation measures will be required for the protection of badgers. Nevertheless, a watching brief will be maintained by the project ecologist throughout the construction phase, in the event that badgers should establish a territory at the site. |
| BIO05 | **Wetlands**<br>Any ponds/wet areas found (although there are none on the site at present) will be inspected by a suitably experienced ecologist prior to works being undertaken. Should any frog spawn or tadpoles be discovered, a licence to remove frog spawn may be required from NPWS. |
| BIO06 | **Other Hydrology**<br>The surface water mitigation measures proposed in Chapter 10 (Hydrology), prepared by AWN Consulting and in the Surface Water Management Plan and Outline Construction Management Plan, prepared by CS Consulting (all submitted as part of this application under separate cover), will ensure that no sediment contamination, contaminated run-off or untreated wastewater will enter any on-site surface water drains and, in particular, the River Mayne as a result of the construction of the proposed development. |
| BIO07 | **Air Quality & Dust**<br>The measures set out in Chapter 11 (Air Quality) of this EIAR will be implemented to ensure that no air-related impacts arise on biodiversity. No further mitigation measures, in the context of biodiversity, are required. |
| Operational Phase | |
| BIO08 | **Lighting** |

[38] Swift Conservation Ireland
[39] Gilbert *et al*. (2021)

| Ref. | Mitigation Measure |
|---|---|
| | The lighting for the proposed development has been designed in accordance with the following guidelines:<br>■ Bats and Lighting – Guidance Notes for Planners, Engineers, Architects and Developers (Bat Conservation Ireland, 2010)[40];<br>■ Bats and Artificial Lighting at Night, Institute of Lighting Professionals, 2023[41];<br>■ Guidance Notes for the Reduction of Obtrusive Light GN01-21 (Institute of Lighting Professionals, 2021)[42];<br>■ Dark Sky Ireland's Environmentally Friendly Lighting Guide[43],<br>■ Guidelines for consideration of bats in lighting projects (Eurobats Publication Series No 8, 2018)[44].<br>The proposed lighting will have the following characteristics:<br>■ The minimum level of lighting will be provided within the developed areas, within the lux level criteria required by Dublin City Council.<br>■ No flood lighting will be provided within the proposed development, and all light fittings will be LED and are designed to shine downwards and will avoid sky glow and light spill.<br>■ Lighting will be directed onto the working areas only – and away from retained woodland areas, which will be retained as dark areas, within the requirements of Dublin City Council. |
| BIO09 | The proposed development is designed in accordance with the principles of Sustainable Drainage Systems (SuDS) as embodied in the recommendations of the Greater Dublin Strategic Drainage Study (GDSDS), which addresses the issue of sustainability by requiring designs to comply with a set of drainage criteria which aim to minimize the impact of urbanization, by replicating the run-off characteristics of the greenfield site. The criteria provide a consistent approach to addressing the increase in both rate and volume of run-off, as well as ensuring the environment is protected from any pollution from roads and buildings. No corresponding mitigation measures are required. The proposed surface water design is also in line with the following standards:<br>■ The Greater Dublin Strategic Drainage Study (GDSDS) 2005, Volume 2<br>■ The Greater Dublin Regional Code of Practice for Drainage Works 2006<br>■ British Standard BS EN 752:2008 (Drains and Sewer Systems Outside Buildings)<br>■ Part H of the Building Regulations (Building Drainage).<br>■ Nature based solutions to the management of rainwater and surface water runoff in urban areas by the Department of Housing Local Government and Heritage<br>■ Dublin City Council Sustainable Drainage Design & Evaluation Guide 2021<br>■ Dublin City Council Green & Blue Roof Guide 2021 |

## Table 23.5 Monitoring – Biodiversity

| Phase | Monitoring Measure |
|---|---|
| Construction | A suitably experienced Project Ecologist (Ecological Clerk of Works) will be appointed for the duration of the construction phase and regular monitoring of all related works will take place to ensure the correct and full implementation of all mitigation measures. The Project Ecologist will ensure that all construction works take place in accordance with the Outline Construction |

[40] https://www.batconservationireland.org/wp-content/uploads/2013/09/BCIrelandGuidelines_Lighting.pdf
[41] https://theilp.org.uk/publication/guidance-note-8-bats-and-artificial-lighting/
[42] https://theilp.org.uk/publication/guidance-note-1-for-the-reduction-of-obtrusive-light-2021/
[43] https://www.darksky.ie/lighting-documents/#guidelines
[44] https://www.eurobats.org/sites/default/files/documents/publications/publication_series/WEB_DIN_A4_EUROBATS_08_ENGL_NVK_28022019.pdf

| Phase | Monitoring Measure |
|---|---|
| | Management Plan, the Surface Water Management Plan, and the mitigation measures set out in this EIAR.<br>As noted in Section 8.6.1.4, should vegetation clearance be required during the bird nesting season, this work will take place only after the Project Ecologist has undertaken a survey to ensure that no active bird nests or recently fledged birds are present. Similarly, no evidence of roosting bats was recorded on the site during any of the comprehensive bat surveys. |
| Operational | No long-term ecological monitoring is required, other than post-construction monitoring of the bat and bird boxes installed. The bat and bird boxes installed on the site will be checked annually by the Project Ecologist for a period of two years post-completion of the works, to ensure that they continue to be accessible to these species.<br>On completion of construction, the lighting installed will be reviewed by the Project Ecologist and a bat specialist, to ensure that it is operating according to the approved specifications. |

### 23.3.3 Land, Soils, Geology & Hydrogeology

**Table 23.6 Mitigation Measures – Land, Soils, Geology & Hydrogeology**

| Ref. | Mitigation Measure |
|---|---|
| Construction Phase | |
| LSG01 | An Outline Construction Environmental Management Plan (OCMP) has been included with the application documentation for this EIAR. The OCMP demonstrates the applicant's commitment to implementing the proposed development in such a way as to avoid or minimise the potential environmental effects arising from construction activities.<br>The OCMP will be implemented and adhered to by the construction contractor and will be overseen and updated as required if site conditions change by the Project Manager, Environmental Manager, Resource Manager and Ecological Clerk of Works, where relevant. All personnel working on the Site will be trained in the implementation of the procedures.<br>The OCMP sets out the proposed procedures and operations to be utilised on the proposed construction site. All mitigation measures outlined here, and within the OCMP will be implemented during the construction phase, as well as any additional measures required pursuant to consent conditions which may be imposed.<br>During the project planning phase, a comprehensive emergency response plan will be developed by the construction contractor. This plan will outline a well-defined procedure for effectively managing emergencies as they arise. This emergency protocol will be disseminated to all site personnel during the site induction process. This plan will include for events such as:<br>■ Pollution incidents: These may involve spillages, the malfunction of temporary structures, embankment collapse, acts of vandalism, fires, and other related events.<br>■ Extreme weather occurrences: Events such as heavy rainfall, flooding, are important factors to consider due to their potential impact on the construction process.<br>■ The construction contractor will be required to implement emergency response procedures that align with industry best practice guidance. All personnel working on the site will be informed of the emergency procedures in place. |
| LSG02 | All excavated materials will be visually assessed by suitably qualified persons for signs of possible contamination such as staining or strong odours. Should any unusual staining or odour be noticed, samples of this soil will be analysed for the presence of potential contaminants to ensure that historical pollution of the soil has not occurred. Should it be determined that any of the soil excavated is contaminated, this will be segregated and appropriately disposed of by a suitably permitted/licensed waste disposal contractor. |

| Ref. | Mitigation Measure |
|---|---|
| | It is predicted that c. 1,500 m3 of soil will be excavated and transported off site. |
| LSG03 | The effects of soil stripping and stockpiling will be mitigated through the implementation of an appropriate earthworks handling protocol during construction. Contractors will prepare and adhere to a method statement indicating the extent of the areas likely to be affected and demonstrating that this is the minimum disturbance necessary to achieve the required works. |
| LSG04 | Dust suppression measures (e.g. damping down during dry periods), vehicle wheel washes, road sweeping, and general housekeeping will ensure that the surrounding environment are free of nuisance dust and dirt on roads. |
| LSG05 | All imported fill and aggregate that may be required for the proposed development will be sourced from reputable suppliers. All suppliers will be vetted for:<br>■ Aggregate compliance certificates/declarations of conformity for the classes of material specified for the proposed development;<br>■ Environmental Management status; and<br>■ Regulatory and Legal Compliance status of the Company |
| LSG06 | Concrete/Cement<br>Where feasible all ready-mixed concrete will be brought to site by truck. A suitable risk assessment for wet concreting will be completed prior to works being carried out which will include measures to prevent discharge of alkaline wastewaters or contaminated storm water to the underlying subsoil.<br>No wash-down or wash-out of ready-mix concrete vehicles during the construction works will be carried out at the site within any riparian or buffer zone. Wash-outs will only be allowed to take place in designated areas with an impervious surface where all wash water is contained and removed from site by road tanker or discharged to foul sewer subject to agreement with Uisce Éireann (Irish Water).<br>The construction contractor will be required to implement emergency response procedures, and these will be in line with industry guidance. Relevant personnel working on the site will be suitably trained in the implementation of the procedures. |
| LSG07 | Fuel/Chemical Handling<br>The following mitigation measures will be taken at the construction stage in order to prevent any spillages to ground of fuels and prevent any resulting soil and/or water quality impacts:<br>■ Designation of a bunded refuelling areas on the site if refuelling cannot be undertaken off site.<br>■ Provision of spill kit facilities across the site.<br>■ Where mobile fuel bowsers are used, the following measures will be taken:<br>□ Any flexible pipe, tap or valve will be fitted with a lock and will be secured when not in use;<br>□ The pump or valve will be fitted with a lock and will be secured when not in use;<br>□ All bowsers to carry a spill kit and relevant operatives will have spill response training;<br>□ Portable generators or similar fuel containing equipment will be placed on suitable drip trays.<br>In the case of drummed fuel or other potentially polluting substances which may be used during construction the following measures will be adopted:<br>■ Secure storage of all containers that contain potential polluting substances in a dedicated internally bunded chemical storage cabinet unit or inside a concrete bunded area.<br>■ Clear labelling of containers so that appropriate remedial measures can be taken in the event of a spillage.<br>■ All drums to be quality approved and manufactured to a recognised standard.<br>■ If drums are to be moved around the site, they will be secured and on spill pallets; and |

| Ref. | Mitigation Measure |
|---|---|
| | ■ Drums to be loaded and unloaded by competent and trained personnel using appropriate equipment.<br>Refuelling of construction vehicles and the addition of hydraulic oils or lubricants to vehicles will take place in designated bunded refuelling areas, which will be away from surface water gulleys or drains. In the event of a machine requiring refuelling outside of this area, fuel will be transported in a mobile double skinned tank. An adequate supply of spill kits and hydrocarbon adsorbent packs will be stored in this area. All relevant personnel will be fully trained in the use of this equipment. Guidelines such as "Control of Water Pollution from Construction Sites, Guidance for Consultants and Contractors" (CIRIA 532, 2001) will be complied with. |
| LSG08 | There will be comprehensive emergency response procedures and standard operating procedures to respond to chemical spillage of all types. All employees will be provided with such equipment, information, training and supervision as is necessary to implement the emergency response procedures and standard operating procedures. |
| Operational Phase | |
| LSG09 | There will be a comprehensive emergency response procedures and standard operating procedures specifically addressing fuel spillage resulting from vehicle leakages. All employees will be provided with appropriate personal protective equipment, spill containment materials, and training in the safe and effective management of vehicle fuel leaks. This includes clear instructions for immediate containment, reporting, and cleanup, as well as measures to prevent contamination of soil, surface water, and groundwater. Employees will receive regular supervision, guidance, and refresher training to ensure the emergency response procedures and standard operating procedures are effectively implemented in the event of vehicle-related fuel spillage. |
| LSG10 | Fuel Storage<br>Spill kit facilities will be provided, and all operatives must be trained in their correct use, to effectively manage any leaks from vehicle fuel storage. Emergency response procedures and standard operating procedures will be established to ensure that fuel leakages from vehicles are contained and cleaned up, thereby minimizing the risk of contamination to soil, surface water, and groundwater. Regular training, supervision, and refresher sessions will be conducted to ensure that operatives are fully capable of implementing these measures and maintaining environmental protection standards throughout the operational phase. |
| LSG11 | A significant proportion of the development area will be covered in hardstand. This provides protection to the underlying soil and aquifer but also reduces local recharge in this area of the aquifer.<br>The proposed incorporation of hardstand areas and SuDS design measures may slightly reduce local groundwater recharge and increase runoff if not properly managed, potentially causing flooding and affecting downstream environments. However, the overall impact on the groundwater regime is expected to be non significant due to the site's small area relative to the total aquifer, and construction will avoid areas with localized flooding to mitigate flood risks.<br>To mitigate these risks, the design of the development and its drainage infrastructure will ensure that runoff rates are restricted to those of greenfield conditions. The development will incorporate SuDS and an attenuation system. The proposed surface water management strategy aims to prevent surcharging during a 1 in 2-year storm events up to and including the 1 in 100 years plus allowance for climate change.<br>Furthermore, there are no proposed surface water or groundwater abstractions, eliminating potential impacts on the quantity of surface water or groundwater resources. |

Table 23.7 Monitoring – Land, Soils, Geology & Hydrogeology

| Phase | Monitoring Measure |
|---|---|
| Construction | During construction phase the following monitoring measures will be considered. Monitoring will be undertaken in accordance with planning conditions and undertaken by the contractor in compliance with the project OCMP.<br>Contractors will carry out regular inspections to confirm compliance with the OCMP. Daily inspections by contractors will address potential environmental impacts including dust, litter, waste management and general housekeeping. |
| Operational | No future monitoring is proposed for the proposed development due to the low hazard potential at the site. |

### 23.3.4 Hydrology

Table 23.8 Mitigation Measures – Hydrology

| Ref. | Mitigation Measure |
|---|---|
| Construction Phase | |
| HYD01 | Outline Construction Management Plan (OCMP)<br>The OCMP outlines and explains the construction techniques and methodologies which will be implemented during construction of the proposed development.<br>The OCMP sets out the proposed procedures and operations to be utilised on the proposed construction site to protect water quality. The OCMP will be implemented and adhered to by the construction contractor and will be overseen and updated as required if site conditions change by the Project Manager, Environmental Manager and Ecological Clerk of Works where relevant. All personnel working on the site will be trained in the implementation of the procedures. All relevant personnel will be fully trained in the use of this equipment. Guidelines such as "Control of Water Pollution from Construction Sites, Guidance for Consultants and Contractors" (CIRIA 532, 2001) will be complied with. |
| HYD02 | Run off and Suspended Solids<br>As there is potential for run-off to indirectly discharge to a watercourse (Mayne River, Mayne Estuary Transitional Waterbody and eventually Irish Sea), in order to manage the potential impact associated with sediment and sediment runoff the following mitigation measures will be implemented during the construction phase.<br>▪ During earthworks and excavation works care will be taken to ensure that exposed soil surfaces are stable to minimise erosion. All exposed soil surfaces will be within the excavation site which limits the potential for any offsite impacts.<br>▪ Silt reduction measures on site will include a combination of silt traps and hydrobrakes (vortex flow control devices) measures.<br>▪ Any hard surface site roads will be swept to remove mud and aggregate materials from their surface while any unsurfaced roads shall be restricted to essential site traffic only.<br>▪ Aggregate materials such as sands and gravels will be stored in clearly marked receptacles within a secure compound area to prevent contamination.<br>▪ Movement of material will be minimised to reduce the degradation of soil structure and generation of dust.<br>▪ Excavations will remain open for as little time as possible before the placement of fill. This will help to minimise the potential for water ingress into excavations.<br>Weather conditions will be considered when planning construction activities to minimise the risk of run-off from the site. |
| HYD03 | Cement/Concrete |

| Ref. | Mitigation Measure |
|---|---|
| | Where feasible all ready-mixed concrete will be brought to site by truck. A suitable risk assessment for wet concreting will be completed prior to works being carried out which will include measures to prevent discharge of alkaline wastewaters or contaminated storm water to the underlying subsoil and aquifer.<br>Wash-outs will only be allowed to take place in designated areas with an impervious surface where all wash water is contained and removed from site by road tanker.<br>The construction contractor will be required to implement emergency response procedures, and these will be in line with industry guidance. Relevant personnel working on the site will be suitably trained in the implementation of the procedures. |
| HYD04 | Hydrocarbons<br>To prevent any spillages to ground of fuels and other construction chemicals on surface water systems, the following mitigation measures will be implemented:<br>■ Designation of bunded refuelling areas on the site;<br>■ Provision of spill kit facilities across the site;<br>■ Where mobile fuel bowsers are used, the following measures will be taken:<br>□ Any flexible pipe, tap or valve will be fitted with a lock and will be secured when not in use;<br>□ The pump or valve will be fitted with a lock and will be secured when not in use;<br>□ All bowsers to carry a spill kit and relevant operatives must have spill response training;<br>□ Portable generators or similar fuel containing equipment will be placed on suitable drip trays.<br>In the case of drummed fuel or other potentially polluting substances which may be used during the construction phase, the following measures will be adopted:<br>■ Secure storage of all containers that contain potential polluting substances in a dedicated internally bunded chemical storage cabinet unit or inside a concrete bunded area;<br>■ Oil and fuel storage tanks shall be stored in designated areas, and these areas shall be stored within temporary bunded areas, doubled skinned tanks or bunded containers to a volume of 110% of the capacity of the largest tank/container. Drainage from the bunded area(s) shall be diverted for collection and safe disposal.<br>■ Clear labelling of containers so that appropriate remedial measures can be taken in the event of a spillage;<br>■ All drums to be quality approved and manufactured to a recognised standard;<br>■ If drums are to be moved around the site, they will be secured and on spill pallets; and<br>■ Drums will be loaded and unloaded by competent and trained personnel using appropriate equipment.<br>In addition to the measures above, all excavated materials will be visually assessed by suitably qualified persons for signs of possible contamination such as staining or strong odours. Should any unusual staining or odour be noticed, samples of this soil will be analysed for the presence of potential contaminants to ensure that historical pollution of the soil has not occurred. Should it be determined that any of the soil excavated is contaminated, this will be segregated and appropriately disposed of by a suitably permitted/licensed waste disposal contractor. |
| HYD05 | Wastewater<br>Foul wastewater arising from the site will be managed and controlled for the duration of the construction works.<br>Foul water from the offices and welfare facilities on the site will be collected in portable sanitary facilities and disposed of appropriately by a licenced contractor. |
| HYD06 | Surface Water Flow |

| Ref. | Mitigation Measure |
|---|---|
| | Surface water discharge from the site will be managed and controlled for the duration of the construction works until the surface water drainage system of the proposed development is complete.<br>The construction contractor will be required to manage suspended solids during the construction phase, and only treated construction water will be permitted to discharge to the established stormwater network. Surface water management measures will be implemented to prevent pollution and degradation of receiving waters and habitats arising from chemical spills or run-off containing elevated levels of suspended solids. These measures will be designed and implemented in accordance with relevant guidelines and best practice, including Control of Water Pollution from Construction Sites – Guidance for Consultants and Contractors (CIRIA C532, 2001).<br>Following discharge to the downstream drainage network, surface waters will undergo dilution and mixing within the Mayne River, together with natural attenuation processes along the drainage pathway, prior to reaching the Mayne Estuary, thereby further reducing the potential for residual impacts on downstream receiving waters. |
| Operational Phase | |
| HYD07 | Surface Water Quality<br>The proposed surface water management design establishes an indirect hydrological connection to the Mayne River, located north of the site, during the operational phase.<br>To mitigate potential contamination from surface water runoff, which may originate from roads and hardstanding areas, a sustainable drainage system (SuDS) will be implemented. This system is designed to minimize the risk of contaminants, such as hydrocarbons, entering the stormwater drainage network and subsequently impacting surface water bodies like the Mayne River, which discharges to the Mayne Estuary Transitional Waterbody, and ultimately discharge to the Irish Sea, as well as the Dublin Ground Waterbody underlying the site.<br>The surface water drainage strategy integrates a range of SuDS measures, including attenuation ponds, green and blue roofs, permeable paving and filter drains. These measures will effectively manage surface water flows by directing run-off to attenuation and infiltration systems to maximise storage and treatment potential. Flow control devices will be installed downstream of attenuation pond outlet pipes to regulate discharge rates and ensure controlled release of treated surface water to the receiving environment. Following discharge, surface waters will undergo dilution and mixing within the Mayne River, together with natural attenuation processes along the drainage pathway, prior to reaching the Mayne Estuary.<br>Refer to the Engineering Services Report, prepared by CS Consulting Engineers submitted separately as part of the planning application for further information on the proposed storm water management and design. |

## Table 23.9 Monitoring – Hydrology

| Phase | Monitoring Measure |
|---|---|
| Construction | During construction phase the following monitoring measures will be implemented. Monitoring will be undertaken in accordance with planning conditions and undertaken by the contractor in compliance with the project OCMP.<br>Contractors will carry out regular inspections to confirm compliance with the OCMP. Daily inspections by contractors will address potential environmental impacts including dust, litter, waste management and general housekeeping.<br>Weekly checks will be carried out to ensure surface water drains are not blocked by silt, or other items. |

| Phase | Monitoring Measure |
|---|---|
| | Regular inspection of surface water run-off and sediments controls (e.g., silt traps). Inspection and maintenance of the silt control measures during construction phase is crucial to ensuring that they work as intended. |
| Operational | No future surface water monitoring is proposed for the proposed development due to the low hazard potential at the site.<br>Hydrocarbon interceptors will be maintained and cleaned out in accordance with the manufacturer's instructions.<br>Maintenance of the surface water drainage system as per normal urban developments is recommended to minimise any accidental discharges to surface water. |

### 23.3.5 Air Quality

#### Table 23.10 Mitigation Measures – Air Quality

| Ref. | Mitigation Measure |
|---|---|
| Construction Phase | |
| AQ01 | Communications<br>■ A stakeholder communications plan that includes community engagement before work commences on site will be developed and implemented by the Contractor.<br>■ Display the name and contact details of person(s) accountable for air quality and dust issues on the site boundary. This may be the environment manager/engineer or the site manager.<br>■ Display the head or regional office contact information. |
| AQ02 | Site Management<br>Site Management will be carried about by the contractor as appointed in the CEMP.<br>■ Record all dust and air quality complaints, identify cause(s), take appropriate measures to reduce emissions in a timely manner, and record the measures taken.<br>■ Make the complaints log available to the local authority when asked.<br>■ Record any exceptional incidents that cause dust and/or air emissions, either on- or offsite, and the action taken to resolve the situation in the log book. |
| AQ03 | Preparing and Maintaining the Site<br>■ The contractor will plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible.<br>■ Erect solid screens or barriers around dusty activities or the site boundary that are at least as high as any stockpiles on site.<br>■ Fully enclose site or specific operations where there is a high potential for dust production and the site is active for an extensive period<br>■ Avoid site runoff of water or mud.<br>■ Keep site fencing, barriers and scaffolding clean using wet methods.<br>■ Remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on site. If they are being re-used on-site cover as described below.<br>■ Cover, seed or fence stockpiles to prevent wind whipping. |
| AQ04 | Operating vehicle/machinery and sustainable travel<br>■ The contractor will ensure all vehicles switch off engines when stationary – no idling vehicles.<br>■ Avoid the use of diesel- or petrol-powered generators and use mains electricity or battery powered equipment where practicable.<br>■ Impose and signpost a maximum-speed-limit of 20 kmph on surfaced and 15 kmph on unsurfaced haul roads and work areas (if long haul routes are required these speeds may be |

| Ref. | Mitigation Measure |
|---|---|
| | increased with suitable additional control measures provided, subject to the approval of the nominated undertaker and with the agreement of the local authority, where appropriate)<br>■ Produce a Construction Logistics Plan to manage the sustainable delivery of goods and materials.<br>■ Implement a Travel Plan that supports and encourages sustainable travel (public transport, cycling, walking, and car-sharing) |
| AQ05 | Operations<br>■ Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction, e.g. suitable local exhaust ventilation systems<br>■ Ensure an adequate water supply on the site for effective dust/particulate matter suppression/mitigation, using non-potable water where possible and appropriate<br>■ Use enclosed chutes and conveyors and covered skips.<br>■ Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate.<br>■ Ensure equipment is readily available on site to clean any dry spillages and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods. |
| AQ06 | Waste management<br>Bonfires and burning of waste materials are legally prohibited. This will be enforced onsite by the contractor. |
| AQ07 | Measures Specific to Earthworks<br>■ Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable<br>■ Use Hessian, mulches or trackifiers where it is not possible to re-vegetate or cover with topsoil, as soon as is practicable.<br>■ Only remove the cover in small areas during work and not all at once. |
| AQ08 | Measures Specific to Construction<br>■ Avoid scabbling (roughening of concrete surfaces) if possible.<br>■ Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out, unless this is required for a particular process, in which case ensure that appropriate additional control measures are in place.<br>■ Ensure bulk cement and other fine powder materials are delivered in enclosed tankers and stored in silos with suitable emission control systems to prevent escape of material and overfilling during delivery.<br>■ For smaller supplies of fine powder materials, ensure bags are sealed after use and stored appropriately to prevent dust. |
| AQ09 | Measures Specific to Trackout<br>■ Use water-assisted dust sweeper(s) on the access and local roads, to remove, as necessary, any material tracked out of the site. This may require the sweeper being continuously in use.<br>■ Avoid dry sweeping of large areas.<br>■ Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport.<br>■ Inspect on-site haul routes for integrity and instigate necessary repairs to the surface as soon as reasonably practicable.<br>■ Record all inspections of haul routes and any subsequent action in a site logbook.<br>■ Install hard surfaced haul routes, which are regularly damped down with fixed or mobile sprinkler systems, or mobile water bowsers and regularly cleaned. |

| Ref. | Mitigation Measure |
|---|---|
| | ■ Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable).<br>■ Ensure there is an adequate area of hard surfaced road between the wheel wash facility and the site exit, wherever site size and layout permit.<br>■ Access gates to be located at least 10 m from receptors where possible. |
| AQ10 | Communications<br>■ Develop and implement a stakeholder communications plan that includes community engagement before work commences on site.<br>■ Display the name and contact details of person(s) accountable for air quality and dust issues on the site boundary. This may be the environment manager/engineer or the site manager.<br>■ Display the head or regional office contact information. |
| AQ11 | Site Management<br>■ Record all dust and air quality complaints, identify cause(s), take appropriate measures to reduce emissions in a timely manner, and record the measures taken.<br>■ Make the complaints log available to the local authority when asked.<br>■ Record any exceptional incidents that cause dust and/or air emissions, either on- or offsite, and the action taken to resolve the situation in the log book. |
| Operational Phase | |
| No site-specific mitigation measures are proposed for the operational phase as impacts are predicted to be not significant. | |

## Table 23.11 Monitoring – Air Quality

| Phase | Monitoring Measure |
|---|---|
| Construction | The following monitoring measures are proposed to ensure the dust mitigation measures are working satisfactorily:<br>■ Undertake daily on-site and off-site inspections, where receptors (including roads) are nearby, to monitor dust, record inspection results in the site inspection log. This should include regular dust soiling checks of surfaces such as street furniture, cars and windowsills within 100 m of site boundary, with cleaning to be provided if necessary.<br>■ Increase the frequency of site inspections by the person accountable for air quality and dust issues on site when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions.<br>■ Monitoring of construction dust deposition along the site boundary to nearby sensitive receptors during the construction phase of the proposed development is recommended to ensure mitigation measures are working satisfactorily. This can be carried out using the Bergerhoff method in accordance with the requirements of the German Standard VDI 2119. The Bergerhoff Gauge consists of a collecting vessel and a stand with a protecting gauge. The collecting vessel is secured to the stand with the opening of the collecting vessel located approximately 2m above ground level. The TA Luft limit value is 350 mg/m$^2$/day during the monitoring period of 30 days (+/- 2 days). Monitoring shall ensure that the dust mitigation measures are working satisfactorily as construction works progress. |
| Operational | There is no monitoring recommended for the operational phase of the proposed development as impacts to air quality are predicted to be not significant. |

### 23.3.6 Climate

**Table 23.12 Mitigation Measures – Climate**

| Ref. | Mitigation Measure |
|---|---|
| **Construction Phase** | |
| CL01 | **GHG**<br>Embodied carbon of materials and construction activities will be the primary source of climate impacts during the construction phase. During the construction phase the following best practice measures shall be implemented on site to prevent significant GHG emissions and reduce impacts to climate:<br>■ Prevention of on-site or delivery vehicles from leaving engines idling, even over short periods.<br>■ Ensuring that fossil fuel powered plant and equipment meet European emission standards.<br>■ Ensuring, where practicable, that site vehicles and delivery vehicles meet the required European standards for emissions of road vehicles.<br>■ Ensure all plant, machinery and vehicles are well maintained and inspected regularly by the relevant contractors.<br>■ Specifying electrically powered plant and equipment where practicable and using grid connections for electric power when practicable instead of fossil fuel powered generators. |
| **Operational Phase** | |
| CL02 | **GHG**<br>A number of mitigation measures have been incorporated into the design of the development to reduce the impact on climate wherever possible. A Climate Action and Energy Statement and a Site Energy and Heating Statement were prepared by EDC in relation to the proposed development.<br>The Climate Action and Energy Statement states that the development will be a Nearly Zero Energy Building (NZEB) in accordance with the 2022 Part L requirements.<br>The residential units will aim to achieve an A2/A3 rated Building Energy Ratio (BER) in line with the NZEB requirements. The development shall include several energy conservation measures to achieve a high energy rating as outlined in the Climate Action Energy Statement:<br>■ Buildings to be constructed with walls external walls achieving a maximum U-value of 0.18W/m²K for residential properties and 0.21 W/m²K for non-residential buildings<br>■ A thermal bridging factor of 0.15 to be achieved for all buildings assuming Acceptable Construction Details are adhered to<br>■ A design air permeability target of 5 m³/hr/m² @ 50 Pa should be achieved for residential buildings<br>■ Space heating to be undertaken using centralised air to water air source heat pumps (ASHP) with Heating Interface Units (HIU) in each dwelling<br><br>A number of sustainable design features have been considered within the design to achieve the sustainability targets of the proposed development. These include:<br>■ The proximity of the development to public transportation networks<br>■ The proximity of the proposed development to active travel networks and car sharing locations<br>■ Installation of infrastructure for electric vehicle (EV) charging for buildings with more than ten car parking spaces to allow for future installation of EV charging points duct infrastructure if sufficient to allow installation<br>■ Water efficiency measures such as low consumption sanitary fittings |

| Ref. | Mitigation Measure |
|---|---|
| | ■ Improved indoor environmental quality through effective insulation and appropriate ventilation<br><br>The above measures will assist in optimising the energy consumed by the development and will also have the benefit of reducing the impact to climate during the operational phase of the development. |
| CL03 | **Climate Risk – Extreme Temperatures**<br>Extreme temperatures, both hot and cold, can affect building materials and infrastructure; however, the development has been designed as outlined in Part L 2022 (Dwellings). Masonry Construction: Brick and blockwork are designed to BS EN 771: Part 1, BS EN 1996 (Eurocode 6: Design of masonry structures), and BS EN 1991: Parts 1-5 (thermal actions). Movement joints accommodate thermal expansion/contraction per manufacturer recommendations.<br>Surface temperatures and condensation risk have been assessed per BS 5250 and BS EN 15026 to ensure material durability under varying temperature and humidity conditions. Thermal bridge-free construction detailed in accordance with BS EN ISO 6946, BS EN ISO 10077-1 and BS EN ISO 10077-2. Passive House quality assurance protocols will be implemented throughout construction to verify thermal performance. Building materials have been selected to withstand extreme temperatures in accordance with current standards and Passive House Requirements.<br>Further, landscaping and public realm design will consider elevated temperatures such as those projected and extreme temperatures +30oC will be accommodated by the design through selection of species that will not demand excessive water input.<br>Utilities are expected to be buried or not exposed for thermal protection, and any substation cooling systems will be designed for RCP4.5 and RCP8.5 scenarios with capacity for future upgrades. Following the mitigation measures set out here and in more detail within the CRVA, there is no residual risk from extreme temperatures. |
| CL04 | **Climate Risk – High Precipitation and Flooding**<br>The Site-Specific Flood Risk Assessment (SSFRA) from 2025 conducted by CS Consulting discussed that the Office of Public Works flooding database has no record of pluvial flooding occurring at the location of the proposed development.<br>The SSFRA shows the majority of the site is unlikely to experience significant pluvial flooding. However, the southern portion of the site may be subject to pluvial flooding with depths exceeding approximately 2m. In view of the local topography, which is characterised by a general slight fall to the north, the subject site is deemed to be at no significant risk of pluvial flooding.<br>In discussions with DCC Drainage Division, it has been discussed that surface water runoff from the proposed development shall be attenuated separate to the existing local surface water drainage network, this shall provide additional resilience and attenuation capacity. Further, the development attenuation volume has been sized to accommodate the 1:100 year rainfall event with an additional 20% allowance to accommodate climate change effects.<br>Blue Roofs will be implemented to the development podium areas. These shall be supplemented by SuDS devices such as tree pits, permeable paving and bioretention areas at street level.<br>As a result of the above measures, high precipitation is a low risk to the proposed development. |
| CL05 | **Climate Risk – Extreme Wind**<br>In relation to extreme winds, residential buildings and urban infrastructure are generally impacted by flying debris rather than direct impacts of extreme weather. Within building management plans, scheduled inspections will be included by a building surveyor to confirm no issues or damage related to wind or storms within the building structures including the roof. Where maintenance is deemed required, it will be promptly completed to ensure the building is resilient to future storm events. |

| Ref. | Mitigation Measure |
|---|---|
| | Trees will be guyed and anchored in place, so as to ensure safe placement and reducing risk of movement once planted. The mechanical strategy is for a decentralised system with all equipment enclosed in each apartment so therefore we will have no mechanical equipment on the roof. |

### Table 23.13 Monitoring – Climate

| Phase | Monitoring Measure |
|---|---|
| Construction | Monitoring and reporting of the embodied carbon in the construction phase will be conducted. The aim of monitoring will be to seek further ways to minimise climate impacts. Monitoring will include contractual obligations, in line with the most recent Climate Action Plan and sectoral targets, for the successful tenderer to ensure that the proposed development stays in line with updated aims. Commitments to monitor GHG emissions during the construction phase will also be secured through the final Construction Environmental Management Plan (CEMP). Monitoring will include embodied carbon of construction materials, water usage, power and fuel usage, and waste generation (including reuse and recycling rates). Where monitoring shows that the proposed development is not meeting its targets, further mitigation will be put in place.<br>Monitoring should also include reviewing potential for extreme weather events which may cause damage during construction. Contractors' Environmental Management System (EMS) will include measures to address risks during such events i.e. flooding. |
| Operational | There are no proposed monitoring requirements associated with the operational phase of the proposed Development. |

## 23.3.7 Noise & Vibration

### Table 23.14 Mitigation Measures – Noise & Vibration

| Ref. | Mitigation Measure |
|---|---|
| Construction Phase | |
| NV01 | The Contractor undertaking the construction of the works will be obliged to take specific noise abatement measures and comply with the recommendations of BS 5228-1:2009+A1:2014 Code of Practice for Noise and Vibration Control on Construction and Open Sites - Noise and the European Communities (Noise Emission by Equipment for Use Outdoors) Regulations, 2001. These measures will ensure that:<br>■ No plant used on site will be permitted to cause an ongoing public nuisance due to noise;<br>■ The best means practicable, including proper maintenance of plant, will be employed to minimise the noise produced by on site operations;<br>■ All vehicles and mechanical plant will be fitted with effective exhaust silencers and maintained in good working order for the duration of the contract;<br>■ Compressors will be attenuated models fitted with properly lined and sealed acoustic covers which will be kept closed whenever the machines are in use and all ancillary pneumatic tools shall be fitted with suitable silencers;<br>■ Machinery that is used intermittently will be shut down or throttled back to a minimum during periods when not in use;<br>■ Any plant, such as generators or pumps that is required to operate outside of normal permitted working hours will be surrounded by an acoustic enclosure or portable screen; |

| Ref. | Mitigation Measure |
|---|---|
| | BS 5228 -1:2009+A1 2014 includes guidance on several aspects of construction site practices, which include, but are not limited to:<br>■ Selection of quiet plant<br>■ Control of noise sources<br>■ Screening<br>■ Hours of work<br>■ Liaison with the public<br>Further comment is offered on these items in Section 13.5, however specific control measures relating to construction activities undertaken by the contractor will be set out within the Construction Environmental Management Plan (CEMP) to be prepared in advance of the works. Noise control measures that will be considered include the selection of quiet plant, enclosures and screens around noise sources, limiting the hours of work and noise monitoring. The contractor will be required to conduct construction noise predictions prior to works taking place and put in place the most appropriate noise control measures depending on the level of noise reduction required at any one location. |
| NV02 | The potential for any item of plant to generate noise will be assessed prior to the item being brought onto the site. The least noisy item of plant will be selected wherever possible. Should a particular item of plant already on the site be found to generate high noise levels, the first action will be to identify whether or not said item can be replaced with a quieter alternative.<br>For static plant such as compressors and generators used at work areas such as construction compounds etc., the units will be supplied with manufacturers' proprietary acoustic enclosures where possible. |
| NV03 | In order to reduce noise levels during the works phases with highest noise levels (site clearance, demolition, ground breaking etc.) when occurring along the closest boundaries, the contractor will evaluate the choice of excavation, breaking or other working method taking into account various ground conditions and site constraints. Where possible, where alternative lower noise generating equipment that would economically achieve, in the given ground conditions, equivalent structural / excavation / breaking results, these will be selected to minimise potential disturbance. |
| NV04 | If replacing a noisy item of plant is not a viable or practical option, t will be attempted to control noise at source. This refers to the modification of an item of plant, or the application of improved sound reduction methods in consultation with the supplier or the best practice use of equipment and materials handling to reduce noise.<br>■ For mobile plant items such as cranes, dump trucks, excavators and loaders, the installation of an acoustic exhaust and/or maintaining enclosure panels closed during operation can reduce noise levels by up to 10 dB. Mobile plant will be switched off when not in use and not left idling;<br>■ For piling plant, noise reduction can be achieved by enclosing the driving system in an acoustic shroud. For steady continuous noise, such as that generated by diesel engines, it is possible to reduce the noise emitted by fitting a more effective exhaust silencer system or utilising an acoustic canopy to replace the normal engine cover;<br>■ For percussive tools such as pneumatic concrete breakers, a number of noise control measures include fitting muffler or sound reducing equipment to the breaker 'tool' and ensuring any leaks in the air lines are sealed if necessary. Erection of localised screens around breaker or drill bit when in operation in close proximity to noise sensitive boundaries are other suitable forms of noise reduction; |

| Ref. | Mitigation Measure |
|---|---|
| | ■ For all materials handling, the contractor will ensure that best practice site noise control measures are implemented including ensuring that materials are not dropped from excessive heights and drop chutes/dump trucks are lined with resilient materials, where relevant.<br>■ Where compressors, generators and pumps are located in areas in close proximity to noise sensitive properties/ areas and have potential to exceed noise criterion, these will be surrounded by acoustic lagging or enclosed within acoustic enclosures providing air ventilation;<br>■ Resonance effects in panel work or cover plates can be reduced, if required, through stiffening or application of damping compounds; rattling and grinding noises can be controlled by fixing resilient materials in between the surfaces in contact;<br>■ Demountable enclosures can also be used, as required, to screen operatives using hand tools and may be moved around site as necessary;<br>■ All items of plant will be subject to regular maintenance. Such maintenance can prevent unnecessary increases in plant noise and can serve to prolong the effectiveness of noise control measures. |
| NV05 | Noise screening will be used where possible to reduce the nose level at receiver locations.<br>■ The length of the screen should in practice be at least five times the height, however, if shorter sections are necessary then the ends of the screen will be wrapped around the source. BS 5228 -1:2009+A1 states that on level sites the screen should be placed as close as possible to either the source or the receiver. The construction of the barrier will be such that there are no gaps or openings at joints in the screen material. In most practical situations the effectiveness of the screen is limited by the sound transmission over the top of the barrier rather than the transmission through the barrier itself. In practice, screens constructed of materials with a mass per unit of surface area greater than 10kg/m2 will give adequate sound insulation performance.<br>■ Careful planning of the site layout will also be considered. The placement of temporary site buildings such as offices and stores between the site and sensitive locations can provide a good level of noise screening during the phasing of works. |
| NV06 | Hours of Work<br>Construction noise impacts will be controlled through strict working hours. Construction activity will take place during the following periods:<br>■ Monday – Friday: 07:00 – 18:00;<br>■ Saturday: 08:00 – 14:00;<br>It may be necessary to work outside of these hours for example during service diversion works, concrete finishing and fit out works etc.<br>Consideration will be given to the scheduling of activities in a manner that reflects the location of the site and the nature of neighbouring properties. Each potentially noisy event/activity will be considered on its individual merits and scheduled according to its noise level, proximity to sensitive locations and possible options for noise control. |
| NV07 | Clear forms of communication will be established between the contractor and noise sensitive areas in proximity so that residents or building occupants are aware of the likely duration of activities likely to generate higher noise or vibration.<br>The duration of piling, excavation, breaking and other high noise or vibration activities works is usually short in relation to the length of construction work as a whole, and the amount of time spent working near to sensitive areas can represent only a part of the overall period. Subjective |

| Ref. | Mitigation Measure |
|---|---|
| | impacts during these phases can be significantly reduced if timelines and potential impacts are known in advance.<br>A designated noise liaison officer will be appointed to site during construction works. All noise complaints will be logged and followed up in a prompt fashion by the liaison officer. |
| NV08 | In the case of vibration levels giving rise to human discomfort, in order to minimise such impacts, the following measures shall be implemented during the construction period:<br>■ A clear communication programme will be established to inform adjacent building occupants in advance of any potential intrusive works which may give rise to vibration levels likely to exceed perceptible levels. The nature and duration of the works will be clearly set out in all communication circulars;<br>■ Alternative less intensive working methods and/or plant items shall be employed, where feasible;<br>■ Appropriate vibration isolation shall be applied to plant, where feasible;<br>Monitoring will be undertaken by the contractor as appointed in the CEMP at identified sensitive buildings, where proposed works have the potential to be at or exceed the vibration limit values. |
| Operational Phase | |
| NV09 | With consideration at the detailed design stage, the selection and location of plant items within the proposed development and associated buildings will ensure that noise emissions from any mechanical and electrical building services plant do not exceed the relevant noise criteria within Section **Error! Reference source not found.** and the thresholds defined in Section **Error! Reference source not found.** of this EIAR. In addition, noise emissions should be broadband in nature and should not contain any tonal or impulsive elements. Screening may be required for air source heat pumps, this will be determined at design stage when appropriate equipment has been selected for the project. |
| NV10 | An inward noise impact has been undertaken and indicates that upgraded acoustic glazing are required. A specification for façade sound insulation is provided in Section **Error! Reference source not found.** that illustrates that the required internal noise levels are achievable. Note that Alternative combinations of glazing systems may also satisfy the internal noise criteria, and final selections will depend on products available on the market at the time of construction. Consequently, these specifications may change as the project progresses, but the overriding requirement is that the internal noise criteria is met. |

### Table 23.15 Monitoring – Noise & Vibration

| Phase | Monitoring Measure |
|---|---|
| Construction | During the construction phase, the contractor for each site will carry out noise monitoring at representative NSLs to evaluate and inform the requirement and / or implementation of noise management measures. Noise monitoring will be conducted in accordance with ISO 1996–1 (ISO 2016) and ISO 1996–2 (ISO 2017). |
| Operational | There are no proposed monitoring requirements associated with the operational phase of the proposed Development. |

## 23.3.8 Landscape & Visual

### Table 23.16 Mitigation Measures – Landscape & Visual

| Ref. | Mitigation Measure |
|---|---|
| Construction Phase | |
| No mitigation measures other than best practice construction site management are proposed. | |
| Operational Phase | |
| The potential townscape effects during the operational phase have been classified 'significant positive'. The potential visual effects for all 16 no. viewpoints have been classified as positive or neutral. Therefore, no mitigation measures are required/recommended. | |

### Table 23.17 Monitoring – Landscape & Visual

| Phase | Monitoring Measure |
|---|---|
| Construction | No monitoring of townscape and visual effects is required. |
| Operational | No reinstatement is required post construction. |

## 23.3.9 Cultural Heritage, Archaeology & Architectural Heritage

### Table 23.18 Mitigation Measures – Cultural Heritage, Archaeology & Architectural Heritage

| Ref. | Mitigation Measure |
|---|---|
| Construction Phase | |
| No mitigation is required for the archaeological, architectural and cultural heritage resource during the construction phase. | |
| Operational Phase | |
| CH01 | Whilst no mitigation is required for the archaeological, architectural and cultural heritage resource during the operation phase, there is an opportunity to implement a heritage strategy for the development. This may include the following elements, where deemed appropriate by the local authority:<br>■ Dissemination of the results of the 2004 excavations throughout the proposed development area, with information boards regarding the excavated archaeological sites;<br>■ Provision of a historic background to the proposed development area at points through the development;<br>■ Development of place/street names that reflect the historic character of the surrounding landscape;<br>■ Physical place-making within the site that reference the historic landscape. |

### Table 23.19 Monitoring – Cultural Heritage, Archaeology & Architectural Heritage

| Phase | Monitoring Measure |
|---|---|
| Construction | The proposed development area has already been subject to full archaeological investigation and preservation by record. As such, monitoring and reinstatement is not applicable. |
| Operational | The proposed development area has already been subject to full archaeological investigation and preservation by record. As such, monitoring and reinstatement is not applicable. |

## 23.3.10 Microclimate – Daylight & Sunlight

### Table 23.20 Mitigation Measures – Microclimate- Daylight & Sunlight

| Ref. | Mitigation Measure |
|---|---|
| Construction Phase | |
| Since no impacts are predicted in relation to daylight/sunlight during the construction phase, mitigation measures are not required for this phase. | |
| Operational Phase | |
| DS01 | An imperceptible, neutral, long-term impact is anticipated for approximately 1.1% of rooms within the apartment blocks of the proposed development as per the daylight analysis, in terms of daylight levels experienced by future occupants. A no significant, neutral, long-term impact is expected for the remaining 98.9% of rooms.<br><br>The small number of rooms (no. 15) that do not meet internal daylight compliances in accordance with BRE guidelines have been mitigation through additional floor space and/or a larger private terrace. Please refer to Section 16.6 and Table 16.15 for a detailed outline of room-specific mitigation. |
| DS02 | Imperceptible impacts are anticipated in relation to the sunlight levels experienced by future occupants of the proposed development. For existing residents of adjoining properties, the assessment indicates either imperceptible or not significant impacts, based on the VSC analysis and supplementary lux level testing of worst-case rooms. Therefore, no remedial or mitigation measures are considered necessary. |

### Table 23.21 Monitoring – Microclimate- Daylight & Sunlight

| Phase | Monitoring Measure |
|---|---|
| Construction | No on-going monitoring is required in relation to daylight during the Construction Phase or the Operational Phase. |
| Operational | No on-going monitoring is required in relation to daylight during the Construction Phase or the Operational Phase. |

## 23.3.11 Microclimate – Wind

### Table 23.22 Mitigation Measures – Microclimate- Wind

| Ref. | Mitigation Measure |
|---|---|
| Construction Phase | |
| Based on professional judgement by reviewing the existing site conditions and the expected conditions once the development is in place via the CFD modelling, it is expected the wind microclimate will gradually adjust from the existing conditions to the final modelled scenario as construction progress develops. | |
| Operational Phase | |
| WI01 | Apartment Block Arrangement<br>The layout and orientation of the proposed buildings have been designed to minimise adverse wind effects across the site. The arrangement provides effective shielding of amenity areas from the prevailing south-westerly winds, primarily through the positioning of buildings within Zones 7 and 8 along the south-western boundary. Zone 9 benefits from protection due to the intervening built form of Zone 7, which acts as a wind buffer from the same prevailing direction. The inclusion of internal courtyard amenity spaces within each zone contributes to the creation of sheltered microclimates, offering reduced wind exposure and improved pedestrian comfort throughout the year. |

| Ref. | Mitigation Measure |
|---|---|
| WI02 | **Private Balconies**<br>All private balconies are considered to meet the relevant wind safety criteria, as detailed in Section 17.4.3.3.<br>Although a pedestrian comfort assessment is not mandatory for these spaces, a supplementary analysis has been carried out. This indicates that a small proportion of balconies fall within the "sitting (short duration)" comfort category. The majority of balconies within Zones 7, 8, and 9 are expected to be suitable for their intended use, with wind conditions generally falling within the 'long sitting' comfort range. A small number of balconies in Zone 7, 8 and 9, particularly those facing south-east, are expected to experience higher wind exposure.<br>The windiest conditions will likely coincide with the most adverse weather events when residents are unlikely to use the balconies. |
| WI03 | **Landscaping**<br>The landscaping has been strategically designed to mitigate increased wind speeds and to provide shelter for pedestrians at ground level and within the central courtyard spaces on the podium level. The landscaping design incorporates trees, raised planters and seating benches & tables which all act as wind mitigation measures. |

### Table 23.23 Monitoring – Microclimate- Wind

| Phase | Monitoring Measure |
|---|---|
| Construction | During the construction phase the wind conditions will gradually change from the conditions experienced in the existing environment to the conditions experienced during the operational phase. As wind comfort conditions are comfortable in both phases and no issues have been identified, no monitoring is required. |
| Operational | The proposed development has been designed to have acceptable pedestrian wind comfort conditions during the operational phase; therefore, no monitoring is required. |

## 23.3.12 Traffic & Transportation

### Table 23.24 Mitigation Measures – Traffic & Transportation

| Ref. | Mitigation Measure |
|---|---|
| Construction Phase | |
| TT01 | **HGVs**<br>All HGV construction traffic to and from the site will follow a designated route, ensuring that heavy construction vehicles avoid sensitive streets to the greatest extent possible and travel as little as possible within the city centre. Subject to final agreement between the lead Contractor and DCC (as part of the Contractor's Construction Management Plan), this designated route will require heavy construction vehicles travelling to and from the site to arrive and depart from/to the M50 motorway via R139 and Clongriffin Main Street, as shown in Figure 18.3.<br>Heavy Goods Vehicle traffic (vehicles 3.5t or over) to and from the construction site shall comprise primarily 3-axle and 4-axle lorries for the removal of spoil and construction waste, and the delivery of large structural elements or plant. |
| TT02 | **Construction Management Plan (CMP)**<br>The lead Contractor appointed for the construction of the development will be required to prepare a site-specific Construction Management Plan (CMP), including a plan for the scheduling |

| Ref. | Mitigation Measure |
|---|---|
| | and management of construction traffic, which will outline measures to be taken to mitigate the effects of construction traffic on the surrounding road network.<br>The final site-specific CMP will include the following measures for minimising construction traffic and mitigating its effects:<br>■ Limiting onsite car parking for construction operatives.<br>■ Restricting all heavy construction traffic to a designated route, ensuring that heavy construction vehicles avoid sensitive streets to the greatest extent possible and travel as little as possible within the city centre.<br>■ Conducting all loading and unloading operations within the site.<br>■ Scheduling deliveries outside of peak hour periods to avoid disturbance to surrounding pedestrian and vehicular traffic.<br>■ Staggering HGV movements to/from site to avoid site queues.<br>■ Preventing haulage vehicles travelling in convoys of more than two vehicles at any time and spacing haulage vehicles by a minimum of 250m at all times.<br>■ Installation of a wheel wash at exit from the site to prevent any dirt being carried out onto surrounding roads.<br>■ Deployment of a road sweeper as necessary to keep roads around the site clean.<br>The following specific traffic control and marshalling measures will be included in the CTMP, to minimise the potential for obstruction of surrounding streets:<br>■ At no time will construction associated vehicles be stopped or parked along haulage routes.<br>■ Haulage vehicles will not travel in convoys of greater than two vehicles at any time.<br>■ Haulage vehicles will be spaced by a minimum of 250m at all times.<br>■ At no time will haulage vehicles be parked or stopped at the entrance to the site.<br>■ All loading of excess material will occur within the site boundary.<br>■ All off-loading of deliveries will take place within the site, away from the public road and will access via the construction site access.<br>Construction vehicle movements will be minimised through:<br>■ Consolidation of delivery loads to/from the site and management of large deliveries on site to occur outside of peak periods.<br>■ Use of precast/prefabricated materials where possible.<br>■ Reuse on site of any 'cut' material generated by the construction works, where possible, through various accommodation works.<br>■ Provision of adequate storage space on site.<br>■ Development of a strategy to minimise construction material quantities as much as possible.<br>Construction personnel will be encouraged to make use of the available high-quality public transport links to the area and/or to commute by bicycle, to minimise private car trips to and from the site. To avoid problems of parking overspill on surrounding streets, parking restrictions and management measures on surrounding streets will be reviewed and implemented as necessary in agreement with local residents and Dublin City Council. |
| TT03 | **Community Liaison Officer**<br>A Designated Community Liaison Officer (DCLO) will be nominated for the proposed development, who will act as a point of contact for local residents, Dublin City Council, and An Garda Síochána. |
| Operational Phase | |
| TT04 | **Travel Plan Framework**<br>Development occupant and visitors' use of sustainable travel modes (public transport, walking, and cycling) constitutes the primary means by which the development will avoid the excessive |

| Ref. | Mitigation Measure |
|---|---|
| | generation of motor vehicle trips. As described in the Travel Plan Framework prepared in support of this planning application and provided separately, a Travel Plan Coordinator shall be appointed for the proposed development, with the remit to implement and oversee an ongoing Residential Travel Plan. |
| TT05 | **Development Servicing Management Plan**<br>The development's facilities management will prepare and implement a Development Servicing Management Plan that will specifically aim to ensure that servicing of the development can be carried out efficiently, whilst minimising both:<br>■ conflicts between vehicular servicing traffic and internal pedestrian and cyclist traffic, and<br>■ any effects on the operational performance of the surrounding road network. |
| TT06 | **Delivery Scheduling**<br>Peak hour deliveries will be discouraged throughout the development. On the basis that the AM peak is often the busiest hour for servicing, the operation of the development will spread deliveries throughout the day wherever possible. The majority of postal deliveries will be made to grouped mailboxes or to reception areas, reducing delivery time in this instance. |
| TT07 | **Waste Management**<br>The development shall provide sufficient facilities for storage and collection of segregated waste. Refuse collection will be undertaken outside of peak hours where possible, with the specific collection times being arranged with the private waste contractors to minimise the impacts on the operation of the site and of the surrounding street network. |
| TT08 | **Operational coordination, restrictions, and enforcement**<br>Facilities management shall be responsible for establishing and enforcing restrictions on the nature and scheduling of permitted vehicular servicing operations relating to the development. Facilities management shall maintain records of all large deliveries and shall coordinate with development occupants to ensure that regular scheduled servicing operations are conducted at suitable times and do not conflict with one another. Facilities management shall take enforcement measures where such operations are conducted without its approval. |
| TT09 | **Accommodating special deliveries**<br>Any special deliveries to the subject development will need to be arranged with facilities management in advance. Special deliveries are defined as unusually large items which would arrive on an infrequent basis. The delivery time and duration will be agreed with facilities management to minimise the impact upon the routine daily servicing requirements of the development and the operation of the surrounding street network. All special deliveries should be arranged for off-peak periods, where possible. |

## Table 23.25 Monitoring – Traffic & Transport

| Phase | Monitoring Measure |
|---|---|
| Construction | The site-specific CMP to be prepared by the lead Contractor shall include measures for monitoring the impact of construction traffic on the operation and condition of the surrounding street network, including remedial actions to be taken in the event of construction traffic causing damage to road infrastructure. The lead Contractor will also be required to monitor the travel habits of construction personnel and to tailor supports for public and shared transport use accordingly. Surrounding streets will be monitored to ensure that no nuisance parking associated with construction activity takes place. |
| Operational | Post-development monitoring of the surrounding street network's performance is not required or proposed in this case. |

| Phase | Monitoring Measure |
|---|---|
| | Within the scope of the Travel Plan to be implemented for the development, a Travel Plan Coordinator shall be responsible for monitoring the travel habits of development occupants and visitors. A Travel Plan is a dynamic process whereby a package of measures and campaigns is identified, piloted, and then monitored on an ongoing basis. The Travel Plan will identify specific targets against which the effectiveness of the plan can be assessed at each review; these will typically take the form of target modal splits for journeys to and from a site. The Travel Plan Coordinator shall gather data on travel patterns, for instance by conducting periodic travel surveys of development occupants. |

### 23.3.13 Material Assets – Waste

**Table 23.26 Mitigation Measures – Material Asset – Waste**

| Ref. | Mitigation Measure |
|---|---|
| **Construction Phase** | |
| WM01 | **Waste Hierarchy**<br>All mitigation measures are guided by the principles of the 'Waste Hierarchy' and 'Circular Economy'. The waste hierarchy sets out waste management options in order of preference, from most to least preferred, based on environmental impact and compliance with EU and national policy: prevention and minimisation of waste, followed by preparing for reuse and recycling / recovery, energy recovery (i.e. incineration) and, as a last resort, disposal.<br>The waste management objectives for the proposed development are as follows. These measures will facilitate material reuse and recycling, where possible, and seek to divert waste from landfill:<br>■ Prevention (Construction Phase): The Main Contractor will prevent and minimise waste generation where possible by ensuring large surpluses of construction materials are not delivered to the site through coordination with the suppliers, operating a 'just-in-time' delivery scheme and ensuring sub-contractors conform to the Contractor(s) Resource and Waste Management Plan (RWMP). The RWMP submitted with this application outlines the overarching principles, and a more detailed, site-specific version will be prepared by the Main Contractor prior to the commencement of the works;<br>■ Reuse (Construction and Operational Phases): Surplus construction materials will be repurposed on-site where feasible. During the operational phase, reuse will be encouraged through appropriate segregation of waste streams to support recovery and minimise disposal;<br>■ Recycle (Construction and Operational Phases): Recycling will be implemented during construction with segregated skips or containers provided for recyclable recyclable construction & demolition waste streams such as metals, timber, plastic and cardboard. During operation, dedicated recycling facilities will be provided to support waste segregation in line with DCC requirements and national waste policy; and<br>■ Disposal (Construction and Operational Phases): Where waste disposal is unavoidable, it will be carried out in accordance with the Waste Management Act 1996 (as amended) and relevant guidance. This applies to both construction waste and operational waste streams. Only licensed / permitted waste contractors will be used, and waste will be sent to authorised facilities. Disposal will remain a last resort in line with waste hierarchy principles. |
| WM02 | As previously stated, a project-specific RWMP will be prepared in line with the requirements of the EPA '*Best Practice Guidelines for the Preparation of Resource and Waste Management Plans* |

| Ref. | Mitigation Measure |
|---|---|
| | *for Construction & Demolition Projects'* (2021). The mitigation measures outlined in the RWMP (included in Appendix 19. 1) will be implemented in full and form part of the mitigation strategy for the site. The mitigation measures presented in this RWMP will ensure effective waste management and minimisation, reuse, recycling, recovery and disposal of waste material generated during the excavation and construction phases of the proposed development.<br>■ Prior to commencement, the appointed Contractor(s) will be required to refine / update the planning stage RWMP in agreement with DCC and in compliance with any planning conditions, or submit an addendum to the RWMP to DCC, detailing specific measures to minimise waste generation and resource consumption, and provide details of the proposed waste contractors and destinations of each waste stream.<br>■ The Contractor will implement the RWMP throughout the duration of the proposed excavation and construction phases. |
| WM03 | A quantity of topsoil and sub soil will need to be excavated to facilitate the proposed development. CS Consulting have estimated that all of this material will need to be removed off-site. Correct classification and segregation of the excavated material is required to ensure that any potentially contaminated materials are identified and handled in a way that will not impact negatively on workers as well as on water and soil environments, both on and off-site. |
| WM04 | ■ Building materials will be chosen to support circular economy objectives and 'design out waste' |
| WM05 | ■ On-site segregation of waste materials will be carried out to increase opportunities for off-site reuse, recycling and recovery. The following waste types, at a minimum, will be segregated:<br>□ Clean Soil<br>□ Contaminated soil (if located onsite)<br>□ Concrete rubble (including ceramics, tiles and bricks);<br>□ Plasterboard;<br>□ Metals;<br>□ Glass;<br>□ Timber;<br>□ Asbestos (if encountered). |
| WM06 | ■ Left over materials (e.g. timber off-cuts, broken concrete blocks / bricks) and any suitable construction materials shall be re-used on-site, where possible; where reuse is not feasible, the materials will be segregated to maximise recycling or recovery prior to disposal; |
| WM07 | ■ All waste materials will be stored in skips or other suitable receptacles in designated areas of the site; |
| WM08 | ■ Any hazardous wastes generated (such as chemicals, solvents, glues, fuels, oils) will also be segregated and will be stored in appropriate receptacles (in bunded, weather protected areas where required); |
| WM09 | ■ A Resource Manager (RM) will be appointed by the main Contractor(s) to ensure effective management of waste during the excavation and construction works; |
| WM10 | ■ All construction staff will be provided with training regarding the waste management procedures; |
| WM11 | ■ All waste leaving site will be prioritised for reuse, recycling or recovery, where possible, to avoid material designated for disposal; |
| WM12 | ■ All waste leaving the site will be transported by suitably permitted contractors and taken to suitably registered, permitted or licensed facilities; |
| WM13 | ■ All waste leaving the site will be recorded and copies of relevant documentation maintained; |

| Ref. | Mitigation Measure |
|---|---|
| WM14 | ■ Nearby sites requiring clean fill material will be contacted to investigate reuse opportunities for clean and inert material, if required. If any of the material is to be reused on another site as by-product (and not as a waste), this will be done in accordance with Regulation 27 (By-products), as amended, European Union (Waste Directive) Regulations 2011-2020. EPA approval will be obtained prior to moving material as a by-product. |
| Operational Phase | |
| WM15 | All waste materials will be segregated into appropriate categories and will be temporarily stored in appropriate bins or other suitable receptacles in designated, easily accessible areas of the site. |
| WM16 | As previously stated, a project specific OWMP has been prepared and is included as Appendix 19.2. The mitigation measures outlined in the OWMP will be implemented in full and form part of the mitigation strategy for the site. Implementation of this OWMP will ensure a high level of recycling, reuse and recovery at the proposed development. All recyclable materials will be segregated at source to reduce waste contractor costs and ensure maximum diversion of materials from landfill, thus achieving the targets set out in the *National Waste Management Plan for a Circular Economy, Waste Action Plan for a Circular Economy – Waste Management Policy in Ireland* and the DCC *Waste Management (Storage, Presentation And Segregation Of Household And Commercial Waste) Bye-Laws 2018.*<br>Residents, tenants and facilities management of the site during the operational phase will be responsible for ensuring – allocating personnel and resources, as needed – the ongoing implementation of the OWMP, ensuring a high level of recycling, reuse and recovery at the site of the proposed development. Facilities management will have supervisory responsibility for this and intended procedures for ensuring compliance among residents/tenants. |
| WM17 | ■ All waste materials will be segregated into appropriate categories including (but not limited to):<br>□ Organic waste;<br>□ Dry Mixed Recyclables;<br>□ Mixed Non-Recyclable Waste;<br>□ Glass;<br>□ WEEE;<br>□ Batteries (non-hazardous and hazardous);<br>□ Cooking oil;<br>□ Light bulbs;<br>□ Cleaning chemicals (pesticides, paints, adhesives, resins, detergents, etc.);<br>□ Furniture (and from time-to-time other bulky waste); and<br>□ Abandoned bicycles. |
| WM18 | ■ Residents, tenants and facilities management will ensure that all waste materials will be stored in colour coded bins or other suitable receptacles in designated, easily accessible locations. Bins will be clearly identified with the approved waste type to ensure there is no cross contamination of waste materials. Facilities management will have supervisory responsibility for this and intended procedures for ensuring compliance among residents/tenants. |
| WM19 | ■ Residents, tenants and facilities management will ensure that all waste collected from the site of the proposed development will be reused, recycled, or recovered, where possible, with the exception of those waste streams where appropriate facilities are currently not available. Facilities management will have supervisory responsibility for this and intended procedures for ensuring compliance among residents/tenants. |

| Ref. | Mitigation Measure |
|---|---|
| WM20 | ▪ Residents, tenants and facilities management will ensure that all waste leaving the site will be transported by suitably permitted contractors and taken to suitably registered, permitted, or licensed facilities. Facilities management will have supervisory responsibility for this and intended procedures for ensuring compliance among residents/tenants. |

### Table 23.27 Monitoring – Material Assets- Waste

| Phase | Monitoring Measure |
|---|---|
| Construction | ▪ Litter Pollution<br>□ The Contractor will review and maintain waste records and site audits.<br>▪ Unlicensed Waste Collection (Illegal Dumping)<br>□ A register will be maintained and reviewed.<br>□ A copy of all waste collection permits will be maintained.<br>▪ Insufficient Waste Facilities<br>□ A register will be maintained and reviewed.<br>□ A copy of all waste collection permits will be maintained.<br>▪ Lack of Waste Classification<br>□ An appointed RM will monitor all on-site waste segregation and classification. |
| Operational | ▪ Litter Pollution<br>□ Waste storage areas will be monitored by the facilities management team.<br>▪ Unlicensed Waste Collection (Illegal Dumping)<br>□ The facilities management team will maintain waste receipts on-site for a period of 7 years and make them available to DCC as requested.<br>▪ Poor Waste Segregation<br>□ Waste generation volumes and cross contamination will be monitored by the facilities management team and their selected waste management company. |

## 23.3.14 Material Assets – Services

### Table 23.28 Mitigation Measures – Material Assets- Services

| Ref. | Mitigation Measure |
|---|---|
| Construction Phase | |
| MS01 | ▪ The precise locations of all existing on-site services (underground and overhead) will be confirmed prior to the commencement of works; |
| MS02 | ▪ The precise routing of electricity, gas and telecommunications infrastructure on the site are to be agreed with ESB, GNI and Eir / Virgin Media, respectively, prior to the commencement of on-site works; |
| MS03 | ▪ All reasonable precautions shall be taken to avoid unplanned disruptions to any services / utilities during the proposed works; |
| MS04 | ▪ Consultation with the relevant services providers shall be undertaken in advance of works. This will ensure all works are carried out to the relevant standards and ensure safe working practices are implemented; |
| MS05 | ▪ There will be an interface established between the contractor and the relevant utilities service providers / authorities during the construction phase of the proposed development. |

| Ref. | Mitigation Measure |
|---|---|
| | This interface will be managed in order to ensure a smooth construction schedule with no / minimal disruption to the local community; |
| MS06 | ▪ All new foul water drainage pipes will be pressure tested and subject to an internal CCTV survey in order to identify any possible defects prior to operation, under the supervision of Dublin City Council; |
| MS07 | ▪ CS Consulting Engineers Ltd. have prepared an Outline Construction Management Plan (2026) that is submitted separately under planning documentation. It contains best practice measures and protocols to be implemented during the construction phase of the proposed development to avoid / minimise environmental impacts, including in relation to surface water, foul water and services. These measures and those listed within Ch 10 Hydrology will be implemented in full; |
| MS08 | ▪ In planning and executing the proposed works, regard shall be had to the Gas Networks Ireland *Guidelines for Designers and Builders – Industrial and Commercial (Non-Domestic) Sites (2018),* the Health & Safety Authority (HSA) *Code of Practice for Avoiding Danger from Underground Services (2016)*, and the ESB Networks & Health and Safety Authority *Code of Practice for Avoiding Danger from Overhead Electricity Lines (2019);* |
| MS09 | ▪ Site-specific risk assessment and work method statement shall be prepared before works are undertaken on the site; |
| MS10 | ▪ Construction traffic will be limited to certain routes and times of day, with the aim of keeping disruption to existing traffic and residents to a minimum. To minimise disruption to the local areas, construction traffic volumes will be managed through the following measures. During peak morning and evening hours, ancillary, maintenance and other site vehicular movements will be discouraged. Daily construction programmes will be planned to minimise the number of disruptions to surrounding streets by staggering HGV movements to avoid site queues; |
| MS11 | ▪ Should a need arise to provide further temporary pedestrian/ vehicle access outside the hoarding line, a detailed temporary Traffic Management Plan will be developed in compliance with the requirements of the Department of Transport Chapter 8 Temporary Traffic Measures and Signs for Roadworks manual. This plan will be shared with DCC Roads/Traffic Section for acknowledgement prior to implementation with appropriate forward notice (in compliance with the Community Liaison Plan) shared with all development stakeholders. |
| Operational Phase | |
| MS12 | ▪ Any necessary maintenance and / or upgrades of on-site utilities infrastructure during the operational phase of the proposed development, will be carried out in accordance with the specifications of the relevant service providers; |
| MS13 | ▪ Proposed drainage systems are to be maintained on a regular basis to reduce the risk of blockage and resulting flooding. |

Table 23.29 Monitoring – Material Assets - Services

| Phase | Monitoring Measure |
|---|---|
| Construction | Monitoring will be provided by each utility company with an overseeing responsibility by the appointed contractor during the construction phase. |
| Operational | Any monitoring of the built services required during the operational phase will be as advised by the relevant services provider. |

Brady Shipman Martin

DUBLIN
Mountpleasant Business Centre
Mountpleasant Avenue Upper
Ranelagh
Dublin 6

CORK
Penrose Wharf Business Centre
Penrose Wharf
Cork

+353 1 208 1900
mail@bradyshipmanmartin.com
www.bradyshipmanmartin.com