COAKLEY O'NEILL
town planning

Environmental Impact Assessment Report (EIAR)

Large-Scale Residential Development at

Ringwood, Blarney

Volume II – Main Chapters

Prepared in December 2025 on behalf of

Clockstrike Ltd.

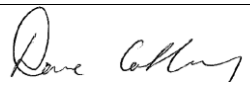
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RINGWOOD LRD EIAR - VOLUME II

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1.0 INTRODUCTION

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1.1 Introduction

Clockstrike Ltd. seeks permission for a Phase 2 Large-scale Residential Development (LRD) on lands at Ringwood, Shean Upper and Shean Lower, Blarney, in the northwest of Cork City.

The subject site is located immediately east of Blarney town centre inside the town's settlement boundary and is approximately 7km north-west of Cork city centre.

The site is approximately 19.35ha. in area, forms part of larger landbank in agricultural use, and is located on sloping, undulating lands that comprise a series of agricultural fields immediately south of the residential developments of Aisling Geal and Ard na Gréine, and running though the eastern side of Ringwood to the R617 to the south. The site and its location is generally shown in Figure 1.1 below.

The "Ringwood", a locally prominent circular woodland area lies to the south and west of the site. An area known as the 'Wet Wood' is included within the site at its northern and northeastern sides.

The subject site is bound to the west by housing fronting onto Station Road. To the east, the site is bound by the N20 roadway and to the north the site is bound by Aisling Geal and Ard na Gréine. To the south the site is bound by the R617 road and Castleview house.

The proposed LRD (hereafter referred to as "the proposed development") compromises of 323 no. residential dwellings comprising of 157no. terraced, end of terraced detached houses; 52 no. duplexes provided in 5 no. 3-storey buildings; and 114 no. apartments provided in 2 no. 5-storey buildings.

The proposal includes the construction of a primary care centre, over 2 stories and 1,724sqm. in area which will incorporate GP services, the refurbishment and redevelopment of existing farm outbuildings for conversion to a retail/pharmacy use, 80sqm in area, and café/restaurant use, 380sqm in area.

The site will be serviced by a new access roadway into the site from the R617 with associated pedestrian and cyclist infrastructure, which will form the 1st phase of the proposed Stoneview Access Link Road. This includes a new signalised junction on the R617 road which will provide a single lane approach to the west and a two lane approach to the east, comprising one lane for through traffic on the R617 and a right turn lane for traffic turning into the site, and associated footpath improvements and cycle lane provision and a new signalised junction on Station Road that reflects the junction permitted under the Phase 1 LRD scheme (Reg. Ref. 2443031). The signalisation of the R617 / Killard Road junction is also proposed.

Phase 1, which adjoins this site to the immediate south and west, is subject to a separate LRD planning application, Ref. No. 24/43031, Appeal Case Reference ABP-321688-25 which was granted permission by An Coimisiún Pleanála on the 6th May 2025 and comprises of 246no. dwellings. Works are due to commence on Phase 1 in the coming weeks.

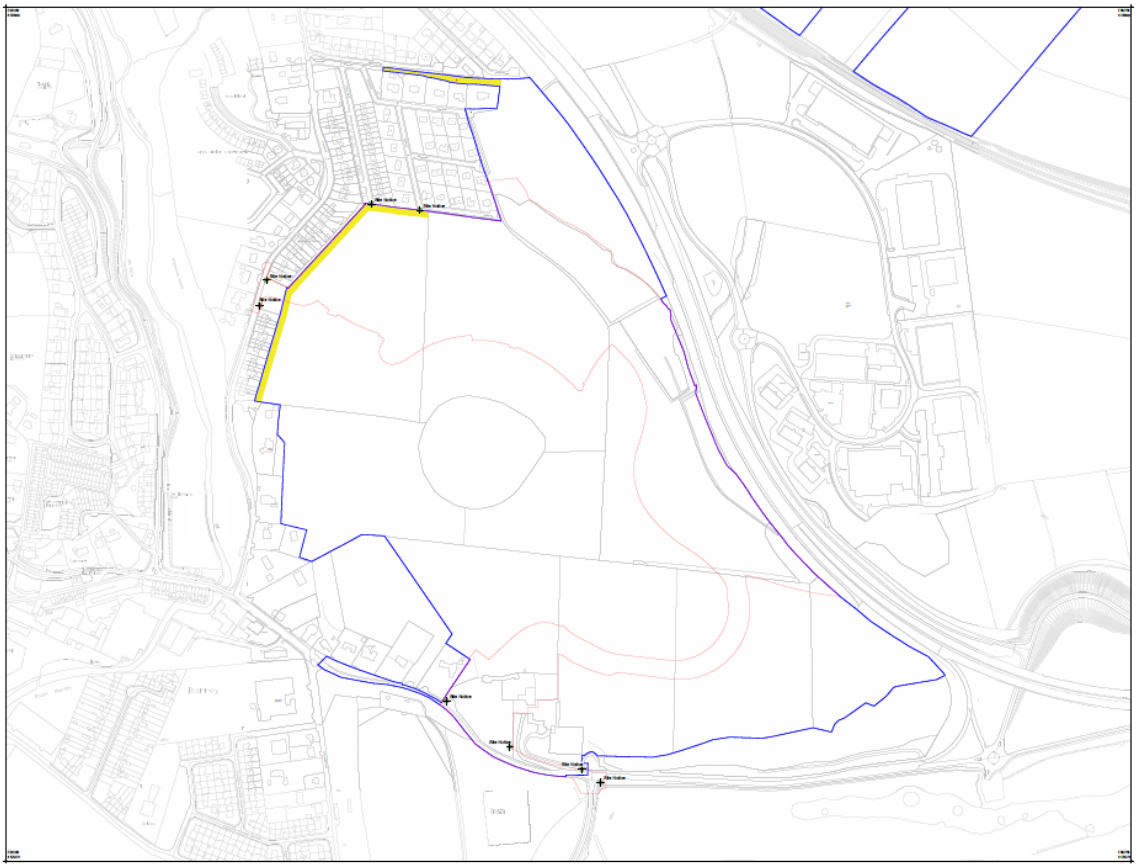


Figure 1.1: Site location for the proposed project shown outlined in red. Wider lands in client's ownership at Ringwood, Blarney shown outlined in blue.

1.2 Overview of the Proposed Development

Clockstrike Ltd. intends to apply to Cork City Council for planning permission for this Large-scale Residential Development (LRD) with a total application site area of c. 19.35 hectares. The proposed development will consist of the following:

- The construction of 323no. residential dwellings comprising the following: 157 no. terraced, end-of-terrace, and semi-detached houses (129no. 3-bed and 28no. 4-bed units); 52 no. duplexes provided in 5 no. 3-storey buildings (26no. 2-bed and 26no. 3-bed units) and 114 no. apartments provided in 2 no. 5-storey buildings (including 54no. 1-bed and 60no. 2- bed units)
- Also included is the construction of a new primary care centre incorporating GP services, over 2 stories and 1,724sqm in area.
- The refurbishment and redevelopment of existing farm outbuildings (460sqm) for their conversion to retail/pharmacy and café/restaurant uses.
- The total proposed gross floor area is 34,963.62sqm;
- The proposed development will also consist of:
    - a new access roadway into the site from the R617 with associated pedestrian and cyclist infrastructure, which will form the 1st phase of the proposed Stoneview Access Link Road;
    - a new signalised junction on the R617 road which will provide a single lane approach to the west and a two lane approach to the east, comprising one lane for through traffic

on the R617 and a right turn lane for traffic turning into the site, and associated footpath improvements and cycle lane provision;

- a new signalised junction at the R617 and Killard Road junction which will provide a two lane approach from the west, one lane for through traffic heading eastbound on the R617 and a right turn lane onto the Killard Road, with associated footpath improvements and pedestrian and cyclist infrastructure;
- a new signalised junction on Station Road that reflects the junction permitted under the Phase 1 LRD scheme (Reg. Ref. 2443031);
- private, communal, and public open spaces and hard and soft landscaping, boundary treatments and amenity areas, including a new wetland public amenity area;
- drainage works and nature-based SuDS measures;
- foul sewer infrastructure, including 1no. pump station, the diversion of existing foul and water sewers and other new network works;
- car parking, including EV charging points, bicycle parking, and motorcycle parking bays;
- 2no. substations;
- all associated ancillary site, drainage and development works.

A detailed description of the proposed development is provided in **Chapter 4 – Proposed Development**.

The proposed development comprises Phase 2 of the two-part development of the residentially zoned land parcel at Ringwood. Additional lands within the Ringwood are also included.

As detailed, Phase 1, which adjoins this site to the immediate south and west, is subject to a separate LRD planning application, Ref. No. 24/43031, Appeal Case Reference ABP-321688-25 which was granted permission by An Coimisiún Pleanála on the 6th May 2025. It comprises 246no. dwellings.

Both Phase 1 and Phase 2 in combination comprise of an area of c. 27.67 hectares.

1.3 Overview of the Planning Process

Under the provisions of the Planning and Development (Large Scale Residential Developments) Act 2021, and the Planning and Development (Large-scale Residential Development) Regulations 2021, planning applications for housing developments of more than 100no. residential units or 200no. student bed spaces may constitute a Large-scale Residential Development (LRD).

This type of application was introduced in December 2021 in accordance with Action 12.3 of the Department of Housing, Local Government and Heritage's *Housing for All – a New Housing Plan for Ireland* (September 2021), which directed that a new planning process for large-scale housing developments in the form of LRDs would replace the Strategic Housing Development (SHD)[1] planning process.

[1] The SHD planning process had previously been introduced in 2017 with a view to speeding up the delivery of housing by bypassing the regular planning process for largescale housing proposals by allowing applicants to apply straight to An Bord Pleanála for planning consent. However, the SHD process did not result in an increase in the rate of housing delivery. Furthermore, multiple judicial reviews were taken and were successful in subsequently quashing SHD planning permissions on the grounds that proper process was not followed.

The LRD planning process saw the reintroduction of the two-stage planning process for such large scale housing proposals. The aim of this reform is to make decision-making on such developments efficient whilst returning primary decision-making to the local level. Under the LRD planning process, applications are made to and determined by local planning authorities, with the possibility of their decision being appealed to An Coimisiún Pleanála by either first or third parties, as is the case with other planning applications.

As the proposed development comprises 323no. residential units, a planning application will be made Cork City Council under the provisions of the *Planning and Development (Large Scale Residential Developments) Act 2021*, and the *Planning and Development (Large-scale Residential Development) Regulations, 2021*.

The proposed development was subject to two LRD Section 247 pre-application consultation meetings with Cork City Council on the 18th June 2024 and 3rd December 2024.

Following on from those Section 247 consultations, a Section 32C LRD pre-application consultation meeting was held between the applicant and Cork City Council on 29th May 2025. Cork City Council subsequently issued an LRD Opinion on 26th June 2025. An LRD planning application is now being made within the statutory 6 month timeframe from the date of issue of the LRD Opinion.

1.4 Requirement for and Approach to Environmental Impact Assessment (EIA)

For the purposes of assessing the likelihood for development projects to have an impact on the environment, and the potential nature of those impacts, the *European Union EIA Directive 85/337/EC*, as amended by directives *97/11/EC, 2003/4/EC, 2011/92/EU* and *2014/52/EU*, has been transposed into Irish legislation in the form of Part X of the *Planning and Development Act 2000, as amended* (hereafter "the Act"), and Part 10 of the *Planning and Development Regulations 2001, as amended* (hereafter "the Regulations".

1.4.1 Requirement for EIA

Section 172(1) of the Act sets out the requirement for EIA as follows:

> *An environmental impact assessment shall be carried out by the planning authority or the Board, as the case may be, in respect of an application for consent for proposed development where either—*
>
> *(a) the proposed development would be of a class specified in—*
>
> *(i) Part 1 of Schedule 5 of the Planning and Development Regulations 2001, and either—*
>
> *(I) such development would equal or exceed, as the case may be any relevant quantity, area or other limit specified in that Part, or*
>
> *(II) no quantity, area or other limit is specified in that Part in respect of the development concerned,*
>
> *or*

(ii) Part 2 of Schedule 5 of the Planning and Development Regulations 2001 and either—

(I)such development would equal or exceed, as the case may be any relevant quantity, area or other limit specified in that Part, or

(II)no quantity, area or other limit is specified in that Part in respect of the development concerned,

or

(b)(i) the proposed development would be of a class specified in Part 2 of Schedule 5 of the Planning and Development Regulations 2001 but does not equal or exceed, as the case may be, the relevant quantity, area or other limit specified in that Part, and

(ii) it is concluded, determined or decided, as the case may be,—

(I) by a planning authority, in exercise of the powers conferred on it by this Act or the Planning and Development Regulations 2001 (S.I. No. 600 of 2001),

(II) by the Board, in exercise of the powers conferred on it by this Act or those regulations,

(III) by a local authority in exercise of the powers conferred on it by regulation 120 of those regulations,

(IV) by a State authority, in exercise of the powers conferred on it by regulation 123A of those regulations,

(V) in accordance with section 13A of the Foreshore Act, by the appropriate Minister (within the meaning of that Act), or

(VI) by the Minister for Communications, Climate Action and Environment, in exercise of the powers conferred on him or her by section 8A of the Minerals Development Act 1940,

that the proposed development is likely to have a significant effect on the environment.

Schedule 5 of the Regulations specifies the type and size of developments that require an Environmental Impact Assessment Report (EIAR) to be submitted as part of a planning application to the competent authority (Cork City Council).

The proposed development at Ringwood, Shean Upper, Blarney, Cork City is considered vis-à-vis the classes of development listed in Schedule 5 and those relevant to the nature of the proposed development. Class 10, Part 2 of Schedule 5 of the Regulations lists the thresholds for infrastructure projects. Under Class 10 (b), applications for infrastructure projects require an EIAR to be submitted in the following instances:

10(b)(i) Construction of more than 500 dwelling units.

…

10(b)(iv) 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. (In this paragraph, "business district" means a district within a city or town in which the predominant land use is retail or commercial use.)

The proposed development in and of itself does not come within the scope of the definition of infrastructure projects under Class 10(b)(i).

However, as outlined above in Section 1.2 of this chapter, the subject proposed development site is c. 19.35 hectares in area and as such is within the scope of the definition of infrastructure projects under Class 10(b)(iv). As such, EIA is required.

1.4.2 Definition of EIA

Section 171(A) of Part X of the Act defines EIA as being a process:

(a) consisting of—

(i) the preparation of an environmental impact assessment report by the applicant in accordance with this Act and regulations made thereunder,

(ii) the carrying out of consultations in accordance with this Act and regulations made thereunder,

(iii) the examination by the planning authority or the Board, as the case may be, of—

(I) the information contained in the environmental impact assessment report,

(II) any supplementary information provided, where necessary, by the applicant in accordance with section 172(1D) and (1E), and

(III) any relevant information received through the consultations carried out pursuant to subparagraph (ii),

(iv) the reasoned conclusion by the planning authority or the Board, as the case may be, on the significant effects on the environment of the proposed development, taking into account the results of the examination carried out pursuant to subparagraph (iii) and, where appropriate, its own supplementary examination, and

(v) the integration of the reasoned conclusion of the planning authority or the Board, as the case may be, into the decision on the proposed development, and

(b) which includes—

(i) an examination, analysis and evaluation, carried out by the planning authority or the Board, as the case may be, in accordance with this Part and regulations made thereunder, that identifies, describes and assesses, in an appropriate manner, in the light of each individual case, the direct and indirect significant effects of the proposed development on the following:

(I) population and human health;

(II) biodiversity, with particular attention to species and habitats protected under the Habitats Directive and the Birds Directive;

(III) land, soil, water, air and climate;

(IV) material assets, cultural heritage and the landscape;

(V) the interaction between the factors mentioned in clauses (I) to (IV), and

(ii) as regards the factors mentioned in subparagraph (i)(I) to (V), such examination, analysis and evaluation of the expected direct and indirect significant effects on the environment derived from the vulnerability of

the proposed development to risks of major accidents or disasters, or both major accidents and disasters, that are relevant to that development;

EIA supports the decision-making process as it is integrated into consenting processes for new development projects. This helps to ensure that consent decisions are made in the knowledge of the environmental consequences of the project.

Article 1(2)(g) of the 2014 EIA Directive (2014/52/EU) states that:

"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;
(iii) 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;
(iv) 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 (iii) 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."

For the purposes of this EIAR, Clockstrike Ltd. is the "developer" of the proposed development and Cork City Council is the "competent authority" responsible for undertaking the EIA and integrating its reasoned conclusion into the assessment of the proposed development.

1.4.3 Legislative Context

Statutory Requirement for EIA

A European Directive for EIA has been in place since 1985 and the adoption of Council Directive 85/337/EEC on the assessment of the effects of certain public and private projects on the environment. The EIA Directive of 1985 has been amended three times by Council Directives 97/11/EC, 2003/35/EC and 2009/31/EC. It was ultimately codified and repealed by Council Directive 2011/92/EU on 13th December 2011. This Directive was further amended in 2014 by Council Directive 2014/52/EU which sets out the current requirements for member states on the assessment of the effects of certain public and private projects on the environment.

The EIA Directive requires the competent authority to consider and take account of the EIAR for certain public and private projects that are likely to have significant effects on the environment as part of the consent decision making process. In Ireland, the requirements for EIA in relation to planning consents are specified in Part X of the Planning and Development Act, 2000, as amended and in Part 10 of the Planning and Development Regulations, 2001, as amended.

As outlined above in Section 1.4.1, the proposed development and potential cumulative effects from proposed future development of adjacent lands merits an EIA under the provisions of the Planning and Development Act, 2000, as amended, and this EIA will be undertaken by the competent authority for the planning consent i.e., Cork City Council.

This EIAR has adhered to the requirements of the EIA Directive and transposing European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018 (SI No. 296 of 2018) which came into force on 1st September 2018, as well as associated guidance as described below in Section 1.4.4.

The European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018 transpose into planning law the requirements of Directive 2014/52/EU, amending previous Directive 2011/92/EU, on the assessment of the effects of certain public and private projects on the environment (the EIA Directive) with effect from 1st September 2018. Where reference is made to the EIA Directive throughout this EIAR, it should be understood that the transposing European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018 also apply.

Regard has also been had to the provisions of the Planning and Development Act, 2000 (as amended), and the Planning and Development Regulations, 2001 (as amended) as they apply now.

Other Relevant Legislation

Habitats and Birds Directives

EU member states are required to establish a network of Natura 2000 sites under the obligations of Council Directive 92/43/EEC (Habitats Directive) and Council Directive 79/409/EEC (Birds Directive), as amended and codified in Council Directive 2009/147/EC. The Natura 2000 network comprises designated sites selected to protect important biodiversity including rare and threatened habitats and species including:

- Special Areas of Conservation (SACs, including candidate SACs) protected under the provisions of the Habitats Directive; and
- Special Protection Areas (SPAs, including proposed SPAs) protected under the provisions of the Birds Directive.

The Habitats and Birds Directives require that the likely significant effects of any plan or project, alone, or in combination with, other plans or projects, on the Natura 2000 site network (i.e. European designated sites), should be assessed before any decision is made to allow that plan or project to proceed.

This process is known as Appropriate Assessment, which starts with Stage 1 AA Screening and, if likely significant effects cannot be ruled out, must progress to Stage 2 AA (i.e., preparation of a Natura Impact Statement). There are a number of steps and tests in place that should be undertaken sequentially and documented by competent authorities in order to make decisions on the approval or refusal of a plan or project that may impact on European designated sites.

Part XAB of the Planning & Development Act, 2000, as amended, which transposes the Birds and Habitats Directive requires the following to be undertaken:

- Stage 1 – Screening for Appropriate Assessment: To assess, in view of best scientific knowledge, if a development, individually or in combination with another plan or project is likely to have a significant effect on any European designated site.
- Stage 2 – Appropriate Assessment: This 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, is likely to have a significant effect on a European designated site. The appropriate assessment must include a final determination by the competent authority as to whether or not a proposed development would adversely affect the integrity of a European designated site. In order to reach a final determination, the consenting authority must undertake examination, analysis and evaluation, followed by findings, conclusions and a final determination. The appropriate assessment must contain complete, precise and definitive findings and conclusions, and may not have lacunae or gaps.
- Stage 3 – Assessment of alternative solutions: The process which examines alternative ways of achieving the objectives of the project or plan that avoid adverse impacts on the integrity of the European designated sites.
- Stage 4 – An assessment where no alternative solutions exist and where adverse impacts remain: an assessment of compensatory measures where, in light of an assessment of imperative reasons of overriding public interest (IROPI), it is deemed that the project or plan should proceed.

A Stage 1 Appropriate Assessment (AA) Screening Report has been carried out by Atkins to aid Cork City Council in its determination as to whether or not a Stage 2 Appropriate Assessment is required. The AA Screening Report has been submitted as part of the planning application for the proposed development and concludes further assessment is not required.

While it is considered that further stages of AA are not necessary for the proposed development, Cork City Council, as the competent authority, will make the final determination in this regard.

1.4.4 Guidance

In addition to the relevant legislation and regulations cited above in this report, in preparing this EIAR the following guidelines have also been considered:

- Environmental Protection Agency (2022). *Guidelines on the information to be contained in Environmental Impact Assessment Reports*.
- Department of Housing, Planning and Local Government (2018). *Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment*.
- European Commission (2017). *Environmental Impact Assessment of Projects: Guidance on the preparation of the Environmental Impact Assessment Report*.
- European Commission (2013). *Guidance on Integrating Climate Change and Biodiversity into Environmental Impact Assessment*.

In addition, specialist disciplines have had regard to other relevant guidelines, and where relevant these are noted in individual chapters of the EIAR.

1.4.5 Structure of the EIAR

This EIAR is presented as follows:

- Volume 1 is a Non-Technical Summary,
- Volume 2 is the main EIAR report including introductory chapters in addition to 'assessment' chapters for each environmental aspect in accordance with Article IV of the EIA Directive. The front-end chapters (Chapters 1-6) provide the relevant project context whilst the assessment chapters (Chapters 7-19) provide a description of the relevant environmental aspects and likely significant effects with summary chapters provided thereafter (Chapter 20 and 21).
- Volume 3 contains the Appendices to the EIAR – these appendices provide the technical information which supports and is cross-referenced with the main EIAR. They include other relevant drawings, modelling outputs, background reports and/or supporting documents.

As is required by Annex IV of the 2014 EIA Directive, this EIAR addresses matters including proposed demolition works, risks to human health, major accidents/disasters, biodiversity, climate change and cumulative effects with other existing and/or approved projects.

Each chapter of this EIAR assesses the direct, indirect, cumulative and residual impact of the proposed development for both the construction and operational stage of the proposed development. The identified quality, significance and duration of effects for each aspect is, unless otherwise indicated, largely based on the terminology set out in EPA's *Guidelines on the information to be contained in Environmental Impact Assessment Reports* (2022) as summarised in the table below.

Impact Rating	
Quality of Effects It is important to inform the non-specialist reader whether an effect is positive, negative or neutral	**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, with 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).
Describing the Significance of Effects	**Imperceptible** An effect capable of measurement but without significant consequences.

'Significance' is a concept that can have different meanings for different topics – in the absence of specific definitions for different topics the following definitions may be useful (also see Determining Significance).	**Not Significant** An effect which causes notable 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 effecting 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 effects.
Describing the Extent and Context of Effects Context can affect the perception of significance. It is important to establish if the effect is unique or, perhaps, commonly or increasingly experienced.	**Extent** Describe the size of the area, the number of sites, and the proportion of the population affected by an effect. **Context** Describe whether the extent, duration or frequency will conform or contrast with established (baseline) conditions (is it the biggest, longest effect ever?).
Describing the Probability of Effects Descriptions of effects should establish how likely it is that the predicted effects will occur so that the CA can take a view of the balance of risk over advantage when making a decision.	**Likely Effects** The effects that can reasonably be expected to occur because of the planned project if all mitigation measures are properly implemented. **Unlikely Effects** The effects that can reasonably be expected not to occur because of the planned project if all mitigation measures are properly implemented.
Describing the Duration and Frequency of Effects 'Duration' is a concept that can have different meanings for different topics – in the absence of specific definitions for different topics the following definitions may be useful.	**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 **Frequency of Effects** Describe how often the effect will occur (once, rarely, occasionally, frequently, constantly – or hourly, daily, weekly, monthly, annually).
Describing the types of Effects	**Indirect Effects (a.k.a. Secondary or Off-site Effects)** Effects on the environment, which are not a direct result of the project, often produced away from the project site or because of a complex pathway. **Cumulative Effects** The addition of many minor or insignificant effects, including effects of other projects, to create larger, more significant effects. **"Do Nothing" Effects** The environment as it would be in the future should the subject project not be carried out. **"Worst Case" Effects** The effects arising from a project in the case where mitigation measures substantially fail. **Indeterminable Effects** When the full consequences of a change in the environment cannot be described. **Irreversible Effects** When the character, distinctiveness, diversity or reproductive capacity of an environment is permanently lost. **Residual Effects** The degree of environmental change that will occur after the proposed mitigation measures have taken effect.

	Synergistic Effects Where the resultant effect is of greater significance than the sum of its constituents (e.g. combination of SOx and NOx to produce smog).

Table 1.1: Description of Effects (Source: EPA Guidelines on the information to be contained in Environmental Impact Assessment Reports (2022)).

1.5 Design Team

The design has been developed on behalf of Clockstrike Ltd., by a multi-disciplinary design team including:

Discipline	Company
Architecture	Conroy Crowe Kelly Architects
Landscape Design	Cunnane Stratton Reynolds Land Planning and Design
Civil Engineering	MHL Consulting Engineers
Traffic and Transportation	SYSTRA
Planning	Coakley O'Neill Town Planning Ltd.
Ecology	AtkinsRéalis

Table 1.2: Design Team.

1.6 EIAR Team

It is a requirement that the EIAR must be prepared by competent experts. For the preparation of this EIAR, Clockstrike Ltd. engaged Coakley O'Neill Town Planning Ltd. to direct and coordinate the preparation of the EIAR and a team of qualified specialists were engaged to prepare individual chapters, as set out in the table below. The following table clearly sets out a list of the experts who have contributed to this EIAR, showing which parts of the EIAR they have worked on, their qualifications, experience and any other relevant credentials.

Name	Company	Area of Expertise	Relevant Chapter/ Inputs to	Relevant Qualifications/ Professional Accreditation	Relevant Experience
Dave Coakley	Coakley O'Neill Town Planning	Planning	EIAR Co-ordinator Non-technical Summary Chapter 1 – Introduction Chapter 2 – Background and Need for Scheme Chapter 4 – Proposed Development (with extracts from Design Statement prepared by Conroy Crowe Kelly (2023)) Chapter 6 – Planning and Policy Chapter 17 – Population and Human Health Chapter 19 – Major Accidents and Disasters Chapter 20 – Cumulative and Interactive Effects	Corporate Member of the Irish Planning Institute (MIPI) BA (Hons.) University College Cork, 1997 MPhil Masters Degree University College Cork, 2000 Masters Degree in Town and Country Planning, University of the West of England, 2005.	25 years

			Chapter 21 –Summary of Mitigation, Monitoring and Residual Effects		
Alan O'Callaghan	Coakley O'Neill Town Planning	Planning	Non-technical Summary Chapter 1 – Introduction Chapter 2 – Background and Need for Scheme Chapter 4 – Proposed Development (with extracts from Design Statement prepared by Conroy Crowe Kelly (2025)) Chapter 6 – Planning and Policy Chapter 17 – Population and Human Health Chapter 19 – Major Accidents and Disasters Chapter 20 – Cumulative and Interactive Effects Chapter 21 –Summary of Mitigation, Monitoring and Residual Effects	Graduate Member of the Irish Planning Institute BA (Hons) Joint Honours Geography and Economics (2018) UCC; Masters in Planning and Sustainable Development (2021) UCC	4 years
Rory Hanrahan	Coakley O'Neill Town Planning	Planning	Non-technical Summary Chapter 1 – Introduction Chapter 2 – Background and Need for Scheme Chapter 4 – Proposed Development (with extracts from Design Statement prepared by Conroy Crowe Kelly (2025)) Chapter 6 – Planning and Policy Chapter 17 – Population and Human Health Chapter 19 – Major Accidents and Disasters Chapter 20 – Cumulative and Interactive Effects Chapter 21 –Summary of Mitigation, Monitoring and Residual Effects	Corporate Member of the Irish Planning Institute (MIPI) BA (Hons) Joint Honours Geography and English (2021) University of Limerick Masters in Planning and Sustainable Development (2023) University College Cork (MPlan)	2.5 years
Richard Bonney	Conroy Crowe Kelly Architects	Architecture and Design	Chapter 3 – Alternatives Considered Chapter 4 – The Proposed Development	BA(Hons) Architecture (2000); BArch (2003); MArch (2004); P.Grad.Dip (Fire Safety Practice); MRIAI	20+ years
Brian Murphy	MHL Consulting Engineers	Civil Engineering	Chapter 5 – Construction Strategy Chapter 16 – Resource and Waste Management Chapter 18 – Material Assets	Bachelor of Civil, Structural and Environmental Engineering, UCC, 2002. Chartered Engineer, Institution of Engineers of Ireland, 2014.	21 years

				IOSH Project Supervisor Design Process Certificate, Institution of Occupational Safety and Health 2021. Member of Institution of Engineers of Ireland since 2000.	
David Murphy	MHL Consulting Engineers	Civil Engineering	Chapter 5 – Construction Strategy Chapter 16 – Resource and Waste Management Chapter 18 – Material Assets	Bachelor of Civil, Structural and Environmental Engineering (Honours), MTU, 2009. Masters in Coastal Management and Geographical Information Systems, UCC, 2011. IOSH Project Supervisor Design Process Certificate, Institution of Occupational Safety and Health, 2022. Member of Institution of Engineers of Ireland since 2007.	13 years
Glen Moon	SYSTRA	Transport Planning Traffic Engineering and Management	Chapter 7 – Traffic and Transportation	MA (Hons) Geography from the University of Edinburgh, 2000; Member of Chartered Institution of Highways & Transportation since 2006.	21 years
Craig van Deventer	DK Partnership Environmental	Air Quality Climate Change	Chapter 8 – Air Quality Chapter 9 – Climate	Gerard has a degree in Electrical & Environmental Engineering (ING) from the Netherlands and bachelor of engineering (BE) from NUIG and has over 35 years experience in consulting engineering.	35+ years
Jasmin Reilly	DK Partnership Environmental	Air Quality Climate Change	Chapter 8 – Air Quality Chapter 9 – Climate	BSc Environmental and Sustainable Technologies (Hons) (2014) MTU formally CIT. 7+ years' experience in air quality and	7+ years

				climate change assessment reporting in Ireland	
Brian Johnson	CLV Consulting Engineers	Noise Impact	Chapter 10 – Noise and Vibration	Corporate Member of the Institute of Acoustics (IOA) BSci (Acoustical Engineering), Purdue University (USA), 1994	30 years
Paul O'Donoghue	Atkins	Ecology	Chapter 11 – Biodiversity	BSc. (Hons) Zoology (1991) UCC; MSc Zoology (1992) UCC; PhD Zoology (1997) UCC	26 years
Faith Bailey	IAC	Archaeological, architectural and cultural heritage	Chapter 12 – Archaeology and Cultural Heritage	Masters in Cultural Landscape Management; BA (Hons); Member of the Institute of Archaeologists of Ireland; Member of the Chartered Institute for Archaeologists	20 years
Jim Kelly	Cunnane Stratton Reynolds	Landscape Architecture/ Landscape & Visual Assessment	Chapter 13 – Landscape and Visual Assessment (with reference to photomontages prepared by G-Net)	B.Agr.Sc. (Landscape Architecture) UCD; Post Grad Dip. L.A. (University of Central England) Level 8/Level 9	35 years
David Casey	JBA Consulting Engineers	Civil Engineering Geology and Hydrogeology	Chapter 14 – Land, Soils, Geology and Hydrogeology Chapter 15 - Water	BSc Building Engineering and Management (2000) Limerick IT; MSc Water Resource & Catchment Management (2011) Heriot Watt University; Pg Cert Water and Environmental Management (2011) Staffordshire University; MCIWEM 2013	11 years
Conor O'Neill	JBA Consulting Engineers	Civil Engineering Geology and Hydrogeology	Chapter 14 – Land, Soils, Geology and Hydrogeology Chapter 15 - Water	BA (Mod) Geography (2018) TCD; MSc Environmental Science (2019) TCD	3 years

Table 1.3: Details of EIAR Contributing Experts.

1.7 Consultation Undertaken

1.7.1 Overview

Project-wide consultation has been undertaken with a range of stakeholders during the development of the EIAR and the LRD application.

Prescribed bodies as per Article 28 of the Planning and Development Regulations, 2001, as amended, were contacted to seek initial comments to inform the preparation of the EIAR.

Outline details of the proposed development were issued via email on 7th October 2025 to:

- An Taisce;
- Cork County Council;
- Failte Ireland;
- Geological Survey of Ireland;
- Iarnród Éireann (Irish Rail);
- Inland Fisheries Ireland;
- Irish Aviation Authority;
- Irish Wildlife Trust;
- Limerick City and County Council;
- National Transport Authority;
- Office of Public Works;
- Southern Regional Assembly;
- The Arts Council;
- The Health and Safety Authority;
- The Heritage Council;
- The HSE, Environmental Health;
- The Minister for Agriculture, Food and the Marine;
- The Minister for Environment, Climate and Communications, and the Minister for Transport (one person is Minister for both);
- The Minister for Housing, Local Government and Heritage (the Minister also oversees the National Parks and Wildlife Service);
- The Minister for Tourism, Culture, Arts, Gaeltacht, Sport and Media;
- Transport Infrastructure Ireland;
- National Parks and Wildlife Services;
- Uisce Éireann.

Formal responses were received from four of the consultees as set out in the following table. Copies of formal responses are attached at Appendix 1 of Volume III of this EIAR.

Prescribed Body	Response Type	Content
Geological Survey Ireland	Written correspondence sent by email (Geoheritage and Planning Programme) 14th October 2025	Geological Survey Ireland is the national earth science agency and is a division of the Department of Climate, Energy and the Environment. We provide independent geological information and interpretation and gather various data for that purpose. Please see our website for data availability. With reference to your email received on the 07 October 2025, concerning the EIA Consultation for proposed LRD at Ringwood, Blarney, Co Cork, we recommend using our various data sets when conducting the EIAR, SEA, planning and scoping processes for developments, plans and policies. For more detailed information on how to access this data please access 'Data and Maps' Data & Maps (gsi.ie) on our 'Geoscience for planning' webpage. Use of our data or maps should be attributed correctly (please refer to each individual dataset's metadata for correct attribution). **Other Comments** Should development go ahead, all other factors considered, Geological Survey Ireland would much appreciate a copy of reports detailing any site investigations carried out. The data would be redacted for confidentiality and added to Geological Survey Ireland's national database of site investigation boreholes, implemented to provide a better service to the civil engineering sector. Data can be sent to the Geological Mapping Unit, at mailto:GeologicalMappingInfo@gsi.ie.
Inland Fisheries Ireland	Email correspondence (Michael Mc Partland Senior Fisheries Environmental Officer), 8th October 2025	Thank you for your email. It appears it may be proposed to dispose of septic effluent from the development to the public sewer. IFI would ask that Irish Water signifies there is sufficient capacity in existence so that it does not overload either hydraulically or organically existing treatment facilities or result in polluting matter entering waters. Should this not be the case then please forward proposals for alternative treatment and disposal options. IFI would ask that there be no interference with, bridging, draining, or culverting of any watercourse, their banks or bankside vegetation to facilitate this development, without the prior approval of IFI and that full cognisance is given to IFI "Guidelines on protection of fisheries during construction works in and adjacent to waters" https://www.fisheriesireland.ie/media/guidelines-on-protection-of-fisheries-during-construction-works-in-and-adjacent-to-waters Furthermore, there should be no loss of flood plain as a result of the proposed development.
The HSE, Environmental Health	Written correspondence sent by email (Niall Roche Environmental Health Officer Environment and Climate Change Network Support Unit), 12th November 2025.	**General Scoping Introduction** The following documents should be taken into consideration when preparing the Environmental Impact Assessment Report: • Guidelines on the information to be contained in Environmental Impact Assessment Reports (2022), EPA. • Advice Notes on Current Practice in the preparation of Environmental Impact Statements (2003), EPA. • Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment, August 2018 https://www.housing.gov.ie/sites/default/files/publications/files/guidelines_for_planning_authorities_and_an_bord_pleanála_on_carrying_out_eia_-_august_2018.pdf EU publication: Environmental Impact Assessment of Projects Guidance on the preparation of the Environmental Impact Assessment Report, EU, 2017 http://ec.europa.eu/environment/eia/pdf/EIA_guidance_EIA_report_final.pdf

		Adoption of the Directive (2014/52/EU) in April 2014 initiated a review of the above guidelines. The draft new guidelines can be seen at: http://www.epa.ie/pubs/consultation/reviewofdrafteisguidelinesadvicenotes Generally, the Environmental Impact Assessment should examine all likely significant impacts and provide the following information for each: a) Description of the receiving environment; b) The nature and scale of the impact; c) An assessment of the significance of the impact; d) Proposed mitigation measures; e) Residual impacts. Directive 2014/52/EU has an enhanced requirement to assess likely significant impacts on Population and Human Health. It is the experience of the National Environmental Health Service (NEHS) that impacts on human health are often inadequately assessed in EIAs in Ireland. It is recommended that the wider determinants of health and well-being are considered in a proportionate manner when considering the EIA. In addition to any likely significant negative impacts from the proposed development, any positive likely significant impacts should also be assessed. For example the potential for health gain should also be assessed, from, for example the inclusion of active travel infrastructure. Such infrastructure may improve air quality and contribute to enabling active lifestyles. The HSE will consider the final EIAR accompanying the Planning application and will make comments to Cork City Council on the methodology used for assessing the likely significant impacts and the evaluation criteria used in assessing the significance of the impact. This report only comments on Environmental Health Impacts of the proposed development. It is based on an assessment of the correspondence submitted which was a 3 page letter received on October 10th 2025. No scoping report was seen. The National Environmental Health Service (NEHS) recommends that the following matters are included and assessed in the EIAR •Public Consultation •Population and Human Health including Opportunities for Health Gain •Land, Soil and Geology •Water and Hydrology •Air Quality •Climate Change (Mitigation and Adaptation) •Noise & Vibration •Material Assets – Traffic and Transportation •Material Assets – Utilities, Services and Waste •Ancillary facilities •Cumulative impacts Some comment on selected criteria for inclusion are provided below. **Public Consultation** The EIAR should demonstrate that a process of public consultation has taken place and that consent has been received from all interested parties. Sensitive receptors and other stakeholders should be identified to ensure all necessary and appropriate mitigation measures are put in place to avoid any complaints about the development, primarily during the construction phase. Similarly, the public should be consulted specifically on the public health aspects of the scheme by consulting on questions like 'what are the potential health benefits/challenges from the development' and 'what opportunities can the development deliver for health gain'. A feedback/complaint mechanism should be put in place to enable stakeholders engage with the developer, through online and offline means. A

		dedicated Community Liaison Officer should be appointed by the developer to act as formal point of contact for open communication between the developer/contractor and residents/community groups on matters of environmental performance and for the receipt of complaints regarding the construction of the proposed development. The Environmental Impact Assessment Report (EIAR) should clearly demonstrate the link between public consultations and how those consultations have influenced the decision-making process in the EIA. **Population and Human Health** The National Environmental Health Service recommends that the potential impacts on human and population health are addressed in each of the following chapters in each of the proposed development's phase construction and operations. •Land, Soils and Geology •Water (Hydrology and Hydrogeology) •Air Quality including dust •Climate Change (Mitigation and Adaptation) •Noise and Vibration •Traffic and Transportation •Waste Management •Ancillary Facilities •Cumulative Impacts The EIAR should be accompanied by a Construction Environmental Management Plan (CEMP) detailing Avoidance, Remedial or Mitigation measures for the protection of public health during that phase of the proposed development. Opportunities for Health Gain could be included in this part of the EIAR to demonstrate how the proposed development contributes to the vision of the Healthy Ireland Framework "where everyone can enjoy physical, and mental health and well-being to their full potential, where well-being is valued and supported at every level of society and is everyone's responsibility" **Land, Soil and Geology** The NEHS recommends that the chosen site is identified as a greenfield site, a brownfield site or combination and assessed in the context of contaminated land if relevant to the proposed development. **Water (Hydrology and Hydrogeology)** The NEHS recommends that the water chapter assess the potential impact of the proposed development on drinking water supplies, for both surface water and ground water sources. The NEHS recommends the inclusion of flood risk assessment under this chapter that looks at historical data on flood risk but also predictive meteorological data in a warming and perhaps wetter Cork for decades into the future. The chapter should assess future precipitation patterns. Opportunities to incorporate Sustainable Drainage Systems and Rainwater Harvesting should also be assessed. Rainwater harvesting may also be linked into strategies to build resilience for the proposed development in the context of climate change where longer and drier spells may be more frequent. **Air Quality including Dust** The potential impacts of the proposed development on local air quality should be assessed in the EIAR with a particular emphasis on the potential effects of dust during the construction phase on identified sensitive receptors. All possible sources impacting air quality during the operation of the development should be identified and mitigation measures indicated. Possible

		sources may include heating systems but may also include aeroallergens associated with landscaping. The NEHS recommends that the EIAR contain a detailed Construction Environmental Management Plan (CEMP) indicating the background air quality situation, the likely sources of emissions during construction (including dust) and the detailed mitigation measures to be put in place to ensure air quality is protective of human health during the construction phase. The NEHS advises utilisation of the WHO Air Quality Guidelines 2021 in determining some emissions levels protective of public health. **Climate Change** Climate Change poses the greatest threat to global health this century (World Health Organisation and others) and is therefore regarded as one of the most important population health issues to assess in the EIAR. The construction phase has the potential to deliver significant Green House Gas emissions through the use of carbon intensive materials such as concrete (embodied carbon), the use of fossil fuels in the operation of machinery and transport, and through the supply chain. Reducing those emissions, otherwise known as mitigation is relevant to the protection of public health both locally and globally due to the transboundary nature of climate change. The NEHS recommends that the EIAR quantify the emissions profile of the proposed development in both the construction and operational phase including opportunities to sequester carbon. Ways to limit the generation of green-house gases are by ensuring the proposed development is designed and constructed to meet Nearly Zero Energy Building Standard or Zero Emission Building Standard. Construction activity should limit emissions through materials choice, green procurement, supply chain and limiting fossil fuel use during this phase. In the context of Adaptation and Resilience the development should be designed to limit exposure to potential hazards and reduce vulnerability of both the infrastructure and the community who will live there. Hazards to consider include severe weather events such as floods (possibly addressed under the Water Chapter), windstorms, heatwaves, dry spells/drought and slower onset hazards associated with changing precipitation patterns and warmer temperatures that may give rise to increased vector borne illness risk (rodents, mosquitos and flies for example). Particular attention is drawn to the design of urban spaces to limit the urban heat island affect and the EIAR should demonstrate how vulnerable people are protected through the use of shade (natural shade from trees or artificial shade at bus shelters for example), limiting concrete surfaces, and the inclusion of green spaces and blue spaces to additional support mental health. The EIAR should clearly illustrate how the development contributes to obligations under the Climate Action and Low Carbon Development Act 2015 and amendment of 2021, the National Adaptation Framework 2024, National Planning Objective 54 of the National Planning Framework and the most recent national Climate Action Plan 2025 **Noise & Vibration** The potential impacts for noise and vibration from the proposed development on all noise sensitive locations must be clearly identified in the EIAR. The EIAR must also consider the appropriateness and effectiveness of all proposed mitigation measures to minimise noise and vibration. A baseline noise monitoring survey should be undertaken to establish the existing background noise levels and an assessment of the predicted noise impacts during the construction phase and the operational phase of the proposed development must be undertaken which details the change in the noise environment resulting from the proposed development.

		As previously stated the CEMP may detail the proposed mitigation measures for the Construction Phase. **Material Assets – Traffic and Transportation** The NEHS recommends any assessment of traffic should be cognisant of the transport hierarchy and work towards assessing access into and out of the proposed development on foot, by bike, by public transport and vehicular transport. The EIAR should identify ways in which the proposed development will facilitate the Climate Action Plan 2023 strategy of Shift – Avoid – Improve. Such a move will ultimately improve air quality and support active travel. **Material Assets – Utilities, Services and Waste.** The EIAR should identify the sources and quantities of waste generated during construction and look to adopt the principles of the 'waste hierarchy'. The proposed development should support movement towards the goals of the Circular Economy and Miscellaneous Provisions Act 2022 where Ireland moves to being a circular economy. **Ancillary Facilities** The EIAR should include details of the on-site infrastructure covering items such as site office, fuel storage depot, sanitary accommodation and canteen, First Aid facilities, disposal of wastewater and the provision of a potable water supply. **Cumulative Impacts** The EIAR should include details of potential cumulative impacts in the context of other developments, existing and proposed in the vicinity of the proposed development.
Transport Infrastructure Ireland	Email correspondence (Tara Spain, Head of Land Use Planning), 15th October 2025	Transport Infrastructure Ireland (TII) wishes to advise that it is not in a position to engage directly with planning applicants with respect to proposed developments. TII will endeavour to consider and respond to planning applications referred to it given its status and duties as a statutory consultee under the Planning Acts. The approach to be adopted by TII in making such submissions or comments will seek to uphold official national road and light rail policy and guidelines including Spatial Planning and National Roads Guidelines for Planning Authorities (DoECLG, 2012) and TII Publications. Regard should also be had to other relevant guidance available at www.TII.ie. The issuing of this correspondence is provided as best practice guidance only and does not prejudice TII's statutory right to make any observations, requests for further information, objections or appeals following the examination of any valid planning application referred. With respect to EIAR scoping issues, the recommendations indicated below provide only general guidance for the preparation of an EIAR, which may affect the national roads networks. The project promoter should have regard, inter alia, to the following; Having regard to the EPA Guidelines on the information to be contained in Environmental Impact Assessment Reports, 2022 it is recommended as appropriate that the national road and light rail networks are recognised as strategic transport assets under "material assets". EIAR assessment and mitigation should have regard to the following: • National Roads: Official policy for development at or near national roads is set out in in the DoECLG Spatial Planning and National Roads Guidelines for Planning Authorities (2012) available at https://www.gov.ie/en/collection/85b83-planning-guidelines-standards/ • TII Publications: - In addition, as part of TII's responsibilities for managing and improving the coun-try's national road and light rail networks, the Authority sets development guidance and standards for traffic and road assessments and construction that may be necessary by reason of proposed

		development location, scale or typology to be prepared to accompany applications for developments or works. Technical guidance and standards are contained in TII Publications, available at https://www.tiipublications.ie/ In addition, the EIAR should have regard to, inter alia, the following: **National Road Network:** • TII would be specifically concerned as to potential significant impacts the development would have on the national road network (and junctions with national roads) and associated infra-structure in the proximity of the proposed development, • In this instance, and, as advised to Cork City Council in a response to LRD Opinion (LRD25-05), TII considers that arrangements for any proposed works adjacent to the N20 will need to be address appropriately the following: • It would be expected that intended works adjacent to the N20 such as landscaping, boundary treatment, lighting, security and drainage as well construction methodolo-gies would be documented, evaluated and designed in manner that has regard to the extents and function of the national road assets and also where relevant TII publications. • TII will require that the requirements to safeguard and maintain the TII maintained area and all associated infrastructure assets on the N20 will be addressed in relation to the proposed SUDS/landscaped adjacent to the N20 boundary. Appropriate as-sessments and plans for the proposal will be expected to address to examine pro-posal interactions and demonstrate the protection of the N20's drainage regime and the physical structural integrity of the N20 in general. • Consultations should be had with the relevant Local Authority/National Roads Design Office (RDO) regarding locations of existing and future national road schemes especially in regard to the M20 Scheme. • The EIAR should have regard to any prior Environmental Impact Statement or Assessment Report, and all conditions and/or modifications imposed by An Coimisiún Pleanála and City Council regarding road schemes in the area. The developer should have regard to any potential cumulative impacts. **TII Publications:** • It would be important that, where appropriate, subject to meeting the appropriate thresholds and criteria and having regard to best practice, a Traffic and Transport Assessment be car-ried out in accordance with relevant guidelines, noting traffic volumes attending the site and traffic routes to/from the site with reference to impacts on the national road network and junctions of lower category roads with national roads. The Authority's *Traffic and Transport Assessment Guidelines* (TII Publication No. PE-PDV-02045) should be referred to in relation to proposed development with potential impacts on the national road network. The scheme promoter is also advised to have regard to Section 2.2 of the Guidelines which addresses requirements for sub-threshold TTA. • The designers and assessors are asked to consult TII Publications to determine whether a Road Safety Audit is required. **Construction Management and the National Road Network:** • Any Construction Environmental Management Plan (CEMP) prepared to accompany the EIAR shall demonstrate and ensure any proposed works in the vicinity of the national road comply with TII Publications requirements and mitigation of potential impact on the national road network. • Any Construction Traffic Management Plan (CTMP) shall demonstrate compliance with TII Publications requirements and include mitigation of potential impact on the national road network. • Separate structure approvals/permits and other licences and works specific deeds of in-demnity may be required in connection with the proposed routes, including where tempo-rary modification to the road network may be

		required. Consultation with relevant local authorities, PPP Companies and MMaRC Contractors may also be required. **TII Environmental Assessment Guidance:** • The EIAR should have regard to TII's Environmental Assessment and Construction Guide-lines, including the *Good Practice Guidance for the Treatment of Noise during the Planning of National Road Schemes (March 2014)*, The EIAR should consider the European Communities (Environmental Noise) Regulations 2018 (S.I. No. 549 of 2018)) and how the development will affect future action plans by the relevant competent authority. The developer may need to consider the incorporation of noise barriers to reduce noise impacts (see *Good Practice Guidance for the Treatment of Noise during the Planning of National Road Schemes (March 2014)*), • Environmental Impact Assessment shall include provision for travel planning / mobility man-agement planning in the interests of protecting national roads capacity in the interests of sustainable travel policy. Transport analysis should also consider: i. A mobility management plan should accompany the transport assessment, ii. Modal share targets should be outlined and how any PT modal share is accommo-dated, iii. Measures proposed to reduce car dependency should be outlined, iv. Detailed phasing proposals of development with associated transport infrastructure provision is required, v. Consider and address cumulative impacts of other development and impacts on road capacity, vi. The traffic and transport assessment should consider all road users, vii. Mitigation measures should be aligned with phasing of road infrastructure improve-ments and required public transport interventions; all clearly outlined. • Any proposals related to future public transport provision are a matter for the NTA. Notwithstanding, any of the above, the developer should be aware that this list is non-exhaustive, thus site and development specific issues should be addressed in accordance with best practise. No part of this submission shall be construed as TII giving consent to access or alter any national road infrastructure assets including drainage regimes, structures, safety, etc. If any damage is caused by any development works to the national road or associated assets, overground or underground, costs arising to fully remediate all impacted infrastructure assets to TII Publications standards and requirements will be pursued. In the interests of clarity, the issuing of this correspondence is provided as best practice guidance only. This correspondence does not prejudice TII's statutory right to make any observations, requests for further information, objections or appeals following the examination of any valid planning application referred.

Table 1.4: Consultation responses from Prescribed Bodies.

A dedicated website for the proposed development has been established and the EIAR is available at: www.ringwoodphase2lrd.ie

Prior to lodging this application, the required information has been issued for the Department of Housing, Local Government and Heritage's EIA Portal. The purpose of this tool is to inform the public, in a timely manner, of applications that are accompanied by an EIAR. The portal will provide a URL link.

Where appropriate, Chapters 7 – 20 identify specific consultations that have been undertaken to support individual assessments and assessment chapters.

1.7.2 Consultation Feedback

The proposed development was subject to two LRD S.247 pre-application consultation meetings with Cork City Council on 18th June 2024 and 3rd December 2024, both via Microsoft Teams. Copies of the minutes are attached at Appendix 1 of Volume III of this EIAR.

The key outcomes of the first S.247 meeting, which have guided the preparation of this LRD application submission to Cork City Council, are as follows:

Planning Policy

a. *Planning policy feel it necessary that a higher density be proposed for these lands given their proximity to the potential Railway Station site.*
b. *Policy would request that the apartment provision be separated from the conventional dwellings in any density calculation, a cleared demarcation of net developable area should also be supplied.*
c. *Commitment should be given to the provision of apartments prior to the conventional dwellings and also more integration of the apartments with the proposed houses.*

Development Management

a. There is a concern using the proposed tier 3 lands for access. It would be a material contravention of the Development Plan and would need to be justified in advance.
b. *Would like to see the doubling up of roads minimised.*
c. *The Distributor Road appears to finish abruptly.*
d. *Might need to wait until the roads are further planned – potentially premature.*
e. *Concern about the use of Tier 3 lands and it would be a material contravention to the Development Plan*
f. *Would like to see the access road connect to somewhere.*
g. *There is an opportunity here to change the approach to the site and increase the density.*
h. *Would like to see more integration of the different types of housing units.*
i. *Need more information on the shelter housing proposal – is there an end user in mind?*
j. *Need to look at community services and access to services.*
k. *Is there a need for some retail or a small medical unit?*
l. *The aim is to minimise journey time to services.*

Traffic and Transport

a. *The proposed development requires the delivery of the entirety of the Ringwood Distributor Road to include the connection with the R617 to the south; The section of the Ringwood Distributor Road which is currently included as part of the primary healthcare application should also be included as part of the Phase 2 Ringwood residential scheme.*
b. *The 'Future Potential Link' to Aisling Gael should be included with the application.*

c. *The horizontal alignment of the distributor road should avoid the existing wooded area to the north east of the site. In addition, the vertical alignment should follow the existing contours as best possible to remove the need for additional road widening and loss of any further woodland.*

a. *There is a requirement to have footpaths on both sides of the Distributor Road, and the proposed parallel road along the Ringwood Distributor road in front of the apartments should be removed, no on-road parking will be permitted on the Distributor Road.*

b. *Parking in line with the standards in the Development Plan*

c. *Requirement for secured bike parking*

Architecture

a. *There is a lack of architectural drawings compared to the submission for Phase 1 to allow us to allow for a thorough appraisal for Phase 2, but based on the information received, the proposal can be assessed according to the key indicators of the 'Responsive Built Form' heading set out in the 2024 Sustainable Residential Development and Compact Settlement guidance as follows:*

- *The layout of the scheme largely consists of a series of interlocking local streets that connect to Station Road via Phase 1 of the proposed development and the proposed link road to the east along with terraces to the northwest and apartment blocks to the east. Generally, the layout of the streets is coherent and legible, and the geometry responds to both the circular geometry of the woods to the south and the contours of the site. However, there are a number of locations where double parallel roads are proposed which should be reconsidered. These include to the north of the site where a road and cycle lane are proposed parallel to a road at Aisling Geal, to the east where a road and substantial amount of parking is proposed parallel to the link road to the northeast of the apartment blocks and to the northwest where a secondary road is proposed with a substantial amount of parking behind existing terraces of houses to Station Road and parallel to a proposed road and cycle lane by proposed duplexes and sheltered housing.*
- *The current proposal does not show clearly whether there is a proposed connection to the Aisling Geal housing estate to the north with a path indicated in the Site Layout Plan. This connection would greatly improve the permeability of the scheme as well as of the existing housing estates to the north and at minimum a cycle and pedestrian route should be proposed with a vehicular connection considered. There is also the potential to connect to the Árd na Gréine housing estate which should be considered. However, the current proposed layout at this edge of the site behind the sheltered housing may need to be slightly amended to allow for this to work well.*
- *There is a coherent distribution of scale across the site with taller buildings located at the bottom of the slope and 2-storey dwellings towards the higher ground which demonstrates an appropriate consideration of visual impact within the wider context.*
- *The 2-storey dwellings are largely arranged in well-proportioned urban blocks although there are issues with how the corners of these blocks are dealt with which could be improved. For instance, the block to the south of the sheltered housing has a long run of presumably a tall back garden wall facing the sheltered housing and*

the adjacent green space which implies a limited active frontage and limited passive surveillance in this area. Similar issues arise between the southwest blocks and elsewhere. As plans or a site plan showing ground floors have not been submitted it is not possible to fully assess this or know how or if this is being dealt with or mitigated.

- *The southeastern apartment block and adjacent duplexes form a more permeable block with a defined communal space in the middle. However, the apartment blocks to the northeast less successfully interact with each other and do not form spaces as useable to the residents based on the Site Layout Plan. There are no plans provided for the apartments and the footprints of the blocks are mirrored and rotated copies which implies more time needs to be given to their development. The elevations provided also need to be further developed as the solid to void ratios of the Southwest and Northwest Elevations shown need improvement. The main issue with the apartment blocks is that they do not form a street edge to the proposed link road in their current format and location. This could be improved by removing the parking and parallel road to the northeast of the apartment blocks with other solutions for parking considered.*
- *The duplexes and sheltered housing follow a terraced and linear format to the northwest and show a road to their northwest against the back garden walls of the existing houses of Assumption Terrace on Station Road. As noted above, this parallel road should be reconsidered with the potential for back to back gardens to Assumption Terrace being another option. This could be achieved by inverting the duplex apartments and allowing for ground floor maisonettes with back gardens or through other means.*
- *The proposal to include the Central Park in construction of Phase 1 is welcomed as is the reassessment of the Phase 1 entrance from Station Road to include housing parallel to Woodville Terrace*
- *Generally speaking, it's felt that further development could improve this scheme greatly and based on the limited amount of architectural drawings submitted, the scheme is early enough in development to allow for this to happen.*

Biodiversity

a. *The new distributor road within the development. Statistics on the number of trees being removed and the area of wet woodland habitat being removed with the current drawing.*
b. *Where possible to reduce the amount of wet woodland habitat being removed where possible.*
c. *To have compensation planting for the trees removed and habitat removed.*
d. *To retain the hedgerow within the public area in phase 2 and use it as a feature within the public open space.*

Drainage

a. *No drainage details or layout drawings were provided.*
b. *It's recommended that drainage details and drawings are submitted as part of a subsequent S247 meeting, with a particular focus on the proposed SuDS / NBS features.*

c. *The Applicant is welcome to engage directly with the Drainage Section in advance to discuss site specific drainage requirements.*

Conservation

a. *Photomontages required to assess any impact on views from Blarney Castle.*

The key outcomes of the second S.247 meeting, which have guided the preparation of this LRD application submission to Cork City Council, are as follows:

Development Management

a. *Concerns re density. Too low. Needs to be upwards of 50 to support commuter rail. Not many opportunities to achieve higher density. It is considered necessary that a higher density be proposed for these lands given their proximity to the potential Railway Station site.*
b. *Concerns with primary care centre location. Not considered appropriate. Would be better located in Blarney Town Centre.*
c. *Re-iterate that there should be a commitment given to delivering the apartments prior to the conventional dwellings and also more integration of the apartments with the proposed houses.*
d. *Elements of infrastructure connected with the primary care centre is zoned City Hinterland and would not be appropriate.*
e. *Concern raised previously re using the proposed tier 3 lands for access. It would be a material contravention of the Development Plan and would need to be justified in advance.*

Engineering

a. *Acknowledges and welcomes the ongoing consultation with the development team (SYSTRA and MHL).*
b. *Further workshops with the design team will need to be carried out to finalise the layout.*
c. *The junction at the R617 needs to be amended to cater for adequate deflection of traffic coming from Blarney travelling to the east. (may need to shift the junction to the east approx. 40m but the exact layout to be agreed with design team). The provision of Active travel facilities need to be included in the development to cater for the active travel demand to safely access the sanctuary walkway.*
d. *The redline boundary of the development needs to be extended to encompass these facilities and they would also need to be compatible with the Blarney Active travel Project.*
e. *Pedestrian and cyclist connectivity to the estates adjacent to the northern boundary of the development should be included in the development.*
f. *A suitably qualified external 3rd party (i.e. outside of MHL and SYSTRA) Quality Audit including a Road safety Audit to be carried out on the proposals. The developer is to commit to all stages of this external 3rd party (i.e. outside of MHL and SYSTRA) Quality and Road safety Audit process.*

Parks and Recreation

a. *SUDS Attenuation on eastern boundary of the site – cross sections required. What is the potential for access and usability of the site for residents as an open space?*

b. *Management and Maintenance plans will be required for all open spaces and specially the SUDs attenuation areas.*
c. *Detailed landscape design for all open spaces to be submitted.*
d. *Communal open spaces in the apartment and duplex blocks – detailed designs needed to include play provision as per Design standards for new apartments. The communal open space for Duplex block D & E is very narrow and will require innovative design to achieve a usable open space.*
e. *The retention of hedgerows is welcome.*
f. *The retention and protection of as many of the trees on site is noted and any further measures to save trees will be welcomed.*
g. *The quality of the ecological surveys carried out to date are of a high standard. Continuation of these surveys for phase 2 are welcomed.*
h. *Another review of the road alignment to reduce the impact of the wet woodland, as per Tony Lynch's request would be very welcomed.*
i. *The retention of hedgerows where possible is very welcomed.*
j. *In relation to the hedgerow removal along he distributor road close to the wet woodland, if the design could be looked at further and reduce the amount of removal it would be welcomed.*
k. *Continue with the surveys that were completed within phase 1 of the development.*
l. *Wintering and breeding bird surveys.*
m. *Bat surveys of both potential roost sites, and activity within and surrounding the site.*
n. *Non-volant mammal surveys.*
o. *IAPS.*
p. *Habitat surveys and freshwater surveys.*

Environmental Management

a. *To properly assess the proposed development, the following details will be required:*
    - *Construction Environmental Management Plan*
      A Construction Environmental Management Plan shall be submitted, this plan shall provide details of intended construction practice for the development, including phasing of the works, piling requirements, mitigation measures for noise & vibration, dust and air quality. Detail in relation to traffic management, lighting, pedestrian safety, water quality protection measures and hours of work to be included.
    - *Construction and Demolition Resource Waste Management Plan*
      The developer shall prepare a Construction and Demolition Resource Waste Management Plan (RWMP) as set out in the Best Practice Guidelines for the Preparation of Resource and Waste Management Plans for C&D Projects (2021) including demonstration of proposals to adhere to best practice and protocols. The RWMP shall include specific proposals as to how the RWMP will be measured and monitored for effectiveness; these details shall be placed on the file and retained as part of the public record. The RWMP must be submitted to the planning authority for written agreement prior to the commencement of development. All records (including for waste and all resources) pursuant to the agreed RWMP shall be made available for inspection at the site office at all times. Particular detail in relation to waste management from refurbishment and

redevelopment of existing farm outbuildings for conversion to a café/restaurant to be included within the plan".

- *Operational Waste Management Plan*

  An Operational Waste Management Plan is required detailing how the waste arising in the development will be managed. Details shall include proposals for waste reduction, reuse, recycling, vented bin storage, as well as who will manage the waste, present it for collection, and dispose of it. The plan should outline who will present the communal waste bins from the Apartment Blocks, primary care centre and restaurant/cafe for collection. Provisions should be made within the properties for internal bins to match those that are presented for waste - i.e. provide, general waste, recycling and compost bins.

  Apartment Blocks - Calculations are to be prepared to show quantities of waste produced versus the volume of waste storage provided in each storage area. Drawings of Bin Stores to be provided and location of bin stores to provide ease of access for residents as well as those presenting waste for collection.

Primary care centre - Calculations are to be prepared to show quantities of waste produced versus the volume of waste storage provided. Location of Primary care centre bin storage to be identified and confirm if management company or Primary care centre operator will present this waste for collection. Drawings of bin storage area to be provided. Details of how medical waste shall be dealt with to be included within plan. Healthcare waste shall not be presented for refuse collection or for disposal at any sanitary landfill site.

Detail required in relation to bin storage facilities for terraced houses and duplexes within this development. Calculations are to be prepared to show quantities of waste produced versus the volume of waste storage provided for townhouses. Bin storage facilities to be provided and bins to be screened from view for terraced houses and duplexes.

All bin storage drawings for the various house types and communal bins to be submitted with the Operational Waste Management Plan.

- *Swept Path Drawing for Refuse Vehicle*

  It is not clear if a refuse vehicle can enter and turn within the development during waste collection. A swept path analysis of a refuse vehicle is required.

- *Noise & Vibration Impact Assessment*

  Noise impact Assessment - An inward and outward noise impact assessment required. To show the impact of the development during construction and operation on the surrounding receptors. The impact of construction of Phase 2 on any occupants within Phase 1, shall be factored in.

  Assessment to also show potential impact of surrounding environment and existing road network on noise levels within the development amenity area, balconies and within the houses and apartments themselves.

  Consideration of noise generated from mechanical plant such as heat pumps to be factored in as well as noise generated from bin storage areas, substation, plant rooms, primary care centre and restaurant/cafe.

  Any proposed mitigation measures to reduce the noise impact from these areas shall be included within the report. Particular attention should be paid to properties above, below or adjacent to the above-mentioned areas.

- *Energy & Climate Action Statement*
  No detail has been provided regarding the proposed energy use within the development. It is not clear what form of space/water heating is proposed for the development. The developer shall submit a 'Climate Action and Energy' statement and endeavour to use sustainable source of energy, and to operate an energy conservation policy on the design and operation of the residential scheme.

Water Services

a. *Drainage requirements as per the previous phase.*
b. *Please continue to engage directly with the Drainage Section***.**

Planning Policy

a. *The inclusion of the entire Ringwood Distributor Road is welcome.*
b. *The junction of the Ringwood Distributor Road with the R617 requires some further consideration to ensure compatibility with Cork City Council's active travel plans for R617. In addition, it would be beneficial if some space was set aside to allow for the future delivery of a southbound bus lane.*
c. *The inclusion of the pedestrian link to 'Aisling Gael' is welcome.*
d. *The provision of a two-way cycle facility fronting onto multiple driveways along the northern route should be reconsidered, the redesign of this cycle facility needs to be modified by either relocating the parking or providing cycle lanes on both sides of the street.*
e. *The local vehicular access between Block E and Block F should be retained.*
f. *The alignment of the Ringwood Distributor Road in the vicinity of the 'wet' wood should be reconsidered, particularly the southern portion to allow for the retention of more trees. Consideration to the providing separate alignments for the active route and the road corridor could assist in this manner.*

Architecture

The layouts and drawings for the northern portion of Phase 2 that were noted as missing or insufficient after the last meeting in June have been included in this iteration with a number of issues previously raised being resolved or referred to in the Architectural Design Statement. The proposed development can be assessed according to the key indicators of the 'Responsive Built Form' heading set out in the 2024 Sustainable Residential Development and Compact Settlements guidance as follows:

a. *Generally, the layout of the streets in the northern portion is coherent and legible and the geometry responds to both the circular geometry of the woods to the south and the contours of the site. The doubled parallel roads to the northeast and northwest have been removed, which is an improvement, but the road to the north remains parallel to the adjacent cul de sac of Aisling Geal. While it is proposed to buffer/ screen the two roads with a linear park, this is not an ideal solution.*
b. *There is a connection proposed to the Aisling Geal housing estate to the north but the housing terraces to the northwest should be reworked to allow for a connection to the Árd na Gréine housing estate to improve permeability.*
c. *The extra drawings provided and amendments to the corners of the urban blocks resolve many of the previously identified issues raised re passive surveillance in the northern portion of the site.*

However, some of the newly introduced Blocks E and I and Mews Block A could be improved by providing gable windows overlooking otherwise unsupervised spaces.

d. *Apartment Blocks E and F wrap around a permeable communal open space with Duplex Blocks J and K, however the value of this space is diminished by the level of parking included and the resultant roads which could be reduced. It is not clear if the communal open space between Duplex Blocks F, G, H and I is accessible to the public or semi-private and the same is true for the communal space between Duplex Blocks D and E and Mews Block A. These spaces also seem rather narrow. Sections through each of these three communal open spaces would benefit the design and help to explain the design intent and level of access.*
e. *The reuse of the barn/ farm outhouses as a café in the southern portion of the site is welcomed and the Primary Care Centre follows a similar aesthetic in terms of roof pitches and general massing which is positive. However, the large carpark to the east should be reconsidered and it would be helpful to have at least a sketch masterplan for the lands to the east to properly assess this portion of the site.*
f. *The 9 housing units adjacent to the proposed Primary Care Centre should be reconfigured as they currently back onto the café and adjacent site and their splayed layout does not seem to sit well with the other buildings. A more rural or farmhouse aesthetic treatment to reflect the reused barn in place of the more generic suburban aesthetic, which is more justified to the north of the Ringwood, along with possibly considering a traditional rural cluster of houses may be beneficial here.*
g. *The 9 housing units adjacent to the proposed Primary Care Centre should be reconfigured as they currently back onto the café and adjacent site and their splayed layout does not seem to sit well with the other buildings. A more rural or farmhouse aesthetic treatment to reflect the reused barn in place of the more generic suburban aesthetic, which is more justified to the north of the Ringwood, along with possibly considering a traditional rural cluster of houses may be beneficial here.*
h. *Notwithstanding issues raised above and valid comments from other Cork City Council departments regarding density, the siting of the Primary Care Centre, etc., we feel that the northern portion of the site has been improved from the previous submissions but that the southern portion may need a substantial revaluation of layouts and massing.*

Conservation

a. *From a conservation perspective, the key consideration would be the view from Blarney Castle, a strategic landmark building and protected structure of international significance.*
b. *The existing and proposed views from the castle show that there would be a negligible impact on the setting this building.*

A Section 32C meeting was held with representatives of Cork City Council on the 29th May 2025

Cork City Council issued its Opinion on 26th June 2025, a copy of which is attached at Appendix 1 of Volume III of this EIAR, which has determined that the materials submitted did not constitute a reasonable basis on which to make an application for permission for the proposed LRD.

The Opinion advises that, pursuant to section 32D(2), the following areas and issues require further consideration:

1. Urban Design/Architecture

Further consideration and amendment of the proposed development in terms of its layout, urban design, form and architecture noting Appendix C and the detailed comments from the City Architect's Section attached. Key areas to be reconsidered and amended include issues raised in the report under the following headings: 'layout and access, design of buildings, Public Spaces.

2. Drainage

Further consideration and amendment of the proposed development in relation to Drainage. An overview of the proposed storm water drainage strategy was provided in a Planning Engineering Design Report. However, no design information or details were provided. On that basis, the documents submitted do not constitute a reasonable basis for making an LRD planning application.

3. N20/M20 Project Office

Further consideration and amendment of the proposed development in relation to the N20/M20 Cork to Limerick Project. Limerick City and County Council has made observations to the proposed development in respect of the N/M20 Cork to Limerick Project.

Clarification is sought on the provision of the TII traffic growth sensitivity test results for the Phase 1 application and request a similar test be undertaken for Phase 2 application. The Phase 2 test should assess the cumulative impacts of traffic (Phase 1 + Phase 2) on the N20/R617 Blarney junction in both the existing (N20/R617) and reconfigured (M20/R617) Blarney junction layouts.

Please consider the traffic generated noise from the N20 and future M20 and ensure the proposed residential development includes adequate noise mitigation and separation in accordance with the relevant noise policy and guidelines.

The N/M20 Cork to Limerick published a Project Update on the 16th June 2025 with the developing design. Further details are available on the project website www.corklimerick.ie. The applicant should consider the updated design information and integrate same as part of their future application.

4. Transport Infrastructure Ireland

Further consideration and amendment of the proposed development having regard to the submission received from T.1.1. (See Appendix D) with particular reference to the following issues:

a) The Authority is of the opinion that insufficient data has been submitted with the planning application to demonstrate that the proposed development will not have a detrimental impact on the capacity, safety or operational efficiency of the national road network in the vicinity of the site.
b) Tll considers that arrangements for these proposed works adjacent to the N20 has not been addressed appropriately in the documentation submitted as follows:

- *It would be expected that intended works adjacent to theN20 such as landscaping, boundary treatment, lighting, security and drainage as well construction methodologies would be*

documented, evaluated and designed in manner that has regard to the extents and function of the national road assets and also where relevant TII publications. TII notes with concern that this has not been undertaken.

- *TII with concern are unable to ascertain or evaluate that the requirements to safeguard and maintain the TII maintained area and all associated infrastructure assets on the N20 has been addressed in relation to the proposed SUDS area located adjacent to the N20 boundary. TII is unable how this proposal interacts with the N20's drainage regime and physical structural integrity of the N20 in general. This is documented in the lack of recognition of proximity to the national road in accompanying analysis and cross sections.*

  TII advises that prior to the application being submitted the developer should be requested to provide plans and details which demonstrate that any proposals at the location address the national road asset and take account of all relevant elements of TII Publications.

c) Any proposals related to future public transport provision are a matter for the NTA. Consultation with the NTA would be essential on rail and BusConnects.

5. Transport & Infrastructure

Further consideration and amendment of the proposed development in terms of certain transport infrastructural issues as outlined in the report of the S.E.E. Strategic Transport Officer and the A/SEE Infrastructure Development section in relation to the following issues:

- *Further consideration and justification of the proposed:*
- *External and internal road networks and connections*
- *Amended Quality Audit to included the proposed amendments identified*
- *Pedestrian Accessibility*
- *Cycle Accessibility*
- *Vehicular Accessibility*
- *Internal road network*
- *Parking identification and classification of types*
- *Transportation Assessment information*

6. Urban Streets & Roads Design/Sustainable Travel

Further consideration and amendment of the design of the development having regard to the reports from the Urban Streets & Roads Design Section in relation to the following issues:

- *Referencing Drawing 2106-PA2-S-107 Sheet 3:*
  - *Comprehensive Road Safety Audit to be carried out and produced by Client*
  - *Footpath/ Cycle Path to South R617 would welcome Grass verge separation distance between edge Roadway and Cycle Path.*
  - *Suitable control measures for pedestrian crossing at junction*
  - *Sightlines to be achieved to both directions suitable planting to East of main entrance.*
  - *Dmurs to be adhered to in relation to pedestrian / cycle mobility within the proposed development/ due to the elevation rise suitable dismount locations to be introduced*
  - *Entrance to Cafe / primary cafe Building to be revised seems to be a lot of activities to be happening in this location hence increase of pedestrian / motor conflict -speed measures critical at this juncture.*
- *Referencing Drawing 2106-PA2-S-105 Sheet 1:*

- *Junction on Station Road to achieve suitable sightlines junction layout / operation to be agreed Safety Audit to be provided.*
- *Motorist from Station Road North may be compromised with this signalised junction.*
- *Immediate entrance to the South to future phase is this plausible to be reconsidered due close proximity 'Stop' Bar.*
- *Internal Corner Radaii to be reduced to mitigate driver behaviour throughout.*
- *Internal safety audit to be carried out noting speed measures/ pedestrian crossing/ suitable signage etc. in conjunction with Dmurs to be implemented.*
- *Future road surface/ raised other to be confirmed in more detail.*
- *Pedestrian crossing points to be directly opposite for safe pedestrian mobility to be redesigned and confirmed in more detail.*

7. Water Infrastructure/Supply

Further consideration and possible amendment of the proposed development having regard to the submission received from Uisce Eireann.

8. Biodiversity

Further consideration and possible amendment of proposed development (A) following Appropriate Assessment Screening and the carrying out of full Ecological Impact Assessment/Surveys.

9. Childcare Facility

Further consideration and amendment of the proposed development having regard to the submission of Cork City Childcare in relation to the need for additional childcare spaces for Phase 2.

It is further noted that the Social and Community Audit also raises that there is current insufficient availability of childcare spaces- whilst also noting Phase 1 provides for 101 spaces- whilst ABP refers to Phase 1 providing 137 spaces.

10. Other Submissions

Further consideration and possible amendment of the proposed development to take account of the submissions received from Inland Fisheries Ireland.

Furthermore, pursuant to article 16A (7) of the Planning and Development Regulations 2001 (as amended), the prospective applicant is hereby notified that, in addition to the requirements as specified in articles 20A, 22 and 23 the following specific information should be submitted with any application for permission. These are in addition to the information submitted at Opinion stage which should be updated accordingly having regard to any changes which are proposed as a result of the above.

a. *Revised drawings and documentation to take into account of the further consideration of the issues raised above and any associated amendments, and the reports/comments of reports and submissions in Appendices C and D of the LRD Opinion*
b. *Reports/Surveys including any necessary revised layouts/mitigation measures as required by the Environment & Waste Management Section and (for the required content of these reports please*

see Appendix C and D as well the details outlined in the S.247 pre-planning notes issued by CCC including:

(i) A Construction Environmental Management Plan.

This plan is sufficient at this stage however prior to the commencement of the development, an updated Construction Management Plan and Waste Management Plan needs to be resubmitted to the Local Authority for agreement when the main contractor has been appointed or when changes have occurred to the previously submitted plans.

(ii) A Construction and Demolition Resource Waste Management Plan.

The Construction Environmental Management Plan provided contains a section relating to Construction and Demolition Resource Waste Management Plan.

(iii) An Operational Waste Management Plan.

An Operational Waste Management Plan needs to be completed as part of the final planning application.

(iv) Apartment Blocks

Communal bin stores are provided for all apartment buildings located internally at the ground floor. Plans elevations and sections of bin stores provided however plan view showing location of bin stores externally to be provided. Also, calculations are to be presented to show quantities of waste produced versus the volume of waste storage provided in each storage area.

(v) Primary care centre -

Calculations are to be prepared to show quantities of waste produced versus the volume of waste storage provided. Location of Primary care centre bin storage to be identified and confirm if management company or Primary care centre operator will present this waste for collection. Drawings of bin storage area to be provided. Details of how medical waste shall be dealt with to be included within plan. Healthcare waste shall not be presented for refuse collection or for disposal at any sanitary landfill site. Calculations need to be provided at full application stage. Further clarification is also required on waste generated and disposal required as per initial query.

Detail required in relation to bin storage facilities for terraced houses and duplexes within this development. Calculations are to be prepared to show quantities of waste produced versus the volume of waste storage provided for townhouses. Bin storage facilities to be provided and bins to be screened from view for terraced houses and duplexes.

Duplex buildings and terraced individual houses, have their own bins, provided with covered areas and directly adjacent each front door.' Drawing to be provided showing location of bin storage area for duplex buildings. Also, calculations are to be presented to show quantities of waste produced versus the volume of waste storage provided in each storage area.

All bin storage drawings for the various house types and communal bins to be submitted with the Operational Waste Management Plan.

An Operational Waste Management Plan is to be completed as part of the final planning application.

(vi) Swept Path Drawing for Refuse Vehicle.

It is not clear if a refuse vehicle can enter and turn within the development during waste collection. A swept path analysis of a refuse vehicle is required.

Auto track Analysis provided for entrance points to development at Station Road and R617 junctions only. Initial feedback raised query in relation to 'refuse vehicle can enter and turn within the development' A swept path analysis of a refuse vehicle is required showing within development

(vii) Noise Impact Assessment.

Noise impact Assessment - An inward and outward noise impact assessment required. To show the impact of the development during construction and operation on the surrounding receptors. The impact of construction of Phase 2 on any occupants within Phase 1, shall be factored in.

Assessment to also show potential impact of surrounding environment and existing road network on noise levels within the development amenity area, balconies and within the houses and apartments themselves.

Consideration of noise generated from mechanical plant such as heat pumps to be factored in as well as noise generated from bin storage areas, substation, plant rooms, primary care centre and restaurant/cafe.

Any proposed mitigation measures to reduce the noise impact from these areas shall be included within the report. Particular attention should be paid to properties above, below or adjacent to the above-mentioned areas.

Noise impacts need to be fully addressed as part of the updated Addendum EIAR to be submitted at full application stage.

(viii) Energy & Climate Action Statement.

No detail has been provided regarding the proposed energy use within the development. It is not clear what form of space/water heating is proposed for the development. The developer shall submit a 'Climate Action and Energy' statement and endeavour to use sustainable source of energy, and to operate an enery conservation policy on the design and operation of the residential scheme.

An Energy and Climate Action Statement needs to be submitted at full application stage

c. Revised drawings to show the alterations recommended within the report of the Strategic Transport Officer, and the Urban Streets & Roads Design Section.

d. A Traffic & Transportation Assessment including any necessary alterations to the scheme to address any issues arising and the comments of the Strategic Transport Officer in his report.

e. Revised drawings and architectural design including layouts, elevations etc. to take account of the detailed issues/concerns raised by the City Architect's Section.

f. A Universal Design Statement.

g. An updated Housing Quality Assessment following any revisions made to the development addressing housing mix requirements of the Cork City Development Plan 2022-2028 and to demonstrate compliance with all the relevant national minimum standards for housing and apartments.
Clarity is needed for the Duplex Blocks apartments (Block A, Band C and D) as they reference 3 bed apartments-(5 person) or 3 bed apartments 3 bed+ study (4 persons) labelled on the drawings - but don't match the floor plans. Please note that a study room will be considered a bedroom for purposes of housing mix; The housing mix may need amending on this matter.

h. A fully comprehensive Landscape and Visual Impact Assessment of the development from Blarney Castle (Strategic landmark building and protected structure of international significance) and associated set of Photomontages with viewing locations shown. Slate roof to barn building connected with Castleview houses should be repaired and refurbished with conservation rooflights.

i. An amended Archaeological Impact Assessment which shall outline mitigation in the event that human remains are uncovered. It is recommended that prior to submission of the amended AIA that Cork City Council Archaeologist Ciara Brett is consulted.

j. (i) An Appropriate Assessment screening to assess the impact of the proposed development on the Natura 2000 conservation sites and look at the in-combination impacts of surrounding developments have on the Natura 2000 sites.
(ii) A Natura Impact Statement should the proposed development be screened in to have a significant impact on the Natura 2000 sites.
(iii) Review of the Ecological Technical Note Report -and the Landscape design Rationale.
(iv) Bat Surveys

- *The has been comprehensive bat surveys conducted for the first phase and more surveys are being conducted for this phase.*
- *Lesser horseshoe bats have been recorded through other surveys within the Blarney area and a known winter roost has been located close to the proposed development. Lesser horseshoe bats and more difficult to survey for and passive bat detectors need to be positioned slightly differently to record them.*
- *Further surveys should be submitted which concentrate on surveying for potential Lesser horseshoe bats within and surrounding the proposed development.*
- *Details of the lighting design and the bat surveys to be used to create dark corridors within the site and reduce the lighting where bats use features such as tree lines, hedgerows and*

grasslands for foraging. Follow the guidelines within the Bats & artificial lighting at night (Bat Conservation Trust & Institute of Lighting Professionals, 2023). Supplementary planting for hedgerows and planting for nocturnal pollinators could also be incorporated within the planting scheme for the proposed development.

(v) Nature - based solutions (NBS or SuDS)- Landscape Design rationale.

- *In reviewing the SuDS elements planned for the site, further details on the wetland on the south-eastern side and all the nature-based solutions are needed- I would like to review cross sections of the SuDS features planned. Full planting details of all the plants to be installed.*

k. There is an imbalance in the ratio of apartments/duplexes versus houses proposed to satisfy the Part V requirement. A more even proportionality of houses versus apartments is necessary. As a 20% Part V liability is appliable to this development, there exists an opportunity to allocate 10% of the Part V units for use as Affordable Housing. The provision of 2 bed houses would be of greatest demand in this regard.

l. Any future planning application will be subject to material contravention - given proposed distributor road on lands zoned Tier3/Strategic Development Lands and City Hinterland

m. Please liaise with the National Transport Authority prior to submission of any planning application and submit any additional information they require.

The applicant's response to all matters outlined in Cork City Council's Opinion of 26th June 2025 is included with the planning application.

1.8 Difficulties Encountered

There were no significant difficulties encountered in the preparation of this EIAR.

1.9 References

Council Directive 79/409/EEC (Birds Directive)

Council Directive 92/43/EEC (Habitats Directive)

Department of Housing, Planning and Local Government (2018). *Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment*.

EIA Directive (2014/52/EU)

European Commission (2017) *Environmental Impact Assessment of Projects: Guidance on the preparation of the Environmental Impact Assessment Report*.

European Commission (2013) *Guidance on Integrating Climate Change and Biodiversity into Environmental Impact Assessment.*

Environmental Protection Agency (2022). *Guidelines on the information to be contained in Environmental Impact Assessment Reports*.

Planning and Development Act, 2000, as amended.

Planning and Development Regulations, 2001, as amended.

2.0 BACKGROUND & NEED FOR THE PROPOSED DEVELOPMENT

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Figures, Plates and Tables

Figure 2.1	Site location for the proposed project shown outlined in red. Wider lands in client's ownership at Ringwood, Blarney shown outlined in blue.
Table 2.1	Table 4.1 of NPF First Revision: Targeted Pattern of City Population Growth

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2.1 Introduction

This chapter identifies the applicants and addresses the need for the proposed development.

2.2 The Applicant and Development Vision

The applicant is Clockstrike Ltd., the landowners of the subject site.

For Cork to credibly progress as a counterbalance to Dublin, the need for ambitious and quality residential developments such as the proposed is now more significant than ever. In this regard, the applicant's vision for the proposed development site can be summarised as follows:

- To create a high quality residential development, with a range of housing options, that supports the intensification of Cork City in a sustainable location within the development boundary of the Urban Town of Blarney, served by public transport and facilities nearby.
- To utilise a residentially zoned site to provide much needed housing units in Cork City.
- To contribute towards a critical mass of population in Blarney who will make use of the planned new Cork commuter rail station at Stoneview, to the north of the site.

2.3 Proposed Development Site

The proposed development site is identified at zoned lands at Ringwood, Shean Upper and Shean Lower, Blarney, Cork City.

The subject site is located immediately east of Blarney town centre inside the town's settlement boundary and is approximately 7km north-west of Cork city centre.

The site is approximately 19.35ha. in area, forms part of larger landbank in agricultural use, and is located on sloping, undulating lands that comprise a series of agricultural fields immediately south of the residential developments of Aisling Geal and Ard na Gréine, and running though the eastern side of Ringwood to the R617 to the south.

The "Ringwood", a locally prominent circular woodland area lies to the south and west of the site. An area known as the 'Wet Wood' is included within the site at its north and northeastern side.

The subject site is bound to the west by housing fronting onto Station Road. To the east, the site is bound by the N20 roadway and to the north the site is bound by Aisling Geal and Ard na Gréine. To the south the site is bound by the R617 road and Castleview house.

West of the site on the other side of Station Road is the natural eco-system of Ardamadane Wood proposed Natural Heritage Area (pNHA) Site Code: 001799. Ardamadane Wood pNHA comprises a dense riparian woodland strip along the River Martin.

Further to the southeast of the site is the town centre of Blarney, which contains a mix of land uses including convenience retail, retail services, commercial properties including hospitality uses,

manufacturing in the form of woollen mills, and educational uses, as well as tourism uses further to the southeast at the estate of Blarney Castle.

To the north and northeast of the site is the N20, the Cork-Dublin rail line, and residentially zoned lands at Stoneview, where a new rail station and park and ride facility is being designed by Irish Rail as part of upcoming investment in the Cork commuter rail network. Blarney Business Park lies east of the site on the other side of the N20.

To the southeast of the site lies Blarney Bog pNHA (Site Code: 001857) (also known as Clogheenmilcon Bog). Blarney Bog is a wetland/fen with wet scrub, wet woodland and areas of open water.

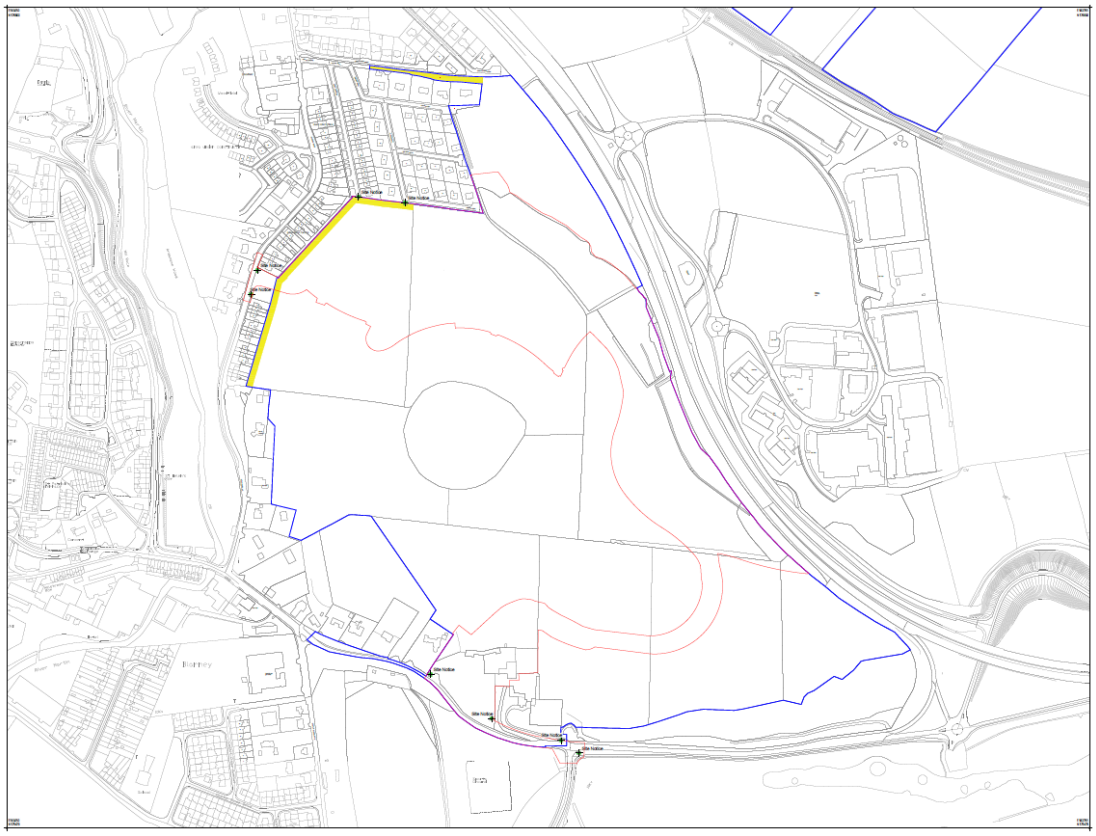


Figure 2.1: Site location for the proposed project shown outlined in red. Wider lands in client's ownership at Ringwood, Blarney shown outlined in blue.

2.4 Need for the Proposed Development

This section sets out the strategic context within which the proposed development is framed, having regard to national policy drivers, recent statistical information published by the Central Statistics Office (CSO), and recent commentary on housing supply and demand in Cork.

The planning policy rationale for the proposed development is set out in Chapter 6 – Planning Policy of this EIAR.

2.4.1 Policy Drivers

National Planning Framework (NPF) First Revision 2025

- The National Planning Framework First Revision (NPF) was published in April 2025, making revisions and updates the original NPF to take account of changes that have occurred since it was published in 2018 and to build on the framework in place.

- The goals and vision remain the same and is guided, in part, by the aim to achieve regional parity in the country by significantly growing the population and employment base of both the Southern Region and the Northern and Western Region over the next two decades to counterbalance the dominance of the Greater Dublin Area.

- In fact, having regard to Table 2.1 of the NPF, of the regional cities outside Dublin, Cork is expected to grow the most, by up to 320,000 people to 2040. The pattern of targeted population growth is presented in table 4.1 of the NPF, as shown in Table 2.1 below:

City	Population 2022	Population Growth 2022 to 2040		Minimum Target Population 2040
		% Range	People	
Dublin - City and Suburbs	1,458,000	20-25%	295,000	1,560,000
Cork - City and Suburbs	**224,000**	**50-60%**	**96,000**	**320,000**
Limerick - City and Suburbs	106,000	50-60%	44,000	150,000
Galway - City and Suburbs	86,000	50-60%	36,000	122,000
Waterford - City and Suburbs	60,000	50-60%	28,000	88,000

Table 2.1: Table 4.1 of NPF First Revision: Targeted Pattern of City Population Growth.

- **National Strategic Outcome (NSO) 1** "Compact Growth" of the NPF is aimed at consolidating and densifying future urban growth and development within existing settlements and their built-up footprints.

- **NSO 4** "Sustainable Mobility" is aimed at facilitating a move away from polluting and carbon intensive propulsion systems towards new technologies, as well as facilitating an increase in the patronage of public transport and supporting modal shift towards greater levels of walking and cycling as transport mode choices.

- **NSO 7** "Enhanced Amenity and Heritage" is focused on enhancing recreational spaces and attractiveness in city and town centres to support a good quality of life. A well-designed public realm, which includes public spaces, parks and streets, and recreational infrastructure, is key to achieving this NSO.

- **NSO 10** "Access to Quality Childcare, Education and Health Services" is prefaced on the fact that good access to a range of quality education and health services is key to creating attractive, successful, and competitive places.

- The NPF Implementation: Housing Growth Requirements Guidelines issued on 29th July 2025 by the Department under Section 28, provide updated housing growth requirements to planning authorities to 2040 in order to facilitate the revision and update of development plans in accordance with the NPF First Revision (2025).

- Policy and Objective 2 of the Guidelines indicate a need for an additional provision of up to 50% over and above the housing growth requirement set out in the Guidelines, requiring all Planning Authorities to review their Development Plans to increase housing targets by 50%, bringing the annual national housing target from 55,000 units to 82,500 units.

- The housing target in the Guidelines for Cork City is 2,706 units per annum to 2034 and 2,539 units per annum from 2035-2040. An additional 50% provision results in an additional 1,353 units per annum to 2034 (or 4,059 units per annum in total); and an additional 1,269 units per annum from 2035-2040 (or 3,808 units per annum in total for that period).

The following National Policy Objectives are of relevance:

- **National Policy Objective (NPO) 3** of the NPF sets out that the Southern Region will increase in population by approximately 330,000 (c 450,000 additional people over 2016-2024), giving a population of just over 2 million people.

- **NPO 4** sets out the following in relation to population and employment growth:

  A target of half (50%) of future population and employment growth will be focused in the existing five cities and their suburbs.

- Additionally, **NPO 7** states:

  Deliver at least 40% of all new homes nationally, within the built-up footprint of existing settlements and ensure compact and sequential patterns of growth.

- While in relation to Transport Orientated Development, **NPO 10** states:

  Deliver Transport Orientated Development (TOD) at scale at suitable locations, served by high capacity public transport and located within or adjacent to the built up footprint of the five cities or a metropolitan town and ensure compact and sequential patterns of growth.

- Additional objectives of relevance include the following:

  National Policy Objective 12:
  Ensure the creation of attractive, liveable, well designed, high quality urban places that are home to diverse and integrated communities that enjoy a high quality of life and well-being.

National Policy Objective 38:

Plan for a more diverse and socially inclusive society that targets equality of opportunity and a better quality of life for all citizens, through improved integration and greater accessibility in the delivery of sustainable communities and the provision of associated services.

National policy Objective 42:

To target the delivery of housing to accommodate approximately 50,000 additional homes per annum to 2040.

National Policy Objective 43:

Prioritise the provision of new homes at locations that can support sustainable development and at an appropriate scale of provision relative to location.

The promotion of housing development within Cork City, and at the subject site, finds resonance with all of these existing national policy provisions.

Housing Policy

The Government's current housing plan, *'Delivering Homes, Building Communities 2025-2030: An Action Plan on Housing Supply and Targeting Homelessness'* was published on the 13th November 2025.

The plan targets the construction of 300,000 homes, including 72,000 social homes and 90,000 affordable housing supports.

Building on the progress of Housing for All, which has already delivered 137,000 homes since 2021, and informed by the Housing Commission's work, this plan will see the State take a greater role while also encouraging the private sector to play a key part in delivery.

Key messages and principles set out in the new housing plan include 2 main pillars:

Pillar 1: Activating Supply

Pillar 1 focuses on activating the supply of 300,000 homes. This will be achieved through activating more land, providing more housing-related infrastructure, securing more development finance for home building, addressing viability challenges particularly those seen in apartment delivery, increasing the adoption of Modern Methods of Construction, increasing the skills in the residential construction sector and working toward ending dereliction and vacancy.

Pillar 2: Supporting People

Pillar 2 details how Government will support people. It sets out a series of key actions that work towards ending homelessness, support affordability and address the housing needs of people as they progress through life. In partnership with local authorities, the LDA and AHBs, the Plan will address the needs of the most vulnerable in our communities, make buying and renting homes more affordable and support the development of villages, towns and cities across the country.

In implementing the new housing plan, the following core principles are set out:

- *Affirms that housing is the number one priority for all arms of Government, including local government.*
- *Recognises the need to ensure access for everybody to good quality, affordable and secure housing within vibrant communities, suitable to individual needs as they move through their life. Affirms that homelessness is unacceptable and accepts that the solution lies in supplying more homes and supports to tackle its root causes.*
- *Recognises that promo ng homeownership is a key objective and pledges to provide targeted homeownership supports.*
- *Commits to building unprecedented levels of social homes and priori sing those who need the most help.*
- *Believes that homes should not be allowed to lie empty and derelict while housing need is so critical.*
- *Commits to the highest ever investment of the State's resources towards both building more homes and building more infrastructure to support the development of those homes.*
- *Will work with Local Authorities, the Land Development Agency, Approved Housing Bodies and the private sector to drive delivery.*
- *Understands that a stable domes c policy environment is crucial to attract the inward investment needed to achieve our supply goals.*
- *Expects that all people and organisations, whether public or private, will play their part in tackling the housing crisis.*

It is considered that the subject development, which proposes 323no. residential units, contributes directly to Pillars 1 and 2 as set out in the policy document.

The proposed development will contribute greatly to the overall housing supply required in the Blarney area and consolidate the future projected growth of the urban town.

2.4.2 Population Growth and Targets

In the context of the policy provisions set out above, the need for additional housing in Cork City is illustrated by reference to published data from the CSO.

Key National Statistics

- The Census of Population 2022 - Summary Results published on 30th May, 2023 show a population of 5,149,139 on Census night, the 3rd April, 2022. This is an increase of 8% since 2016. It is also the highest population recorded in a census since 1841.

- The Summary Results also show that the total housing stock on 3rd April 2022 was 2,112,121, an increase of over 5% on the 2016 figure. There were almost 20,000 fewer vacant dwellings (-11%) in 2022 compared to 2016. This does not include holiday homes, of which there were 66,956, compared with 62,148 in 2016.

- The CSO's most recent population and labour force projections for Ireland, published in June 2018 advise that Ireland's population is projected to reach 6.69 million in 2051, a rise of just under two million persons if there is high net inward migration and high fertility. Even with low net inward migration and declining fertility, Ireland's population is still expected to reach 5.58 million in 2051.

- The CSO publication reveals that there will be between 1.5 and 1.6 million persons aged 65 years and over by 2051, compared with 629,800 in 2016. Therefore, while around 13.3% of the population was aged 65 years and older in 2016, this will rise to up to 27.4% in 2051.

- Given this trend, it is clear that Ireland is now dependent on net inward migration to sustain population and employment growth.

Cork City

- Between Census 2011 and Census 2016, Cork City's population grew by 5.4%, making Cork the fastest growing population centre outside of Dublin.

- Cork City recorded relatively high net inward migration in the intercensal period 2011-2016, with net migration increasing by more than 7 persons per 1,000 of the population. According to Census 2016 there are a total of 195,900 households in Cork City and County, an increase of 4.2% since Census 2011.

- The Summary Results of the 2022 Census recorded an 8% increase in population across Cork County. Blarney, the Electoral Division within which the subject site is located, recorded a population of 5,211. The population of the expanded Cork City boundary was 222,526 persons in 2022.

- The population of the expanded City is set to grow to 345,000 by 2040 from 210,000 (2016). This translates to between 5,000 and 6,500 additional people living in the city, per annum, out to 2040.

- A well-documented and unintended consequence of the lack of housing supply is increasing house and rental prices. The national Residential Property Price Index (RPPI) increased by 7.6% in the 12 months to September 2025, up from the 7.5% recorded in the year to August 2025.

- The median price of residential properties sold Cork's Northside was €340,000, for which Blarney forms part of. Specific to Blarney, this was even higher at €374,000. Houseprice.ie notes that the median house price in Cork was €360,000 which increased by 8.3% from the 2024 median house price of €332,500, which itself was a 9% from 2023 median house prices.

- With respect to Blarney, the median house price increased by €10,000 from 2024.

- The situation is made all the starker in the context of the target of 50% of the population growth to 2040 to be in existing built up areas of Ireland's five cities, including Cork, as noted in section 2.4.1 above. This will require a significant increase in the number of dwellings across all house

types, allowing for greater density in the city and Metropolitan Area. In addition, a further 65,000 jobs have been targeted for the Cork Metropolitan Area by 2031, which will require an additional 27,300 housing units (of all types) to accommodate that growth.

- In addition to the demand for housing generated by the significant population growth targets for Cork City and its wider Metropolitan Area, as with the rest of the country, the population of Cork continues to experience a homelessness crisis. Latest official figures from Cork Simon Community reveal that Co. Cork has 712no. adults in official homeless emergency accommodation in October 2025.

2.5 Conclusion

In conclusion, the need for the proposed development is premised on:

- National policy drivers which underline the requirement for a significant uplift in population in Ireland's urban centres, including Cork.
- The critical need for new housing supply within urban centres such as Cork to address the national housing crisis.
- The national strategic aim of achieving regional parity across the country by emphasising growth of the regions other than the Eastern and Midland Region.

The need for new residential development in Cork City and the wider Cork Metropolitan Area is self-evident, as is the obligation to make the most efficient use of zoned land in the existing built-up area of Cork City.

The proposed development will also contribute towards the achievement of the target of an average of 60,000 homes per year set out in the Government's most recent housing policy plan.

2.6 References

Cork City Development Plan 2022-2028

Cork Simon Community Homeless Watch, available @ https://www.corksimon.ie/homeless-watch/ [accessed 10th December 2025]

CSO Census 2016

CSO Summary Results Census 2022

CSO, (2018). "Population and Labour Force Projections 2017 – 2051", online, available at: https://www.cso.ie/en/releasesandpublications/ep/p-plfp/populationandlabourforceprojections2017-2051/ [accessed 3rd December 2025]

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National Planning Framework First Revision 2025

Regional Spatial and Economic Strategy for the Southern Region (RSES) 2020

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3.0 ALTERNATIVES CONSIDERED

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3.1 Introduction

This chapter of the EIAR was prepared by Richard Bonney of Conroy Crowe Kelly Architects Ltd, Richard Graduated from Sheffield University in 2002 and has been a chartered member of the Royal Institute of Architects in Ireland since 2015 and working across a wide range of building sectors with over 20 years of experience.

3.2 Legislative Context

Article 5 (1) of the 2014 Directive requires the consideration of reasonable alternatives which are relevant to the project and take into account the effects of the project on the environment. It states under Article 5 (1) that:

> *"Where an environmental impact assessment is required, the developer shall prepare and submit an environmental impact assessment report. The information to be provided by the developer shall include at least…"*
>
> *"…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."*

Schedule 6 of the Planning and Development Regulations, 2001 (as amended) sets out the information which is to be contained in an EIAR and Part 1 (d) of Schedule 6 states that the following shall be included:

> *"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."*

In accordance with EPA Guidelines different types of alternatives may be considered at several key stages during the process. As environmental issues emerge during the preparation of the EIAR, alternative designs may need to be considered early in the process or alternative mitigation options may need to be considered towards the end of the process.

The EPA Guidelines States:

> *"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 considered in deciding on the selected option. A detailed assessment (or 'mini-EIA') of each alternative is not required." The consideration and examination of alternatives is set out below.

3.3 'Do-nothing' Scenario

The consideration of an alternative location would equate to a 'do-nothing' alternative for the subject site. This would mean that these residential zoned lands would not be developed in accordance with the objectives of the Cork City Development Plan 2022-28 and would be contrary to the Council's objectives to promote residential land use at this site.

Objective 10.63 Blarney East / Ringwood Expansion Area:

> *"To support the compact growth and development of Blarney East / Ringwood Expansion Area as a strategic City consolidation and expansion area, as identified in the Core Strategy. All development shall be designed, planned, and delivered in a co-ordinated and phased manner, using a layout and mix of uses that form part of an emerging neighbourhood integrated with the wider area."*

A '*do-nothing*' scenario is not considered viable or appropriate. Therefore, having regard to the opportunity to redevelop an underutilised, appropriately zoned site at a sustainable location close to public transport and road infrastructure, a do-nothing scenario would leave a suitably zoned and located site empty, which is considered to be an inefficient use of the site and contrary to the implementation of the policies and objectives of the national, regional and local planning policy.

3.4 Alternative Locations

The Cork City Development Plan 2022-28 Map 11 zone the lands to the north of Ringwood, Shean Upper as 'ZO 02, New Residential Neighbourhoods, to provide for new residential development in tandem with the provision of the necessary social and physical infrastructure.'



Figure 3.1: Northern Ringwood Lands outlined in red as indicated within the Cork City Council Development Plan 2022-28.

This zone covers primarily greenfield, undeveloped lands for new sustainable residential areas. Development in this zone, while primarily residential, is to provide an appropriate mix of housing types and tenures along with the amenity, social, community and physical infrastructure required to promote compact growth, balanced communities, and sustainable, liveable communities.

The development of the site is consistent with the core strategy of the Development Plan. At this location, the proposed scheme will deliver significant additional public and private housing in a range of house types in a consolidated and accessible urban neighbourhood which will be supported by ancillary community facilities and public open spaces. The site is well connected to Blarney which will also ensure that the future residents will benefit from the existing shops and all other facilities available in the area.

It is noted that extensive preliminary studies were conducted on the site prior to the preparation of a full planning application pack to ensure the site suitability as part of the due diligence process. This included the following assessments:

- Topographical Surveys
- Preliminary Ecological Surveys and Assessments
- Preliminary Flood Risk Assessment
- Archaeological and Geophysical Surveys
- Arboricultural Survey
- Test fits of early design iterations of the scheme

It is considered that the site is entirely suitable for the nature of the development as proposed in the application and it was not considered necessary to consider alternative sites.

3.5 Alternative Layouts and Designs

This section provides an overview as to how the proposed development has evolved to date by way of consideration of alternative designs and the alterative nature of the proposal now before Cork City Council (CCC). Various options were considered as the scheme progressed and key considerations were incorporated into the evolving project design, having regard to the key environmental issues pertaining.

The final design of the scheme has evolved as part of a multi-disciplinary process with input from all EIAR team members, the project design team, applicant, and primarily advice received as part of the extensive pre planning process with Cork City Council, which consisted of initial section 247 pre planning meetings followed by an LRD meeting.

An opinion on the scheme proposed to Cork City Council at each of the pre planning phases was circulated following the pre planning meetings, which in turn informed design changes to the scheme which have been incorporated into the final development proposal.

3.5.1 Alternative Design 01 - Pre-Planning Meeting, April 2023. (c.485-unit scheme)

In 2022, the Cork City Council Development Plan 2022-2028, was published and revised zoning introduced into the subject Ringwood land parcel.

Lands in the southeast of Ringwood were redesignated as **'City Hinterland'** and '**Long-Term Strategic Development Land**' and the areas in the north of Ringwood were designated as **ZO 2 -** '**New Residential Development'.**

> *To provide for new residential development in tandem with the provision of the necessary social and physical infrastructure. This zone covers primarily greenfield, undeveloped lands for new sustainable residential areas. Development in this zone, while primarily residential, must provide an appropriate mix of housing types and tenures along with the amenity, social, community and physical infrastructure required to promote compact growth, balanced communities, and sustainable, liveable communities*

The development proposal 'Alternative 01', comprised of the development of 485 no. residential units to the north of the Ringwood with the key statistics as follows:

- 117 no. 1-bed apartments. (incl. 24 sheltered housing units)
- 64 no. 2-bed apartments
- 51 no. 3-bed apartments
- 28 no. 2-bed houses (sheltered housing)
- 150 no. 3-bed houses
- 75 no. 4-bed houses
- Creche for 102 Children
- Density 35uph
- POS approx. 15%
- Total site area is 14.2ha



Figure 3.2: Proposed site layout for the Northern Ringwood Lands April 2023.

Key aspects of the Development*:*

- It was proposed to access the development via a new vehicular entrance/exit from Station Road. Pedestrian connectivity with Blarney town centre was proposed along Station Road.
- Modest additional car parking provision on CCC lands located off Station Road to compensate for the proposed loss of existing on-street car parking spaces.
- Landscaping, and public open space amenity areas, and associated and ancillary site, drainage, and development works.
- Proposed heights were 2-storey houses and 3-storey apartment buildings to align with the CDP height and density targets for Blarney.
- In accordance with CDP parking standards, 563 no. car parking spaces were proposed to serve the houses, including the sheltered housing units. 291 no. parking spaces were proposed to serve the apartments in accordance with the Design Standards for Apartments Guidelines (2020). Bicycle parking for the apartments were to be provided in accordance with the Apartment Guidelines (2020) in the form of 116 no. sheltered spaces. Car parking was provided for the creche in the form of 17 no. spaces, and bicycle parking in the form of 5 no. spaces, as per the CDP standards.
- The proposal included landscaping and amenity areas. The proposed development was to provide almost 16% of the site as public open space. In addition, an existing hedgerow which runs N-S through the centre of the site was proposed to be largely retained and incorporated into the linear park there as an amenity linking the northern and southern parts of the site.
- There were 4 separate characters areas based off topography.
- Photomontages from Blarney castle's perspective involved the mitigated visual impact.

The following feedback was received from Cork City Council:

- These are appropriately zoned lands for residential development, and welcome considering the current need for housing in Cork City.
- The lands are zoned ZO 2 New Residential Development, Tier 2, in the City Development Plan (CCDP). Compared to previous pre-planning meeting this site is more favourable from a phasing perspective.
- The approach on urban blocks (fronts onto streets, backs onto backs) is good.

Areas identified in the design for clarification / improvement.

The following design issues were raised:

- An explanation required for the strategy for two planning applications - both applications should have their merits as standalone developments.
- Consider parking provision for Woodville Terrace residents to the rear of their houses rather than the area shown off Station Road.
- Hierarchy of streets – consider priority at entrance to scheme, address pedestrian safety around central open space and address high density housing locations in relation to appropriate streets.
- Consider a reduction in car parking as per the City Development Plan standards and increase bicycle parking provision.
- Need to address the integration with town and adjoining areas and provide long sections.
- Consider the key views back to town / look and feel of house types.

- Request to reconsider standalone apartments at entrance not desirable.
- Clarify from a conservation and design perspective on the location of apartment blocks in the southwest corner of site, including their visibility from Blarney Castle.
- Permeability – consider potential links to areas north.
- Provide for passive surveillance to the buildings at the western boundary.
- Minimise the need for straight sections of estate road.

The following Engineering issues were raised:

- Provide response from Uisce Éireann that proposal is feasible.
- Construction Management Plan - Construction Access to be provided.
- Narrowing of carriageways – consider their horizontal and vertical alignment and where appropriate introduce shared surfacing.
- More detail to the east re. the east to west split (drainage) to the east as it goes outside the red boundary. This discharge location to be included.

The following Traffic, Access and Transportation issues were raised:

- Consider introduction of Active Travel measures from site to town centre.
- Consider traffic and transportation matters at site access junction at Station Road and R167 and Station Road junction.

The following landscape issues were raised:

- Clarify landscape proposals re. screening and interaction with neighbours.
- Permeability - Integrate routes to park.
- Consider pedestrian safety around central open space.
- Review the location of the central kickabout area.
- Review required to see if interventions are needed to maintain the health of the Ringwood.
- Proposed sheltered housing needs open space – also, address deficit of open space in the Northwest.

3.5.2 Alternative 02 – Pre-Planning Meeting, August 2023 (c.474-unit scheme)

After the S.247 meeting, the design team listened to and responded to the issues raised by CCC and brought forward an alternative revised scheme with was submitted and subsequent S247 meeting was held on the 3rd August 2023.



Figure 3.3: Proposed revised site layout for the Northern Ringwood Lands August 2023

This iteration comprised of the construction of 474 no. residential dwellings comprising of:

- 108 no. 1-bed apartments (including 24 no. sheltered housing units),
- 111 no. 2-bed apartments,
- 30 no. 2-bed houses,
- 150 no. 3-bed houses,
- 75 no. 4-bed houses.
- 1nr crèche with capacity to cater for 102 no. children.
- Density 35uph
- POS approx. 16%

The design changes made from the previous alternative scheme feedback of April 2023 included the following:

- It was proposed **to advance the planning consent process for the proposed LRD as two concurrent planning applications for buildability reasons, as it offers the applicants and contractors more scope and flexibility in delivering the overall scheme in a timely manner.**
- Both applications will independently meet Development Plan standards and requirements.
- Both applications will include any overlapping infrastructure and access elements to ensure they can be implemented separately and independently.
- **Planning application, Ph 1** (southern part of the scheme) and site, including the replacement parking to the rear of Woodville Terrace and 211 no. of units, density of 36uph, POS 16%
- **Planning application, Ph 2** (northern part of the site) and include a feeder road for the future Stoneview Ringwood link road comprising of 263 no. of units, at a density of 35uph and POS 15%.

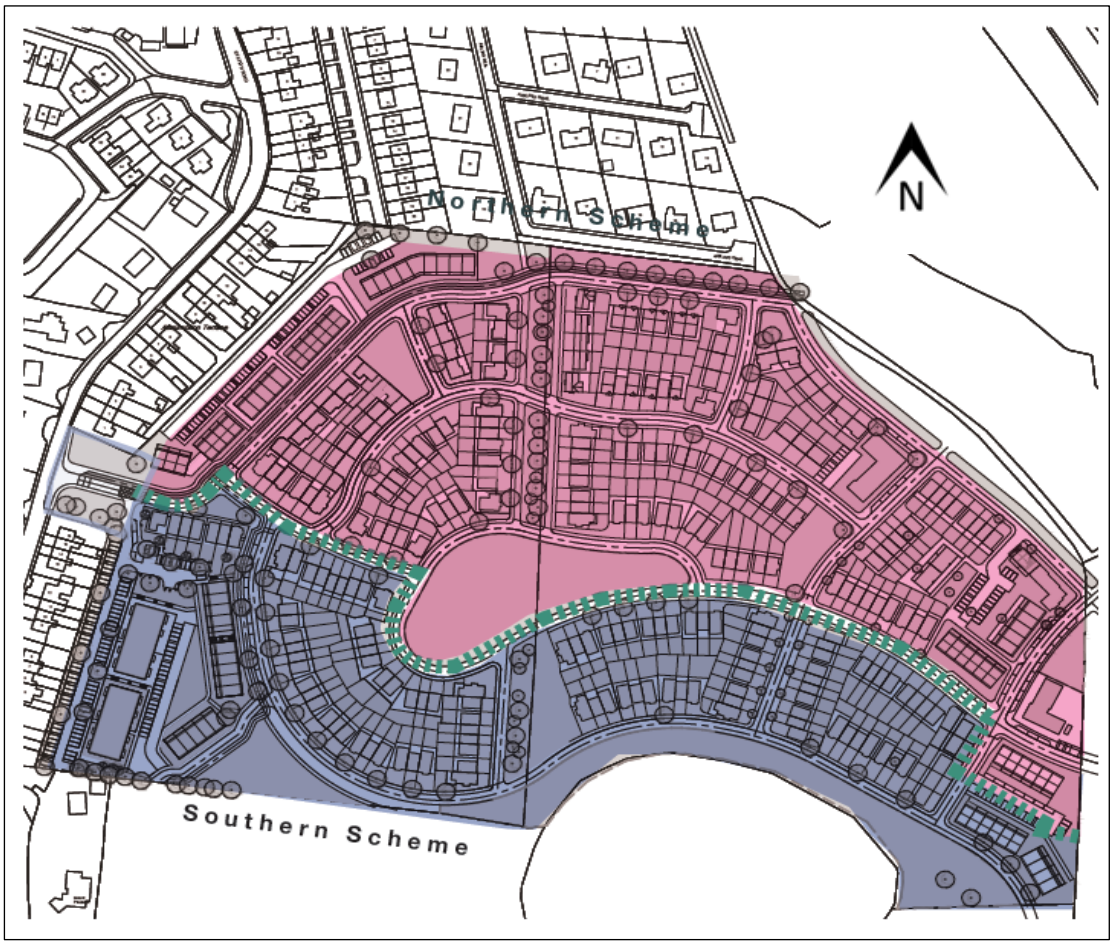


Figure 3.4: Proposed scheme split for Ringwood.

- Revised rear parking arrangements were made for residents living on Woodville Terrace with each property having two new spaces located to the rear of each garden. A total of 32 new spaces are proposed.
- Revisions were made to the site's entrance with the realignment of roads and the introduction of a small green to improve flow and legibility of the primary routes to all road users.
- A realignment of roads reduced the potential flow into the central open space by introducing a deliberate right turn off the northern link street. This now encouraged slow moving local traffic to the central open space reducing risk to users in the central open space.
- Revisions were made to the locations of higher density housing in relation to appropriate streets. The higher density housing was located on or accessed directly off the higher trafficked main roads.
- The scheme reduced car parking standards for the proposed apartments as per the City Development Plan. Bicycle parking provision was increased.
- An aerial image was prepared of the proposed scheme, which illustrates this integration with Blarney and visual impact.
- The new pedestrian and cycle infrastructure would provide convenient linkage from the development into Blarney. The buildings in the new development would set specific architectural threads from both the town and local area to articulate into new character areas. This would provide a readable local architectural narrative which relates back to the town.

- The configuration of buildings at the entrance were reconfigured with 3 storey housing and an entrance green.
- The location of the larger blocks at the southwestern corner of the development was addressed and amendments proposed. The southwest corner of the site presents the best and most appropriate opportunity to incorporate higher density residential units in accordance with national and local planning policy requirements.
- It was submitted that the apartment blocks will not be unduly visible from Blarney Castle. These apartments are located on the lowest part of the site which slopes in a southwest direction and bounded by existing hedgerow containing large mature trees.



Figure 3.5: Photomontage submitted demonstrate that the Phase 1 apartment blocks will not have an excessive negative impact on views from Blarney Castle.

- The apartment blocks have flat roofs to visually reduce their scale and impact from the town. Also were minimised (2nr removed) but the 2nr remaining were still required to meet density requirements of the Development Plan.
- Passive surveillance was to be maximised to the buildings on the northwest boundary. The units which overlook the rear access road have parking spaces and front doors located from the rear. These were also broken with paths and visual links through to the rear and adjacent public open space to provide permeability and deter any anti-social activity. It was proposed that all other areas of open space would have active frontages facing onto them.

The following feedback was received from Cork City Council in August 2023:

- **Approval that the applicant is dividing the site into two phases.**
- Environmental elements must be assessed for the overall site.
- The masterplan information is welcomed, along with the site sections etc. to improve understanding of proposal.
- Overall, infrastructural issues could affect the delivery of this development.
- A new access road could be needed to deliver Phase 1.
- More social infrastructure is to be considered. The deficiency in a primary healthcare centre has implications for the feasibility of the population.
- The sheltered housing is good, and the inclusion of a community centre should be considered and a local shop/retail.
- Parking behind Woodville Terrace is provided for the existing residents.
- There is currently only access to the proposed development from Station Road and this overlaps with the active travel project on Station Road.
- The applicant needs to identify the overall transport needs for the area and consider the impacts of these on the phasing of this development.
- **The applicant could deliver a smaller scheme phase 1 with the current access from Station Road, then deliver the rest phase 2 of the scheme with the new link road to the east.**
- The new link road will have public transport options. The applicant should reconsider the densities along these lines.
- Phasing of this proposal is key for the management of potential impacts.
- The applicant should focus on the Station Road upgrades for active travel.
- The future link road to the east of the scheme could encroach into the wooded area to the northeast.

3.5.3 Alternative 03 – Pre-Planning Meeting, June 2024 (Split Scheme, Phase 2) (c.307-unit scheme)

After the S.247 meeting in August 2023, the design team listened to and responded to the issues raised by CCC and the design was split into two phases. This iteration would be phase 2 comprised of the construction of 307 no. residential dwellings on the northern portion of the lands comprising of:

- Total of 307 residential dwellings.
- 122no. 1,2 bed apartments in 4 No Blocks.
- 24no. 1-bed Sheltered Housing Units
- 52no. 1,2 bed Duplex Units
- 108no. 1,2,3-bed houses
- Density 41uph
- POS approx. 15%
- Total site area is 14.08ha.



Figure 3.6: Proposed revised site layout for the 307 units to the Northern side of the Ringwood Lands June 2024.

The proposed development access would be provided from the Station Road junction (Proposed in Phase 1) to the west and includes the proposal of a stretch of new link road heading southwards to adjoin Phase the R617 through the Ringwood lands.

The design changes made from the previous alternative scheme feedback included the following:

- **Application Split into two Phases One to the South and Two to the North**. The application divided into a second phase with the southern scheme only consisting of 307 residential units.
- **New link road added adjoining the R617 to take the traffic pressure from the existing Station Road**. A stretch of new link road heading southwards to adjoin the R617 through the Ringwood lands.
- **Increased Density.** Greater density of units c.41uph, including apartment along the link road.

The following feedback was received from Cork City Council during the meeting:

- It is necessary that a higher density be proposed for these lands given the proximity to the potential Railway Station site.
- Apartment provision be separated from the conventional dwellings in any density calculation, a cleared demarcation of net developable area should also be supplied.
- Planning would like to see the doubling up of roads minimised.
- It was noted that there was a concern using the proposed tier 3 lands for access. It would be a material contravention of the Development Plan and would need to be justified in advance.
- The proposed development requires the delivery of the entirety of the Ringwood Distributor Road to include the connection with the R617 to the south.
- The section of the Ringwood Distributor Road which is currently included as part of the primary healthcare application should also be included as part of the Phase 2 Ringwood residential scheme.
- The 'Future Potential Link' to Aisling Gael should be included with the application.

- The horizontal alignment of the distributor road should avoid the existing wooded area to the northeast of the site. In addition, the vertical alignment should follow the existing contours as best possible to remove the need for additional road widening and loss of any further woodland.
- Photomontages from Blarney castle's perspective required.
- Where possible to reduce the amount of wet woodland habitat being removed. Use compensatory planting.

3.5.4 Alternative 04 – Pre-Planning Meeting, December 2024 (c.304-unit scheme).

After the S.247 meeting in June 24, the design team listened to and responded to the issues raised by CCC. The December 2024 iteration comprises of the construction of 304 no. residential dwellings on both the southern and northern portion of the lands, new Primary Care Centre, cafe and a new link road access to the development from the R617:

- Total Residential Units: 304
- Total Houses : 120
- Total Duplex Units : 94
- Apartments in 2 no. blocks : 80
- Mews apartments 8
- Net Residential Density : 41 units/ha
- **New Primary Care Centre and Cafe: Provided on Southern Lands**
- Public Open Space on-site : 16 % of total area.



Figure 3.7: Proposed revised northern site layout for the 304-unit December 2024



Figure 3.8: Site layout for the 304-unit December 2024 with Northern and Southern side of the land.

<u>The design changes made from the previous alternative scheme feedback included the following:</u>

- **Increase in Density.** An increased density of 41 uph requiring 304 units is proposed which is fully in accordance with the targets and ranges set out in both the CDP and the Guidelines.
- **Removal of all double parallel roads.** The Road to the east adjacent the apartment blocks has now been omitted
- **New Primary Care Centre and Café.** Added to the Southern Lands.
- **Architectural design and internal layouts changes including:**
    i) The amended site layout provides a pedestrian and cycle link from Aisling Geal, there is no link to Ard Na Greine proposed as the sheltered housing was omitted and rear gardens back onto the boundary.

ii) The design team has carefully considered the approach in terms of both height and scale across the development. Scale increases in gradually from the west to east - Two storey houses are located to the entrance at the Station Road junction. Three storey duplex dwellings are to the centre of the development and Four Storey apartments front directly onto the link Road.
iii) Corner blocks with passive surveillance increased.
iv) Two apartment buildings have been omitted and replaced with a new cell of duplexes and mews buildings which create an enclosed communal open space.
v) Duplex terraces to the rear of Assumption Terrace have omitted and replaced with terraces of houses with rear gardens to reduce scale, as per suggested during the meeting by the CCC Architects department.

The following feedback was received from Cork City Council during the meeting:

- Generally, the layout of the streets in the northern portion is coherent and legible and the geometry responds to both the circular geometry of the woods to the south and the contours of the site.
- There is a connection proposed to the Aisling Geal housing estate to the north but the housing terraces to the northwest should be reworked to allow for a connection to the Árd na Gréine housing estate to improve permeability.
- Some of the newly introduced Blocks E and I and Mews Block A could be improved by providing gable windows overlooking unsupervised spaces.
- Apartment Blocks E and F wrap around a permeable communal open space with Duplex Blocks J and K, however the value of this space is diminished by the level of parking.
- The reuse of the barn/ farm outhouses as a café in the southern portion of the site is welcomed and the Primary Care Centre follows a similar aesthetic in terms of roof pitches and general massing which is positive.
- The 9 housing units adjacent to the proposed Primary Care Centre should be reconfigured as they currently back onto the café and adjacent site and their splayed layout does not seem to sit well with the other buildings.

3.5.5 Alternative 05 – LRD S.32b Meeting May 2025 (c.334-unit scheme).

After the S.247 meeting in December 24, the design team listened to and responded to the issues raised by CCC. The May 2025 iteration comprises of the construction of 334 no. residential dwellings on both the southern and northern portion of the lands and a new link road access to the development from the R617.

- Total Residential Units: 334
- Total Houses : 111
- Total Duplex Units : 40
- Apartments in 2 no. Blocks : 102
- Deck Access Apartments: 73
- Mews apartments 8
- Net Residential Density : 48.2 units/ha
- Primary Care Centre and Cafe: Provided on Southern Lands
- Public Open Space on-site: 15 % of total area.



Figure 3.9: Proposed revised northern site layout for the 334-unit May 2025



Figure 3.10: Site layout for the 334-unit scheme May 2025.

The design changes made from the previous alternative scheme feedback included the following:

- **Protection Measures adjacent the wetwood.** Buffering of the wetwood to avoid environmental impact and further detailed landscape proposals for a Public Open Space encompassing the SuDS attenuation area at the wetwood.
- **Increase in Density**. The development density was increased to c.48uph by adding additional floor to the apartment blocks and deck access apartments.
- **Communal Open Spaces**. Further detail of the communal open spaces which serve the larger blocks by the landscape architect.
- **PCC relocation**. Primary Care Centre was moved and redesigned, relocated to the west of Castleview House. This avoids the environmental issues of the provision of a large carpark to the east which is instead located within the enclosure of the existing stone walls.
- **Removal of houses at the entrance of the R617.** The group of houses at the entrance from the R617 are omitted from the scheme with the PCC now facing the entrance road.

The following feedback was received from Cork City Council during the meeting:

- Further information required regarding rough proposals for housing blocks in Phase 3 adjacent to the Primary Care Centre and Cafe/ Retail buildings.
- There is a pedestrian/ cycle connection proposed to the Aisling Geal housing estate to the north but the housing terraces to the northwest should be reworked to allow for a connection to the Ard na Greine housing estate to improve permeability.
- It was noted in the meeting that the red line boundary that extends beyond this is to account for cut and fill especially adjacent to the town park. However, due to the lack of massing proposals for the residential blocks of Phase 3, it is difficult to assess where the proposed junctions with the spine road will occur and to ideally ensure relatively level access to Phase 3 to avoid parallel roads, disconnection from the spine road, etc.
- The large carpark to the east is still not ideal and the lack of massing studies for the adjacent Phase 3 means it is not possible to judge any mitigation to this large open parking area.
- The deck access apartment blocks introduced to increase density have a similar and congruous elevational treatment to adjacent residential buildings which is positive, but the threshold treatment of apartments requires further consideration as this will affect the success in use of these blocks. Orientation is a concern for Deck Access Block and orientating the deck side south (or southwest) is generally not recommended as the habitable rooms will receive less sunlight, etc. This does not withstand any comments from CCC's Housing Department re the proposal to use Deck Access Block A as a portion of the Part V provision as this typology may not be ideal for social housing with issues re the maintenance, ownership and use of the communal decks.
- Landscaping drawings have been provided for the communal open spaces between apartment and duplex blocks. While the other 2 spaces are deemed acceptable if not quite tight and slightly generic, the communal open space between Apartment Blocks A and Band Deck Access Blocks Band C requires further work as it is still dominated by parking spaces and vehicular access which results in a less usable and low-quality public space.
- There is a footpath required to the rear of the parking spaces provided opposite residential units 101-104.
- The shared space within the Communal Open Space between Apartment Block A and Block B

requires additional detailing with respect to landscaping and materials to better reflect the shared space vision for this area; the current layout suggests a standardised approach to parking provision albeit on a shared surface, this approach could lead to indiscriminate parking and potentially a poor environment for pedestrians. Additionally, it may be necessary to allow for the movement of vehicles within this area to remove the need for larger vehicles to carry out U-turns within space.

- The shared street to the west of Duplex Block B requires additional detailing with respect to landscaping, materials and traffic management (the introduction of one-way movements may simplify the operation of this street) to ensure its successful implementation.
- The section of internal roadway between residential unit 66 and unit 73 should be closed to traffic and replaced with open space retaining the existing hedgerow. The removal of this section of roadway will reinforce the planned 'Home Zone' and ensure through is directed to the more appropriate routes to the north of the scheme.
- Pedestrian and cycling connections to all adjacent housing estates should be allowed for. This includes the potential to connect to: Ard na Greine, Assumption Terrace and Aisling Geal.
  The section of internal roadway between residential unit 66 and unit 73 should be closed to traffic and replaced with open space retaining the existing hedgerow. The removal of this section of roadway will reinforce the planned 'Home Zone' and ensure through is directed to the more appropriate routes to the north of the scheme.

3.5.6 Alternative 06 – Current December 2025 (c.323-unit scheme).

After the S.32b meeting in May 2025, the design team listened to and responded to the issues raised by CCC and came up with the alternative. The November 2025 iteration comprises of the construction of 323 no. residential dwellings on both the southern and northern portion of the lands and a new link road access to the development from the R617.

- Total Residential Units: 323
- Total Houses: 157
- Total Duplex Units: 52
- Apartments in 2 no. Blocks: 114
- Deck Access Apartments: 0
- Mews apartments: 0
- Net Residential Density: 45.11 units/ha
- Primary Care Centre and Cafe: Provided on Southern Lands
- Public Open Space on-site: c.15 % of total area.



Figure 3.11: Proposed revised northern site layout for the 323-unit December 2025



Figure 3.12: Overall site layout for the 323-unit scheme December 2025.

The design changes made from the previous alternative scheme feedback included the following:

- **New Link through to Árd Na Greine**. The housing blocks adjacent to scheme and adjacent to Assumption Terrace and Aisling Gael have been redesigned to provide potential pedestrian links. This will enhance site integration and pedestrian permeability. Informed by principles of defensible space and passive surveillance, entrances at end-of-terrace dwellings have been strategically relocated to gable ends. This approach supports improved visibility and activation along the public realm, discouraging anti-social behaviour and fostering a safer, more connected streetscape.
- **The removal of sewer adjacent Assumption Terrace.** The existing sewer and easement running to the rear of the houses backing onto Assumption Terrace on Station Road has been relocated under the new roadway. This prevents the creation of a no-man's lands to the rear of the gardens and a potential focus for antisocial behaviour.
- **Removal of Car Parking to the courtyard of the apartment blocks 1 and 2**. Car parking spaces are located away from the central core area with a new landscape courtyard created. The landscape design will support placemaking principles through softened edges, green buffers, and improved pedestrian flow, transforming the space from a vehicle-dominated zone to a shared, multifunctional setting. This also results in a dropping of car park ratio below the max indicated in the CCC development plan.
- **New through road to the rear of the apartment blocks 1 and 2.** The redesign of the courtyard introduces a through road which incorporates perpendicular parking bays and parallel accessible spaces positioned along a shared surface. This surface will be integrated into the overall landscape strategy and will function as a low-traffic through-route, prioritising pedestrian and cyclist movement.
- **A redesign of a shared street**. The shared street to the west of Duplex Block B (now Duplex Block D) was redesigned and adjacent duplex blocks changed and reorientated. The proposed link will remain two-way, ensuring continued vehicular access and connectivity, while balancing the needs of all users through thoughtful design.
- **An internal road removed**. The two urban blocks have been reconfigured to eliminate the previously proposed shared road between unit 66 and unit 73, resulting in a more cohesive and pedestrian-friendly layout. The end units have been reoriented to feature gable-end entries that directly overlook the public open space (POS), enhancing passive surveillance and providing natural supervision of the adjacent public pathway. The with additional breathing space that reinforces its ecological and visual value as part of the landscape strategy.
- **Removal of deck access apartment blocks.** The deck access apartment blocks introduced to increase density have now been omitted in lieu of traditional duplex buildings. Orientation was a concern raised by CCC and also the Part V provision as this typology was deemed not ideal for social housing within CCC due to issues re the maintenance, ownership and use of the communal decks.
- **Removal of mews type apartment units.** This typology has been removed from the development in lieu of traditional duplex arrangements around a central communal open space.

3.6 Summary of Environmental Reasons for Selection Alternative

The proposed development has responded to several environmental constraints emerging from the detailed assessment undertaken to inform the design, including traffic impact, utilities, visual impact, environmental and development of landscaping proposals:

- **Traffic and Movement**: The layout integrates a clear hierarchy of routes, balancing vehicular access with pedestrian and cycle linkages. This reduces traffic impact, promotes sustainable travel, and ensures permeability across the site.
- **Utilities and Infrastructure**: Service corridors and building placements have been coordinated to optimise utility provision, minimise disruption, and future-proof the scheme for long-term resilience.
- **Visual Impact**: Building heights and massing are carefully arranged to respect sensitive viewpoints, particularly from **Blarney Castle** and the surrounding village. Taller blocks are positioned at the lowest parts of the site, reducing visibility and maintaining harmony with the landscape.
- **Environmental Considerations**: Landscaping proposals incorporate biodiversity corridors, native planting, and green buffers, enhancing ecological value while providing amenity space. Sustainable drainage systems (SuDS) are integrated to manage surface water and reduce flood risk.
- **Landscape and Character**: The arrangement of blocks, their form, and materiality respond directly to site conditions, creating a varied yet cohesive streetscape. Changes in grain, height, and materials reflect the sloping topography, ensuring the development feels organic and embedded in its setting.

3.7 Alternative Processes

The relevance of alternative processes and technologies is limited in the case of this EIAR having regard to the nature of the proposed development, which is a residential development.

3.8 Cumulative Impact

The proposed scheme is not expected to cause any significant adverse environmental effects and is considered more beneficial than previously assessed design options. Key improvements include enhanced traffic flow, better landscape and visual integration, and positive outcomes for population and human health. Maintaining a landscape link to Ringwood supports biodiversity and wellbeing, while reduced parking and improved pedestrian and cycling routes promote healthier, less car-dependent lifestyles.

Alternative 06 delivers a high-density residential scheme with reduced car parking, aligning with both zoning and density goals while respecting the site's sensitive heritage and landscape context. The proposal thoughtfully balances environmental sensitivities with the site's sustainable and accessible location, offering strong connections to Blarney village and proximity to services, future amenities, and the planned CMATS railway link to Cork City Centre.

The landscape, visual and amenity strategy has evolved throughout the scheme design, to provide for a reduced level of development which reflects the sensitises of the site.

For potential cumulative impacts primarily relate to traffic, dust, noise, and other nuisances from the construction of the development, with other planned or existing projects, these include future phases of development, refer to each of the following EIAR chapters which have regard to these in the assessment and mitigation measures proposed.

3.9 Mitigation Measures

These are provided throughout the various chapters in the EIAR, and no alternative mitigation measures were considered in the preparation of this chapter.

3.10 References

The Cork City Development Plan 2022-2028.

Section 28 Guidelines for Planning Authorities - Design Standards for New Apartments (July 2023)

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4.0 PROPOSED DEVELOPMENT

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4.1 Introduction

This chapter provides a detailed description of the proposed development. In accordance with Article 5(1)(a) of the 2011 Directive as amended by Directive 2014/52/EU the description of the proposal should comprise *"…information on the site, design, size, and other relevant features of the project*".

A description of the site and its surrounding context is presented in Chapter 2. This chapter sets out a description of the proposed development. This description sets the basis against which the specialist assessments presented in this EIAR have been undertaken.

4.2 Site Location and Context

The subject site is located immediately east of Blarney town centre inside the town's settlement boundary and is approximately 7km north-west of Cork city centre. The site is approximately 19.35ha. in area, forms part of larger landbank in agricultural use, and is located on sloping, undulating lands that comprise a series of agricultural fields immediately south of the residential developments of Aisling Geal and Ard na Gréine, and running though the eastern side of Ringwood to the R617 to the south.

The "Ringwood", a locally prominent circular woodland area lies to the south and west of the site. An area known as the 'Wet Wood' is included within the site at its northern and northeastern side. The subject site is bound to the west by housing fronting onto Station Road. To the east, the site is bound by the N20 roadway and to the north the site is bound by Aisling Geal and Ard na Gréine. To the south the site is bound by the R617 road and Castleview house.



Figure 4.1: Location of subject site within Blarney context

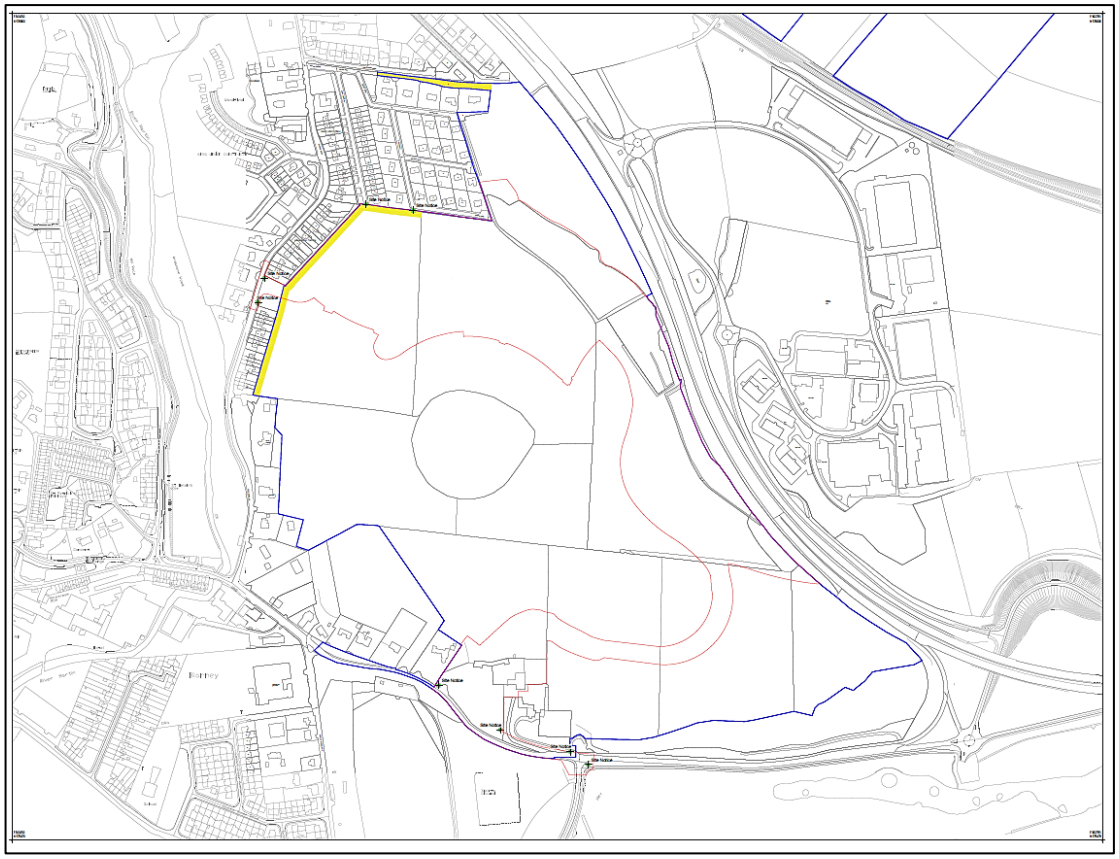


Figure 4.2: Site location for the proposed project shown outlined in red. Wider lands in client's ownership at Ringwood, Blarney shown outlined in blue.

4.3 Main Features of the Proposed Development

4.3.1 Proposed Development

The proposed development will consist of a large-scale residential development (LRD), representing Phase 2 of development in the Blarney East / Ringwood Expansion Area, and comprising the construction of 323 no. residential dwellings comprising of 157 no. terraced, end-of-terrace, and detached houses (129no. 3-bed and 28no. 4-bed units); 52 no. duplexes provided in 5 no. 3-storey buildings and 114 no. apartments provided in 2 no. 5-storey buildings (a mix of 1 and 2 bed units).

It is proposed to construct a primary care centre, over 2 stories and 1,724sqm in area, incorporating GP services, the refurbishment and redevelopment of existing farm outbuildings for conversion to a retail/pharmacy use, 80sqm in area, and café/restaurant use, 380sqm in area

A new access roadway into the site from the R617 with associated pedestrian and cyclist infrastructure, which will form the 1st phase of the proposed Stoneview Access Link Road, which incorporates a new signalised junction on the R617 road which will provide a single lane approach to the west and a two lane approach to the east, comprising one lane for through traffic on the R617 and a right turn lane for traffic turning into the site, and associated footpath improvements and cycle lane provision.

Further road improvement works include works to the junction at the R617 and Killard Road to include a new signalised junction which will provide a two lane approach from the west, one lane for through traffic heading eastbound on the R617 and a right turn lane onto the Killard Road, with associated footpath improvements and pedestrian and cyclist infrastructure.

In addition, a new signalised junction on Station Road that reflects the junction permitted under the Phase 1 LRD scheme (Reg. Ref. 2443031).

Further works include the provision of private, communal, and public open spaces and hard and soft landscaping, boundary treatments and amenity areas, including a new wetland public amenity area, drainage works and nature-based SuDS measures, foul sewer infrastructure, including 1no. pump station, the diversion of existing foul and water sewers and other new network works.

Car parking, including EV charging points, bicycle parking, and motorcycle parking bays and 2no. substations are also proposed.



Figure 4.3: Proposed site layout.



Figure 4.4: Proposed Site Layout - Residential

4.3.2 Proposed Construction

It is intended that the construction of the proposed development will be carried out in three phases, which will commence in 2027 and all three will run within a combined 48 month time frame. A Construction and Environmental Management Plan (CEMP) prepared by MHL Consulting Engineers outlining the process is included with the planning application.

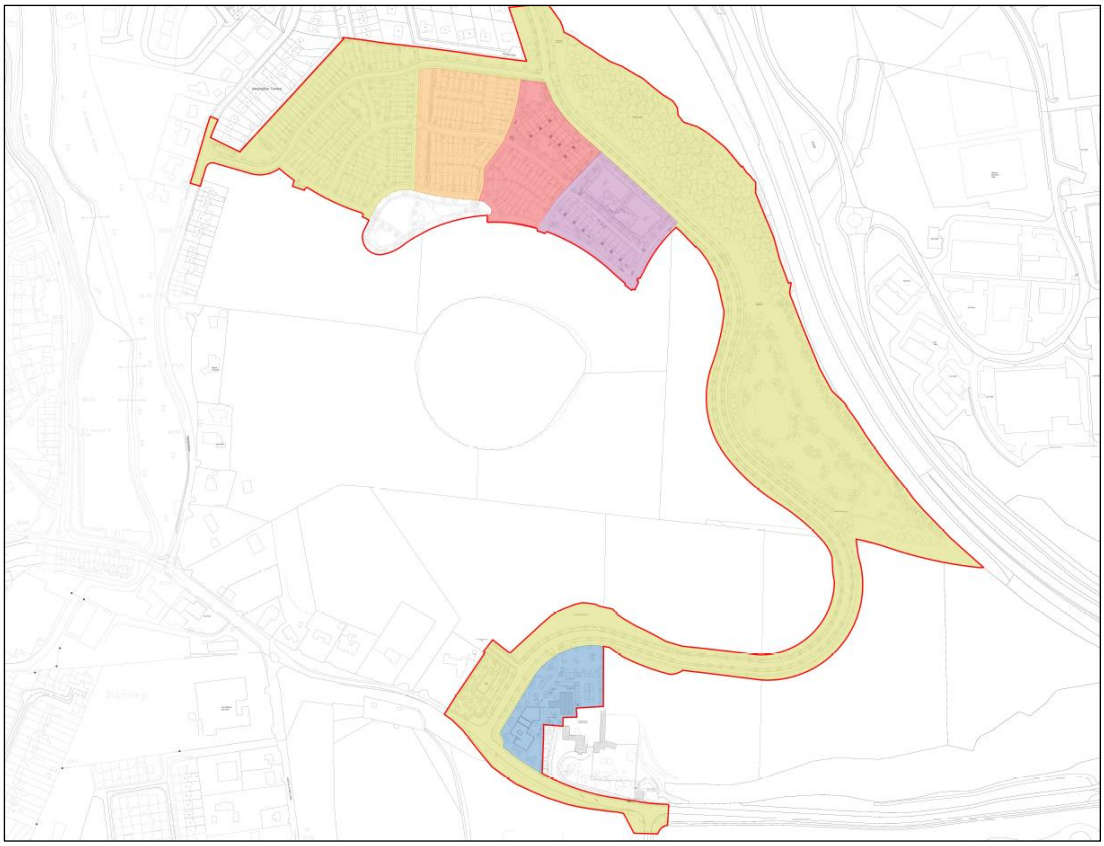


Figure 4.5: Proposed Phasing.

4.3.3 Key Development Statistics

A detailed floorspace schedule is set out in the Housing Quality Assessment prepared by Conroy Crowe Kelly Architects and submitted with the planning application. The principal development statistics are as follows:

Development Statistic	Proposed Development
Gross Site Area	19.35ha
Net Site Area	7.16ha
No. Residential Units	323no. residential units, to include: • 114no. apartments • 52no. duplexes • 157no. houses
Gross Floor Area	34,963.62m^2 to include: • 32,616.42m^2 Residential • 1,724m^2 – Primary Care Centre • 460m^2 – Retail and Café/Restaurant • 147m^2 – External Bin / Bike Stores • 16.2m^2 - Substations
Building Height	2-5 storeys
Resident External Amenity Space	Total Public Open Space Provision on site – 1.053ha (15%) Total Communal Open Space on site – 1,520sqm
Part V	64no. units, as follows: • 16no. 3 bed houses • 16no. duplex units

	• 32no. apartment units
Residential Density	45.11 units/ha of net developable area
Aspect	All of the houses are by their nature dual or triple aspect. Of the 52 duplex units, 100% are dual aspect. Of the 114 apartments, 59 are dual aspect, which is 51% above the 25% per SPPR 3.
Cycle Spaces	414no. cycle spaces
Motorbike Spaces	20no. parking spaces
Car Spaces	514no. parking spaces

Table 4.1: Key Development Statistics

4.3.4 Design Approach

The Architectural Design Statement prepared by Conroy Crowe Kelly Architects that accompanies this planning application sets out the design rationale for the proposed development in detail.

The following design objectives have informed the design process of the proposed scheme:

- A connected and sustainable residential development: One that establishes its own character and sense of place while forming an integrated part of Blarney.
- A development that respects and enhances its setting, maximising the natural amenity of the Ringwood and ensuring that building massing is carefully managed to protect key views from Blarney Castle.
- A landscape-led approach: Where natural features are celebrated, and the built form is designed to complement rather than compete with the surrounding environment.
- A balanced urban edge: Apartments and duplexes provide density and definition at the lower levels, while houses step up the slope, creating a varied yet coherent streetscape.
- Sustainable mobility: With proximity to the railway station and provision for walking and cycling links, the scheme encourages sustainable travel choices and reduces car dependency.
- There is an urgent need for housing in Cork City, with an estimated 22,000+ people recorded as having an ongoing housing requirement, highlighting the scale of the crisis and the immediate demand for new homes.

The proposal for the site is informed by the nature of the neighbouring established community, the need to integrate successfully, and at the same time to meet local and national residential density requirements. As the site contains steep slopes in places, the proposed development has been designed in response to this context and incorporates screening, spatial variation and natural separation.

The proposed development provides a density of 45.11 units/ha, which is in keeping with the target densities for Blarney in the *Cork City Development Plan 2022-2028*, and which is fully in keeping with the target densities for Outer Suburban/Greenfield Sites of Metropolitan towns under the *Sustainable and Compact Settlement Guidelines for Planning Authorities* (2024).

The proposed development includes a range of residential typologies – apartments, duplex units, terraced houses, end of terrace house, and detached houses.

The proposed building heights follow the prevailing heights within Blarney, with 2-storey houses and 3-5 storey apartment and duplex buildings.

The visual impact of the taller houses and multi-unit residential buildings is limited by locating them in the eastern side of the site. These parts of the site present the best and most appropriate opportunity to incorporate higher density and more urban-form residential units as they are the lowest and best visually screened parts of the site. The eastern part of the site also fronts onto the proposed distributor road.

The proposed buildings are arranged across the site in three character areas with road arrangements to address site topography. The character areas are as follows:

- **Park Edge**
  Located to the northwest behind Assumption Terrace and Station Road, Park Edge occupies land that falls towards the north. A primary road connects Station Road with the new Spine Road leading to the future Railway Station. The typology is predominantly 3-and 4-bedroom family houses, creating a domestic frontage and providing continuity with the existing dwellings at Assumption Terrace.

- **Wood Side**
  At the centre of the scheme, Wood Side faces south towards future public open space and enjoys views of the Ringwood. This area benefits from direct access to generous landscaped open spaces and pathways leading into the Ringwood. Housing typologies include duplexes, larger multi-unit buildings, and 3- to 4-bedroom family homes, supporting family life with multiple play and recreation areas. Higher multi-unit buildings are positioned along the new distributor road, establishing the required hard urban edge.

- **Lower Wood**
  Situated at the lowest part of the site, Lower Wood accommodates the largest multi-storey buildings, including apartment blocks and duplex terraces. Rising north–south towards the Ringwood, this area fronts the distributor road and provides direct access to the future Blarney Railway Station. Two apartment blocks are proposed, comprising 1- and 2-bedroom units. These are carefully located to avoid visibility from Blarney Castle and lie within 1,000 metres of the future station, thereby promoting sustainable transport use.

Internal street layouts follow site contours as best as possible with a loose, organic pattern. This provides both pedestrian and cycle friendly gradients and reduces excavation and engineering solutions such as the use of retaining structures.

The proposed development has been designed so residential units are overlooking streets and public and communal open spaces which provides passive surveillance. Landscaping and tree planting are provided along the roads/streets which assists in providing a sense of enclosure.

Most apartments benefit from unobstructed views of either communal open spaces or the existing woodland setting, reinforcing the development's relationship with its natural context. All pedestrian

pathways leading to the apartment blocks are designed in full compliance with Part M of the Building Regulations, ensuring universal access.

Good pedestrian facilities (such as wide footpaths and well-designed crossings) have been designed as part of the proposed development. These will make walking a more convenient and pleasurable experience and will encourage pedestrian activity. The proposed development has been designed to provide pedestrian and cycle connectivity and to reduce traffic speeds with long straight sections of road, where possible, having been avoided.

The development provides six distinct areas of public open space, each contributing to the overall hierarchy:

- **Central Green (Open Space 1):**
  A large, central landscaped green with housing frontages opening directly onto it. This space encompasses buildings from both Phase 1 and Phase 2, acting as a unifying focal point.

- **Pocket Park & Play Space (Open Space 2):**
  Located adjacent to the loop road and the future entrance to Ard Na Greine, this park provides accessible play opportunities and a welcoming green edge.

- **Linear Park (Open Space 3):**
  A natural buffer to the Aisling Geal houses, this park creates a green corridor that softens boundaries and enhances amenity.

- **Wildlife Corridor Continuation (Open Spaces 4 & 5):**
  These spaces incorporate the existing hedge and extend the wildlife corridor up to Ringwood at the hilltop, encouraging biodiversity and ecological connectivity.

- **Pocket Park Adjacent Ring Road (Open Space 6):**
  Designed to serve duplexes and apartments, this park provides play space and amenity for residents in higher-density areas.

Additional Green Infrastructure is to be provided in the following areas:

- **Wetwood and Wetland Areas (not included in net open space calculation):**
  A natural habitat integrated into the SUDs system, providing pathways, wildlife habitats, and seasonal flora. This area enhances biodiversity while offering children opportunities for exploration and informal play.

  An existing hedgerow which runs N-S through the centre of the site is proposed to be retained and incorporated into the linear park which functions as an amenity linking the subject site with permitted Phase 1 of development immediately south of the site.

In addition, the landscape design will provide:

- safe and accessible recreational spaces throughout the site;
- legible cycle and pedestrian links to wider services and recreational amenities;
- the planting of native/pollinator friendly trees and shrubs suitable for the long-term site objectives such as definition of space, screening, seasonality, biodiversity etc;
- the incorporation of nature-based SuDS solutions appropriate to site ground conditions;
- wildlife-friendly features across the development, such as bat and bird nesting boxes, insect hotels etc;
- green infrastructure management/maintenance operations aimed at promoting biodiversity.

All of the above landscaping interventions and mitigation planting and measures proposed will ensure that the proposed development will enhance biodiversity on site, in accordance with Cork City Development Plan Objective 11.224.

4.3.5 Services

In relation to services, the following is proposed:

- **Foul Water Services:** A Pre-Connection Enquiry was submitted to Uisce Éireann. The reference number for this enquiry is CDS24003261. The response to this Enquiry was issued by Uisce Eireann on 2nd December 2025. The Pre-Connection Enquiry response confirmed that the proposed development can be serviced by the existing wastewater infrastructure network in the area. A copy of the confirmation is included in an Appendix to the application's Engineering Report prepared by MHL Consulting Engineers.

  The Confirmation of Feasibility (COF) states that sufficient capacity is available in the UE network to facilitate a wastewater connection of 325 units. UE have advised that in order to facilitate the wastewater connection, it will be required to upgrade approximately 450m of foul sewer on the Station Road from 225mm to 300mm/450mm at a minimum. UE have advised that they are commencing network upgrade works in Blarney in the short term.

  Wastewater collection within the proposed development will be via a network of 150mm, 225mm and 375mm diameter gravity sewers, which will direct the flows from the western side of the site to the existing Station Road wastewater sewer. This new gravity sewer will then connect directly to the existing foul sewer on Station Road. Flows from the remaining eastern portion of the site and the proposed Primary Care Centre will flow south to a new proposed pump station. This new pump station is to be located west of the new spine road development access, where a proposed rising main will pump wastewater to a receiving manhole located at the Station Road /R617 junction. The first phase units of the development can be served by this existing foul sewer. Later phases of the development will be served by an upgraded foul sewer, the upgrading works to be carried out by Uisce Éireann, for which Uisce Éireann will levy the Applicant and which work will take place as the development is progressed beyond the initial development build out.

- **Water Services:** A Pre Connection Enquiry was submitted to Uisce Éireann. The reference number for this enquiry is CDS24003261. The response to this Enquiry confirmed that the proposed development can be serviced by the existing water infrastructure network in the area. A copy of the confirmation is included in an Appendix to the application's Engineering Report prepared by MHL Consulting Engineers. - A 150mm diameter watermain is located in Station Road and on the R617, immediately to the west of the site and south of the site respectively .

- The surface water drainage network for the proposed development underwent modelling, incorporating details such as above ground flows, green basins, swales and supporting surface water engineered solutions. These engineered solutions include pipe lengths, slopes, contributing impermeable areas, upstream invert levels, upstream cover levels, and pipe diameters. Please refer to the submitted layouts for specifics on proposed pipe slopes, sizes, and routing.

  The new drainage system provided for the proposed development will be entirely separated from the wastewater sewer network. Noting this methodology, the site is to be split into separate sub catchment zones for drainage and attenuation purposes. This sub catchment assessment aligns with the sub catchment and storm routed proposed for the granted phase 1 portion of the site.

  A new storm water sewer system will be constructed on site. The construction of the storm sewer pipe network shall be in accordance with Section 3 of the Department of Environment and Local Government publication "*Recommendations for Site Development Works for Housing Areas*".

  The proposed development has been design to replicate, insofar as possible, the site's natural drainage as closely as possible, maximising benefits for water quality, biodiversity and amenity. The proposed wetland area is integrated with this approach. Further SuDS measures are proposed.

In relation to electricity, 2no. new substations will be installed as part of the development. This will have enough capacity for the proposed development, including the proposed EV charging points. A connection will be made to the existing network where there is sufficient capacity for the proposed development. In relation to telecommunications and broadband, the developer will be required to place an order with a telecoms provider for new fixed phone lines and fixed broadband connections.

4.4 References

Cork City Development Plan 2022-2028, as varied

Sustainable and Compact Settlement Guidelines for Planning Authorities (2024)

5.0 CONSTRUCTION STRATEGY

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5.1 Introduction

MHL & Associates Ltd., Civil Engineering Consultants, undertook the preparation of this section of the Environmental Impact Assessment Report (EIAR), in association and consultation with Coakley O'Neill Town Planners, Conroy Crowe Kelly Architects, Systra Ltd, JBA Consulting and Cunnane Stratton Reynolds Land planning and Design. This chapter of the EIAR was prepared by Mr. David Murphy, B.Eng. (Hons), M.A, MIEI, of MHL & Associates, and reviewed by Mr. Brian Murphy, BE, CEng MIEI of MHL & Associates.

This section of the Environmental Impact Assessment Report (EIAR) has been developed in accordance with Part 1 of Annex IV of the EIA Directive 1 and adheres to article 94 and Schedule 6 of the Planning and Development Regulations, as amended. The structure of this chapter is designed to articulate the following key elements:

- Land use requirements essential for supporting the construction of the proposed development.
- An outline of the indicative duration and phasing throughout the construction period.
- Identification of the probable activities necessary to prepare the site and execute the enabling works vital for supporting the construction of the proposed development.
- Presentation of indicative methodologies for executing construction activities, encompassing works on structures or buildings of architectural heritage value.
- A delineation of the anticipated activities required for final finishes and landscaping.

A Construction Environmental Management Plan (CEMP) has been compiled to establish the minimum requirements that appointed Contractors must adhere to during the implementation of the proposed development.

5.2 Proposed Development

5.2.1 Existing Site

The application site is located in the town of Blarney, considered an outer suburb of Cork City as defined in the Cork City Development Plan 2022 -2028. Access to/from the site is currently via an existing agricultural entrance on Station Road immediately on the western side of the site and an existing vehicle access to the south on the applicant's site, connecting with the R617. The proposed development lands currently serves agricultural uses, farmed by the existing multi-generational owners. The site is bound by Station Road to the west, existing residential estates of Aisling Gael and Ard na Greine to the north and the Ringwood to the south. Nearby uses include Blarney Business Park to the east of the N20, the Shean Upper Sanctuary to the south and the wider Blarney Town to the south and southwest and existing private dwelling houses to the west and north.

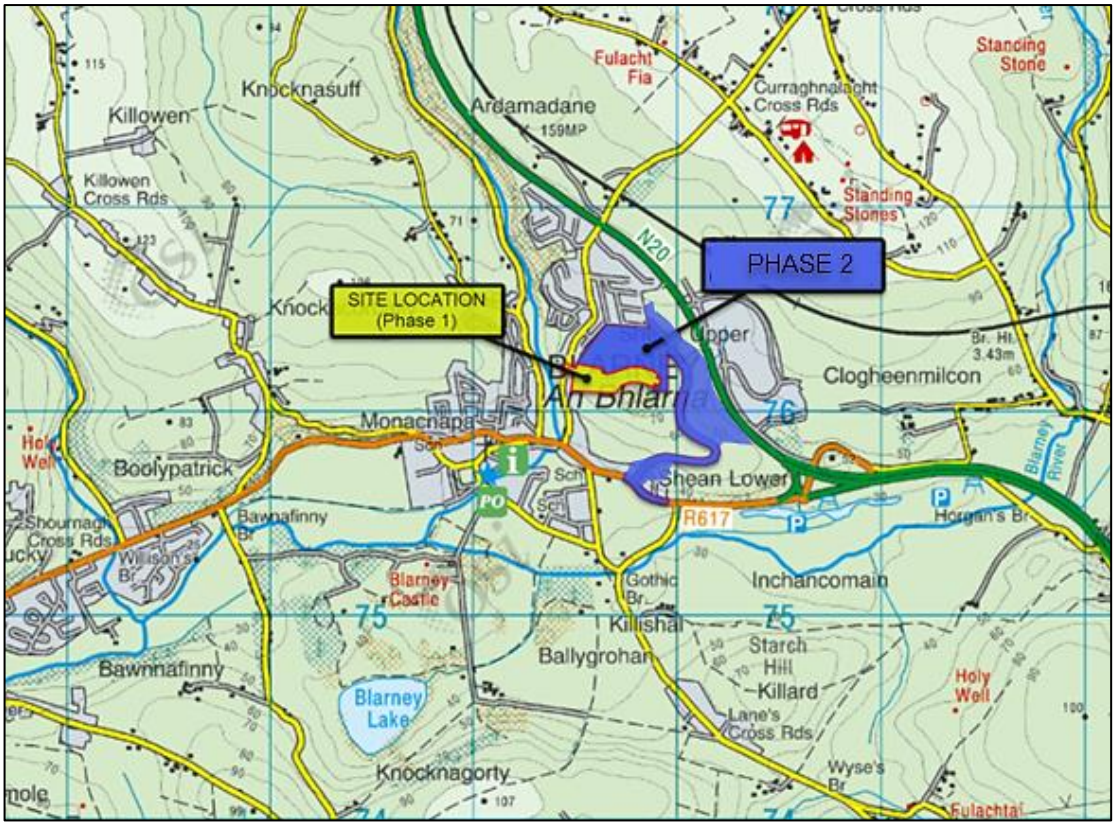


Figure 5.1: Site Location (Showing Phase 1 and Phase 2 Application)

5.2.2 Proposed Development

The proposed development will consist of a large-scale residential development (LRD), representing Phase 2 of development in the Blarney East / Ringwood Expansion Area, and comprising the construction of (i) 323 no. residential dwellings comprising of 157 no. terraced, end-of-terrace, and detached houses (including 129 no. 3-bed and 28 no. 4-bed units); 52 no. duplexes provided in 5 no. 3-storey buildings (including 26 no. 2-bed and 26 no. 3-bed units) and 114 no. apartments provided in 2 no. 5-storey buildings (including 54 no. 1-bed and 60 no. 2-bed units); (ii) a primary care centre, over 2 stories and 1,724sqm in area, incorporating GP services (iii) the refurbishment and redevelopment of existing farm outbuildings for conversion to a retail/pharmacy use, 80sqm in area, and café/restaurant use, 380sqm in area; (iv) a new access roadway into the site from the R617 with associated pedestrian and cyclist infrastructure, which will form the 1st phase of the proposed Stoneview Access Link Road, (v) a new signalised junction on the R617 road which will provide a single lane approach to the west and a two lane approach to the east, comprising one lane for through traffic on the R617 and a right turn lane for traffic turning into the site, and associated footpath improvements and cycle lane provision (vi) a new signalised junction at the R617 and Killard Road junction which will provide a two lane approach from the west, one lane for through traffic heading eastbound on the R617 and a right turn lane onto the Killard Road, with associated footpath improvements and pedestrian and cyclist infrastructure; (vii) a new signalised junction on Station Road that reflects the junction permitted under the Phase 1 LRD scheme (Reg. Ref. 2443031) (viii) private, communal, and public open spaces and hard and soft landscaping, boundary treatments and amenity areas, including a new wetland public amenity area, (ix) drainage works and nature-based SuDS measures (x) foul sewer infrastructure, including 1no. pump station, the diversion of existing foul and water sewers and other new network works, (xi) car parking, including EV charging points, bicycle parking, and motorcycle parking bays (xii) 2no. substations, all associated ancillary site, drainage and development works.

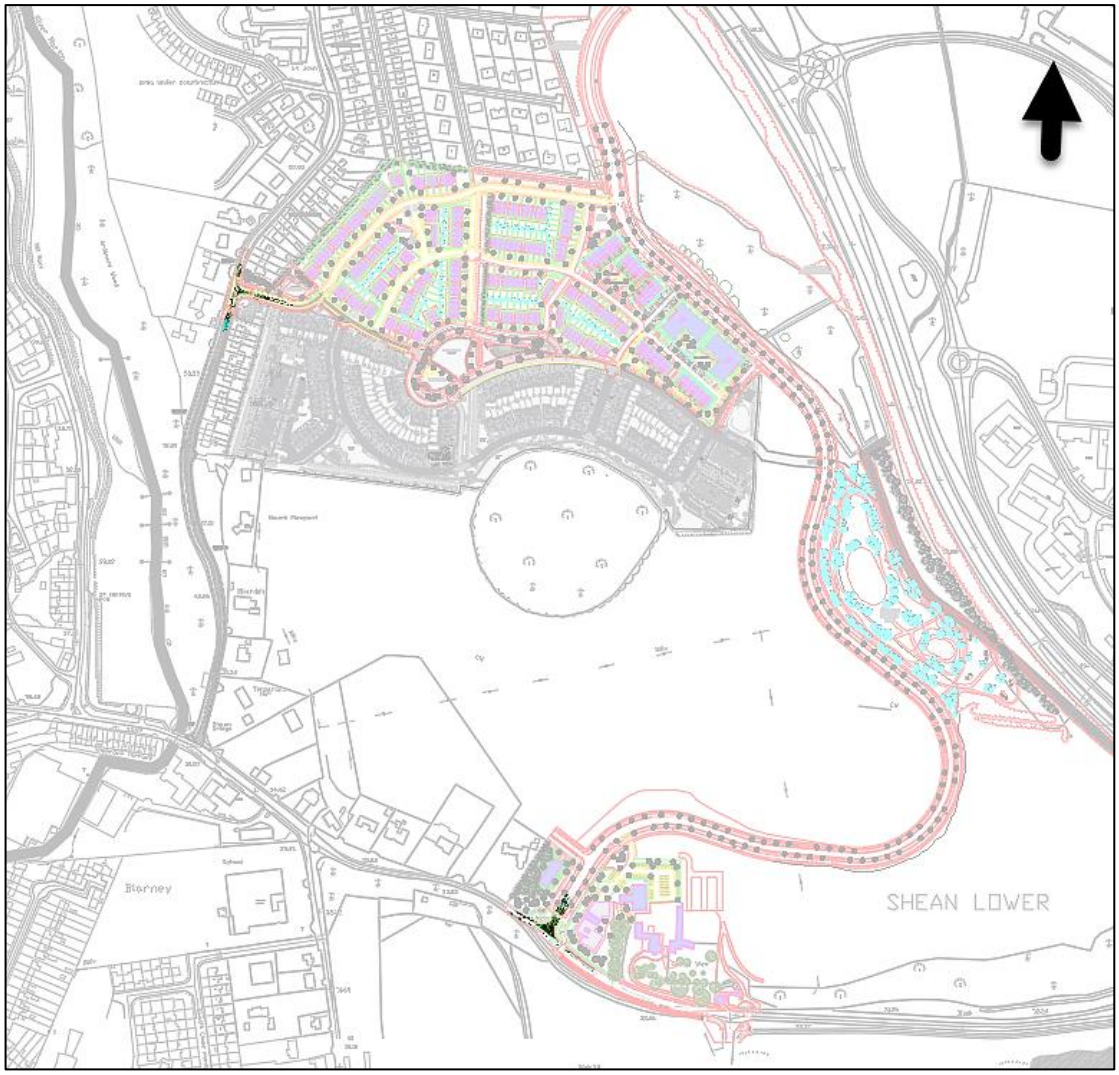


Figure 5.2: Proposed Site Layout Phase 2 (c: CCK Architects)

5.2.3 Cumulative Development

The permitted development as part of Phase 1 will consist of a largescale residential development (LRD) of 246no. residential dwellings comprising the following: 101no. apartments arranged in 4no. part 3-storey, part 4-storey apartment blocks (to include 6no. 1-bed studio units, 35no. 1-bed units and 60no. 2-bed units); 30no. duplex dwellings arranged in 3no. 3-storey buildings (to include 15no. 1-bed dwellings and 15no. 2-bed dwellings); and 115no. 2-storey and 3-storey houses (to include 19no. 2-bed dwellings, 64no. 3-bed dwellings, and 32no. 4-bed dwellings).

That development also includes crèche with capacity to accommodate 137no. children, which will serve both Phase 1 and Phase 2.



Figure 5.3: Proposed Site Layout Phase 1 (c: CCK Architects) (Granted)

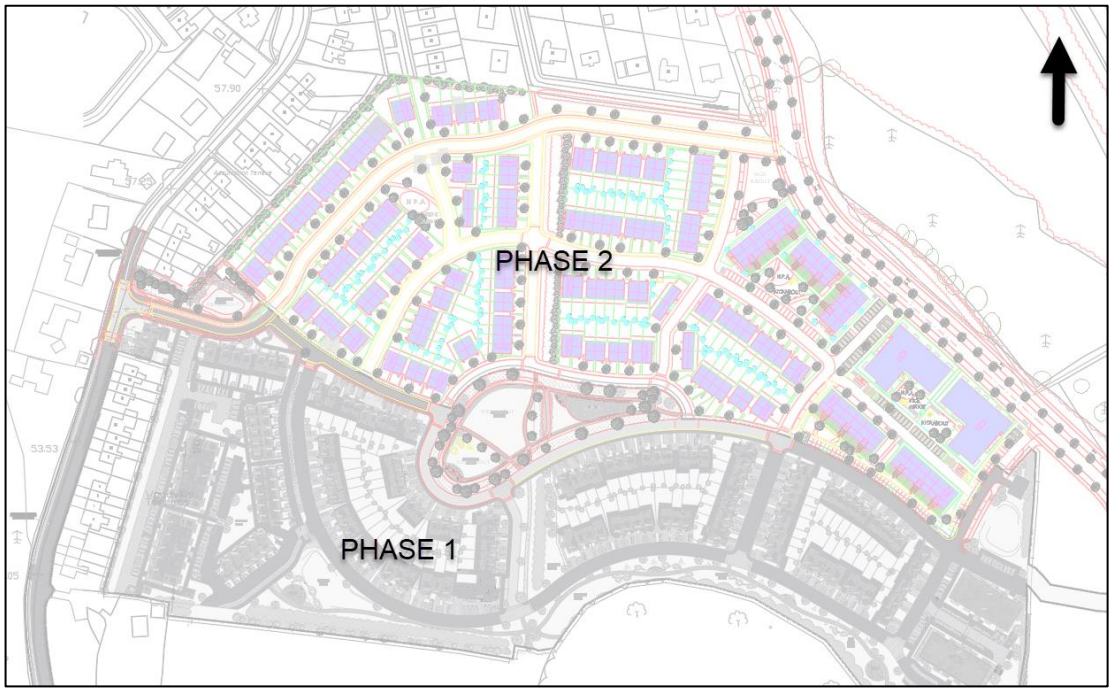


Figure 5.4: Proposed Layout Phase 1 and 2 (North of Ringwood)

This phase 2 development is to comprise of a mix of residential units and a new link road connecting the eastern side of the site to a new junction connecting to the R617 regional road to the south. Phase 2 residential scheme is located to the north of the granted Phase 1 site. These respective phases are shown in Figure 5.5 with the proposed new link road shown to follow an optimal alignment from the R617 northwards following the existing site topography. The combined site Phase 1 and 2 developable areas are as referenced in this EIAR in light of the cumulative impact of the intended overall development.

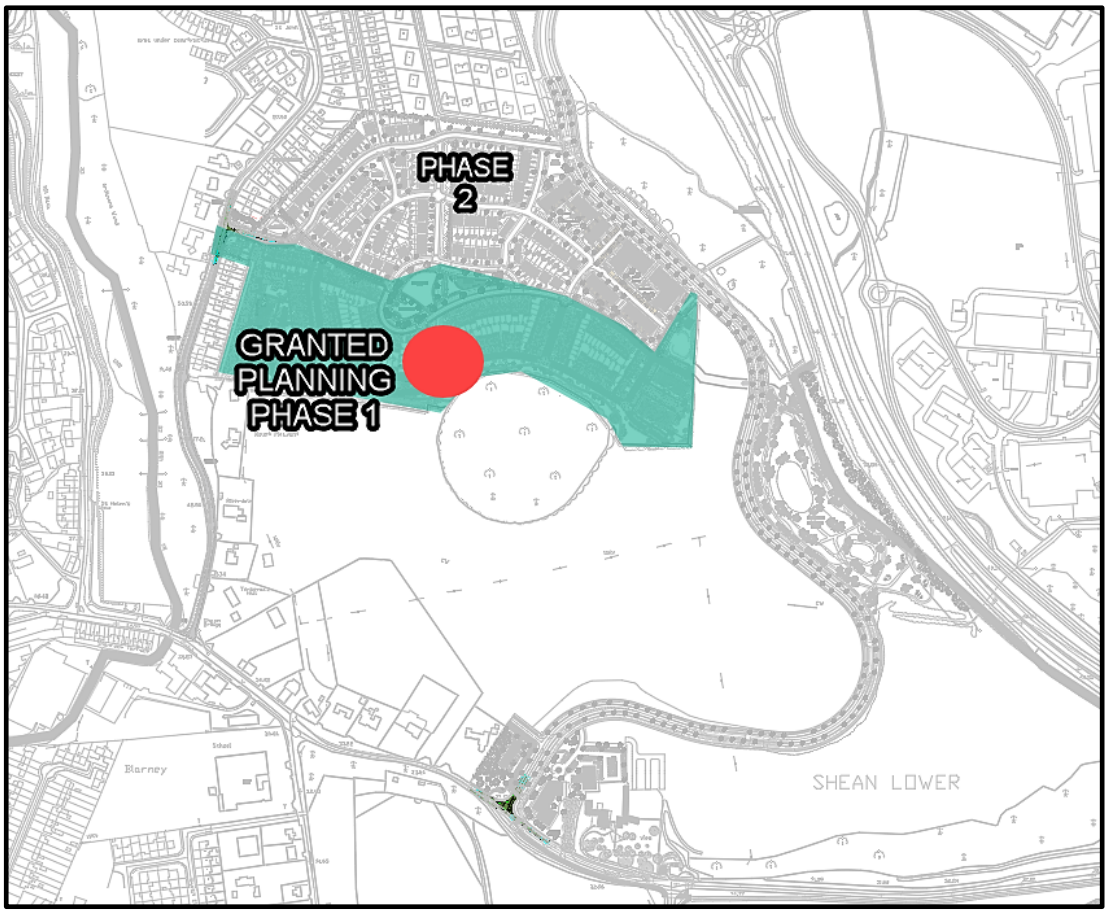


Figure 5.5: Proposed Site Layout - wider context.

5.2.4 Future Phases

The proposed future phases will consist of a largescale residential development (LRD) residential dwellings comprising a similar unit mix and density as outlined in Phase 1 and 2. Future phases do not form part of this EIAR Chapter, as the lands upon which they are intended to be developed at not currently zoned.

5.2.5 Cumulative Projects

In the vicinity of the development site, several key developments are at varying stages as of November 2025. These comprise the following.

Ringwood Phase 1, involves a permitted residential development of 246 units south of the site, granted by An Coimisiún Pleanála on May 6, 2025, with 25 conditions, and initial site works ongoing.

The Monacnapa SHD, saw an initial 2022 permission for 113no. units (reduced from 143no.) quashed by the courts and refused again by the Commission on 7th November 2025, but leaving potential for a future resubmission.

The N/M20 National Road scheme, aims to link Cork and Limerick with a high-quality corridor; Phase 3 design and environmental evaluation is advancing, narrowing the mainline to 200m, with a 2026 planning application planned but no construction started.

The Blarney/Stoneview element of the Cork Area Commuter Rail Project, proposes a new station northeast of the site, three station upgrades, full electrification, and a 400–600-space strategic park-and-ride with accessible parking options, all pending a future Railway Order to An Coimisiún Pleanála, with no works commenced.

Please refer to Chapter 20 - Cumulative Projects of this EIAR for further details.

5.3 Roles and Responsibilities

5.3.1 Client and Contractor

The Applicant will be responsible for ensuring that an appropriate Environmental Management Framework is adhered to, that competent parties are appointed to undertake construction and that sufficient resources are made available to facilitate the appropriate management of risks to the environment.

As part of the Environmental Management Framework, the Building Contractor will need to comply with all relevant environmental legislation, take account of published standards (ISO14001) and relevant documentation including the Environmental Impact Assessment Report (EIAR), any planning conditions from An Coimisiún Pleanála (ACP) or/and Cork City Council, this CEMP and the subsequent detailed CEMP. Regarding the subsequent detailed CEMP, the Applicant is responsible for ensuring that this is developed in consultation with the design team and the Local Authority.

The Building Contractor is also responsible for ensuring that all members of the Project Construction Team, including sub-contractors, comply with the procedures set out in the CEMP, including following any specific requirements set out in the EIAR. The Contractor appointed will be responsible for the organisation, direction, and execution of environmental-related activities during the construction of the proposed development. In addition, they will ensure that all persons allocated specific environmental responsibilities are notified of their appointment and confirm that their responsibilities are clearly understood.

5.3.2 Site Manager

A Site Manager will be appointed by the Contractor to oversee the day-to-day management of the site and ensure that effective, safe, and planned construction activities are delivered on an ongoing basis to the highest standards. The Site Manager will be a competent, suitably qualified and an experienced professional that will oversee site logistics, communicate regularly with construction staff, accommodate project-specific inductions for staff on-site and ensure that all work is compliant with the relevant design standards and health and safety legislation.

5.3.3 Site Environment Manager (SEM)

A Site Environmental Manager will be appointed by the Contractor to ensure that the CEMP is effectively implemented. The Environmental Manager will be suitably qualified and competent. The responsibilities of the SEM include, but are not limited to, the following:

- Preparing, maintaining, and implementing the CEMP

- Completing site inspection and environmental compliance reports
- Providing guidance for the site team in dealing with environmental matters, including legal and statutory requirements affecting the works
- Reviewing environmental management content of method statements where relevant
- Reporting environmental performance to the Site Manager
- Liaising with statutory and non-statutory bodies and third parties with an environmental interest in the proposed development.
- Conducting regular environmental inspections as specified in the contract and checking adherence to the CEMP
- Keeping up to date with relevant environmental best practice and legislative changes
- Ensuring all personnel have undertaken adequate environmental inductions, awareness briefings sand training (including sub-contractors)
- Dealing with environmental complaints
- Managing and responding to environmental incidents and ensuring that all incidents are recorded and reported in an appropriate manner.

5.3.4 Environmental Specialists

Where relevant, and to fulfil obligations under the CEMP, the Contractor will be responsible for engaging suitably qualified specialists including (where necessary):

- Project archaeologist.
- Project ecologist.
- Project arborist.
- Noise and vibration specialist.
- Air Quality and dust specialist.
- Land, soils, and contamination specialist; and
- Water specialist

5.4 Training and Induction

5.4.1 Site Induction

All personnel involved in the proposed development will receive environmental awareness training. The environmental training and awareness procedure will ensure that staff are familiar with the principles of the CEMP, the environmental aspects and impacts associated with their activities, the procedures in place to control these impacts and the consequences of departure from these procedures.

5.4.2 Specific Training and Awareness Raising

A project specific training plan that identifies the competency requirements for all personnel allocated with environmental responsibilities will be produced by the Contractor. Training will be provided by the Contractor to ensure that all persons working on site have a practical understanding of environmental issues and management requirements prior to commencing activities. A register of completed training is

to be kept by the SEM. The Site Manager will ensure that environmental emergency plans are drawn up, and the SEM will conduct the necessary training/inductions.

5.4.3 Construction Methods

The development of a residential housing site involves a systematic approach to ensure the project's success. Key phases in the preparation and clearing of the site encompass activities such as traffic management planning, surface water management strategies, and the establishment of secure site access points. The preservation of existing vegetation, responsible topsoil management, and the levelling of the ground with consideration for material reuse are integral components. Infrastructure setup includes the designation of areas for vehicle set-down, material storage, site offices, and welfare facilities, along with utility services connections and diversions. Additionally, the utilisation of previously used construction units as the phases are built out within the housing development is addressed, incorporating traffic management plans, and reinstating environmental strategies.

The construction of permanent access roads and facilities involves safeguarding existing infrastructure, constructing permanent access roads, and setting up gates for access control. Temporary access roads are prepared, considering proper drainage and signage installation. Permanent road infrastructure planning includes accommodating future cable installation beneath the road surface and completing road surfacing with drainage, kerb construction, and road markings. The final touches encompass installing permanent signage, ensuring readiness for community use upon project completion.

In terms of earthworks within the residential development, activities such as haul roads, foundation design are to be carefully executed. Graded stone is delivered for haul roads, and excavation involves responsible soil and rock handling for potential reuse. Drainage installations are carried out, including the installation of temporary drainage systems. Permanent drainage and infrastructure setup cover water attenuation features, carrier drains, filter drains, stormwater drainage, and road gullies. Site finishing and landscaping involve completing road surfacing, erecting permanent signs, surfacing unpaved areas, and introducing landscaping elements that harmonise with the surroundings.

For reinforced concrete foundations of residential structures, excavations are conducted with safety and aesthetics in mind, followed by reinforcement and concrete pouring. Structural steel erection for residential buildings involves planning, temporary support, and the installation of wall cladding and roof structures for weatherproofing. Interior fit-out activities include floor screeds, constructing internal walls using modern materials, and installing necessary infrastructure. The final site finishes and infrastructure enhancements encompass completing road surfacing, lining, and permanent signage, surfacing substation areas, and concluding landscaping efforts to create a harmonious residential environment.

5.5 Construction Works Management

5.5.1 Proposed Construction Screening

The following outlines the indicative construction strategy and associated program for the proposed development. While the Main Contractor(s), upon appointment, will bear ultimate responsibility for the safe and secure sequencing and implementation of the works, ensuring compliance with statutory

requirements and the mitigation measures outlined in the Environmental Impact Assessment Report (EIAR), the approach detailed below is framed as a worst-case scenario for the comprehensive construction of the development. It is acknowledged that some degree of flexibility is necessary in the construction sequencing, as articulated in this chapter, to address potential on-site challenges that may arise. This flexibility allows for adaptive responses in case of unforeseen issues during the construction process.

The construction of the development will tie in with the construction and completion of phase 2 in tandem with the granted phase 1 development build out.

Prior to any Phase 2 construction works being carried out, the proposed development will initially involve some site clearance and grading of the site to accommodate the construction of all associated engineering works and subsequently the building foundations.

This will involve the delivery of machinery, site equipment/plant and materials and the removal of some material off-site. Any material that can be reused later in the construction process will be stockpiled in an appropriate location; this will reduce the number of vehicular movements on the public roads. Once the site access, parking and compound facilities are established, the main haulage of materials to the site will include stone, concrete, blocks, steel, and other building materials. Appropriate traffic management measures will be provided to minimise the impact of construction traffic on the local road network as detailed.

An indicative construction sequence is outlined below to illustrate the buildability of the project. The actual construction sequence will be confirmed when any conditions of planning are received, and construction appointments confirmed.

To develop the site, the following works will be required to be carried out:

- Provision of a temporary construction access from Station Road and the R617 Road into the site, provision of a safe and secure site compound including welfare facilities for workers and the erection of temporary boundary fencing. Provision of a temporary construction haulage route from the R617 to Phase 2 and the granted Phase 1 sites.
- Measures, including temporary fencing, to reduce the potential risk of impacts to retained trees and open space areas in phase 1 and phase 2 of the site.
- Creation of a storage area for surplus plant and materials.
- Creation of a site batch concrete area.
- Installation of silt fencing and creation of silt traps to the north of the construction area of the site to prevent construction runoff towards natural vegetation and the nearby watercourse of the Shean Upper and River Martin.
- Trenching for underground services including foul sewer, surface water drainage including attenuation and outfall pipework, water mains, gas, telecommunications, electricity, and lighting.
- Construction and connection of underground services to existing underground services, principally connections to the Station Road and the R617.

- Surface water connection will be made to the River Martin and Shean Upper watercourses. The final outfall to the River will be constructed as an open channel through existing vegetated areas to ensure minimum environmental impact.
- Watermain connections will be made to the existing watermain in Station Road and on the R617.
- Foul sewer connection will be made to the existing foul sewer in Station Road and on the R617.
- No dwelling unit will be occupied prior to the completion of an approved foul sewer connection, and no hard-standing area will be completed without the final surface water outfall being in place.
- Excavation and concrete works for strip and pad footing foundations.
- Piling to some blocks, in areas of previously placed fill, likely to be bored piles with in-situ concrete and rebar infilling.
- Construction of the apartment buildings and houses, likely to be constructed in reinforced-concrete frames and timber frames respectively, and construction of all plant and storage areas,
- Construction of ancillary site works including the provision of one substation, outdoor amenity areas, landscaping, car parking spaces, motorbike spaces, bicycle parking spaces, bin stores, public lighting, and all supporting site development works.
- Erection of permanent boundary fencing, landscaping, and lighting.

It is anticipated that the overall construction programme will take approximately 48 months to complete, with the development being completed sometime before 2030.

Typical residential housing development requires the site development works to be undertaken in the following sequence:

- Site setup and site clearance.
- Site signage and delivery yard/ temporary parking setup.
- Site fencing/ hoarding erection.
- Groundworks/ foundation/ earthworks/grading.
- Carriageway construction.
- Sub structure, sewers/ service runs.
- External service tie in works to public utilities.
- Super structure/ housing unit building out.
- Cladding.
- Fit out, testing and commissioning.

Any future phases of development will be subject to new and separate applications and approvals.

For later phases of the development, foul sewers and watermains in Station Road and on the R617 (proposed rising main) will have to be sized appropriately to serve the proposed development. This work will be carried out by Uisce Éireann and specific construction controls will be put in place by Uisce Éireann and their contractors for this work. The details of this work and the associated construction controls will be a matter for later detailed agreement between Uisce Éireann and Cork City Council but will involve traffic management and traffic controls on Station Road and the R617 to facilitate safe construction while facilitating existing traffic.

5.5.2 Site Compound

The construction site will be organised to include designated areas for various purposes, such as:

- Material and equipment laydown space
- Space allocated for site machinery.
- Road access
- Secure fencing around the compound site
- Parking space
- Implementation of a wheel wash system for all trucks leaving the construction compounds, with collected water treated and disposed of off-site.
- Storage area for construction waste
- Site offices
- Electricity supply from a generator/ network
- IT/telecommunication connection
- Water supply facilitated by a bowser.
- Welfare facilities, with proper disposal of foul sewage through off-site removal.

5.5.3 Site Hoarding

Site Hoarding plays a crucial role in establishing a secure site boundary and ensuring the safety of individuals unfamiliar with construction operations. Before significant construction activity begins, the Enabling Works Contractor will set up the site boundary using appropriate signage, hoarding construction, and welfare facilities. This measure serves to safeguard against potential environmental impacts associated with construction, including noise, visual impact, and dust.

The Contractor's responsibility includes maintaining a clear demarcation, creating a safe enclosure between public facilities and the construction site. Whenever possible, hoarding and fencing from Phase 1 and Phase 2 works will be retained, reconfigured, and reused for subsequent phases. The size of the compound and facilities required by the Contractor will vary during the works, with a preference for a small-scale compound within the site compound.

The proposed hoarding line along development's access with Station Road and the development' spine road development access with the R617 will integrate with the existing road network, ensuring existing footpath facilities are maintained. Necessary licenses from the Local Authority will be obtained in advance. Short closures of the footpath may occur for service connections, with pedestrians redirected along the adjacent carriageway, temporarily closing one lane to westbound traffic. Controlled access points, such as gates or doors, will be locked when unmonitored (e.g., outside working hours). The hoarding will be well-maintained, painted, and may feature graphics conveying project information.

5.5.4 Site Safety

Appropriate management of the transport operations will be applied throughout the construction process. Construction site compounds and staff parking areas will be set up before any construction works start on-site. The site compounds will be located within the site's boundary at appropriate locations. The site

compound established for the Phase 2 development is likely to be maintained through the later phases of the development. Hoarding and boundary fencing will be erected to delineate all site works and separate same from the surrounding public areas located adjacent to the development.

Staff parking during construction will be accommodated close to the site compound with access from Station Road generally. There will be construction access from the Station Road and the R617 road and final arrangements for such access will be agreed before construction works commence and will be carefully managed throughout the works.

As construction progresses, the completed Phase 1 and Phase 2 areas of the development will have permanent access from Station Road and the R617. It is proposed that a dedicated construction haul route and access from R617 will be installed to avoid construction travel through phase 1 and phase 2 completed areas of the development. This will ensure a separation of construction and permanent user access until the construction works are completed.

Works on upgrades to existing water supply and foul sewer pipework on Station Road and the R617, by Uisce Éireann, will require traffic management and controls to be employed on Station Road, including managed single-lane traffic flows to facilitate this pipe-laying work.

A detailed Construction Traffic Management Plan will be prepared by the Contractor and submitted to the Planning Authority prior to the commencement of any construction on the development site and Uisce Éireann Cork City Council will agree a Traffic Management Plan for the works on the Station Road.

Security of the site is an important issue with respect to restricting site entry to personnel solely involved in the construction process during working hours and preventing unauthorised access out of hours. Site access for all personnel and visitors will be strictly controlled, and all visitors will report to the site office prior to entering the construction area.

5.5.5 Working Hours

It is envisaged that normal working hours will be between 8:00 and 19:00, Monday to Friday and 8:00 to 16:00 on Saturdays, subject to any conditions set down by ACP/Cork City Council. No working will be allowed on Sundays or Bank Holidays. Subject to the agreement of the local authority, out-of-hours working may be required for water main connections, foul drainage connections, tower crane erection and removal etc. Any such arrangements will be agreed at construction stage.

Working hours for water supply and foul sewer upgrades on Station Road and the R617 will be agreed with Uisce Éireann and Cork City Council for the later phases of the development and work outside of normal working hours may be required for significant connections to existing infrastructure.

5.5.6 Cranes and Lifting Equipment

The proposed build method for the apartment blocks is likely to be either structural steel or reinforced concrete (RC) frame. Tower cranes and concrete placing booms will be required to erect the RC frame. A

combination of goods hoists and telehandlers will offload and distribute materials for the construction and finishing trades.

The proposed houses are likely to be constructed using timber frame technology which will require the use of mobile cranes to lift sections of timber kits into place on an ongoing basis as house construction progresses.

All lifting equipment and appliances will carry current test certificates and be inspected prior to use. Trained and competent bankmen will attend the cranes.

Road closures may be required for a short period to enable the cranes to be transported to/from the subject site. The appropriate approvals and permits for any road closures will be applied for and agreed with Cork City Council. All relevant stakeholders will be kept informed of any such closures.

5.5.7 Site Storage

Storage of materials on site will be kept to the minimum. A construction programme will be developed to ensure that no large materials will be required to be stored on-site until they are needed. Materials such as glazing and cladding systems will be delivered in batches and loaded evenly on the required floors. Throughout the project, storage of materials outside the site boundary or in areas of landscape and ecological value within the site will not be permitted.

5.5.8 Works Breakdown

The following is a list of the main activities that are planned to be undertaken in the first phase.

5.5.9 Enabling Works

It is estimated that the enabling works for the site, will take three months and will partly be carried out in Phase 1. Subsequent enabling works for future phases will run concurrently with the build out of phase 1 (Granted permission) and Phase 2.

Enabling Works Site Set Up

- Site set up for the enabling works contract, including construction compound and erection of secure site hoarding and fencing along Station Road and the neighbouring premises.
- Temporary site access established at the developments site's western boundary to facilitate site access, installation of site hoarding for duration of construction works.
- Implementation of Contractor's Health & Safety Plan for the enabling works contract. Identification and cut-off, as required, to existing services.
- Protection of existing site features to be retained

Site Preparation

The Contractor shall coordinate the Works with the Archaeologist.

Groundworks

As part of Phase 2, the following is a list of the main groundworks activities that are planned to be undertaken that are relevant to the delivery of the site:

- Develop the preferred sequencing of the works.
- Conduct condition surveys of sensitive boundary structures and existing in proximity to the works.
- Co-ordinate the design and installation of the temporary works required to implement the Main Contractor's preferred sequence of works.
- Relocate construction compound and welfare facilities within the site boundary; and
- Agree on the optimum location for stockpiling of material for re-use on site.
- Installation, and later removal, of working platform (possible re-use of site won material).
- Construction of permanent foundations for proposed units.
- Conduction of working load pile tests on a number of foundations.
- Conduction of integrity testing.
- Installation and removal of temporary enabling works /structures; and
- Along with the rest of the site groundworks, removal of surplus excavated material in the site area for on-site relocation /off-site disposal.
- Along with the rest of the site groundworks, temporary stockpiling of excavated material in the phased areas for disposal offsite (to be stockpiled for a maximum of 6 months) and appropriate temporary covering.

Main Construction Works

The main construction works include the construction of the new buildings and the external site works. The footpath will remain open throughout the construction phase, with the exception of short, localised road closure licences necessary to complete service tie-ins as described.

Site Set Up and Preparation

Mobilisation and site set up for the main contract works, including the erection of the construction compound and secure site hoarding.

Construction of minor works along the south footpath on Station Road, includes:

- Creation of a dished kerb at proposed vehicular entrance.
- Relocation of streetlight.
- Creation of dropped kerbs for emergency access to the development,
- Installation of new manholes constructed in Station Road pavement.
- Installation of sections of surface water concrete pipework to connect new manholes and gullies.

- Connection into existing surface water outfall.
- Diversion of existing road gullies into new surface water sewer; and
- Construction of new trapped blockwork road gullies and connection into surface water sewer.
- Condition surveys of existing boundary structures that will be retained; and
- Preparation of site area for the construction of the new buildings.

Construction of New Development

It is envisaged that a number of construction activities will progress during Phase 1 including the installation of temporary structures, including tower cranes, needling, and stability measures to structures.

Construction of all New Site Services

- Connection to new foul drainage infrastructure.
- Connection to surface water drainage for discharge to River Martin and Shean Upper; and
- Connection to new site services, including Electricity Supply Board, and Telecoms.
- Construction of strip/ raft/ pile foundations in areas at grade.
- Installation of radon barrier/damp proof membrane/waterproof membrane, where appropriate;
- Construction of reinforced concrete ground floor slabs.
- Superstructure unit construction, be that traditional build, timber frame, etc.
- The floor slabs shall be flat slab construction, which requires formwork and temporary propping, to roof level.
- Installation of temporary works to maintain construction traffic movements.
- Completion of external envelope. The façade will start once groundworks is clear.
- External envelope insulation and detail to ensure air tightness in accordance with the Building Regulations.
- Installation of windows.
- Installation of building services.
- Internal fit out, including partition walls, doors, joinery, and fire rated enclosures as required.
- Toilet and sanitary facilities installation, including disabled/accessible provision in accordance with the Building Regulations.
- Internal finishes (floors, walls, and ceilings) to various areas; and
- Fitted furniture installation.
- Other site related works not listed above include:
- Construction of appropriate sub-base to non-trafficable and trafficable areas.
- Removal of vegetation, repointing to localised sections of stonework, and construction of surface water tanks, bioretention areas, swales, basins, hydrocarbon interceptors, flow control manholes, storm outfall point, and landscaping works.

Construction Methods

The following sections outline the indicative construction methodology for the main construction elements applicable to phase 2. It should be noted that the methodology described in these sections is aligned with the construction methodology that was developed for the wider development.

Enabling Works

All enabling works form an important part of the construction strategy for the proposed development.

Preparation Works

A survey of the buildings and local surroundings will be carried out. This will identify the detail of the buildings' construction and all services on the site. Site investigation pits and boreholes will be taken to establish the soil condition. Movement, vibration, and dust monitors will be put in place.

Service Disconnections and Diversions

Utilities such as ESB may be required to be rerouted with the installation of new substations. Disconnections will be phased corresponding to the proposed progress and construction works on site. The site is relatively free of services, with the services encountered within the site curtilage. These services will be made defunct and stripped out during the preliminary enabling/construction phase. primary services and utilities are beneath the adjoining road network and not in direct proximity to the site. Where the excavation strategy or temporary works require any temporary diversion of local services or utilities on the site perimeter, this would be undertaken with prior agreement of the relevant service provider. The Contractor may seek agreement with Uisce Éireann for a foul connection on Station Road for the site compounds and welfare facilities. Alternatively, foul waste may be removed by tanker and disposed of off-site at an appropriately licensed facility.

5.6 Traffic and Transportation Measures

Chapter 7 of the EIAR and the Traffic and Transport Assessment (TTA) prepared by Systra Ltd. addresses any significant potential impacts in respect of traffic during the construction phase. It is outlined in the TTA that a detailed Construction Traffic Management Plan (CTMP) will be prepared by the successful contractor in consultation with Cork City Council Roads and Transportation Department. This CTMP will address the requirement for pipe upgrading works, by Uisce Éireann , on the Station Road at later phases of the development.

The principal objective of the CTMP is to ensure that the impacts of all building activities generated during the construction phase upon the public (off-site), existing private property owners on or adjacent to the site boundaries, occupiers of early phases of the development (adjacent to the construction works), visitors to the subject site (on-site) and internal (on-site) workers environment are fully considered and proactively managed/programmed, thereby ensuring that safety is maintained at all times, disruption is minimised, and that works are undertaken within a controlled, hazard-minimised environment. Please refer to the outline CTMP Phase 2 developed by MHL & Associates Ltd.

5.6.1 Access Control

The proposed construction site is located off west of the site via the existing road which serves the existing greenfield site. The proposed phase 2 development access onto Station Road is approximately 480m north of Station Road's junction with the R617 and circa 1.4km from the nearby N20 interchange connecting

with the R617. The existing R617 development access is circa 380m east of the Station Road/ R617 priority T junction.

The completion "The Spine Road", will add a second connection from the earlier phases with future development phases in Ringwood. This proposed phase 2 spine road will connect with the R617 along the southern boundary of the client's lands. These two entrances will be the main access points from the wider road network and will form the preferred haulage route to/from the site in agreement with Cork City Council. It is envisioned that the new Spine Road will from part of the Construction Traffic Haul Route for future development phases.

It is anticipated that heavy goods vehicles will be restricted to off-peak times on the local road network to reduce the impact on the road network during the morning and evening peaks. It is expected that HGV movements and general deliveries will otherwise arrive/leave throughout the day at a steady rate.

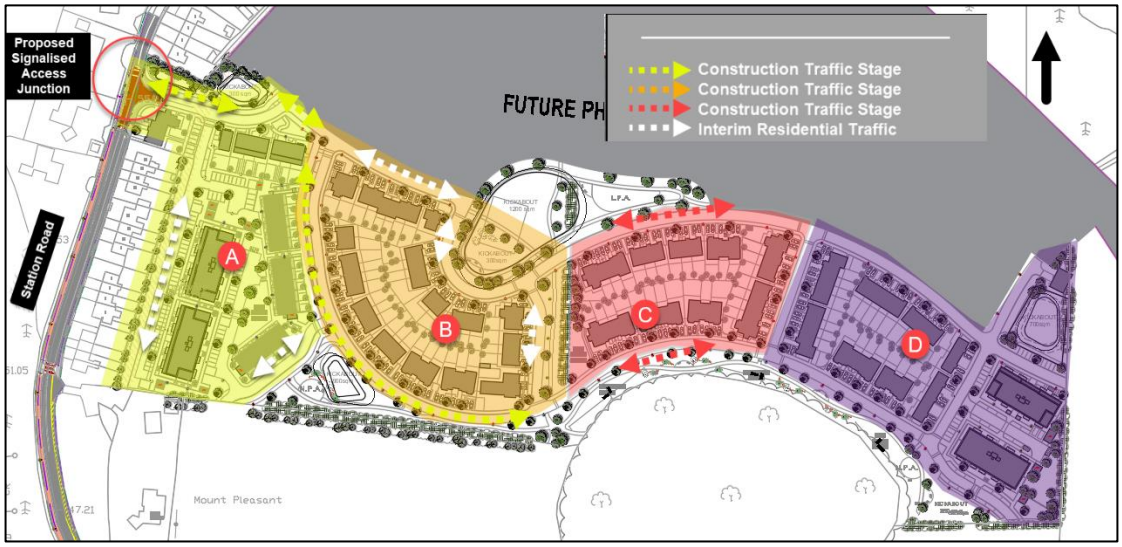


Figure 5.6: Phase 1 Feasible construction traffic routing for sub phases.

Appropriate signage for the site will be provided on the approach routes to provide clarity for construction vehicles, particularly deliveries who may not be familiar with the site location. This will provide wayfinding for drivers and limit the number of turning manoeuvres outside the site.

Development of the Spine Road will be delivered from its southern junction with the R617. It will be constructed from this new junction northwards, ensuring that the residential development and established residents are not impacted by the road works contractors. The following section includes a range of mitigation measures to minimise the construction traffic generation, ensure the safety of the workforce on the site and accessing the site, and ensuring the safety of the public on the surrounding roads.

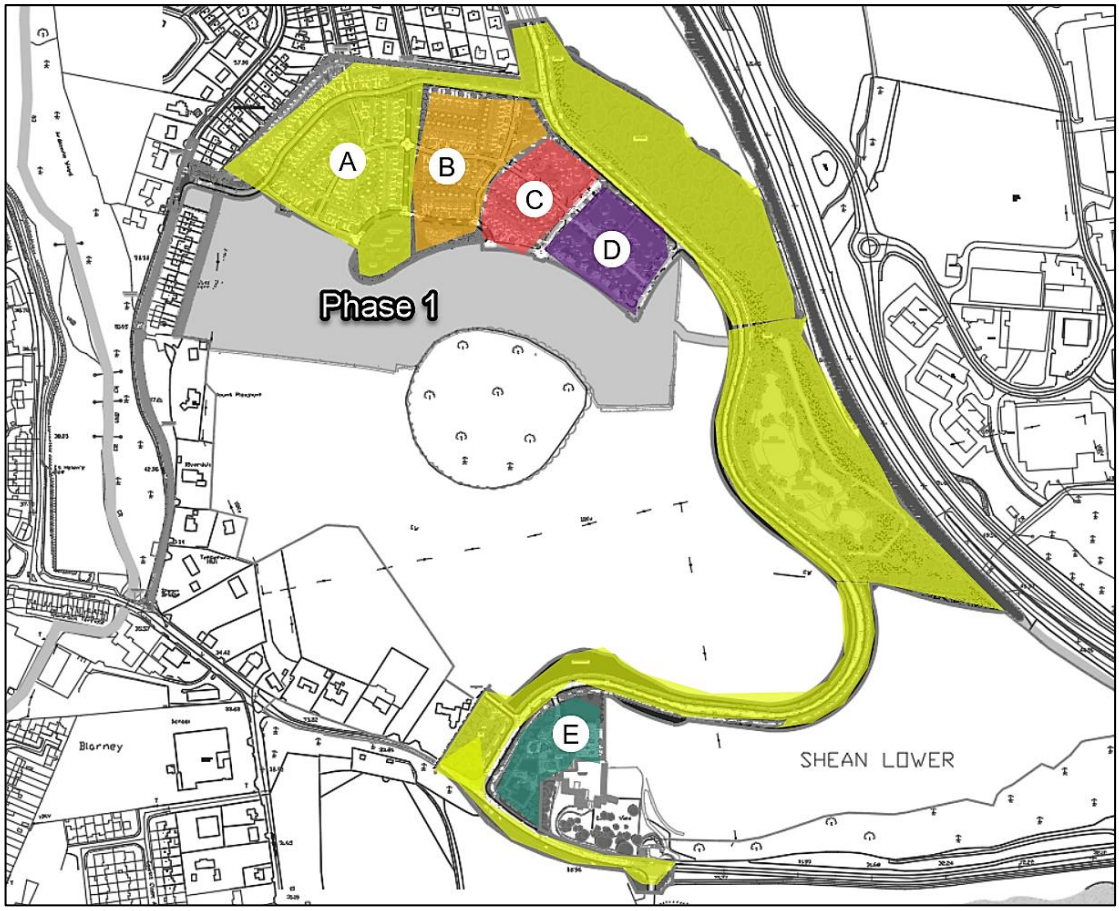


Figure 5.7: Phase 2 Feasible construction phasing.

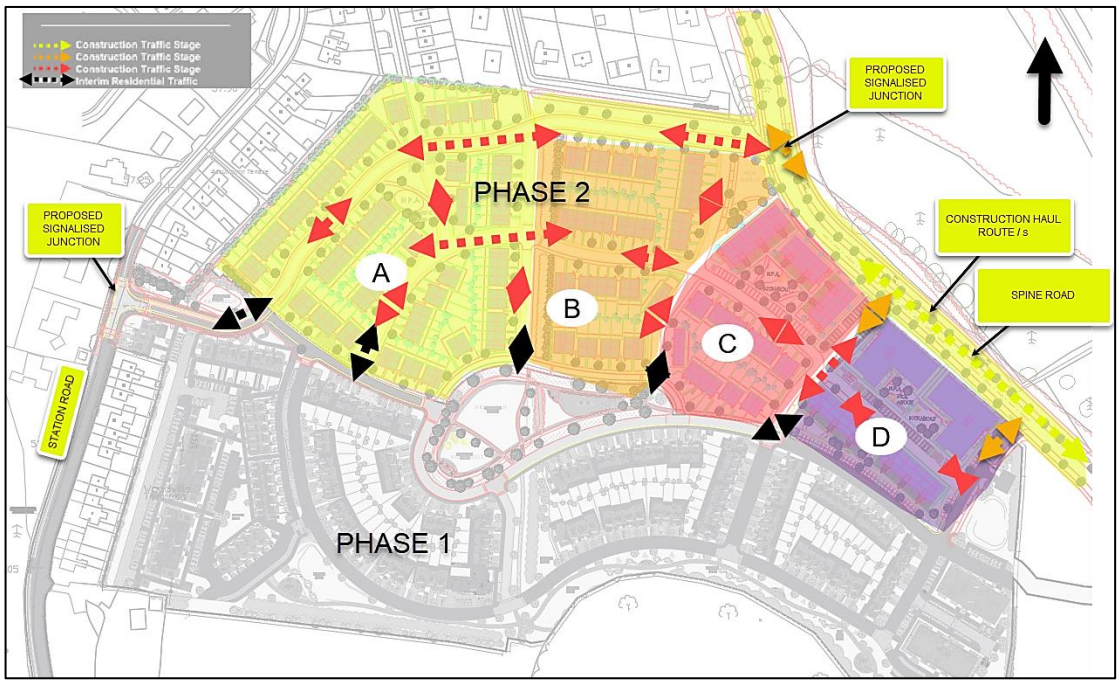


Figure 5.8: Phase 2 Feasible construction traffic routing for sub phases.

5.6.2 Construction Related Traffic Movements

The site clearance, piling and general construction activities will generate a level of vehicle movement to and from the site as well as internally within the subject site.

The typical construction trips generated during site clearance and construction comprise:

- Construction employees arriving and leaving work;
- Deliveries and removal of machinery; and
- Delivery and removal of materials.

Appropriate measures will be put in place to ensure safe access to/from the site. Measures will also be implemented on-site to ensure safe manoeuvres can be carried out within the construction site. A construction site car park will be located within the Applicant's lands. There will be designated areas on site for loading/unloading and a specified storage area for materials and machinery. A waste and recycling area will be established within the construction site boundary, close to the construction access, to prevent unnecessary trips through the site for collection. To ensure that the internal site routes and the public roads to the construction site entrance are kept in good condition, a wheel washing facility will be located close to the exits from the construction area to minimise mud and dust.

The pipe upgrade works on the Station Road and the R617 will be managed principally by Uisce Éireann at later phases of the development, subject to detailed discussions with Cork City Council and the main contractor for the development works. Co-ordination of main works and pipe upgrade works will be required to ensure that traffic on the Station Road will continue to be facilitated.

The level of construction traffic throughout the working day is expected to be low to moderate, the highest volume of vehicles is expected when workers arrive to and leave work. Generally, workers are expected to travel by private vehicle and public transport. It is expected that there will be a typical average of approximately 60 no. construction employees on site during each phase of the works.

Deliveries and HGV movement numbers are expected to be low to moderate and evenly spread throughout the day. The HGV traffic is expected to be greater during the initial stage of the development as larger machinery and materials will be delivered. This will, however, reduce as the construction of the buildings advance.

Deliveries of materials to site will be planned to avoid high volume periods where possible, particularly the AM peak hour. There may be occasions, however, when it is necessary to have deliveries within these periods. As previously stated, the Contractor will develop, agree, and submit a detailed Construction Traffic Management Plan to the local authority for approval prior to commencement of construction works. The following section details some of the mitigation measures to be included in the detailed CTMP.

5.6.3 Mitigation Measures

A competent traffic co-ordinator and banksmen will be appointed by the contractor to oversee the following control measures which will be implemented as part of the final CTMP to reduce the risks

associated with construction traffic. Some of the following measures also tie in with mitigation measures for dust and noise.

- A detailed site plan/layout of the construction site will be developed to identify locations for site offices/storage areas/waste management areas etc.
- Entrances and exits – separate entry and exit gateways will be provided for pedestrians and vehicles with a gate attendant employed to interface with the traffic and public to facilitate safe access and egress of vehicles.
- Where employees will need to cross the construction route, a clearly signed and lit crossing point will be provided where drivers and pedestrians can see each other clearly.
- Visibility – the site operator will ensure that drivers driving out onto the public roads have the appropriate visibility splays.
- The existing site accommodates significant numbers of public, informal walkers who use the areas for amenity purposes. All such amenity routes will be cordoned off from construction areas to ensure the safety of the public.
- All operators of construction machinery and vehicles will be trained and competent and have valid CSCS cards.
- All site staff will be made aware that there are employees and visitors to nearby town centre in the surrounding areas using the construction haulage roads.
- Approach signage with good sightlines will be provided at the site access route and site entrance.
- Traffic management measures will be co-ordinated such that works on the main site and works on pipe upgrades on the Station Road and the R617 by Uisce Éireann , are fully co-ordinated.
- Traffic management procedures will be communicated to suppliers and workers.
- Deliveries to site will be planned to arrive during working hours only, save for exceptional loads for which a detailed plan will be agreed with the local authority.
- The access routes to the construction site entrances and internal site routes will be kept in good condition and clear of obstructions.
- The contractor will put measures in place to mitigate any excessive noise for nearby properties that may be created during construction activities.
- Internal trafficked areas will be watered twice daily on dry days to reduce dust, if required. •
- Vehicles delivering or collecting material with dust potential will be covered with tarpaulin at all times to restrict the escape of dust.
- A stringent 'clean as you go' policy will be implemented on site to ensure no loose material is left on the ground within the construction access road and the public road.
- Vehicle wheel washing facilities will be in place for vehicles leaving the construction site area.
- A road sweep will be deployed if necessary to ensure the site access route between the site accesses and the Station Road/ R617 junction, the R617/Killard Road Junction, Killard Road, the R617 and Station Road, will be kept clean at all times.
- Construction materials or equipment will not be stored outside the site boundary.
- Pedestrian/vehicular routes, crossing points, parking, loading and vehicle only areas will be clearly marked, signposted, and segregated as appropriate.
- Where required site vehicles will be fitted with appropriate audible and visual devices.
- Loading and unloading will be carried out in a designated area within the construction site boundary and reversing activities will be kept to a minimum.
- Loads will be checked prior to unloading and loads will be adequately secured for travel.

- Visitors to site will be accompanied and a safe area will be provided for visiting drivers during loading and unloading.
- Speed limits signage will be used to control speeds on the access route and within the construction site.
- Construction vehicles and machinery will be maintained in good condition by a competent person as per the manufacturer's instructions. A dedicated area for maintenance work will be provided within the construction site area.
- All operators will wear personal protective equipment on-site and seat belts, where fitted by the manufacturer, will be worn when operating equipment.

5.6.4 Minimise Construction Vehicle Movements

To minimise construction vehicle movements, several strategies will be implemented. These include consolidating delivery loads to and from the site and managing large deliveries outside peak periods. Additionally, the use of precast and prefabricated materials will be prioritised when feasible. The assessment of 'cut' material generated during construction will explore opportunities for on-site reuse through various accommodation works, thereby reducing the need for offsite removal. Adequate on-site storage space will be provided, and a comprehensive strategy will be developed to minimise overall construction material quantities. Furthermore, efforts will be made to reduce construction staff vehicle movements by introducing Travel to Work Scheme benefits, promoting car sharing, and encouraging the use of public transportation.

5.6.5 Removal of Site Materials

The most intensive periods for material removal is during bulk excavation and will be carefully managed to prevent any queuing of trucks on public roadways around the site. To maintain a systematic and organised process, all trucks involved in material hauling will be equipped with built-in tarpaulins, ensuring that the excavated material is securely covered during transport. Additionally, wheel wash facilities will be strategically placed at all site egress points, contributing to effective site management, and minimising potential impacts on surrounding areas.

5.7 Air Quality

As construction activities are likely to generate some dust emissions, dust management requirements will be developed and implemented as part of the Dust Mitigation Plan during the construction phase. The potential for dust to be emitted depends on the type of construction activity being carried out, the dust controls in place and also the weather conditions, such as the level of rainfall, wind speed and direction.

5.7.1 Data Sources

The potential impact for dust depends on the distance to potentially sensitive locations, such as neighbouring residential properties and sensitive environmental receptors in this case. The main activities that give rise to dust emissions during construction include the following:

- Excavations and Piling

- Materials handling and storage
- Temporary stockpiling of any earthwork materials for re-use
- Movement of vehicles, particularly HGVs.

The mitigation measures set out below will be put in place during the construction phases. The level of dust control to be implemented will depend on the weather conditions, the specific construction activities (e.g. earthworks activities, construction activities and site vehicle movements) and the potential for dust nuisance as a result of those activities.

5.7.2 Mitigation Measures

Mitigation measures for dust control will include:

- The contractor shall prepare a dust minimisation plan which shall be communicated to all staff.
- Internal trafficked areas will be watered twice daily on dry days to reduce dust if required. Vehicles delivering or collecting material with dust potential will be covered with tarpaulin at all times to restrict the escape of dust.
- A stringent 'clean as you go' policy will be implemented on site to ensure no loose material is left on the ground within the construction access road and the public roads.
- Vehicle wheel washing facilities will be in place for vehicles leaving the construction site area.
- While works on pipe upsizing on Station Road are underway, by Uisce Éireann, road sweeping/wheel washing will be undertaken to ensure dust minimisation.
- The internal development road linking the site to Station Road will be inspected daily for cleanliness and a road sweep will be deployed if necessary to ensure the site access route between the site access and the Station Road / R617 junction, will be kept clean at all times.
- Topsoil stockpiles will be located in a location so as not to necessitate double handling and topsoil stockpiles will be seeded to promote grass growth and reduce dust.
- Material handling systems and site stockpiling of materials will be laid out to minimise exposure to wind.
- Water misting or sprays will be used as required if particularly dusty activities are necessary during dry or windy periods.

5.8 Noise Vibration Control Measures

To mitigate the potential impact of noise on the surrounding community, encompassing commercial, sporting, and residential properties, a structured approach to working hours for heavy equipment and machinery has been devised. This includes machinery such as piling drills, pipe-drilling equipment, excavators, construction vehicles, and generators, all of which are slated to operate only within specified timeframes. Furthermore, deliveries and material removal will be confined to these designated hours, unless exceptional circumstances arise, warranting permission from the Local Authority.

While the normal working hours are stipulated, these will be subject to detailed agreement with Cork City Council before the commencement of construction. Recognising the occasional necessity for construction activities beyond standard hours, proactive consultation processes will be initiated with Cork City Council,

local residents, and businesses. This will involve communicating the nature, rationale, and anticipated duration of such works to ensure transparency and community awareness.

5.8.1 Noise and Vibration Regulations

During the works the contractor shall comply with the requirements of BS 5228-1:2009+ A1:2014 and BS 5228-2:2009 +A1:2014 (Code of Practice for Noise and Vibration Control on Construction and Open Sites) as well as Safety, Health, and Welfare at Work (General Applications) Regulations 2007 Noise and Vibration.

During the construction phase, a series of effective practices will be implemented to mitigate potential noise and vibration impacts. These measures include restricting high-noise activities to specific hours, erecting barriers along the construction site boundary for noise containment and employing methods such as digging and ripping for rock excavation to minimise disturbance. To enhance communication, a designated site representative (SEM) will oversee noise-related matters.

Furthermore, the selection of low-noise equipment, strategic placement of noisy machinery away from sensitive areas, and the use of noise reduction measures like acoustic enclosures will be prioritised. Operational best practices, such as avoiding unnecessary engine revving and timely equipment maintenance, will be enforced to minimise both air and noise emissions. Pneumatic percussive tools will be equipped with mufflers, and noise monitors will be installed to assess sound levels. Additionally, ear protection zones will be established, and personnel will receive training on ear protection, ensuring a comprehensive approach to noise management throughout the construction process.

5.8.2 Noise Limits

During working hours, the construction site will operate within specified noise limits as per BS 5228. These standards dictate a daytime noise threshold of 70 dBA, carefully measured outside the nearest window of the closest occupied room to the site boundary. This commitment ensures that the construction activities maintain a noise level compatible with suburban settings, fostering a serene atmosphere for residents away from the hustle of main road traffic and industrial sounds. The adherence to these guidelines underscores a conscientious approach to mitigating noise disruptions during the construction process.

5.8.3 Vibration Limits

Vibration limits to be applied for the duration of construction works are as set out in BS 5228 (Code of Practice for Vibration Control on Construction and Open Sites) and BS 7385:1993 (Evaluation and measurement for vibration in buildings Part 2: Guide to damage levels from ground borne vibration). Allowable vibration during the construction phase is summarised below in

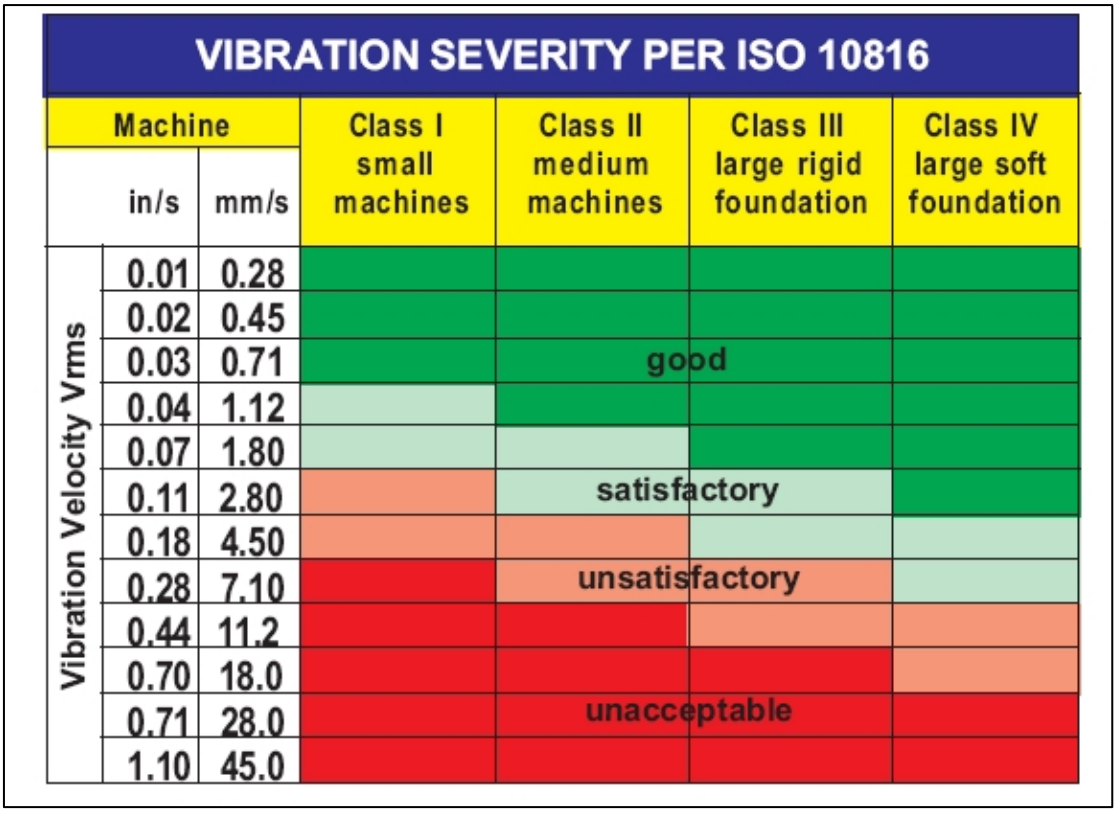


Table 5.1: Guideline for Allowable Vibration (c: ISO 10816)

5.9 Water and Wastewater Controls

In adherence to statutory legislation, including the Local Government (Water Pollution) Act, 1977, and 1990 (as amended), all activities associated with these works will comply with regulatory requirements. The contractor is committed to full cooperation with Uisce Éireann and the Environmental Department of Cork City Council. Notably, the proximity of the River Martin, situated approximately 100 meters west of the development entrance along Station Road, underscores the importance of stringent measures to safeguard against water pollution and ensure responsible construction practices. The Geological Survey of Ireland Groundwater Vulnerability map that groundwater vulnerabilities are variable at the site, with areas of High to Extreme Vulnerability and 'Rock at or near surface' noted.

The following description outlines the proposed water/wastewater works to be carried out during each phase:

- Surface Water - The proposed surface water network will include a drainage pipe network, attenuation storage and SuDS features. The restricted discharge from the site will be conveyed to outfall both western and eastern sub catchments, with western flows connecting to an existing storm outfall to the River Martin and eastward flows out falling to the Shean Upper, located to the east of Phase 1. The lower section of the site is to connect into an existing storm sewer located on the R617, south of the Spine Road Development Access with the R617.
- Foul Drainage - Wastewater collection within the proposed development will be via a network of 150mm, 225mm and 375mm diameter gravity sewers, which will direct the flows from the western side of the site to the existing Station Road wastewater sewer. This new gravity sewer will then

connect directly to the existing foul sewer on Station Road. Flows from the remaining eastern portion of the site and the proposed Primary Care Centre will flow south to a new proposed pump station. This new pump station is to be located west of the new spine road development access, where a proposed rising main will pump wastewater to a receiving manhole located at the Station Road /R617 junction. The first phase units of the development can be served by this existing foul sewer. Later phases of the development will be served by an upgraded foul sewer, the upgrading works to be carried out by Uisce Éireann, for which Uisce Éireann will levy the Applicant and which work will take place as the development is progressed beyond the initial development build out.

- Potable Water - A 150mm diameter watermain is located in Station Road and on the R617, immediately to the west of the site and south of the site respectively . Uisce Éireann have advised that the connection to serve the development is to be made to this existing main. The first phase units of the development can be served by this existing watermain with upgrades, upgrading works to be carried out Uisce Éireann, for which Uisce Éireann will levy the Applicant and which work will take place as the development is progressed beyond the first phase.

The mitigation measures outlined below provide the water management controls required to be implemented by potential Contractors and Sub-contractors and set out the proposed procedures and operations to be utilised on the proposed development to mitigate against any water related environmental impacts. The mitigation and control measures outlined herein will be employed on site during the construction phase of the development.

The main areas of water related concerns covered by this section are:

- Pre-Construction (Inc Site Clearance/Tree felling)
- Construction Phase drainage controls
- Earthworks (i.e. infrastructure & drainage) and surface water quality protection
- Temporary stockpiles water management and controls; and
- Fuel usage, storage, and management.

5.9.1 Mitigation Measures

To address potential surface water runoff contamination during site clearance and construction, particular attention will be given to mitigating 'siltation' and spillage. Siltation, characterised by the washing away of soil and particulate matter during rainfall, will be actively managed through the deployment of silt fencing, stilling basins, and strainers within the site. These measures aim to prevent the discharge of silt into the existing drainage network and watercourses, ensuring responsible environmental practices throughout the project.

5.10 Excavation, Erosion and Sediment Control

Various measures will be enacted to manage sediment-laden water runoff, such as the implementation of silt fences and silt traps. The exposed ground area will be minimised, and efforts will be made to retain vegetation for as long as practical. Trench clearing and topsoil stripping will be deferred until work is set

to proceed, and prompt backfilling of trenches will be undertaken. Temporary stockpile areas for earthworks will be equipped with upstream silt fencing to safeguard sensitive zones.

On-site settlement areas will feature geotextile liners and riprapped inlets and outlets to prevent scour and erosion. Surface water runoff from areas devoid of topsoil and water collected in excavations will be directed to on-site settlement areas before controlled discharge. Surface water discharge points will be finalised in consultation with Cork City Council's Environment Section before commencing on-site work.

A specific method statement, to be agreed upon with the Local Authority and site ecologist, will govern the storage of arisings. As a precaution during the construction stage, bunding will be employed for fuel storage, and chemicals will be stored in appropriate tanks. In the event of any on-site spillage, localised moderate environmental impact is anticipated in the short term.

In the course of the construction process, if deemed necessary following the archaeological and heritage assessment, archaeological monitoring may be undertaken in areas suspected to be in proximity to an archaeological site. This monitoring could involve the presence of a forensic archaeologist or human osteoarchaeologist, maintaining a watchful eye during groundworks to identify and document any archaeological remains that may emerge. In the event of uncovering archaeological features or materials during construction monitoring, an immediate halt to machine work in the vicinity is crucial to enable the archaeologist to assess, excavate, and record any findings.

Please refer to Section 5.15 of this Chapter for further details.

5.11 Accidental Spills and Leaks

To ensure the safe storage of oils, fuels, paints, and other chemicals, a secure bunded hardstand area, designed to be impervious, will be designated for this purpose. The refuelling and servicing of construction machinery will be confined to a specified hard stand area, strategically located away from surface water inlets and sensitive receptor areas.

In anticipation of any accidental pollution events, a comprehensive response procedure will be established. Spillage kits will be readily available, and construction staff will be well-versed in emergency procedures and the proper utilisation of the equipment. These measures are in place to minimise the environmental impact of construction-related activities.

5.12 Concrete

Concrete batching activities will occur both on-site and off-site. The wash down and wash out of concrete trucks will be conducted off-site, and any surplus concrete will not be disposed of on the construction site. Rigorous monitoring procedures will be implemented for pumped concrete to prevent any accidental discharge.

To safeguard against environmental impact, mixer washings will not be discharged into surface water drains; instead, they will be directed to designated settlement areas on-site. These measures ensure responsible handling and disposal of concrete-related materials during construction.

5.13 Wheel Wash Areas

The discharge from vehicle wheel wash areas will be carefully directed to onsite settlement areas. Any debris and sediment captured by these vehicle wheel washes will be appropriately disposed of at a licensed facility off-site. To ensure water quality compliance, a schedule for surface water quality monitoring will be collaboratively developed through consultation with the Site Manager (SM) and Site Environmental Manager (SEM). This schedule will be finalised before the commencement of construction.

In cases where monitoring parameters exceed prescribed standards, the SM/SEM will promptly initiate and report corrective actions. This may involve adjusting environmental control measures and, consequently, modifying the relevant construction method statement. As part of the construction of the development, a water quality monitoring program at the outfall tie-in is proposed. The specifics of this program and sampling requirements will be mutually agreed upon with Cork City Council in accordance with the Planning Authority.

5.14 Landscape Management

Throughout each construction phase, a combination of site security fencing and solid hoarding will be strategically deployed to manage visibility, reduce noise pollution, and restrict sightlines into the site. This approach is aimed at mitigating temporary landscape and visual impacts. The northern section of the development works site, as well as areas along surface-water outfall/connections, existing vegetation, and trees. Protective measures will be implemented during construction activities, particularly during the creation of the stormwater attenuation area and the storm outfall to the river. Specifically, the stormwater outfall pipe from the attenuation storage areas will reuse the existing outfall location serving the immediate Ringwood area, ensuring disturbance from storm water excavation works to this environment is kept to a minimum.

To minimise the impact on trees and vegetation, the following mitigation measures will be put into practice. While some tree removal is inevitable for the construction of the surface water outfall channel, it will be confined to the identified trees earmarked for removal in the application.

- All mitigation measures to be put in place to protect such trees and vegetation shall be prepared in consultation with a qualified arborist, who shall supervise works for which an Arboriculture Method Statement is required.
- The specific Arboriculture Method Statement shall be prepared for any works within the root protection area of any tree to be retained and the measures outlined shall be strictly enforced on site.
- Trees will be protected in accordance with BS: 5837:2012 Trees in relation to design and construction. Recommendations and any further agreed procedures.
- Sensitive site areas will be fenced off and protected from construction vehicles and equipment. The contractor will liaise and co-ordinate these works with the site ecologist and with Cork City Council.
- Reinstatement of trees and vegetation will be undertaken by a suitably qualified landscape contractor.

5.15 Archaeology and Heritage

5.15.1 Pre-Construction

Before the initiation of any construction activities, a thorough archaeological and heritage assessment, along with surveys, will be conducted. This process will involve advanced archaeological testing, including the excavation of machine or hand-dug test trenches across the development's footprint. This approach aims to provide early insights into relevant materials, enabling informed decisions on the optimal course for construction and the appropriate handling of any archaeological discoveries that may surface.

The outcomes of these assessments and surveys may lead to a recommendation for detailed monitoring of all groundworks associated with the development. This monitoring would include the possibility of fully excavating any archaeologically significant material that is uncovered during the construction process.

5.15.2 During Construction

In the course of the construction process, if deemed necessary following the archaeological and heritage assessment, archaeological monitoring may be undertaken in areas suspected to be in proximity to an archaeological site. This monitoring could involve the presence of a forensic archaeologist or human osteoarchaeologist, maintaining a watchful eye during groundworks to identify and document any archaeological remains that may emerge. In the event of uncovering archaeological features or materials during construction monitoring, an immediate halt to machine work in the vicinity is crucial to enable the archaeologist to assess, excavate, and record any findings.

In the scenario where archaeological features or materials are uncovered, sufficient funds will be allocated to cover excavation, fencing, post-excavation analysis, and reporting. This excavation work should be conducted under license in accordance with Section 26 of the National Monuments Act 1930-2014, and a pre-approved method statement should be established in consultation with the National Monuments Service (Dept. of Culture, Heritage, and the Gaeltacht) and the National Museum of Ireland.

5.15.3 Mitigation Measures

A programme of archaeological supervision/monitoring of all ground works will be undertaken by a suitably qualified archaeologist. Please refer to IAC Archaeology reporting which outlines the level of monitoring requirement during construction within the site. In the unlikely event of an archaeological discovery, the National Monuments Service and Cork City Council will be consulted to agree how the encountered archaeological remains are recorded and resolved.

5.16 Invasive Species Management

Non-native and invasive species (if present) within or near the proposed works area will be documented. All identified species will be cross-referenced with both the "Most Unwanted: Established Threat" and "High Risk: Recorded Species" lists compiled by Invasive Species. The contractor will develop an Invasive Species Management Plan if required, outlining protocols for managing notable species such as Japanese Knotweed.

For Japanese Knotweed, the following measures will be implemented: clear delineation of all stands using hazard tape and fencing before the commencement of works, installation of appropriate signage to deter entry into affected areas, creation of specialised washdown areas for machinery and footwear at each location, power washing of all machinery and equipment with proper disposal of wash water, visual checks for soil, vegetation, etc., particularly with tracked machinery, locating washdown areas in close proximity to existing stands, and including these areas in the post-works treatment program for Japanese Knotweed. If there is a need for stockpiling contaminated material, these areas will be clearly marked on-site, ensuring they are not within 50m of nearby watercourses.

The specific treatment details will be specified in a comprehensive management plan, collaboratively prepared by the treatment contractor and supervising ecologist before the commencement of treatment. The outlined principles and guidelines include conducting a thorough survey of the entire site and adjacent areas, assessing and mapping the level of infestation prior to treatment, noting, and mapping the age, condition, and any previous treatments of all stands, prioritising areas for treatment with the ultimate goal of complete removal within the works area, and preparing an updated Management Plan that covers the entire site. This plan, developed by the contractor with input from the supervising ecologist, will include projections over a suitable timeframe. Additionally, all work carried out in the area will be mapped, clearly dated, and detailed in an accompanying schedule, providing a timeframe for follow-up work.

5.17 Community Liaison during Construction

Effective community liaison is crucial to minimise disruptions to residents, ensure public safety, and facilitate smooth construction activities. Key elements for success include providing timely information to the public, establishing responsive points of contact, and maintaining good housekeeping practices throughout the operations. A 'good neighbour' policy will be enforced, emphasising early implementation, nuisance reduction, access maintenance, clear information dissemination, and regular stakeholder liaison.

To operationalise this policy, the Contractor will develop a Community Liaison Plan, detailing the notification process for major works, temporary traffic diversions, and construction progress. The plan will encompass the Contractor's community relations policy, designate personnel for public relations management, outline a methodology for addressing observations, queries, and complaints, and strategize project-wide liaison with relevant parties. A liaison manager will oversee tasks such as briefing neighbours, coordinating with local authorities and emergency services, collaborating with law enforcement on traffic and permits, and providing contact details prominently on construction site notice boards and relevant communications.

5.18 Waste Management

Efficient waste management is integral to the construction process, and a comprehensive Construction Waste Management Plan will be collaboratively developed and implemented in coordination with Cork City Council. This plan aims to regulate on-site waste management, ensure the segregation of different waste streams, and minimise construction waste costs. Adhering to the waste management hierarchy—prioritising prevention, reduction, reuse, recycling, energy recovery, and responsible disposal—the plan will contribute to sustainable practices.

Acknowledging the significance of construction waste as a substantial component of the municipal waste stream, its proper handling is crucial to alleviate pressure on landfill facilities and prevent environmental pollution. The proposed development site anticipates construction waste as the primary waste material, emphasising the need for a structured waste management approach.

The definition of waste, as outlined in the Waste Management Act 1996 and the European Waste Catalogue, will guide the identification and management of materials, ensuring adherence to regulatory standards and responsible waste disposal practices. This commitment to waste management aligns with environmental best practices and regulatory frameworks, reflecting a conscientious approach to construction processes.

There are two main types of construction waste – Hazardous and Non-hazardous as detailed below:

Non-hazardous

- Timber Waste
- Scrap Metal
- Plastic
- Paper / Cardboard
- Canteen Waste
- Litter

Hazardous

Hazardous Wastes are defined as wastes which can have a harmful effect on the environment and on human health as they exhibit ignitability, reactivity, corrosivity and/or toxicity and/or are listed as hazardous by the European Waste Catalogue and/or may be identified as hazardous by application of the EPA Waste Characterisation Tool compiled by The Clean Technology Centre.

The hazardous wastes that may be experienced at a development of this nature are as follows:

- Adhesives and Sealants
- Aerosols
- Batteries
- Chemicals
- Cleaning Products
- Oil (Contaminated absorbent Material or debris)
- Paints and Thinner
- Fuels (hydrocarbons such as diesel)
- Concrete waste

The proposed development will result in the generation of waste material from the following sources:

- Removal of existing boundaries
- Excavation of soil for site access, to foundations, ductwork and sewers/watermains

- Excavation of stone / made ground across the site to achieve proposed development levels
- Surplus material (off-cuts, damaged materials, packaging etc.) generated during the construction of the new development.

Excavation of soil will be a necessary component of the construction process, primarily to facilitate the establishment of foundations, access roads, site services, and overall landscaping. The approach to soil management aligns with sustainable practices, as excavated topsoil will be repurposed on-site for landscaping wherever feasible. This strategy not only minimises the need for off-site disposal but also contributes to the responsible use of resources, promoting a circular economy within the construction phase.

A nuanced approach is anticipated for the surplus material extracted from the previously filled area in the south-east region of the site. Recognising its potential limited value for on-site reuse, this material will be systematically removed and directed to approved sites conducive to re-use, recovery, or, if necessary, disposal in licensed waste facilities. Conversely, material excavated from other areas of the site will be prioritised for on-site reuse, forming an integral part of the detailed soils management strategy designed to shape the proposed development levels. This conscientious soil management plan reflects a commitment to sustainable construction practices and environmental responsibility.

The Waste Management Hierarchy, emphasising the priority of waste management options, underscores the preference for prevention and minimisation, followed by reuse, recycling/recovery, energy recovery (incineration), and, as the least favoured option, disposal. In the context of the upcoming construction, the necessity for excavations to support the development introduces a practical challenge in fully adhering to the prevention and minimisation principle during the bulk excavation phase.

While the primary goal is to reuse the majority of the excavated material within the development, the surplus generated presents a scenario where complete adherence to the prevention and minimisation aspect becomes challenging. The surplus material, while not entirely aligning with the top-tier preference of waste management, will be managed with a strategic approach. This approach acknowledges the inherent necessity of excavation in construction processes and strives to optimise reuse within the development while considering responsible alternatives for surplus material, aligning with the broader principles of the Waste Management Hierarchy.

The next viable option in the waste management strategy involves the potential beneficial reuse of the surplus excavation material, particularly focusing on inert natural material falling under Category A1. This process may entail further testing to ascertain whether the materials meet specific engineering standards for their intended end-use as engineering fill. Exploration of nearby sites in need of clean fill/capping material will be conducted to identify opportunities for beneficial reuse of clean and inert material.

If the material is destined for reuse on another site, compliance with the European Communities (Waste Directive) Regulations 2011, Article 27 is imperative. This involves fulfilling specified conditions and submitting by-product decisions to the Environmental Protection Agency (EPA) through their online notification form. In the event that the material is classified as waste, its removal, and subsequent actions, whether reuse, recycling, recovery, or disposal, will strictly adhere to the Waste Management Acts 1996-

2008, the Waste Management (Collection Permit) Regulations 2007 (as amended), and the Waste Management (Facility Permit & Registration) Regulations 2007 (as amended).

The decision regarding the regulatory framework—Certificate of Registration (COR), Waste Facility Permit, or Waste Licence—will hinge on the volume of waste removed and the specific requirements of the receiving facility. Prioritising the exploration of beneficial reuse options will precede considerations for recycling and recovery at permitted and licensed waste sites. The prospect of disposing of inert natural material to landfill will only be entertained if all available reuse options have been meticulously explored and securing capacity at appropriately permitted/licensed facilities for recycling or recovery proves unfeasible. This comprehensive approach underscores a commitment to responsible and environmentally conscious management of the surplus excavation material throughout its lifecycle.

Furthermore, any soil or subsoil identified as potentially contaminated will be handled separately from clean and inert soil or subsoil. Rigorous testing will be conducted to classify the material as either non-hazardous or hazardous in accordance with the EPA publication 'Waste Classification: List of Waste & Determining if Waste is Hazardous or Non-Hazardous,' utilising the HazWasteOnline application or a similarly approved classification method. Subsequently, the material will be classified as clean, inert, non-hazardous, or hazardous in accordance with the EC Council Decision 2003/33/EC. This meticulous classification process ensures a thorough understanding of the material's nature and guides its appropriate and environmentally sound management.

The highest volume of materials generated will be topsoil and subsoil/stones from site clearance to accommodate access routes, footpaths, services, and foundation excavation to enable construction of the houses and apartment blocks. Some of the material will be re-used on site, however, some will be removed off-site. Given that the proposed developable area is multiple hectares, the following estimations of excavated material have been calculated:

In addition, topsoil, subsoil, clay, and rock will require excavation to facilitate site levelling, construction of foundations, along with the installation of underground services. For Phase 2, the expectation is for a volume of material to be excavated to achieve designed site levels. Whilst every effort will be made to reuse excavated material onsite, in the creation of proposed roads, platforms for proposed buildings and open space areas, it is expected that excavated material will have to be deposited to intended fill zones on the wider site area as there will be a surplus of this material. Further surplus material will be removed from site for appropriate offsite reuse, recovery, recycling and / or disposal.

5.19 Environmental Management

To protect the environment during the construction phase of the proposed development's Phase 2, an outline Construction Environmental Management Plan (CEMP) has been formulated. This plan encompasses various mitigation measures, including those mandated by planning decision conditions, to effectively counter potential environmental impacts. The outline CEMP's implementation is structured to minimise disruption and nuisance throughout the construction process. When appointed, the nominated contractor will develop a construction stage CEMP for Phase 2 in line with the CEMP planning requirements.

Adhering to industry best practices, the CEMP incorporates guidance from the Construction Industry Research and Information Association (CIRIA) in the UK, particularly the Environmental Good Practice on Site Guide, 4th Edition (CIRIA, 2015). Functioning as a dynamic and live document, the CEMP undergoes updates and additions as construction progresses, ensuring its continued relevance and efficacy.

The CEMP places particular emphasis on environmental control measures during construction activities, addressing issues like runoff, dewatering, over-pumping, and accidental spills. These measures aim to mitigate the risk of water pollution and groundwater contamination, reflecting a commitment to responsible environmental management throughout the construction phase.

5.20 Emergency Planning and Response

A comprehensive set of standardised emergency response procedures will dictate the management of emergency incidents. The contractor will be obligated to delineate these emergency incident response procedures in the detailed Construction Environmental Management Plan (CEMP) and formulate an Emergency Incident Response Plan.

The outlined procedures will encompass:

- Emergency preparedness and response procedure (incl. emergency phone numbers)
- Incident investigation procedure
- Nonconformity, corrective action, and preventative action
- Spillage containment procedure
- Pollution prevention programme and corrective action reporting

In the case of spillages or other incidents, precautionary measures will be implemented to avert environmental pollution. This may involve safeguarding drains with covers or booms, utilising absorbent granules following a fuel, oil, or chemical spill, and temporarily ceasing equipment or other noise- and dust-producing sources.

Upon resolution of the situation, comprehensive information about the incident and the remedial actions taken will be furnished to the City Council and relevant authorities. These details will be meticulously recorded for appropriate documentation.

To prevent a recurrence of such incidents, measures to mitigate and avoid similar occurrences will be collaboratively developed in consultation with the relevant authorities.

5.21 Inspections and Monitoring

To uphold the environmental performance standards of the contractor, regular site inspections will be conducted. These inspections will adhere to the specifications outlined in the Environmental Impact Assessment Report (EIAR), ensuring that construction activities are executed without significant adverse effects. Comprehensive monitoring programs, aligned with the measures outlined in the detailed Construction Environmental Management Plan (CEMP)/Construction Traffic Management Plan (CTMP) and EIAR, will be developed, implemented, documented, and assessed.

The Site Environmental Manager will consistently review the results of environmental monitoring activities, facilitating the identification of trends and the prompt implementation of corrective actions when necessary. Daily routine inspections, overseen by the Site Environmental Manager, will be conducted to verify the effective implementation of all essential environmental measures by construction staff. Additionally, detailed weekly inspections, appropriately documented by the Environmental Manager, will be carried out, covering various aspects of construction activities to ensure compliance and address any environmental concerns The inspection routine should include:

- Summary of compliance/non-compliance with the detailed CEMP / CTMP.
- Results and interpretation of monitoring programmes
- Key issues noted during inspections.
- Summary record of non-conformities, incidents, and corrective actions
- Summary of environmental complaints and queries received in relation to environmental matters; and
- Summary record of environmental training undertaken by staff.

5.22 Difficulties Encountered

No difficulties were encountered during the preparation of this chapter of the EIAR.

5.23 Cumulative Effects

The construction strategy recognises that the Proposed Development is part of a larger development area, which includes the granted phase 1 development and proposed future phases across the subject's site. Understanding and addressing the cumulative impacts of these future phases on the immediate vicinity of the applicant planning site is essential for effective planning and mitigation strategies.

To address this, the construction strategy outlines measures to account for the cumulative impacts of future phases. This involves conducting a comprehensive assessment to evaluate the cumulative effects of all phases of the development. Factors such as air and water quality, noise levels, biodiversity, and landscape changes are carefully considered. Infrastructure planning is also crucial, ensuring that the infrastructure requirements for future phases are considered alongside the Proposed Development. This includes transportation networks, utilities provision, and waste management systems. Community engagement will play a vital role in addressing concerns related to cumulative impacts. Regular updates, public consultations, and community outreach programs will be conducted to communicate the long-term vision for the development area and address any concerns or issues raised by local stakeholders.

A phased construction approach will be implemented to coordinate activities across all phases. This approach allows for better resource management, minimises disruptions, and optimises the use of shared infrastructure.

Mitigation measures will be incorporated into the construction strategy to address the cumulative impacts of future phases. Measures to reduce noise and dust emissions, protect natural habitats, manage traffic congestion, and minimise disruption to local residents and businesses will be implemented.

Regular monitoring and review processes will be put in place to assess the effectiveness of mitigation measures and make any necessary adjustments throughout the construction process. By proactively addressing the cumulative impacts of future phases, the project can achieve sustainable development objectives while minimising adverse effects on the surrounding environment and community.

5.24 References

Construction Industry Research and Information Association (CIRIA) 2015

Environmental Good Practice on Site Guide. 4th Edition.

Department of Transport, Tourism and Sport (2017) Guidelines for Managing Openings in Public Roads (Second Edition, April 2017)

Government of Ireland (2013) Safety, Health, and Welfare at Work (Construction) Regulations 2013.

Government of Ireland (2005) Safety, Health, and Welfare at Work Act 2005.

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6.0 PLANNING & POLICY

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6.1 Introduction

This chapter focuses on the key planning policies at national, regional, and local level that guide and regulate the nature and extent of development proposed under the Large-Scale Residential Development.

6.2 Project Description

The proposed Large-Scale Residential Development project is described in detail in **Chapter 4 - Proposed Development**.

6.3 Planning Policy Context

The key provisions of national, regional, and local planning policy as they relate to the proposed development are set out in the following sections. The principal guiding international, national, regional and local documents are listed below:

- Project Ireland 2040 - National Planning Framework First Revision (2025)
- Delivering Homes, Building Communities 2025-2030
- Climate Action Plan (2025)
- Urban Development and Building Height Guidelines (2018)
- Sustainable Urban Housing Design Standards for New Apartments, Guidelines for Planning Authorities (2023)
- Sustainable and Compact Settlements, Guidelines for Planning Authorities (2024)
- Design Manual for Urban Roads and Streets (2019)
- Guidelines for Planning Authorities on Childcare Facilities (2001)
- The Planning System and Flood Risk Management (2009)
- The EU Habitats Directive (92/43/EEC) and the EU Birds Directive (79/409/EEC)
- Regional Spatial and Economic Strategy for the Southern Region (2020)
- Cork Metropolitan Area Transport Strategy (2020)
- Cork City Development Plan 2022-2028

6.3.1 National Planning Framework First Revision (2025)

The National Planning Framework First Revision (NPF) was published in April 2025, making revisions and updates of the original NPF 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 goals and vision remain the same and is guided, in part, by the aim to achieve regional parity in the country by significantly growing the population and employment base of both the Southern Region and the Northern and Western Region over the next two decades to counterbalance the dominance of the Greater Dublin Area.

The NPF is guided, in part, by the aim of achieving regional parity in the country by significantly growing the population of both the Southern Region and the Northern and Western Region over the next two decades, to counterbalance the dominance of the Greater Dublin Area.

The NPF sets a population growth target of at least 96,000 people for Cork City and its suburbs by 2040, with 50% of all new housing to be built within its existing footprint (National Policy Objectives 4 and 8), to facilitate Cork City becoming a compact city of scale, growing twice as much to 2040 as it has over the past 25 years.

The NPF reiterates the need for providing housing within the existing built-up footprints in line with National Policy Objective 10, which seeks to ''Deliver Transport Orientated Development (TOD) at scale at suitable locations, served by high-capacity public transport and located within or adjacent to the built-up footprint of the five cities or a metropolitan town and ensure compact and sequential patterns of growth.

The NPF identifies that ''progressing the sustainable development of new brownfield and greenfield areas for housing along existing and planned high capacity public transport corridors with a particular focus on large-scale Transport Orientated Development (TOD) opportunities within the metropolitan area'' and, ''Identifying infill and regeneration opportunities to intensify housing development in inner city and inner suburban areas, supported by public realm and urban amenity projects'' to be among the key Growth Enablers for Cork City.

National Strategic Outcome (NSO) 1 "Compact Growth" of the NPF is aimed at consolidating and densifying future urban growth and development within existing settlements and their built-up footprints.

NSO 4 "Sustainable Mobility" is aimed at facilitating a move away from polluting and carbon intensive propulsion systems towards new technologies, as well as facilitating an increase in the patronage of public transport and supporting modal shift towards greater levels of walking and cycling as transport mode choices.

NSO 7 "Enhanced Amenity and Heritage" is focused on enhancing recreational spaces and attractiveness in city and town centres to support a good quality of life. A well-designed public realm, which includes public spaces, parks and streets, and recreational infrastructure, is key to achieving this NSO.

NSO 10 "Access to Quality Childcare, Education and Health Services" is prefaced on the fact that good access to a range of quality education and health services is key to creating attractive, successful, and competitive places.

The NPF Implementation: Housing Growth Requirements Guidelines issued on 29th July 2025 by the Department under Section 28 of the Act, provide updated housing growth requirements to planning authorities to 2040 in order to facilitate the revision and update of development plans in accordance with the NPF First Revision (2025).

Policy and Objective 2 of the Guidelines indicate a need for an additional provision of up to 50% over and above the housing growth requirement set out in the Guidelines, requiring all Planning Authorities to review their Development Plans to increase housing targets by 50%, bringing the annual national housing target from 55,000 units to 82,500 units.

The housing target in the Guidelines for Cork City is 2,706 units per annum to 2034 and 2,539 units per annum from 2035-2040. An additional 50% provision results in an additional 1,353 units per annum to

2034 (or 4,059 units per annum in total); and an additional 1,269 units per annum from 2035-2040 (or 3,808 units per annum in total for that period).

The following National Policy Objectives are of relevance:

National Policy Objective (NPO) 3 of the NPF sets out that the Southern Region will increase in population by approximately 330,000 (c 450,000 additional people over 2016-2024), giving a population of just over 2 million people.

NPO 4 sets out the following in relation to population and employment growth:

> *A target of half (50%) of future population and employment growth will be focused in the existing five cities and their suburbs.*

Additionally, **NPO 7** states:

> *Deliver at least 40% of all new homes nationally, within the built-up footprint of existing settlements and ensure compact and sequential patterns of growth.*

While in relation to Transport Orientated Development, **NPO 10** states:

> *Deliver Transport Orientated Development (TOD) at scale at suitable locations, served by high capacity public transport and located within or adjacent to the built up footprint of the five cities or a metropolitan town and ensure compact and sequential patterns of growth.*

Additional objectives of relevance include the following:

> ***National Policy Objective 12:***
> *Ensure the creation of attractive, liveable, well designed, high quality urban places that are home to diverse and integrated communities that enjoy a high quality of life and well-being.*

> ***National Policy Objective 38:***
> *Plan for a more diverse and socially inclusive society that targets equality of opportunity and a better quality of life for all citizens, through improved integration and greater accessibility in the delivery of sustainable communities and the provision of associated services.*

> ***National policy Objective 42:***
> *To target the delivery of housing to accommodate approximately 50,000 additional homes per annum to 2040.*

> ***National Policy Objective 43:***
> *Prioritise the provision of new homes at locations that can support sustainable development and at an appropriate scale of provision relative to location.*

6.3.2 Delivering Homes, Building Communities 2025-2030

On the 13th November 2025, the Government published their new national housing policy document titled "Delivering Homes, Building Communities 2025-2030: An Action Plan on Housing Supply and Targeting Homelessness'', which aims to speed up the delivery of new homes and tackle homelessness. The plan targets the construction of 300,000 homes, including 72,000 social homes and 90,000 affordable housing supports.

Building on the progress of Housing for All, which has already delivered 137,000 homes since 2021, and informed by the Housing Commission's work, this plan will see the State take a bigger role while also encouraging the private sector to play a key part in delivery.

Key messages and principles set out in the new housing plan include 2 main pillars:

- **Pillar 1: Activating Supply**
  Pillar 1 focuses on activating the supply of 300,000 homes. This will be achieved through activating more land, providing more housing-related infrastructure, securing more development finance for home building, addressing viability challenges particularly those seen in apartment delivery, increasing the adoption of Modern Methods of Construction, increasing the skills in the residential construction sector and working toward ending dereliction and vacancy.

- **Pillar 2: Supporting People**
  Pillar 2 details how Government will support people. It sets out a series of key actions that work towards ending homelessness, support affordability and address the housing needs of people as they progress through life. In partnership with local authorities, the LDA and AHBs, the Plan will address the needs of the most vulnerable in our communities, make buying and renting homes more affordable and support the development of villages, towns and cities across the country.

In implementing the new housing plan, the following core principles are set out:

- *Affirms that housing is the number one priority for all arms of Government, including local government.*
- *Recognises the need to ensure access for everybody to good quality, affordable and secure housing within vibrant communities, suitable to individual needs as they move through their life. Affirms that homelessness is unacceptable and accepts that the solution lies in supplying more homes and supports to tackle its root causes.*
- *Recognises that promo ng homeownership is a key objective and pledges to provide targeted homeownership supports.*
- *Commits to building unprecedented levels of social homes and priori sing those who need the most help.*
- *Believes that homes should not be allowed to lie empty and derelict while housing need is so critical.*

- *Commits to the highest ever investment of the State's resources towards both building more homes and building more infrastructure to support the development of those homes.*
- *Will work with Local Authorities, the Land Development Agency, Approved Housing Bodies and the private sector to drive delivery.*
- *Understands that a stable domes c policy environment is crucial to attract the inward investment needed to achieve our supply goals.*
- *Expects that all people and organisations, whether public or private, will play their part in tackling the housing crisis.*

It is considered that the subject development, which proposes 323no. residential units, contributes directly to Pillars 1 and 2 as set out in the policy document.

The proposed development will contribute greatly to the overall housing supply required in the Blarney area and consolidate the future projected growth of the urban town.

The provision of 64no. units for Part V purposes will play a crucial role in facilitating an increased supply of homes for low income households.

Separately to Part V, the provision of 259no. homes for private sale will greatly reduce the pressure on the supply and demand of existing housing stock, not only in Blarney but the wider area, and also will relieve pressure on the private rental sector.

6.3.3 Climate Action Plan, 2025

The Climate Action Plan 2025 (CAP25) is the third annual update to Ireland's Climate Action Plan 2019. The plan implements the economy-wide carbon budgets and sectoral emissions ceilings introduced in 2022 and includes a strategy for taking meaningful action to halve Ireland's greenhouse gas emissions by 2030, and reach net zero no later than 2050, as committed to in the Programme for Government.

Key messages set out in the CAP note that the contemporary high regulatory standards for new building construction combined with the momentum gathering towards delivering the targets means that new building stock will result in less construction and operational emissions compared with previously.

A Climate Action and Energy Analysis Report is included with the planning application. The proposed development will align with the NZEB standards, as well as the EU Energy Performance of Buildings Directive.

6.3.4 Urban Development and Building Height Guidelines, 2018

The *Urban Development and Building Height Guidelines* state that it is Government policy that building heights must be generally increased in appropriate urban locations. They also state that:

> *There is therefore a presumption in favour of buildings of increased height in our town/city cores and in other urban locations with good public transport accessibility.*

The Guidelines contain broad principles that planning authorities must follow in considering development proposals for buildings taller than prevailing building heights in urban areas. These broad principles are:

- Does the proposal positively assist in securing NPF objectives of focusing development in key urban centres?
- Is the proposal in line with the requirements of the relevant Development Plan?
- Where the relevant Development Plan or Local Area Plan pre-dates the Guidelines, can it be demonstrated that implementation of the pre-existing policies and objectives of those plans would undermine the objectives and policies of the NPF?

The majority of the existing built environment in Blarney is 2-storeys in height, with established 3-storey and 3-storey with dormer apartment buildings at Woodfield Hall also, c. 150m northwest of the site of the proposed development.

As outlined in Section 6.3.1 of this chapter, the proposed development positively assists in securing NPF objectives to focus development in Cork City. It also is in keeping with the Guidelines' approach to building height within urban areas and generally aligns with the building height strategy of the Cork City Development Plan. It is also in keeping with a series of decisions made by the Planning Authority for developments within the city under that building height strategy.

6.3.5 Sustainable Urban Housing: Design Standards for New Apartments, Guidelines for Planning Authorities, 2023

Section 1.19 of the Guidelines states that Specific Planning Policy Requirements (SPPRs) contained in the Guidelines take precedence over any conflicting policies and objectives of development plans.

Section 2.4 of the Guidelines identifies intermediate urban locations as being generally suitable for medium-high density residential development of any scale that includes apartments to some extent (broadly >45 units/ha).

The proposed development site, which is located within a reasonable walking distance i.e., 6 minutes (450m) of Blarney town centre, can be classified as an intermediate urban location in terms of the Apartment Guidelines.

6.3.6 Sustainable and Compact Settlement Guidelines for Planning Authorities (2024)

The *Sustainable and Compact Settlement Guidelines for Planning Authorities* were published in January 2024 and replaced the *Sustainable Residential Development in Urban Areas Guidelines* issued in 2009.

It is a policy and objective of the Guidelines that net residential densities in the range of 35-50 units/ha shall generally be applied at suburban and edge locations of Metropolitan towns in Cork and Dublin, as defined in the RSES.

With regard to quality design and placemaking, the Guidelines direct that:

- the urban design of settlements should support the transition away from private car use and support ease of movement for pedestrians, cyclists and public transport;

- the creation of sustainable communities requires a diverse mix of housing and variety in residential densities with a focus on housing types that can facilitate compact growth and provide greater housing choices that respond to the needs of single people, families, older people and people with disabilities;

- natural features and biodiversity should be protected with appropriate separation and setbacks from important natural assets;

- nature based solutions for surface water management are required, and public open spaces should be designed to cater for a range of active and passive recreational needs and to conserve and restore nature and biodiversity;

- new development should respond positively to the established pattern and form of development in the surrounding area, should create opportunities for new linkages where possible, should ensure that the public realm is well-overlooked with active frontages, should be designed with modern architecture and durable, high-quality materials and finishes.

SPPR 1 of the Guidelines stipulates that there should be a separation distance of 16 metres at a minimum between opposing windows serving habitable rooms at the rear or side of houses, duplex units and apartment units, above ground floor level.

SPPR 2 of the Guidelines states that proposals for new houses must meet the following minimum private open space standards:

- 1 bed house 20 sq. metre
- 2 bed house 30 sq. metre
- 3 bed house 40 sq. metre
- 4 bed + house 50 sq. metre

SPPR 3 (iii) of the Guidelines states that in intermediate and peripheral locations, the maximum rate of car parking provision for residential development, where such provision is justified to the satisfaction of the planning authority, should be 2no. spaces per dwelling.

SPPR 4 of the Guidelines states that all new residential schemes must include safe and secure cycle storage facilities to meet the needs of residents and visitors. For residential units that do not have ground level open space or have smaller terraces, a general minimum of 1no. cycle storage space per bedroom is recommended. Cycle storage facilities should be provided either within the residential building footprint or within an adjacent or adjoining purpose-built structure of permanent construction.

Policy and Objective 5.1 - Public Open Space states that the requirement in the development plan shall be for public open space provision of not less than a minimum of 10% of net site area and not more than a minimum of 15% of net site area save in exceptional circumstances.

The proposed development aligns with the Guidelines in the following ways:

- The proposed density of 45.11 units/ha is in accordance with the Guidelines' residential density policy for this suburban/edge location of the Cork Metropolitan town of Blarney.

- The level of car parking proposed is below the maximum Cork City Development Plan standard. The quantum of bicycle parking proposed exceeds the Cork City Development Plan, Apartment Guidelines and Compact Settlements Guidelines minimum standards. Dedicated cycle lanes are also proposed. The combination of these factors will disincentivise private car use and will encourage use of sustainable modes of travel.

- The proposed dwelling mix is as follows:

    - 1-bedroom homes – 17%
    - 2-bedroom homes – 27%
    - 3-bedroom homes – 47%
    - 4-bedroom homes – 9%

    The proposed dwelling mix will support the creation of a diverse and balanced community on site. A Housing Mix Statement addressing the proposed mix is enclosed in the planning application.

- The proposed development will provide 15% of the net developable area of the site as public open space (1.053ha.).

- A large open space area to the southern side adjoining Phase 1 incorporating two kickabout areas and a local play area.

- A linear park running through the site linking its northern boundary to amenity areas to the south.

- A series of pocket parks throughout providing neighbourhood play and kickabout areas.

- The proposed open space benefits from excellent levels of passive surveillance by the surrounding houses. The proposed retention of hedgerows on site as well as the landscaping interventions and mitigation planting and measures proposed ensure that the proposed development will enhance biodiversity on site.

- The inclusion of the Wetwood along with the creation of a new Wetland amenity area bring significant additional gain in terms of ecology and amenity provision. These areas are additional to the calculation of the net open space areas of 15%.

- In addition, neighbourhood play areas, kickabout areas and natural play mounds are proposed, along with communal open space between the apartment and duplex buildings and public

seating and amenity pathways throughout the site. These will all support a range of both active and passive recreational needs.

- The proposal for the site is informed by the nature of the neighbouring established community, the need to integrate successfully and at the same time to meet local and national residential density requirements. Future linkages to future residential development to the north and lands zoned for open space to the south are provided for in the site layout and landscaping proposals.

- The open spaces and other areas of public realm have a high degree of passive surveillance thanks to the proposed urban blocks, terraces of houses, and dual aspect and side-fronted houses which provide continuous street frontage and passive supervision.

- The design is modern and high-quality, as outlined in detail in the Architectural Design Statement prepared by Conroy Crowe Kelly which is submitted with the application.

- Minimum separation distances of 16m are achieved from adjacent property rear boundaries.

- All apartment and duplex units at ground floor level are provided with individual terraced areas and all upper floor units are provided with balconies or private terraces screened with glass or metal balustrading. These will all be accessible from the internal layouts and will comply with the minimum standards outlined in Apartment Guidelines and Compact Settlements Guidelines. All houses have generous private rear gardens, which are compliant in size and design with the relevant SPPR.

6.3.7 Design Manual for Urban Roads and Streets (2019)

To effectively communicate how the principles, approaches and standards within this Manual have been applied, it is recommended that all proposed developments, regardless of scale, are accompanied by documentation that provides a clear rationale for the project, such as within a design statement.

To ensure that street layout plans communicate a complete picture of the design, it is recommended that the following information be presented, as appropriate:

- The width of streets, footways, verges, medians, and privacy strips.
- The location, type and configuration of crossings and junctions.
- Corner radii (including swept paths).
- On-street parking.
- Horizontal and vertical alignment data.
- Horizontal and vertical deflections.
- Forward visibility splays.
- Kerb lines (including heights).
- Surface Materials and Planting.
- Street furniture and facilities.
- Signage and Line Marking.
- Lighting.

Design teams and planning authorities are required to balance the level of detail given at any stage of the design/consent process. For example, more technical specifications may be better suited to later compliance submissions so that the initial consent process is not overly burdened with detail.

On this basis, a Statement of Compliance with the Design Manual for Urban Roads and Streets has been prepared by the applicant's design team.

6.3.8 Guidelines for Planning Authorities on Childcare Facilities, 2001

Although Appendix 2 of the Childcare Guidelines for Planning Authorities (2001) states an indicative standard of one childcare facility per 75no. dwellings in new housing areas, this is no longer considered to be a practical benchmark. The 2022 Apartment Guidelines require that childcare facilities be provided in accordance with the demographic profile of the area and the existing capacity of childcare centres. The Apartment Guidelines also specifically state that

> *….one-bedroom or studio type units should not generally be considered to contribute to a requirement for any childcare provision and, subject to location, this may also apply, in part or whole, to units with two or more bedrooms*.

A 137no. children crèche will be provided as part of the permitted Phase 1 development under Application Register Reference 24/43031 (ABP 321688-25).

This 137no. children creche will cater for the projected childcare demand of both Phase 1 and Phase 2. A Childcare Needs Assessment has been carried out to address this matter.

6.3.9 The Planning System and Flood Risk Management – Guidelines for Planning Authorities, 2009

There are no historic flood events recorded within the proposed development site according to FloodInfo.ie. The proposed development site is located in Flood Zone C as per the CFRAM flood mapping. However, the flood risk from the Sheen Upper Watercourse to the east of the site is not considered in the CFRAM study and only an indicative estimate is provided under the *Cork City Development Plan 2022-2028*. Therefore, a site-specific Flood Risk Assessment was undertaken to provide a more detailed assessment and confirm how the site appropriately manages the risk of flooding. This assessment is included with the planning application. Site-specific hydraulic modelling of the Shean Upper Stream shows flooding confined to the proposed wetland amenity area, with all residential and community development situated well above modelled fluvial flood levels. Groundwater and tidal sources are screened out.

6.3.10 EU Birds and Habitats Directives

The network of Natura 2000 sites across the EU is comprised of all designated sites that fall into one of two categories: Special Area of Conservation (SAC) and Special Protection Area (SPA). The protection and conservation of Natura 2000 sites is provided for by means of both the Habitats Directive 92/43/EEC and the Birds Directive 79/409/EEC. 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 a 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 Habitats Directive has been transposed into Irish law, with the current relevant legislation being the European Communities (Birds and Natural Habitats) Regulations, 2011. Section 42(1) of Part 5 of these regulations states that:

> *A screening for Appropriate Assessment of a plan or project for which an application for consent is received, or which a public authority wishes to undertake or adopt, and which is not directly connected with or necessary to the management of the site as a European Site, shall be carried out by the public authority to assess, in view of best scientific knowledge and in view of the conservation objectives of the site, if that plan or project, individually or in combination with other plans or projects is likely to have a significant effect on the European site.*

An Appropriate Assessment (AA) Screening Report has been prepared in respect of the proposed development, copies of which accompany this application.

Following the assessment detailed in the AA Screening report, the report concludes that:

> *..the proposed development will not, either individually or in combination with other plans or projects, give rise to impacts which would constitute significant effects on the Great Island Channel SAC or Cork Harbour SPA, in view of its/their conservation objectives.*

The AA Screening report recommends that Cork City Council, as the competent authority, may determine that Stage 2 Appropriate Assessment is not required in respect of the proposed development.

6.3.11 Regional Spatial & Economic Strategy for the Southern Region, 2020

The Southern Regional Assembly was responsible for creating the Regional Spatial and Economic Strategy for the Southern Region (RSES), which came into effect on 31st January 2020. Included in the RSES for the Southern Region is the Cork Metropolitan Area Strategic Plan (MASP).

In line with the NPF, this regional policy document has assigned a heretofore unprecedented scale and rate of growth for Cork City in order to assist in counterbalancing the excessive growth and sprawl of Dublin. In order to achieve the ambitious regional growth targets set for Cork, it is paramount that proposals such as the subject proposed development of this report are facilitated through the planning process.

RSES **Regional Policy Objective (RPO) 6** seeks to prioritise the delivery of compact growth in the cities of the Southern Region, including Cork.

RPO 8 (b) seeks to prioritise the delivery of compact growth and sustainable mobility in accordance with NPF objectives.

Section 3.10 of the RSES notes that the mix of housing demand is changing dramatically and, in particular, an emphasis on catering for smaller households of 1-2 persons is now required in terms of housing supply.

The RSES and the Cork MASP identify Blarney as a strategic residential growth node on the Cork commuter rail network.

Compact sustainable growth is one of the guiding principles of the Cork MASP. The MASP contains population growth targets for 2031 that are consistent with those in the NPF that are set for 2040. According to section 5 of the Cork MASP, Cork City and Suburbs are to grow by 75,000 by the year 2031, with a target population of 283,669 for that year.

Cork MASP Policy Objective 1(b)(iv) seeks to promote the regeneration, consolidation and infrastructure-led growth of metropolitan towns and other strategic employment locations in a sustainable manner.

In addition, in Section 4.0 of the MASP one of the national enablers identified for the Cork Metropolitan Area is:

> ***Progressing the sustainable development of new areas for housing, especially those on public transport corridors*** *such as Monard and* ***urban expansion areas on the rail corridor such as*** *at Carrigtwohill, Midleton, Cobh and* ***Blarney.*** [emphasis added]

Under **Cork MASP Policy Objective 6**, it is an objective to seek sustainable delivery of the national enablers identified for the Cork Metropolitan Area.

The MASP cites the development of a new commuter rail station and Park and Ride facility in Blarney as some of the key transport priorities for the Cork Metropolitan Area. Cork MASP Policy Objective 8 is explicit in this regard.

The MASP also states the indicative residential yield at Blarney, defined as a Strategic Residential Growth Node on the Metropolitan Rail Line, as being 3,555 units (including 2,600 units at Stoneview) up to 2031.

The proposed development will deliver 323no. residential units within the city boundary in the Metropolitan Town of Blarney, thereby increasing the population of the Cork Metropolitan Area as planned for under the RSES and MASP.

It is therefore considered that the proposed development is consistent with the RSES and the Cork MASP and will aid in achieving its aims.

Having regard to the RSES, the proposed development:

- will strengthen the settlement structure of the Southern Region;
- will contribute to the achievement of significantly accelerated and urban-focused compact growth (RPO 8);
- will respond to the need for quality housing for one and two person households at a sustainable density in the right location (Section 3.10);

In line with the Cork MASP, the proposed development:

- will support the consolidation of the metropolitan town of Blarney through the delivery of new housing there on zoned, serviceable lands (Cork MASP Policy Objective 1);
- will progress the sustainable development of this strategic residential growth node on the Cork metropolitan rail line (Cork MASP Policy Objective 6).

6.3.12 Cork Metropolitan Area Transport Strategy 2040 (2020)

The *Cork Metropolitan Area Transport Strategy 2040* (CMATS) was devised and published in 2020 in response to the policies contained in the NPF which envisage that Cork will become the fastest-growing city region in Ireland with a projected 50% to 60% increase of its population in the period up to 2040.

CMATS (2020) reaffirms the preceding two decades of planning policy for Blarney regarding the development of a new rail station and associated Park and Ride facility to support sustainable growth. CMATS envisages enhanced pedestrian and cycling infrastructure for Blarney, including the Blarney Greenway Route, which will run to the south of the subject site along the R617, as well as a Core Radial Bus Network to serve the town (which will also run along the R617), all of which will facilitate connectivity between Blarney and the wider metropolitan area.

The proposed development will be within walking distance of the new BusConnects route on the R617. The proposed development will also increase the population of Blarney by an additional c. 888 people[1] which will contribute towards a critical mass of population living in the town who will be best placed to benefit from the various transport projects set out in CMATS, which include, not just the BusConnects scheme but also the proposed Blarney Rail Station and associated Park and Ride, the CycleConnects scheme, and the Blarney-wide elements of the NTA's Active Travel Investment Programme.

6.3.13 Cork City Development Plan 2022-2028

The *Cork City Development Plan 2022-2028* (hereafter 'CDP') is the relevant statutory local level plan under which the development management of the subject site is to be considered.

As per CDP **Objective 10.63**, Ringwood/East Blarney is identified as one of seven strategic areas in Cork City identified for compact consolidation and expansion.

[1] 323 new homes multiplied by the average household size in Blarney (Census 2022 figures indicate that the average household size in Blarney has increased since Census 2016, from 2.72 to 2.75).

To support the compact growth and development of Blarney East / Ringwood Expansion Area as a strategic City consolidation and expansion area, as identified in the Core Strategy. All development shall be designed, planned and delivered in a co-ordinated and phased manner, using a layout and mix of uses that form part of an emerging neighbourhood integrated with the wider area.

Under the CDP, the site has four zoning objectives, illustrated below:

1. The area where residential dwellings are proposed is zoned **ZO 2 New Residential Neighbourhoods**, where the objective is:

To provide for new residential development in tandem with the provision of the necessary social and physical infrastructure.

2. The area relating to the proposed Access Link Road and SuDS measures is zoned **ZO 20 - City Hinterland** and designated for **'Long Term Strategic Development'**. The objective here is:

To protect and improve rural amenity and provide for the development of agriculture.

Within the City Hinterland zone, rural housing and rural-related business activities are permissible. Other uses open for consideration in this zone include renewable energy development (wind turbines, solar farms), tourism uses and facilities, garden centres and nurseries, cemeteries and community and cultural uses, market gardening and food production ancillary to agricultural uses.



Figure 6.1: Excerpt from the CDP MAP 11 Blarney and Hinterland Zoning Map, showing the land use zoning objectives pertaining to the subject site.

3. The wetwood area is zoned as **ZO 15 - Public Open Space**, where the objective is:

To protect, retain and provide for passive and active recreational uses, open space, green networks, natural areas and amenity facilities.

The following sections of the CDP apply to the development management of the subject site:

ZO 2.1 *Lands in this zone are designated as Tier 1 or Tier 2 zoned lands in the Core Strategy. Any development proposals must satisfy the requirements for developing on Tier 1 or Tier 2 lands set out in Chapter 2 Core Strategy.*

ZO 2.2 *This zone covers primarily greenfield, undeveloped lands for new sustainable residential areas. Development in this zone, while primarily residential, must provide an appropriate mix of housing types and tenures along with the amenity, social, community and physical infrastructure required to promote compact growth, balanced communities and sustainable, liveable communities.*

ZO 2.3 *Uses set out under ZO 1 Sustainable Residential Neighbourhoods are appropriate under this zone subject to such uses supporting the creation of sustainable communities and not conflicting with the primary objective of this zoning.*

4. Finally, the area where the proposed primary care centre, retail pharmacy and restaurant/café are proposed is zoned **ZO 01 Sustainable Residential Neighbourhoods,** where the objective is: *To protect and provide for residential uses and amenities, local services and community, institutional, educational, and civic uses.*

The following sections of the CDP apply to the development management of the subject site:

ZO 1.1 *The provision and protection of residential uses and residential amenity is a central objective of this zoning. This zone covers large areas of Cork City's built-up area, including inner-city and outer suburban neighbourhoods. While they are predominantly residential in character these areas are not homogenous in terms of land uses and include a mix of uses. The vision for sustainable residential development in Cork City is one of sustainable residential neighbourhoods where a range of residential accommodation, open space, local services and community facilities are available within easy reach of residents.*

ZO 1.2 *Development in this zone should generally respect the character and scale of the neighbourhood in which it is situated. Development that does not support the primary objective of this zone will be resisted.*

ZO 1.3 *Primary uses in this zone include residential uses, crèches, schools, home-based economic activity, open space and places of public worship.*

ZO 1.4 *Uses that contribute to sustainable residential neighbourhoods are also acceptable in principle in this zone provided they do not detract from the primary objective of protecting*

residential amenity and do not conflict with other objectives of this Development Plan. Such uses include but are not limited to: small-scale local services including local convenience shops; ***community facilities****; cultural facilities; hotels and hostels; live-work units; service stations (petrol filling stations);* ***local medical services****; third level education institutes; community based enterprise or social enterprises,* ***health facilities including hospitals****.* [emphasis added]

ZO 20.1 *The primary objective of this zone is to preserve the character of the City Hinterland generally for use as agriculture, rural amenity, open space, recreational uses, green and blue infrastructure and to protect and enhance biodiversity. Rural-related business activities which have a demonstrated need for a rural location are also permissible. Any development associated with such uses should not compromise the specific function and character of the City Hinterland in the particular area.*

ZO 20.2 ***Other uses open for consideration in this zone*** *include renewable energy development (wind turbines, solar farms), tourism uses and facilities, garden centres and nurseries, cemeteries and* ***community and cultural uses****, market gardening and food production ancillary to agricultural uses.* [emphasis added]

ZO 20.3 *The City Hinterland helps to maintain a clear distinction between urban areas and the countryside and avoid the harmful impacts of urban sprawl.*

ZO 20.4 *Single housing in the City Hinterland will be facilitated only where the objectives and requirements on rural housing set out in Chapter 3 Delivering Homes and Communities are met. Housing must be based on exceptional rural housing need and on the core considerations of demonstrable economic or social need to live in a rural area. Other considerations including siting and design criteria are also relevant.*

According to **Figure 2.21**: *"Growth Strategy Map 2022-2028"* of the CDP, the subject site includes Tier 2 lands. With regard to Tier 2 lands, Section 2.51 of the CDP states the following:

Tier 2 sites are zoned land that are considered serviceable by physical infrastructure within the life of this Plan. While the NPF's tiered approach does not focus on community infrastructure, this is of central importance in the creation of sustainable neighbourhoods and is covered in detail in Chapter 3 Delivering Homes and Communities.

The primary appropriate land uses set out under CDP **Section ZO 1.3** (regarding ZO 1 Sustainable Residential Neighbourhoods) are as follows: residential uses; crèches; schools; home-based economic activity; open space, and; places of public worship.

Section 2.60 states that the primary objective for City Hinterland is to preserve the character of the area generally for use as agriculture, rural amenity, open space, recreational uses, green and blue infrastructure and to protect and enhance biodiversity.

The subject site is identified as a built up area in Figure 6.5 of the CDP. It is not located within a High Value Landscape or a prominent and strategic greenbelt area. It is not located on a scenic route.

Section 2.52 addresses areas identified for Long Term Strategic Development, stating:

> *This Plan also identifies a third tier of land – longer term strategic development land – required beyond this Plan period to fulfil the City's ambitions in achieving the growth targets for 2040. These lands are not zoned as they are considered as being unlikely to be serviced during the lifetime of this Plan. These lands are identified as long term strategic sites needing long term planning and service delivery. They are identified to ensure active land management by safeguarding and strategically planning for the longer term growth needed to achieve ambitious NPF growth targets. For these reasons these longer term strategic development lands are not included within the Core Strategy for calculation purposes. Table 2.4 details the location and quantum of longer term strategic development lands within the city.*

Objective 6.18 addresses development within area's zoned as Public Open Space and states:

> *a. To protect, retain, improve and provide for areas of public open space for recreation and amenity purposes. There will be a presumption against development of land zoned Public Open Space for alternative purposes;*
> *b. There will be presumption against development on all open space in residential estates in the city, including any green area / public amenity area that formed part of an executed planning permission for development and was identified for the purposes of recreation / amenity open space, and also including land which has been habitually used as public open space. Such lands shall be protected for recreation, open space and amenity purposes;*
> *c. The development of open spaces should "aim to enhance and protect natural features and views and be set in safe and secure environments with the emphasis on active open spaces accessible to and enjoyed by all sectors of the community;*
> *d. To follow an approach of qualitative as well as quantitative standards for open spaces providing high quality open spaces with high levels of access to recreation for local communities, including good practices of inclusive design;*
> *e. Specific design outcomes should be framed in relation to the nature of spaces being created or enhanced (e.g. in relation to maintenance, nature exposure and connectivity, strategic landscape and social role).*
> *f. Support measures to green the city, including re-grassing of appropriate hard-surfaced areas in locations throughout the City.*

In terms of the delivery of community based healthcare facilities, the CDP states the following:

> ***3.80*** *The importance of health to our everyday lives has been magnified by the Covid-19 pandemic and it has also made us appreciate more than ever that our health is not solely contingent on the healthcare system but also a range of other factors. This Development Plan recognises and proactively addresses some of these factors and land use considerations including objectives which seek to support our healthcare system, achieve liveable neighbourhoods, protect and enhance green and blue infrastructure, support recreation and community facilities, deliver infrastructure in-step with new development and reduce greenhouse gas emissions and pollution. As such Health is a cross cutting theme that informs all elements of this Plan.*

3.81 *In 2012 Cork was designated a World Health Organisation (WHO) Healthy City. As such, a range of partners, including Cork City Council and the HSE have committed to continually creating and improving the physical and social environments of the city and expanding the community resources that enable people to mutually support each other in performing all the functions of life and developing to their maximum potential. The designation recognises that a Healthy City is not merely a product of health sector activities but largely determined by policies and actions beyond the health sector. The Cork Healthy Cities Action Plan Phase VII 2020-2030 lists a number of actions under relevant themes aimed at improving the health and well-being of people in the City and reduce health inequalities. The Action Plan, by necessity, is multi-faceted but in terms of land-use management there are a number of relevant themes including 'Healthy Places and Settings' and 'Integrated Planning for Health'.*

3.82 *Within Cork City, healthcare facilities are managed by a range of public, private and voluntary bodies. The Health Service Executive (HSE) is the primary organisation responsible for healthcare infrastructure in the City and is responsible for providing public health and social services. The public healthcare system is undergoing strategic change as part of the 'Sláintecare' ten-year programme. In addition to a range of investment proposals and care improvements, one of the key outputs of Sláintecare in terms of spatial planning implications is a strategy of transitioning towards a primary and community-based care system rather than the current hospital-centric model of health care. There are also proposals to invest in the hospital system with the National Development Plan 2018-2027 supporting the development of a new acute hospital and elective hospital for Cork.*

3.83 *Community Healthcare Networks (CHNs) are being implemented by the HSE across Cork City and County to deliver Primary Health Care Services in accordance with the Sláintecare vision. There are 7 CHNs covering Cork City under the remit of the Cork/Kerry Health Region and each network will manage and deliver local services within its geographical area, working together to meet the needs of the local community. As these centres will offer community-based services, they will be permissible in principle within a wide range of Zoning Objectives.*

3.84 *In addition to the strategic new development proposals, there are also likely to be requirements to expand and undertake development works to existing healthcare facilities in the City. Subject to compliance with other policy objectives contained in the Development Plan, these proposals will be supported in principle.*

3.85 *In accordance with wider sustainable transport objectives, measures to help reduce private car use and facilitate more sustainable transport use such as sustainable travel/mobility plans and park and ride facilities will be encouraged in respect of all new and existing hospitals. In the case of Cork University Hospital, this could include implementing a park and ride service involving dedicated off-site parking or shared parking within a facility where the existing parking area is only used periodically or outside daytime hours.*

Objective 3.27 addresses **Healthcare Infrastructure** and states it is Council policy:

To support the sustainable provision and expansion of hospitals and other healthcare facilities within the city including the provision of primary care centres and other specialist facilities at suitable locations, subject to proper planning and sustainable development considerations.

With regard to the core residential element of the proposed scheme, given its location within the CDP's ZO-02 New Residential Neighbourhoods zoning objective for the site, it is considered acceptable in principle.

Given the CDP's ZO-01 and ZO-20 zoning objectives for the southern part of the site and the character of the immediate area, a community healthcare based development proposal is an appropriate use. The proposed primary care facility and refurbished retail/pharmacy and café/restaurant buildings, which are located within the site's ZO-01 zoned area, are open for consideration within such zones.

The proposed Stoneview Access Link Road ('New Station Road') is intended to provide for long term access into the Stoneview development area to the north of the N20 and the Cork-Dublin Rail line. In doing so, it will provide access to the proposed Blarney Railway Station intended for delivery by 2028. In this respect, it is clear that the proposal for a link road meets with the provisions of the site's designation for long term strategic development.

Should the Council consider that a material contravention does arise, then there is sufficient justification for same. Express provision is made in the Planning and Development Acts, whereby a planning authority is entitled to grant planning permission for a development which would materially contravene their development plan.

Figure 6.2 below sets out CDP city population targets to 2040.

	1991	1996	2002	2006	2011	2016	2022	2028	2031	2040
Cork City*	178,716	184,502	191,277	195,478	200,373	210,853	222,333	261,040	286,178	335,853
%Change	–	3.2%	3.7%	2.2%	2.5%	5.2%	5.6%	17.4%	9.4%	17.4%

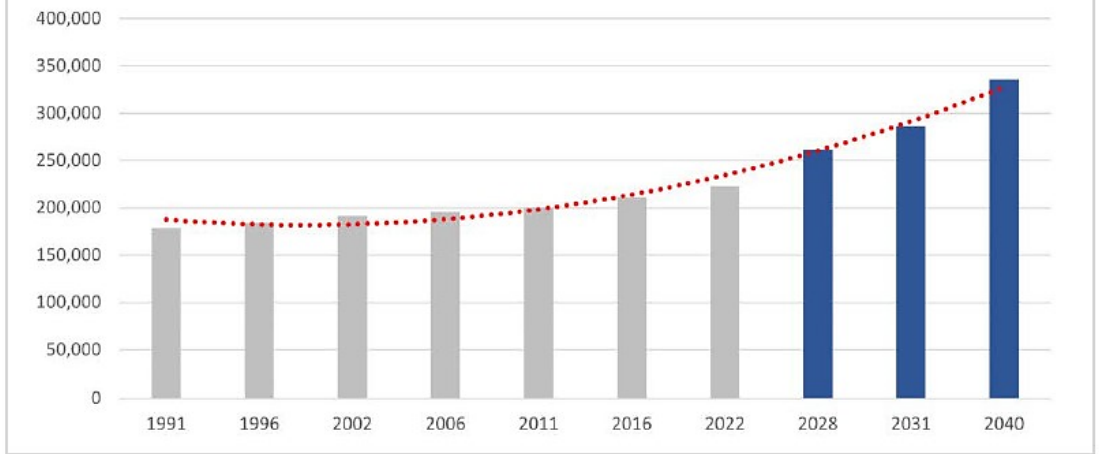


Figure 2.6: Population Trends and Targets, 1991-2040 (*Best estimates based on current boundary)

Figure 6.2: Population Targets - Figure 2.6 of Cork City Development Plan

Paragraph 2.19 of the Plan addresses population growth in the City, stating:

> *The NPF targets 60% population growth for Cork City by 2040. This will result in an additional 125,000 people living in the City within 20 years. A breakdown of this shows how the City will need to achieve 10% - 17% population growth within each of the next four census periods. Over the last 30 years, Cork City has grown at a lower rate of 2% - 5%. Significant planning and investment will be required over a sustained period to achieve the NPF growth target by 2040.*

Figure 6.3 illustrates the City Concept Plan to 2040 highlighting site as part of Blarney.

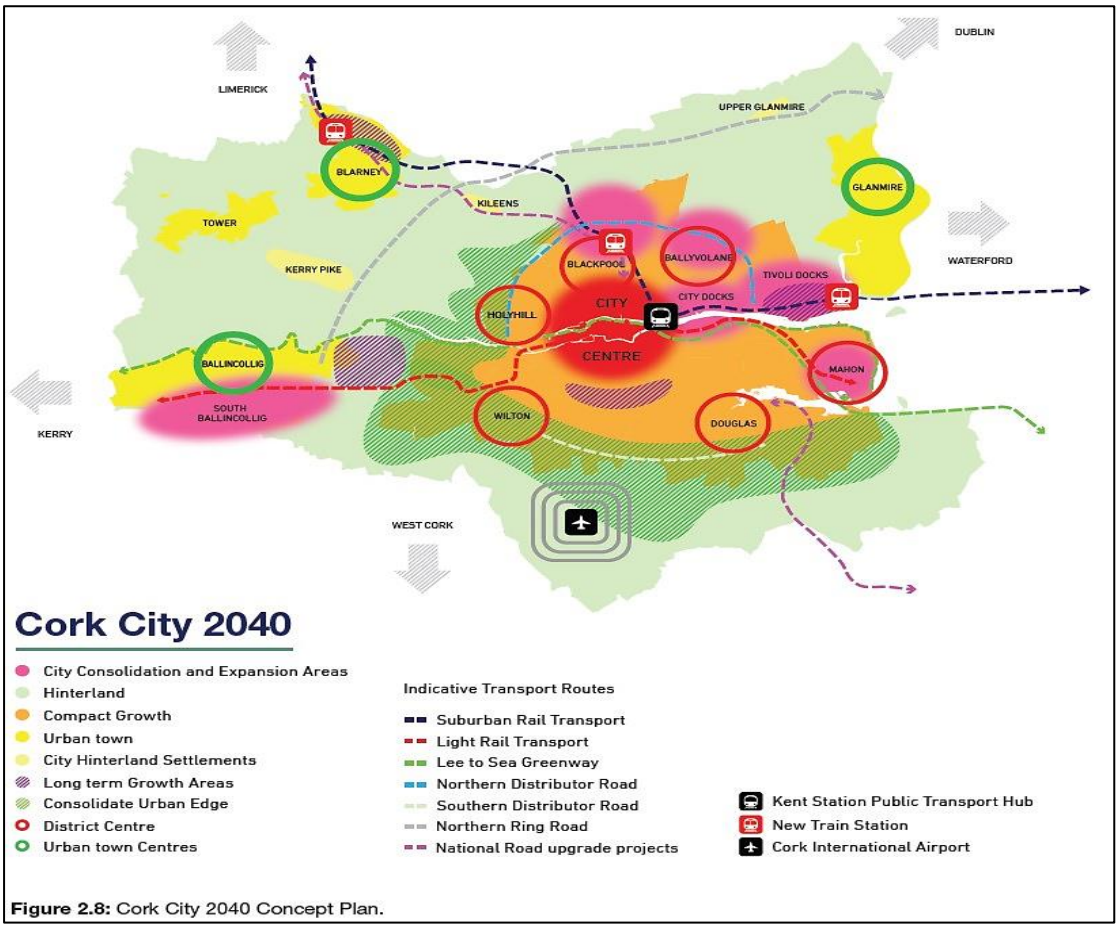


Figure 6.3: City Concept Plan - Figure 2.8 of Cork City Development Plan

Figure 6.4 illustrates the City's Liveable Walkable Neighbourhoods, Communities and Urban Towns, identifying the subject lands are part of the Urban Town of Blarney.

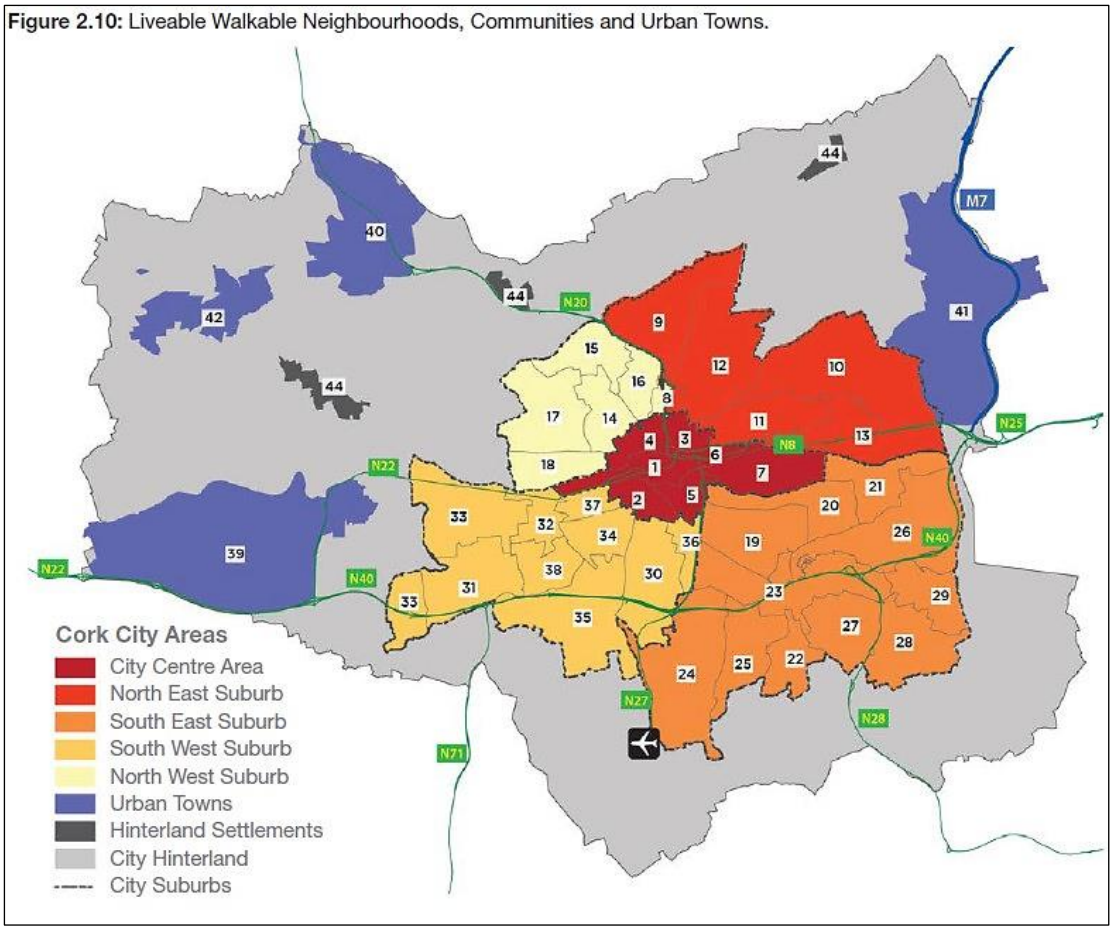


Figure 6.4: Walkable Neighbourhoods - Figure 2.10 of Cork City Development Plan

Paragraphs 2.46 and **2.47** address the Plan's Core Strategy, stating:

> ***2.46*** *Cork City's Core Strategy Map (Figure 2.20) and Table (Table 2.2) set out a land use strategy for Compact Liveable Growth for the plan period and beyond. The NPF population targets, detailed in section 2.9, are distributed to enhance and grow the existing network of neighbourhoods, towns and settlements in the city. The strategy provides the rationale for land use zonings and site-specific objectives set out in this Plan. It is based on a detailed analysis of the housing delivery potential carried out in the Joint Cork Housing Strategy and HNDA. It has also been prepared and informed by an appraisal of infrastructural capacities of sites and areas to accommodate new development within and adjoining the existing built-up area of the city.*
>
> ***2.47*** *The Core Strategy Map spatially illustrates strategic expansion areas within the city and the Core Strategy Table sets out accompanying population targets. The strategy also focuses on the delivery of core bus corridors, the Lee-to-Sea greenway and the longer-term delivery of an LRT alongside enhancing walking and cycling networks. The strategy is based on the following objectives for city growth, detailed further in Table 2.6.*

This strategy is illustrated in Figure 6.5, where the site is located just south of a proposed train station and park and ride facility at Stoneview, as well as being located west of a proposed new employment zone described as the Blarney Business Park Extension in Chapter 7 of the Plan.

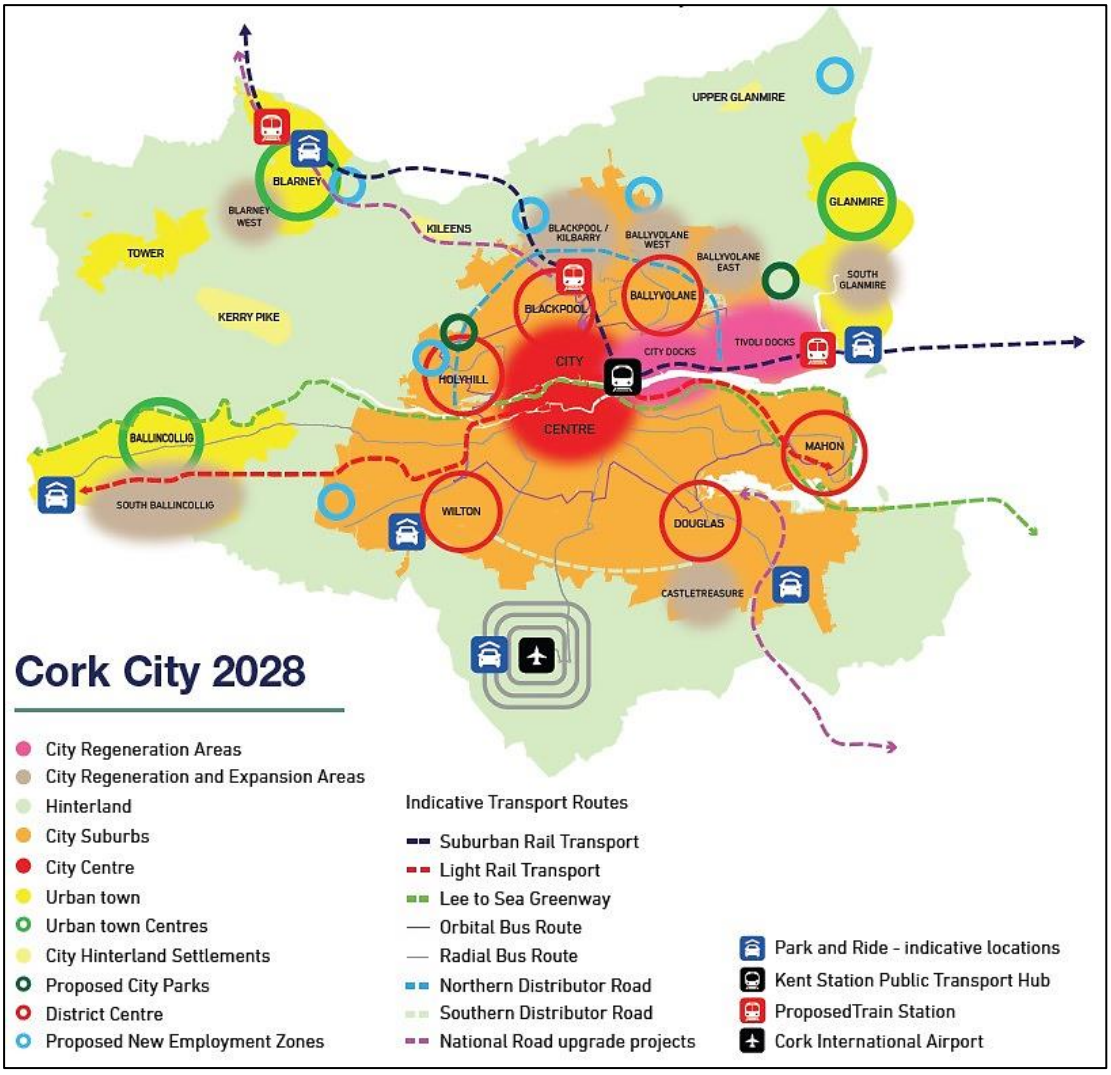


Figure 6.5: Core Strategy - Figure 2.20 of Cork City Development Plan

This is reflected in Table 2.3 which sets out the City Growth Strategy for 2022 – 2028 in quantitative terms.

The proposed development is in keeping with these various designations and support the CDP objectives that seek to realise them.

Figure 6.6 identifies Built Up Footprint and Greenfield Growth Target Locations for the period of the Plan between 2022-2028. The subject site is identified as a Greenfield Growth Location.

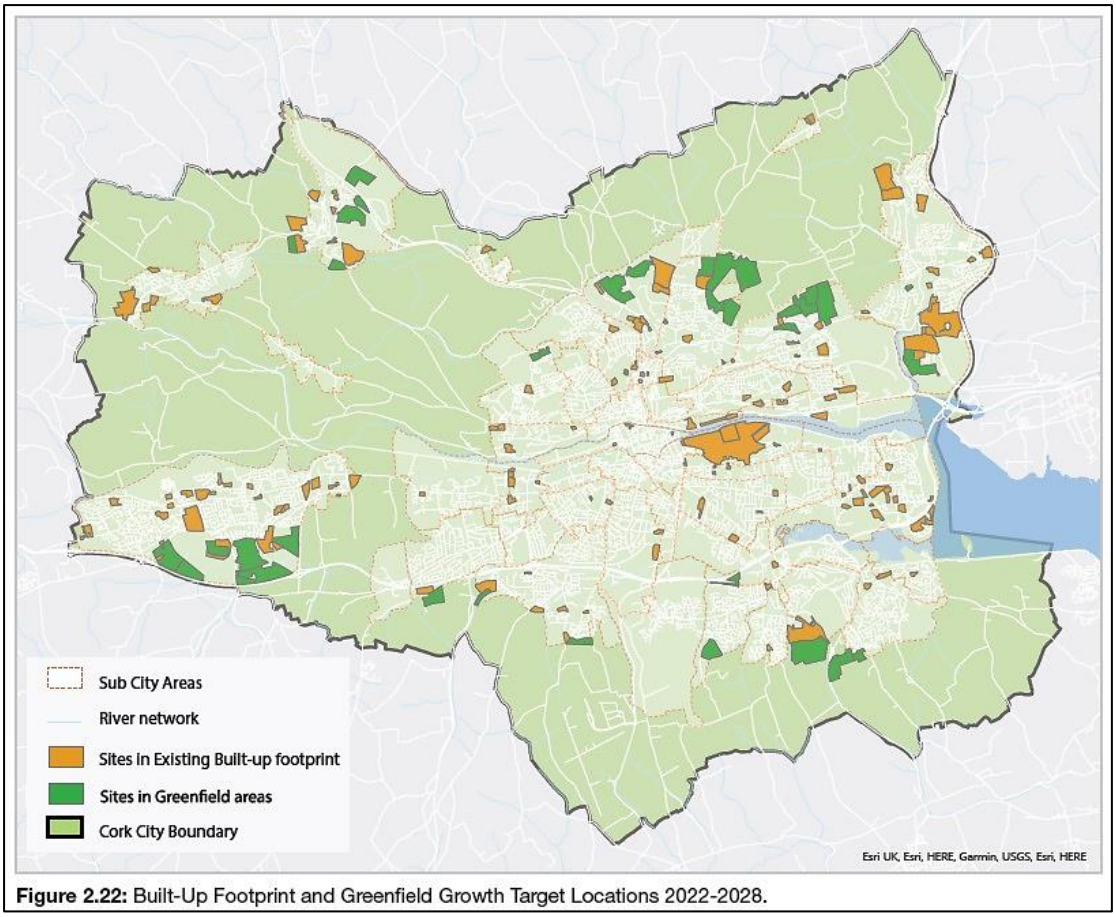


Figure 2.22: Built-Up Footprint and Greenfield Growth Target Locations 2022-2028.

Figure 6.6: Growth Locations - Figure 2.22 of Cork City Development Plan

A summary of the key objectives for city growth follows in Table 6.1 setting out the roles, key sites, and key deliverables the Core Strategy will play in shaping land use planning in Cork City during this Plan period. As it relates to the urban towns, including Blarney, it is as follows:

City Area	Role in Core Strategy	Some Key Sites	Key Deliverables
Urban Towns	Phased delivery of strategic sites by targeting growth proportionate to the existing population within the four urban towns. All development shall focus on prioritising walking, cycling and public transport use. Apply a mixed-use approach to regenerating key underutilized locations. Use a range of designs and densities that reflect and enhance the individual character of each town.	Expansion of South Ballincollig (Maglin), South Glanmire (Ballinglanna). Opportunities to repurpose underutilized sites within town centres.	1. Framework plans for South Ballincollig and South Glanmire. 2. Heritage led plans for Blarney and Tower. 3. Action plans for key sites (Neighbourhood Development Sites). 4. Plan for the long-term delivery.

Table 6.1: Growth Strategy - Suburban Areas – Cork City Development Plan

Strategic Objective 1 of the Plan is to create a compact liveable growth, as follows:

> *To increase the population of Cork City in line with national and regional growth targets. To develop Cork City as an international compact, sustainable healthy city of scale and the regional driver of growth by creating sustainable, liveable, integrated communities and neighbourhoods*

for all. To plan to deliver at least half (50%) of all new homes in the existing built-up footprint of the City.

Housing Supply Targets are set out in Table 3.2 and sets out a target of 16,236 new homes in the City between 2022 and 2028. This is supported by Objective 3.3 relating to New Housing Supply which states that at least 17,118 new homes are to be developed within the city over the Plan period. The development of zoned land forms part of the strategy set out to achieve the supply targets.

Residential density is addressed in Chapter 3. **Paragraph 3.25** states:

Greenfield sites will need to be developed to densities that reflect their suitability for urban density. This will require a step-change in the urban density of schemes being proposed. As a general rule the minimum density shall be 35 dwellings per hectare (net density), excluding one-off houses.

Objective 3.5 Residential Density states Cork City Council will seek to:

a. Promote compact urban growth by encouraging higher densities throughout Cork City according to the Cork City Density Strategy, Building Height and Tall Building Study and resultant standards set out in Chapter 11: Placemaking and Managing Development and Mapped Objectives; and
b. Ensure that urban density is achieved by development proposals providing for high quality sustainable residential development, ensure a balance between the protection of the established character of the surrounding area and existing residential amenities;
c. Ensure that urban density is closely linked to creating successful neighbourhoods and ensuring that neighbourhoods are integrated and permeable to ensure short trips are possible to urban centres, local services and amenities;
d. Ensuring high-quality architectural, urban and public realm design. Guidance is set out in Chapter 11: Placemaking and Managing Development.

A proposed net residential density of 45.11 units per hectare at the site complies with this objective.

Strategic Objective 2 relating to Delivering Homes & Sustainable Neighbourhoods underpins this:

To increase the population of Cork City in line with the Core Strategy. To deliver sustainable, liveable, safe, healthy and child-friendly communities and neighbourhoods. To ensure that new homes are provided at appropriate densities in brownfield, infill and greenfield locations within and contiguous to existing City footprint identified in the Core Strategy, and aligned with transport, community and social infrastructure. To ensure that new homes are provided with a good mix of accommodation types and sizes to meet the needs and abilities of all members of society.

To achieve a higher quality of life for Cork City's communities, promoting healthy living, wellbeing and active lifestyles. To ensure that placemaking is at the heart of all development to create attractive, accessible, liveable, well-designed, child-friendly, playful, healthy, safe, secure and welcoming, high-quality urban places. To promote the concept of a 15-minute city focused on

inclusive, diverse and integrated neighbourhoods served by a range of homes, amenities, services, jobs and active and public transport alternatives.

Proposals for new development will demonstrate how placemaking is at the heart of the development and how the development will contribute to the local neighbourhood.

Objective 3.6 "Housing Mix" advises that Cork City Council will seek to:

a. Implement the provisions of the Joint Housing Strategy and HNDA as far as they relate to Cork City;
b. Encourage the development of an appropriate mix of dwelling types to meet target residential densities, utilising a range of dwelling types and density typologies informed by best practice (as illustrated in "Density Done Well" in the Cork City Density Strategy, Building Height and Tall Building Strategy) with combinations of houses, stacked units and apartments;
c. Within all new residential developments it will be necessary to ensure an appropriate balance of housing tenure and dwelling size to sustain balanced and inclusive communities, including a balance of family-sized units and smaller dwellings tailored to suit the location (please refer to Chapter 11: Placemaking and Managing Development for those standards);
d. Deliver at least 20% below-market priced housing across Cork City and ideally within each new residential neighbourhood;
e. Encourage the provision of housing for one and two person households in all neighbourhoods to meet the needs of all age groups, including providing for downsizing to release family housing units;
f. Update Development Plan policy as necessary to reflect emerging national guidance with regard to housing standards.

Objective 3.21 "Childcare Facilities" states:

To support the provision and expansion of high-quality childcare facilities throughout the city. The Council will:
a. Require purpose built childcare facilities as part of proposals for new residential developments of more than 75 dwelling units. However, where it can be clearly established that existing facilities are sufficient, alternative arrangements will be considered;
b. Consult with the Cork City Childcare Company and the HSE on planning applications where childcare facilities are proposed;
c. Require employers with more than 500 members of staff to provide childcare facilities as part of planning applications for significant new and extended development.

This objective is supported by **Paragraphs 11.162** through **11.168**.

The site is located in the eastern part of Blarney. The following objective applies to this location.

Objective 10.63 Blarney East / Ringwood Expansion Area
To support the compact growth and development of Blarney East / Ringwood Expansion Area as a strategic City consolidation and expansion area, as identified in the Core Strategy. All development

shall be designed, planned and delivered in a co-ordinated and phased manner, using a layout and mix of uses that form part of an emerging neighbourhood integrated with the wider area.

Chapter 11 address residential development and housing standards. The following have relevance.

Paragraph 11.16 advises that a Visual Impact Assessment should be carried out to demonstrate the visual impact if a development proposal is likely to have an impact on protected views and/ or views of special amenity value. A Visual Impact Assessment has been carried out and demonstrates no undue impacts.

Paragraph 11.31 advises:

An understanding of the character of an area is essential to inform strategies for the development of sites and areas. The Cork City Urban Density, Building Height and Tall Building Study 2021 sets out an assessment of prevailing height based upon an analysis of building heights in Cork City's 44 neighbourhoods.

In terms of Residential Density, the following paragraphs are set out:

11.69 *Density is a measure of the relationship between buildings and their surrounding public and private space. The Cork City Urban Density, Building Height and Tall Buildings Study provides the basis for the densities set out in this Development Plan.*

11.70 *The most appropriate measure of residential density will be in the form of dwellings per hectare (DPH) for residential or predominantly residential developments. Plot ratio is most useful in establishing development capacity and in relation to mixed use schemes that are predominantly non-residential in nature.*

11.71 *Most of Cork City has been designed around the use of the private car and is built at densities of less than 25 dwellings per hectare in traditional suburban formats, with one particular model of dwelling type, gardens, amenity space and parking. Developing Cork City as a compact city will require housing to be built at higher densities utilising different models of development. Most of the new development in Cork City and the Urban Towns will be built at a "gentle density" of 40-70dph and a scale of 2-4 storeys. Some areas will be developed at densities higher than this (e.g. the City Centre, City Docks, Tivoli Docks, the inner city areas, Blackpool and the light rail corridor at Wilton and Mahon).*

Residential densities and building heights are set out in Table 11.2. Densities are expressed in terms of minimums and maximums for the constituent areas of the City.

The target density for Blarney town centre itself is between 35 and 50 units/ha. The target building height for Blarney town centre is 2-3 storeys. The subject site itself is identified as being in an outer suburban area, where target heights and residential densities are in the range of 2-4 storeys and 40-60 units/ha.

Building heights and residential density for the development are in keeping with these provisions.

Section 11.74 of the CDP advises that development proposals *"will need to ensure that they have an appropriate residential mix in terms of dwelling type, dwelling size, tenure, and specialist housing",* while CDP Objective 11.2 "Dwelling Size Mix" requires the following:

> *All planning applications for residential developments or mixed-use developments comprising more than 50 dwellings will be required to comply with the target dwelling size mix specified in Tables 11.3-11.9, apart from in exceptional circumstances.*
>
> *Applications for 10-50 dwellings will need to provide a dwelling size mix that benefits from the flexibility provided by the dwelling size target ranges provided for the respective sub-area.*
>
> *Purpose-Built Student Accommodation schemes will be exempt from dwelling size mix targets. Where there is a target for student accommodation, and it can be demonstrated that this demand has been provided for within the area, then this demand can be reassigned to other dwelling sizes according to the relative target proportions.*
>
> *Where a clear justification can be provided on the basis of market evidence that demand / need for a specific dwelling size is lower than the target then flexibility will be provided according to the ranges specified.*

Dwelling size mix targets have been identified for four different market types, one of which is the urban towns and hinterland villages areas where the subject site is located.

Table 11.9 "Urban Towns and Hinterland Villages Dwelling Size Mix for Housing Developments" of the Plan presents the dwelling size mix for housing developments in the urban towns and hinterland villages and is as follows:

Unit	Min	Max	Target
Studios / PBSA	**0%**	**5%**	**0%**
1 bedroom	**15%**	**25%**	**21%**
2 bedroom	**30%**	**40%**	**34%**
3 bedroom	**25%**	**35%**	**30%**
4 bedroom / Larger	**10%**	**20%**	**15%**

Table 6.2: Dwelling Mix Targets - Table 11.9 of Cork City Development Plan

Section 2.41 of the Plan acknowledges that average household size will continue to decrease over the lifetime of the Plan, and states that the Joint Cork Housing Strategy and Housing Need Demand Assessment strategy (HNDA), "*sets out a city-wide average household size target of 2.49 for the Plan period based on a changing average household size from 2022-2028.*"

However, notwithstanding this, Census 2022 figures indicate that the average household size in Blarney has actually increased since Census 2016, from 2.72 to 2.75.

Paragraph 11.91 addresses apartment standards and advises they are to be aligned with the Government guidance in the form of Sustainable Urban Housing: Design Standards for New Apartments.

Paragraph 11.112 addresses 'Public Open Space in Housing Developments' advising that public open space for residential developments will normally be required as per Table 11.11 apart from in exceptional circumstances. This table sets out a general provision of 10%, while at Greenfield sites / Areas for which a local area plan is appropriate it is 15%. Objective 11.5 addresses Private Amenity Space for Houses, outlining a general requirement for 48sqm, while acknowledging that smaller areas may be provided.

Paragraph 11.115 deals with 'Phased Development', stating that all large development proposals should be accompanied by a phasing schedule, which may be subject to planning condition to ensure compliance

As per Variation No. 1 to the *Cork City Development Plan 2022-2028*, the subject site is located in Parking Zone 3. The varied Plan car parking standards are maximums and require a maximum of 1.25no. car parking spaces for every 1 and 2 bedroom residential unit in city suburban locations, and a maximum of 2.25no. for every 3+ bedroom residential unit.

In addition, under paragraphs 11.241 through to 11.244 of the Plan, requires that multi-unit residential developments should provide a minimum of 1no. EV equipped parking space per 5no. car parking spaces, that apartment developments should provide 1no. motorcycle parking bay for every 10no. car spaces, and that 5% of car parking spaces provided should be set aside for PRM (persons with reduced mobility).

Table 11.14 relates to bicycle parking standards, with the Plan requiring the provision of sheltered bicycle parking at a rate of 0.5 no. per suburban apartment, and 1 no. per twenty-five children enrolled at a creche.

Chapter 12 address land use zonings. In relation to the purpose of the zoning objectives set out, the following is stated:

> ***12.1*** *Land use zonings spatially represent the development strategy for the City. The development strategy for Cork City is set out in the Core Strategy. The land use zoning strategy is based on the principles of compact growth, sustainable communities and neighbourhoods, placemaking and climate resilience, and the Strategic Vision for Cork City set out in Chapter 1.*
>
> ***12.2*** *There are twenty-one land use zones in this Plan, each with its own distinct objective to facilitate a particular type(s) of development. These zones indicate where different types of development are appropriate within the City and are indicated on the Zoning Maps.*
>
> ***12.3*** *Zoning objectives only relate to land use. A range of other factors including density, height, mobility, design and environmental criteria, amongst others, determine whether or not any particular development proposal is appropriate in an area. Zoning objectives cannot be considered in isolation and must be read in association with all Development Plan objectives set out in this Plan. If in doubt, the direction provided in the Core Strategy should be followed.*

Table 11.11 states that the general provision for public open space should be 10%. The proposed development provides for more than this amount, with 15% of the site designed as public open space.

Paragraph 11.116 of the Plan states the following:

> *Developments over 100 residential units shall demonstrate that adequate provisions for specified physical and social infrastructural requirements, including roads, sewers, water mains, community, recreational and sporting facilities (indoor and outdoor), public transport, first and second level schools and shops are available at completion to support the development.*

As outlined in the Construction and Environmental Management Plan (CEMP) prepared by MHL Consulting Engineers, copies of which accompany this planning application, the construction of the proposed development is expected to take 48months.

A Social and Community Audit (SCA) has been prepared by Coakley O'Neill Town Planning, copies of which accompany this planning application. The SCA demonstrates that, with the exception of childcare for pre-school children, adequate social infrastructure is available in the area to serve the proposed development. A 137no. child creche is permitted as part of Phase 1, with works due to commence in the coming months. This will serve the childcare demand for both Phase 1 and 2.

Paragraph 11.226 of the Plan stipulates that the layout of proposed new residential development must be designed in accordance with the Design Manual for Urban Roads and Streets (DMURS). A DMURS Compliance Statement has been prepared and is included in the application.

Overall, the proposed development aligns with the Plan objectives in the following ways:

- Will comply with the relevant zoning objectives for the subject site.
- Will contribute towards achieving NPF population growth targets and the objective of compact growth.
- Will deliver much needed new homes in Cork City, that will strengthen, expand, and diversify the existing community in the area.
- Will support sustainable transport use.
- Will support national and local climate action objectives regarding renewable energy generation, passive solar heating and a high standard of build quality including insulation.
- Will provide excellent open space with active recreational infrastructure for all age groups, while at the same time enhancing biodiversity on site through the use of SuDS and through the planting of new native and high value non-native trees and other plant species in line with the All-Ireland Pollinator Plan.
- Will exhibit an example of best-in-class placemaking, with high-quality urban design.
- Will support the objectives of the Cork MASP.
- Aligns with the objectives of CMATS, particularly in terms of the opening of BusConnects and walking and cycling routes and infrastructure.
- Will contribute to the realisation of a 15-minute neighbourhood in the Blarney area that is walkable and permeable, with a high degree of passive surveillance designed into the scheme.
- Through its design, will ensure a high quality of life for those living on site and nearby.
- Will provide a good choice of dwelling types and sizes. This, combined with the high-quality urban design, will support a sense of inclusive, diverse community becoming established on site.
- Provides for EV parking and will facilitate a high degree of cycling.

The proposed development also clearly aligns with and supports the following key strategic principles of the Strategic Vision of the Plan:

- Compact growth
- A city of neighbourhoods and communities
- Sustainable and active travel
- A resilient city
- A healthy, inclusive, and diverse city
- A connected city

6.4 Conclusion

In conclusion, having regard to:

- the provisions of the National Planning Framework First Revision, which support the escalation of population growth in the existing built-up area of Cork City,
- The provisions of the RSES and its constituent Cork Metropolitan Area Strategic Plan (MASP) both build on the policy contained in the 2001 *Cork Area Strategic Plan* (CASP) and 2008 CASP update, all of which emphasise Blarney as a strategic residential growth node on the Cork commuter rail network
- the Design Manual for Urban Roads and Streets 2019,
- the Guidelines for Sustainable and Compact Settlement Guidelines for Planning Authorities.
- the Sustainable Urban Housing: Design Standards for New Apartments Guidelines for Planning Authorities 2023,
- the site's strategic position adjacent other large residential redevelopment sites on the northside the city,
- the site's location within the 'Blarney East / Ringwood Expansion Area' and its identification as a 'strategic City consolidation and expansion area',
- the site's proximity to public transport, and the proposals for significant public transport upgrades in the immediate area, including the reopening of the Blarney Rail Station and the construction of an associated Park and Ride facility,,
- the nature, scale, and design of the proposed development, and
- the pattern of existing, permitted, and proposed development in the area,

It is considered that the proposed development would not seriously injure the residential or visual amenities of the area, would respect and enhance the existing character of the area and would be acceptable in terms of pedestrian and traffic safety and convenience. The proposed development would, therefore, be in accordance with the proper planning and sustainable development of the area.

6.5 References

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7.0 TRAFFIC & TRANSPORTATION

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7.1 Introduction

7.1.1 Overview

This chapter of the EIAR has been prepared to assess the potential impact of the proposed development in terms of traffic and transport. The chapter provides the following:

- An overview of the receiving environment;
- A detailed and robust assessment of the potential impact of the proposed development on the local road network both during the short-term construction phase and long-term operational phase; and
- Outlines mitigation measures to ensure significant effects are minimised or avoided.
- The assessment of the traffic and transport section has been prepared SYSTRA, who have extensive experience with a wide range of Transport Statements, Transport Assessments, and Development Proposals throughout Ireland.

This document should be read in conjunction with the Transport Assessment (TA) (which incorporates a Mobility Management Plan) which also accompanies the planning application.

7.1.2 Development Summary

Please refer to '**Chapter 4 – Proposed Development'** for the development description.

7.1.3 Consultation

A Section 247 Pre-Application meeting was held with representatives of Cork City Council (CCC) on 24th April 2024 (Ref: 66/24).

A further Section 247 Pre-Application meeting was held with representatives of Cork City Council (CCC) in December 2024 (Ref: 159/24).

The S32B Stage Transport Assessment was submitted to CCC in April 2025. A S32B meeting was held with representatives of Cork City Council (CCC) in May 2025 (LRD Ref: 25-05). The main transport points raised in the LRD Opinion Response and SYSTRA's response to these is summarised in Table 1 of the Transport Assessment.

7.1.4 Legislation, Policy and Guidance

This EIAR Transportation Chapter has been prepared in line with assumptions adopted within the Traffic and Transport Assessment and the relevant EIAR guidance documents, as outlined below.

This chapter has been prepared with cognisance of the following guidelines:

- Environmental Impact Assessment of Projects: Guidance on the preparation of the Environmental Impact Assessment Report (European Commission, 2017);
- Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment (Department of Housing, Planning & Local Government, 2018);
- Guidelines on the Information to be contained in Environmental Impact Assessment reports (EPA, 2022);
- Institute of Environmental Management and Assessment (IEMA) Guideline: 'Environmental Assessment of Traffic and Movement (IEMA, 2023);
- PAG Unit 5. 3: Travel Demand Projections (TII, 2019);
- Project Ireland 2040 – National Planning Framework; and
- Transport Infrastructure Ireland's (TII's) Traffic & Transport Assessment Guidelines (2014).
- Cork City Development Plan (2022 – 2028);
- Design Manual for Urban Roads and Streets (DMURS, updated 2019); and
- National Cycle Manual (NTA, 2023).

7.2 Assessment Methodology and Significance Criteria

7.2.1 Assessment of Significance

In Ireland, there are currently no definitive guidelines or standards which outline how the effect of traffic and transport should be quantified or described for the purposes of Environmental Impact Assessment. However, TII's 'Traffic and Transport Guidelines' indicate that if the impact generated by the additional traffic generated by a new development may be expected to exceed 10% of the existing traffic movements, it is considered material in the context of the local network. This threshold is reduced to 5% in sensitive situations.

The UK's Institute of Environmental Management and Assessment (IEMA) '*Environmental Assessment of Traffic and Movement*' (2023) suggests two broad rules to apply to assist in determining the scale and extent of the assessment. The Guidelines suggest that links where traffic (or HGVs) increase by more than 30% should be considered for more detailed assessment, or where the increase in total traffic exceeds 10% in sensitive locations.

As referenced in the IEMA Guidelines, a range of indicators for determining the significance of the relief from severance advises that changes in traffic flow of 30%, 60% and 90% are regarded as producing 'slight', 'moderate' and 'substantial' changes respectively. Additionally, the Guidelines state that it is generally accepted that traffic flow increases of less than 10% on uncongested roads are generally considered to be 'not significant', given that daily variations in background traffic flow may vary by this amount.

The following section sets out the methodology used to assess the significance of effects at locations along the proposed routes within the study area where total traffic levels exceed the screening thresholds set out by IEMA. Where the impact of operational traffic exceeds 30% on any particular link (10% on sensitive links), then a detailed assessment of the significance of effect has been undertaken, which takes account the link sensitivity and the magnitude of change. This will consider the criteria set out in the IEMA Guidelines, such as severance, driver delay, pedestrian delay, pedestrian amenity and safety.

7.2.2 Sensitivity

The sensitivity to change in traffic levels of any given road segment, and the receptors located along that road segment, is generally assessed by considering the residual capacity of the network under existing conditions.

Where there is a high degree of residual capacity, the network may readily accept and absorb an increase in traffic and therefore, the sensitivity may be said to be low. Conversely, where the existing traffic levels are high compared to the road capacity, there is little spare capacity, and the sensitivity to change in traffic levels will be considered to be high.

The criteria that have been used to make judgements on the sensitivity of the receptor(s) and the magnitude of change are presented in Table 7.1.

Sensitivity	Description
High	The receptor / resource has little ability to absorb change without fundamentally altering its present character, or is of international or national importance. Local residents whose daily activities depend upon unrestricted movement within their environment. Receptors such as schools, colleges, hospitals and accident hotspots.
Medium	The receptor / resource has moderate capacity to absorb change without significantly altering its present character, or is of high importance.
Low	The receptor / resource is tolerant of change without detriment to its character, or is of low / local importance. Areas such as trunk road or 'A' class roads constructed to accommodate significant HGV volumes.
Negligible	Users not sensitive to transport effects. Includes very small settlements and roads with no significant settlements including new strategic trunk roads or motorways.

Table 7.1: Framework for Determining Sensitivity of Receptors

7.2.3 Magnitude

The magnitude of effects is a function of the existing traffic volume, the percentage increase and change due to the proposed development, changes in the type of traffic and the temporal distribution of traffic (day of week, time of day).

The determination of magnitude has been undertaken by reviewing the proposed development, establishing the parameters of the receptors that may be affected and quantifying these effects utilising guidelines and professional judgement.

Consideration is given to the composition of the traffic on the road network, under both existing and proposed conditions. For example, LGVs have less effect on traffic and the road system than HGVs. Similarly, HGVs can have less effect than abnormal load vehicles, depending on the frequency of the abnormal loads.

The criteria that has been used to make judgement on the magnitude of the effect on the receptor(s) is presented in **Table 7.2**.

Magnitude	Description
Major	Total loss of, or major / substantial alteration to, key elements/features of the baseline (pre-development) conditions such that the post development character/composition/attributes will be fundamentally changed. Generally a rule of >90% (or >70% at sensitive receptors) change in traffic is considered to be a major magnitude.
Moderate	Loss or alteration to one or more key elements/features of the baseline conditions such that post development character / composition / attributes of the baseline will be materially changed. Generally, a rule of 60% - 90% (or 40% - 70% at sensitive receptors) change in traffic is considered to be a moderate magnitude.
Minor	A minor shift away from baseline conditions. Change arising from the loss / alteration will be discernible/detectable but not material. The underlying character / composition / attributes of the baseline condition will be similar to the pre-development circumstances / situation. Generally, a rule of 30 – 60% (or 10% - 40% at sensitive receptors) change in traffic is considered to be a minor magnitude.
Negligible	Very little change from baseline conditions. Change barely distinguishable, approximating to a 'no change' situation. Generally, a rule of <30% (or <10% at sensitive receptors) change in traffic is considered to be a negligible magnitude.

Table 7.2: Framework for Determining Magnitude of Effects

7.2.4 Significance

As a guide to inform the assessment, but not as a substitute for professional judgement, criteria for determining the significance of traffic related effects are set out in **Table 7.3**. This is based on combining the magnitude of the effect with the receptor sensitivity.

Sensitivity of Receptor	Magnitude of Change			
	Major	Moderate	Minor	Negligible
High	Major	Major / Moderate	Moderate	Minor
Medium	Major / Moderate	Moderate	Moderate / Minor	Minor
Low	Moderate	Moderate / Minor	Minor	Negligible

Table 7.3: Significance Criteria Matrix

The effects recorded in grey highlighted cells are considered to be '**Significant**'.

Significance is categorised as major, moderate, minor or negligible. Effects judged to be of minor or negligible significance are considered '**Not Significant'**.

7.2.5 Potential Environmental Effects

The assessment is structured around the consideration of potential environmental effects relating to traffic and transport. The EPA EIAR guidelines (2022) outlines a number of definitions that can be used to describe potential significant effects. This includes definitions for the quality of effects, significance of effects, extent of effects, probability of effects, duration and frequency of effects and the type of effects. Whilst some of these are easily qualified using the EPA guidelines, the significance of the effects is open to interpretation and relies on the professional engineering judgement. Potential significant effects as identified by the IEMA Guidelines including the following:

Noise;

- Severance;
- Driver delay;
- Pedestrian delay;
- Pedestrian amenity;
- Accidents and safety;
- Hazardous loads (e. g. nuclear products); and
- Dust and dirt

The IEMA guidance suggests that in order to determine the scale and extent of the assessment and the level of effect the Proposed Development will have on the surrounding road network, the following two 'rules' should be followed:

- **Rule 1** – Include highway links where flows will increase by more than 30% (or the number of heavy goods vehicles (HGVs) will increase by more than 30%); and
- **Rule 2** – Include highway links of high sensitivity where traffic flows have increased by 10% or more.

Paragraph 2.5 of the IEMA Guidelines identifies groups, locations and special interests which may be sensitive to changes in traffic conditions as follows:

- People at home;
- People in work places;
- Sensitive groups including children, elderly and disabled;
- Sensitive locations, e. g. hospitals, churches, schools, historic buildings;
- People walking or cycling;
- Open spaces, recreational sites, shopping areas; and
- Sites of ecological / nature conservation value tourist attractions.

7.3 Receiving Environment

The following section provides a summary of the proposed development's receiving environment. Full details are included in **Chapter 3** of the TA.

7.3.1 Subject Site Location

The subject site is located ~1.2km to the north-east of the village centre in Blarney, to the north of the R617. The site would be accessed at two points;

- via the phase 1 signalised junction with Station Road; and
- via a new signalised junction on the R617.

Pedestrian and Cycle Infrastructure

Key elements of existing pedestrian infrastructure are:

- A continuous footway of typically 1m in width, along the west side of Station Road, that runs from Ard Dara Drive to the R617 / Station Road junction.
- On the east side of Station Road, there is currently no footway in the vicinity of the proposed site access point.
- To the north of this, there is a 250m section of footway that runs along the frontage of the properties on the east side of the road. To the south of this point, there is a further 140m section of footway, that again fronts a line of properties.
- To the north of the site, there is a footpath on at least one side of Station Road between the site entrance and the bridge over the N20, but no continuous footpath on any one side, meaning that pedestrians need to cross the road to continue onwards.
- A footpath on the north side of the R617 of between 1-2m in width, that runs between Station Road and Shean Lower which links into the Clogheenmilcan Walk off-road path.
- Controlled Toucan crossings across the R617 to the east of Station Road, and the west of Waterloo Road.

There is presently a limited amount of cycle infrastructure currently in place in the vicinity of the subject site. This comprises:

- The 2m-wide, off-road Clogheenmilcan Walk, where cyclists share the surfaced mixed use path with pedestrians. This runs along the south side of the R617, linking Woodland Park with the small car park close to the N20 / R617 interchange.
- The 2m-wide, off-road, shared-use Waterloo Road path.

7.3.2 Public Transport

The closest bus stops to the site are located on the R617, close to the junction with Station Road. These are 530m distant from the proposed site access point, which corresponds to an approximate 6-minute walking time.

Bus Eireann Service 215 runs along the R617, with an hourly service frequency throughout the day on Monday through to Sunday. Service 215 runs between Jacobs Island, Cork City Centre, Blarney and Tower.

7.3.3 Future Sustainable Transport

Station Road

Improvements to the active travel network on Station Road between the site access junction and the R617 / Station Road junction, are permitted as part of the Phase 1 scheme.

This will comprise a new 3m-wide shared track for cyclists and pedestrians on the west side of Station Road, between the R617 and the site access junction. Due to constraints, the width of the track will be reduced in certain sections.

Blarney Village Pedestrian and Cycle Infrastructure Scheme

Cork City Council is taking forward an extensive active travel scheme within Blarney.

The study area extends northwards towards Waterloo between Station Road and Waterloo Road (both east and west of the River Martin, eastwards towards Blarney Business Park, and southwards towards Blarney playground.

The objectives of the scheme are:

- Enhanced connectivity for pedestrians and cyclists.
- Provision of sustainable alternative routes for commuters, school and leisure users.
- Creation of an environment that will encourage the uptake of sustainable forms of transport.
- Reduction in traffic volumes on the local road network.
- Improved quality of life for residents and businesses in the area.

The scheme is currently at the planning / design stage, with the final Part 8 Consultation expected to be undertaken in 2025.

The recently completed project in the east of the study area has created a shared pedestrian and cycle facility linking the R617 and N20 on-ramps towards Blarney Business Park, improving safety, accessibility, and public amenities for the local community. The key improvements are:

- New bus stops and shelters
- Widened Clogheenmilcon Sanctuary Walkway
- New cycle and footpaths

- Road resurfacing
- Upgraded lighting and drainage

CMATS

The Cork Metropolitan Area Transport Strategy (CMATS) proposes the following key transport interventions in Blarney:

- Development of a new rail station on the Cork-Dublin rail line within the Stoneview area, along with an associated Park and Ride facility to reduce traffic pressure along the M20 / N2 corridor. CMATS notes that new stations will primarily support residential-led, mixed use development. Train frequency would be increased to 10 minutes, adding further capacity on the line.
- Expansion of the Cork BusConnects network along the R617 to Blarney, which will provide a high-frequency service to the city centre.
- Extension and improvement of the existing Waterloo Road and Killard Road / Blarney Bog Greenway cycle routes.
- Further enhanced pedestrian and cycle routes to serve Blarney, which will improve connectivity to, from and within the settlement.

The CMATS strategy is supported within the Cork City Development Plan. CCC is also investigating the development of an improved Blarney-wide walking and cycling network, which will greatly improve links within the village, and support future developments.

7.3.4 Local Road Network

The key roads within the study area are described below.

N20

The N20 National Road provides the strategic east-west road connection through the area, and is accessed via the N20 / R617 interchange, located 1.2km to the south-east of the site.

R617 Convent Road

The R617 is single-carriageway road that runs east-west, 600m from the southern boundary of the site. From the N20, it runs west, through Blarney town centre, and continues in a south-west direction to meet the R579 at Ballyandreen.

Within Blarney, to the west of the L2796 junction, the R617 has a speed limit of 50km/h. Between the L2796 and the N20, the speed limit if 60km/h. In the vicinity of Station Road, the R617 has a width of between 6m and 6.5m.

Station Road

Station Road is a single-carriageway road that runs north-south to the west of the site, beginning at the R617, and continuing north past the site, first crossing over the N20, and then the Dublin to Cork rail line. It is a local road that has a speed limit of 50km/h.

Most traffic accessing the site will do so via the R617 / Station Road priority junction. Station Road forms the minor arm of the junction, and is a one lane approach with a short flare with capacity for two cars. Unless correctly positioned, waiting right-turning traffic from the westbound R617 into Station Road blocks following traffic until the turn is made. There is a signalised pedestrian crossing across the R617, 30m to the east of the junction.

Other Roads

L2704 Castle Close Lawn and the L2796, are single-carriageway roads with a speed limit of 50km/h. These feed into Lanes Cross, which provides an alternative route to the N20 to access the west side of Cork.

7.3.5 Baseline Traffic Flows

In order to establish baseline traffic conditions on the local road network, new traffic surveys were undertaken in April 2025.

These comprised Junction Turning Count (JTC) surveys at 10 locations, and Automatic Traffic Counters (ATC) placed at three locations.

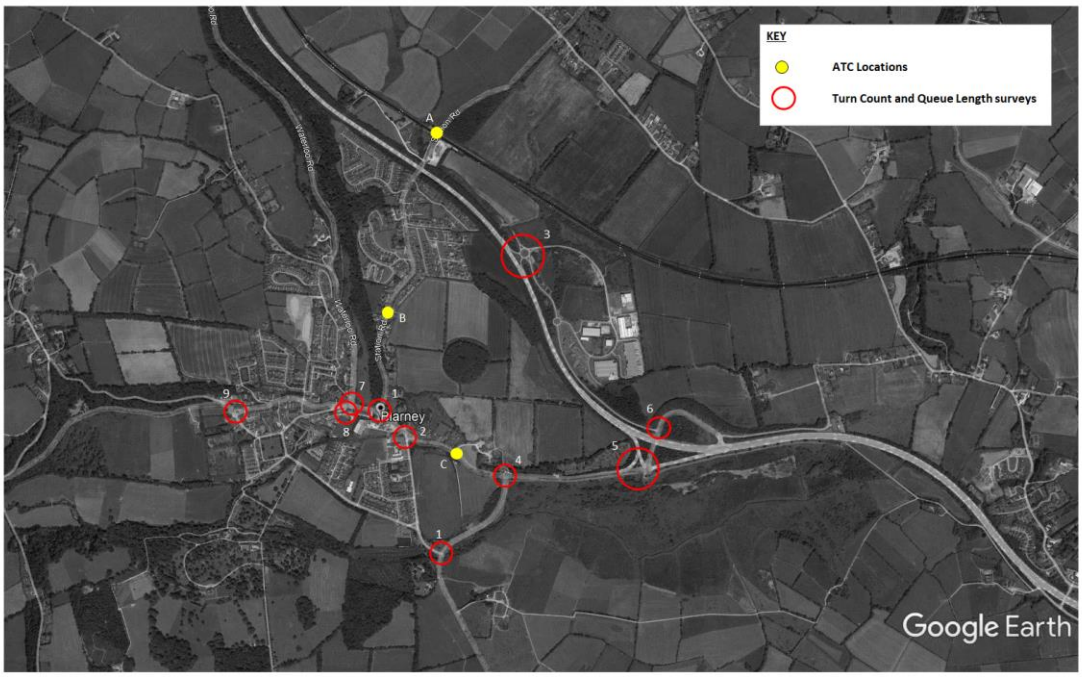


Figure 7.1: JTC and ATC Locations

The JTC survey locations illustrated in **Figure 7.1** are as follows:

- 1. R617 / Station Road priority junction
- 2. R617 / Castle Close Lawn priority junction
- 3. Blarney Business Park Roundabout
- 4. R617 / Lane's Cross priority junction
- 5. N20 / R617 Interchange (Roundabout and R617 on-slips onto NB N20)
- 6. R617 / Blarney Business Park priority junction

- 7. R617 / Waterloo Road;
- 8. R617 / Millstreet Row;
- 9. R617 / St Anne's Road; and
- 10. Lane's Cross / Castle Close Lawn.

ATC were placed at the following locations:

- A. Station Road to north of N20 overbridge;
- B. Station Road south of Woodfield; and
- C. R617 between Castle Close Lawn and Lane's Cross junctions.

Surveyed AM and PM peak hour traffic flows were converted into AADT using a factor calculated from the ATC counter that was in place for a week on R617 Convent Road. AADT flows across the study area were calculated for the links shown in **Figure 7.2**.

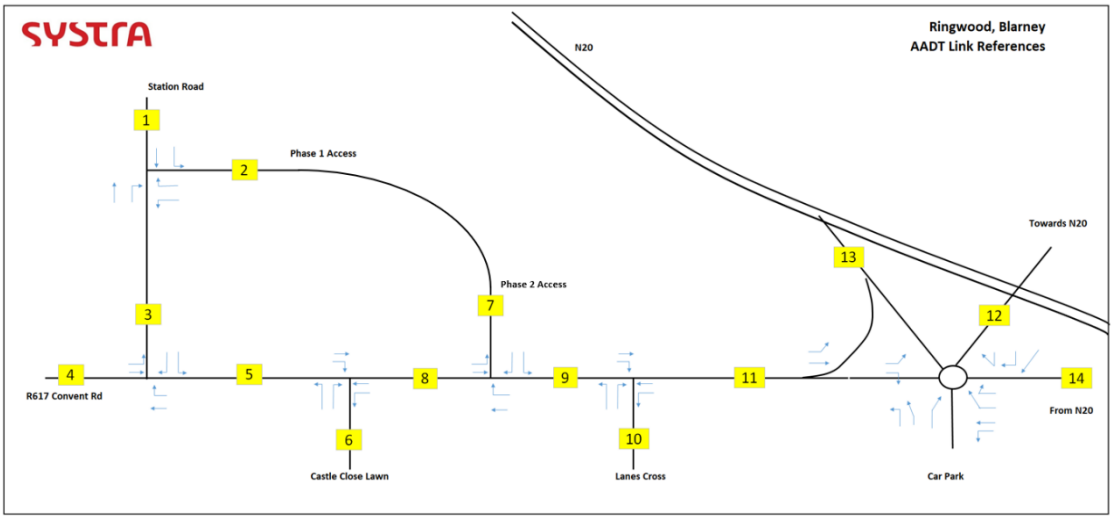


Figure 7.2: Links in the Study Area

Table 7.4 presents the calculated Base 2025 AADTs for each of the links shown in **Figure 7.2. Table 7.4** also shows those links that are considered to be sensitive to increases in traffic levels. This sensitivity has been determined by SYSTRA in terms of the presence of sensitive receptors (schools, community facilities etc), and the nature and purpose of the road.

Link Ref	Description	Base 2025 AADT (two-way, vehicles)	Sensitive Link (as per IEMA Guidelines)	IEMA Threshold for assessment	Note
1	Station Road north of site access	5,914	Yes	10%	Sensitive as passes through residential area
2	Site Access	-	Yes	10%	Sensitive as passes through residential area

3	Station Road between Site Access and R617	6,099	Yes	10%	Sensitive as passes through residential area
4	R617 west of Station Rd	15,812	Yes	10%	Sensitive as passes through residential area / local centre
5	R617 between Station Rd and Castle Close Lawn	16,270	Yes	10%	Sensitive as passes through residential / commercial area
6	Castle Close Lawn	6,695	Yes	10%	Sensitive as passes through residential area, which includes Scoil Mhuire gan Smail.
7	Phase 2 Site Access	-	-	-	
8	R617 Convent Road between CCL and Phase 1a Access	13,113	Yes	10%	Sensitive as passes through residential area
9	R617 Convent Road between Phase 2 Access and Lanes Cross	13,215	No	30%	No receptors
10	Lanes Cross	5,709	Yes	10%	Sensitive as passes park at southern end
11	R617 between Lanes Cross and N20 interchange	18,402	No	30%	No receptors
12	R617 underneath N20	10,784	No	30%	No receptors
13	N20 NB on-slip	3,423	No	30%	No receptors
14	N20 WB off-slip	5,486	No	30%	No receptors

Table 7.4: 2025 Base AADT

7.4 Characteristics of the Proposed Development

A description of the site is provided in '**Chapter 4 – Proposed Development'**. The main features of the site design from a transport perspective are:

- Pedestrian, cycle and vehicular access into the site will be taken from the Phase 1 signalised junction on Station Road, and a new signalised junction on the R617.

- The construction of a new signalised junction on the R617 will provide vehicle, cycle and pedestrian access into the site. This will reduce traffic pressure on the Phase 1 site access junction on Station Road, allowing vehicles to access the site without travelling through the R617 / Station Road junction.
- Improvements will be made to the active travel infrastructure on Station Road as part of the Phase 1 scheme, between the site access junction and the R617. This will provide a safer environment for pedestrians, cyclists and vulnerable users.
- The construction of the first phase of the 'Stoneview Access Link Road' into the site, which will ultimately link into lands to the north of the N20 / rail line, in future phases of the wider Masterplan. The Access Link Road has been designed to accommodate future bus services between the R617 and the future Blarney Rail Station. Segregated cycle paths will run along its full length.
- A network of high-quality walking and segregated cycling routes will be created within the subject site, and an extensive set of measures are in place to reduce vehicle speeds and priority. All proposed road and paths within the development will be designed in accordance with the Design Manual for Roads and Streets (DMURS, 2019) and the NTA's National Cycle Manual 2023.
- The development will be designed to complement and support:
  - Future phases of development at Ringwood and the future Stoneview Framework Masterplan, the development of which is an objective of the Cork City Development Plan 2022-2028.
  - The future transport initiatives set out in CMATS, such as Cork Bus Connects and the Blarney Rail Station.

7.5 Predicted Effects of the Proposed Development

7.5.1 Construction Phase

Site Operating Hours

It is anticipated that the working hours on site will be:

- 07.00am – 07.00pm (Monday – Friday inclusive)
- 07.00am – 4.00pm (Saturday)

It is proposed that exceptionally, and with prior agreement of the planning authority, working hours may be extended and/or works may take place on a Sunday and/or Bank Holiday at times when critical elements of work need to be advanced.

Longer working days can occur when there is a planned concrete pour. If extended working hours are required, these will be agreed in advance with the planning authority.

Vehicle Types

The following vehicle types will be used on site during the construction stage:

- Bowser (2)
- Breaker (1)

- Container (1)
- Dozer (2)
- Dumper (2)
- Excavator (3)
- Generator (2)
- Plate Compactor (2)
- Power Washer (1)
- Roller (1)

There will be no abnormal load movements to the site.

Construction Traffic

Construction traffic will comprise the construction workers (cars) and HGVs / LGVs carrying construction materials.

Construction traffic will be typical of a residential development site. It is expected that the majority of HGV movements to the site will occur during the initial construction phases of the development and will consist of 18T HGV, i.e., during groundworks, drainage and service installation, concrete, masonry deliveries.

During this period it is anticipated that there will be a total of 15 HGV trips to the site (30 two-way movements), and 15 light vehicle trips to the site (30 two way movements) associated with construction workers.

Construction worker travel will typically occur outside of peak hours on the local road network, with operatives typically arriving before 08:00, and leaving from 16:00 onwards.

Access Routes

It is proposed to restrict HGV deliveries to the most suitable routes, in order to minimise the impact to the local community.

The suggested access routes are shown **Figure 7.3.** HGVs would be restricted to the R617 (from both east and west), Station Road between the R617 and the site (initially), and then the new spine route through the site. HGVs would not be permitted on Station Road to the north of the site, or along Castle Close Lawn, where the Secondary School is located.

Construction traffic for Phase 2 will access the site from the Station Road access initially whilst the R617 access and haul road is constructed. Once this is complete the R617 access will be the main point of access for construction traffic.

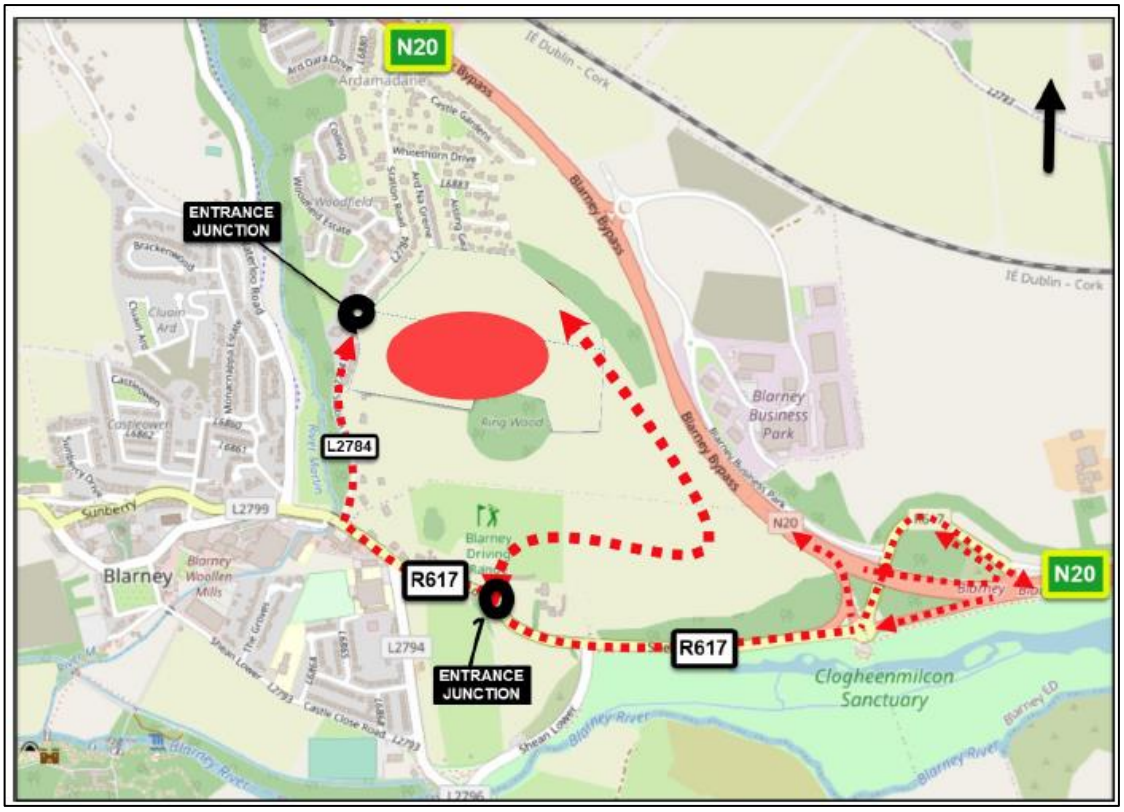


Figure 7.3: Construction Routes

The details of the proposed construction routeing will be agreed with CCC, prior to commencement of construction works, with the national road network being used as much as possible. The use of these designated routes can be written into Contractor obligations, and compliance can be assured through observations and monitoring.

Table 7.5 shows the predicted daily percentage impact on the road links on the proposed construction routes, conservatively assuming that all construction traffic travels on each road link. For the purpose of assessment, all construction traffic has been applied to both accesses.

Ref	Road Link	Base 2028			Construction Traffic			Impact		
		HGV	LV	Total	HGV	LV	Total	HGV	LV	Total
1	Station Road north of site access	208	5,972	6,180	0	0	0	0.0%	0.0%	0.0%
2	Phase 1 Site Access	19	1,852	1,871	30	30	60	160.3%	1.6%	3.2%
3	Station Road between Phase 1 and R617	193	7,672	7,865	30	30	60	15.6%	0.4%	0.8%
4	R617 west of Station Rd	714	16,384	17,098	30	30	60	4.2%	0.2%	0.4%
5	R617 between Station Rd and Castle Close Lawn	714	17,746	18,460	30	30	60	4.2%	0.2%	0.3%
6	Castle Close Lawn	120	7,264	7,383	0	30	30	0.0%	0.4%	0.4%
7	Phase 2 Site Access	0	0	0	30	30	60	-	-	-
8	R617 Convent Road between CCL and Phase 1A access	733	13,928	14,661	30	30	60	4.1%	0.2%	0.4%
9	R617 Convent Road between Phase 1A access and Lanes Cross	738	14,036	14,774	30	30	60	4.1%	0.2%	0.4%
10	Lanes Cross	113	5,687	5,800	0	30	30	0.0%	0.5%	0.5%
11	R617 between Lanes Cross and N20 interchange	836	19,180	20,016	30	30	60	3.6%	0.2%	0.3%
12	R617 underneath N20	531	11,106	11,638	30	30	60	5.6%	0.3%	0.5%
13	N20 NB on slip	346	3,338	3,684	30	30	60	8.7%	0.9%	1.6%
14	N20 WB off slip	281	5,704	5,985	30	30	60	10.7%	0.5%	1.0%

Table 7.5: Construction Impact

Table 7.5 shows that, in terms of overall traffic numbers, the biggest impact will be a 3.2% increase in traffic on the Phase 1 site access. Within this figure there will be a 160.3% increase in HGV flows however this number is due to low baseline HGV levels and the daily increase in HGV traffic is expected to be 30 vehicles. Elsewhere, predicted increases in HGV flows are below 10% on all links except Link 3 which shows an HGV impact of 15.6%.

With an expected increase in total traffic on all links of less than 4%, the effect of the construction phase is assessed to be short term and of negligible significance and therefore **Not Significant.**

Mitigation

Although not considered to be significant in EIAR terms, if not properly managed then construction traffic does have the potential to impact negatively on the local community, businesses, vulnerable travellers and road users.

Traffic impacts during the construction stage will be mitigated through the implementation of a Construction Traffic Management Plan (CTMP), which will be agreed with CCC. An Outline CTMP, which sets out the principles to be followed, has been prepared by MHL & Associates Ltd, submitted with this application. The CTMP sets out the principles by which construction traffic will be planned for, managed, and monitored, to ensure that any impacts on local communities, vulnerable users and road users, will be minimised as far as possible.

7.5.2 Operational Phase

Trip Generation

A person trip generation exercise for the proposed development was undertaken as part of the TA and is set out in Section 5 of that document. **Table 7.6** shows the predicted vehicle trip generation of the development, based upon the proposed 323 residential units, a primary care centre with GP services, retail pharmacy and cafe/restaurant. The figures below have been calculated using the mode split from the Census 2022 data with 5% commuter shift to active travel as agreed by CCC as part of Phase 1 assessment. The trip generation detailed in **Table 7.6** was based on a previous assumption of a slightly higher number of units (339) which has since been revised downwards. This chapter therefore provides a robust assessment of the impact of the proposed development.

As set out in the Cork Metropolitan Area Transport Strategy (CMATS), by 2030 there is expected to be a high quality, multi-modal transport network for trips to, from and within Blarney, including the proposed Rail Station and Park and Ride. The figures presented in the TA therefore represent a very robust assessment of future traffic levels.

Hour starting	Private Houses (veh trips)			Private Flats (veh trips)			Primary Care Centre			TOTAL VEH TRIPS		
	Arrive	Depart	Two-way	Arrive	Depart	Two-way	Arrive	Depart	Two-way	Arrive	Depart	Two-way
07:00	12	35	47	8	48	56	24	2	26	44	85	129
08:00	24	98	122	12	71	83	89	41	130	126	209	335
09:00	30	42	72	23	36	58	80	65	146	133	144	276
10:00	28	29	57	18	27	45	70	73	144	117	129	246
11:00	25	29	54	16	23	39	79	79	158	120	132	251
12:00	31	31	62	24	22	45	61	88	149	116	141	257
13:00	35	36	71	20	22	43	62	52	114	116	110	227
14:00	43	39	82	25	22	47	90	81	171	159	142	301
15:00	57	40	98	35	18	53	78	86	164	171	144	315
16:00	59	37	96	39	17	56	61	77	138	160	130	290
17:00	82	46	128	51	18	69	32	64	96	165	128	293
18:00	60	45	105	38	20	58	15	29	45	114	95	208
12-Hr Total	**488**	**507**	**995**	**309**	**344**	**653**	**742**	**737**	**1480**	**1539**	**1589**	**3128**

Table 7.6: Predicted Development Trips (Veh)

Table 7.6 shows that during the AM peak hours (08:00 – 09:00), the development is expected to generate a total of 335 two-way vehicle trips. In the PM peak hour (17:00 – 18:00), 293 trips are expected to be generated.

Traffic Distribution

New traffic demand to and from the development, as set out in **Table 7.6**, has been distributed through the network based upon the traffic splits observed in the 2025 surveys. This process is detailed in Section 6 of the TA.

Traffic Impact

Traffic flows have been calculated for the following scenarios:

- Do Minimum 2028 (Year of Opening)
- Do Something 2028
- Do Minimum 2043 (Year of Opening + 15)
- Do Something 2043
- Background traffic growth, along with traffic from committed developments and Phase 1 traffic has been added to the 2025 survey totals to create the future year **Do Minimum scenarios.**

Traffic growth between 2025, 2028 and 2043 has been calculated using trip-end totals from the CMATS Regional Traffic Model, which suggest the following factors within the Cork Metropolitan area:

- 2025-2028 – 1.8%.
- 2022-2043 – 8.5%.

These applied factors are considered to be robust, particularly when considered against the over-arching objectives of CMATS and Climate Action Plan 2025 to reduce traffic levels over the same period.

The resultant increase in traffic as a result of applying this growth is seen by SYSTRA as a proxy for traffic created by developments in Blarney that are included in the CDP.

In addition to background traffic growth, traffic from two committed developments in the Blarney area has been added to Baseline totals. These developments are subject to consented or ongoing planning applications:

- Monacnapa SHD, a consented development of 113 units that would be accessed from Sunberry Heights on the R617, to the west of Station Road. It is noted that this development was refused permission by ACP on the 7th November 2025, however to provide a robust assessment considering the potential for a resubmission of a similar scheme in the future the traffic flows for this scheme have been left in; and
- The Glean Fia development in Tower, which would be accessed from Bawnafinny, to the south-east of Tower.

Projected AADT flows for the Base and future year Do Minimum Scenarios is provided in **Table 7.7**.

Ref	Road Link	2025 Base		2028 DM		2033 DM		2043 DM	
		AADT	HV %	AADT	HV %	AADT	HV %	AADT	HV %
1	Station Road north of site access	5,914	3%	6,180	3%	6,313	3%	6,577	3%
2	Phase 1 Site Access	0	1%	1,871	1%	1,871	1%	1,871	1%
3	Station Road between Phase 1 and R617	6,099	2%	7,865	2%	8,001	2%	8,274	2%
4	R617 west of Station Rd	15,812	4%	17,098	4%	17,452	4%	18,159	4%
5	R617 between Station Rd and Castle Close Lawn	16,270	4%	18,460	4%	18,824	4%	19,551	4%
6	Castle Close Lawn	6,695	2%	7,383	2%	7,533	2%	7,833	2%
7	Phase 2 Site Access								
8	R617 Convent Road between CCL and Phase 1A access	13,113	5%	14,661	5%	14,954	5%	15,541	5%
9	R617 Convent Road between Phase 1A access and Lanes Cross	13,215	5%	14,774	5%	15,070	5%	15,659	5%
10	Lanes Cross	5,709	2%	5,800	2%	5,928	2%	6,181	2%
11	R617 between Lanes Cross and N20 interchange	18,402	4%	20,016	4%	20,427	4%	21,250	4%
12	R617 underneath N20	10,784	5%	11,638	5%	11,879	5%	12,361	5%
13	N20 NB on slip	3,423	9%	3,684	9%	3,761	9%	3,914	9%
14	N20 WB off slip	5,486	5%	5,985	5%	6,107	5%	6,353	5%

Table 7.7: Base and Do Minimum AADT Link Flows

The **Do Something scenarios** represent the Do Minimum scenarios, with traffic from the Phase 2 development added.

The development contribution to the future year link flows on the wider local road network is shown in **Table 7.8.**

Ref	Road Link	IEMA Threshold	2028 DM + Phase 2			2033 DM + Phase 2			2043 DM + Phase 2		
			AADT	Increase	% Impact	AADT	Increase	% Impact	AADT	Increase	% Impact
1	Station Road north of site access	10%	6,551	371	6.0%	6,685	373	5.9%	6,953	376	5.7%
2	Phase 1 Site Access	10%	3,447	1,576	84.2%	3,491	1,620	86.6%	3,578	1,707	91.2%
3	Station Road between Phase 1 and R617	10%	5,210	-2,654	-33.8%	5,303	-2,698	-33.7%	5,489	-2,785	-33.7%
4	R617 west of Station Rd	10%	17,705	607	3.6%	18,059	607	3.5%	18,766	607	3.3%
5	R617 between Station Rd and Castle Close Lawn	10%	15,817	-2,643	-14.3%	16,151	-2,672	-14.2%	16,819	-2,732	-14.0%
6	Castle Close Lawn	10%	7,500	117	1.6%	7,650	117	1.5%	7,949	117	1.5%
7	Phase 2 Site Access	10%	4,746	4,746		4,789	4,789		4,876	4,876	
8	R617 Convent Road between CCL and Phase 1A access	10%	12,956	-1,705	-11.6%	13,219	-1,735	-11.6%	13,746	-1,795	-11.5%
9	R617 Convent Road between Phase 1A access and Lanes Cross	30%	16,635	1,860	12.6%	16,930	1,860	12.3%	17,520	1,861	11.9%
10	Lanes Cross	10%	6,327	527	9.1%	6,455	527	8.9%	6,708	527	8.5%
11	R617 between Lanes Cross and N20 interchange	30%	21,349	1,334	6.7%	21,761	1,333	6.5%	22,584	1,334	6.3%
12	R617 underneath N20	30%	12,340	702	6.0%	12,581	702	5.9%	13,063	702	5.7%
13	N20 NB on slip	30%	3,917	232	6.3%	3,993	232	6.2%	4,147	232	5.9%
14	N20 WB off slip	30%	6,402	417	7.0%	6,525	417	6.8%	6,770	417	6.6%

Table 7.8: AADT Link Flows & Development Contribution

The figures in **Table 7.8** show that the predicted impacts of the development are below 10% on all links in the study area, with the exception of Link 2, the Phase 1 access on Station Road and Link 9, the R617 between the Phase 2 access and Lanes Cross. The latter is still under the IEMA threshold of 30% as indicated in the table. A detailed assessment of the Phase 1 access road has been undertaken and is presented below.

7.6 Detailed Assessment

7.6.1 Severance

Description

The IEMA Guidelines advise that "Severance is the perceived division that can occur within a community when it becomes separated by a major traffic artery".

The potential for traffic associated with the proposed development to cause severance is assessed on a case-by-case basis using professional judgement where traffic increases are predicted on roads through residential settlements. Increased severance can result in the isolation of areas of a settlement or individual properties. Severance may result from the difficulty of crossing a heavily trafficked road or a physical barrier created by the road itself. Severance effects could equally be applied to residents, motorists or pedestrians.

Assessment

With reference to **Table 7.1**, the sensitivity of Link 2 to changes in traffic levels is considered to be low for severance, due to the Phase 1 signal controlled junction on Station Road which will provide full pedestrian and cycle signal controlled crossing facilities where none currently exist, plus the internal development layout which will provide segregated high quality cycle tracks and footways.

With reference to **Table 7.2**, the magnitude of change in total traffic on Link 2 would generally be considered to be major as the increase is between 84% and 91%, however this large percentage increase represents the Phase 2 traffic for which this access link road was purposefully designed and built for, and with the Phase 1 infrastructure noted above in place it can be deemed that the magnitude of impact will be minor. When the minor magnitude of impact is combined with the low sensitivity of the receptor in accordance with **Table 7.3**, it can be concluded that there will be a long-term, minor severance effect, which is considered to be **Not Significant** in accordance with the EIA regulations.

Severance				
Link	**Description**	**Sensitivity**	**Magnitude of Impact**	**Significance of Effect**
2	**Phase 1 access road**	**Low**	**Minor**	**Minor and Not Significant**

7.6.2 Driver Delay

Description

IEMA Guidelines advise "*delays are only likely to be significant when the traffic on the network surrounding the development is already at, or close to, the capacity of the system*".

Assessment

The sensitivity of Link 2 to an increased driver delay effect is considered to be low in accordance with **Table 7.1.** As noted previously, the access road is an integral part of the development and as such has been designed and developed with the anticipated traffic flows in mind.

With reference to **Table 7.2**, the magnitude of change in total traffic on Link 2 would generally be considered to be major as the increase is between 84% and 91%, however this large percentage increase represents the Phase 2 traffic for which this access link road was purposefully designed and built for, and with the Phase 1 infrastructure noted above in place it can be deemed that the magnitude of impact will be minor.

Combining the minor magnitude of the change with the low sensitivity of the receptor in accordance with **Table 7.3** equates to an effect which is classed as long-term, minor and **Not Significant** as per the EIA Regulations.

Driver Delay				
Link	**Description**	**Sensitivity**	**Magnitude of Impact**	**Significance of Effect**
2	**Phase 1 access road**	**Low**	**Minor**	**Minor and Not Significant**

7.6.3 Pedestrian Delay and Amenity

Description

Traffic volumes, traffic composition, traffic speed, the existence of pedestrian footways and the existence of pedestrian crossings all contribute to the level of general pleasantness experienced by pedestrians and other vulnerable road users.

Assessment

Link 2, the Phase 1 access road features the following active travel provisions:

- An internal site layout that is DMURS compliant, featuring high-quality walking and cycling facilities.
- Segregated cycle tracks; and
- Full pedestrian and cycle signal controlled crossing at the Station Road junction.

The sensitivity of Link 2 to an increased pedestrian delay and reduced amenity effect is considered to be low in accordance with **Table 7.1**, due to the active travel features listed above. With reference to **Table 7.2**, the magnitude of change in total traffic on Link 2 would generally be considered to be major as the increase is between 84% and 91%, however this large percentage increase represents the Phase 2 traffic for which this access link road was purposefully designed and built for, and with the Phase 1 infrastructure noted above in place it can be deemed that the magnitude of impact will be minor.

Combining the minor magnitude of impact with the low sensitivity of the link in accordance with the matrix in **Table 7.3**, it is considered that increased traffic associated with the proposed development will have a long-term, minor effect on pedestrian delay and amenity. This effect is assessed as **Not Significant** in accordance with the EIA Regulations.

Pedestrian Delay and Amenity				
Link	**Description**	**Sensitivity**	**Magnitude of Impact**	**Significance of Effect**
2	**Phase 1 access road**	**Low**	**Minor**	**Minor and Not Significant**

7.6.4 Accidents and Safety

Description

A high-level calculation has been undertaken to quantify the increased level of accident risk that could be expected due to an increase in traffic associated with the proposed development. The likelihood of an accident occurring is commonly expressed in terms of 'accidents per million vehicle-km'. Accidents that are appraised in relation to transport are predominantly those in which personal injury is sustained by those involved (personal injury accidents (PIAs)).

Assessment

Link 2 leads into both Phase 1 and Phase 2 of the development from the site access junction on Station Road. For the purpose of assessment, a length of 200m has been assumed, and can be classified as 'urban

typical single carriageway' in accordance with the criteria set out within DMRB. Accident rates from the DMRB for this standard of road are:

- Urban typical single carriageway: 0. 844 PIA per million vehicle km.
- The annual calculated increase in PIA as a result of the development is 0. 105 PIA per year, which equates to one additional PIA over a ten-year period.
- Receptor sensitivity for Accident and Safety effects is always considered as high. The assessed magnitude of this effect is negligible. When combined, the effect can be classified as long-term, minor and **Not Significant.**

Accidents and Safety				
Link	**Description**	**Sensitivity**	**Magnitude of Impact**	**Significance of Effect**
2	**Phase 1 access road**	**High**	**Negligible**	**Minor and Not Significant**

7.6.5 Conclusion

In conclusion, all of the impacts of the scheme have been assessed as **Not Significant** in accordance with the EIA Regulations.

7.7 Cumulative Effects

The cumulative developments that have been considered in this assessment are presented in **Table 7.9**.

REF	LOCATION	COMMENT
1. Ringwood	Phase 1 of residential development at Ringwood granted permission by An Coimisiún Pleanála on the 6th May 2025 subject to 25no. planning conditions. The permitted development is for the construction of 246no. residential units on zoned lands directly to the south of the subject site.	Initial site development works currently ongoing. Included within the assessment as a Committed Development, and included in Base flows.
2. Monacnapa	Application Register Reference: ABP-312893-22. Permission was granted for 113no. residential units at Monacnapa, Blarney, Co. Cork on 19th July 2022 (143no. units were applied for but Condition No. 2 of the grant of permission for this development omitted 30no. Apartments). This permission was quashed by the courts and remitted back to the Commission under An Coimisiún Pleanála - Case reference: TA28.319963.	Refused permission by ACP on the 7th November 2025. For a robust assessment the development has been included as a Committed Development and included in Base flows assuming there is potential for resubmission of a similar scheme in the future.

3. N / M20 National Road	The N/M20 scheme is to deliver a high-quality transport link connecting Cork and Limerick. Consultants were appointed in 2019 to bring the scheme through phases 1-4 of project development to secure planning permission. The Phase 3 Design and Environmental Evaluation stage of the project is currently progressing, and the proposed mainline corridor has been reduced to 200m. A planning application for the project will be submitted to An Coimisiún Pleanála in 2026 as part of Phase 4.	No works have commenced as yet. A junction capacity assessment of the new junction design has been included within the Transport Assessment. The assessment predicts that the reconfigured junction will operate below capacity in all scenarios, with and without the Phase 2 development.
4. Blarney / Stoneview	Cork Area Commuter Rail Project which is being progressed by Iarnród Éireann through a number of separate but interrelated projects which will be delivered in specific work packages which will be subject to a future Railway Order to An Coimisiún Pleanála. Phase 2 of the Project focuses on proposals for eight new stations for Cork, three station upgrades, a new depot, and full electrification of the Cork rail network. One of the 8 new stations is to be located at Blarney/Stoneview to the northeast of the subject site. Further Phase 2 works include the provision of a Strategic Park and Ride at Blarney/Stoneview. The capacity of the Strategic Park and Ride facility will be in the range of 400 – 600 spaces which will include Mobility Impaired Parking located close to the station entrance, standard car parking, motorcycle parking and bicycle parking including secure bicycle lockers.	No works have commenced as yet. Subject to Railway Order to An Coimisiún Pleanála. Longer-term project not considered within this assessment. The effects of the proposed Rail Station will be the subject of a detailed planning application in the future.

Table 7.9: Base and Do Minimum AADT Link Flows

On this basis, the remaining in-combination effects are assessed as **Not Significant** in accordance with the EIA Regulations.

7.8 Mitigation Measures

This assessment concludes that the proposed development will not have a significant effect on the local road network during the operational phase.

A Mobility Management Plan has also been prepared by SYSTRA and is included in the Transport Assessment (as part of the planning application submission), as a 'best practice' measure, to accompany the planning application.

The aim of the Mobility Management Plan is to minimise the proportion of single occupancy vehicle trips and address the forecast transport impacts of the end-users of the subject site. These mobility measures will also support and enable those residents who may be living 'car-free' providing them with a range of sustainable mobility options and negating the need to own a car. These measures are primarily focussed on encouraging walking, cycling and the use of public transport and can be broadly summarised into the following groups:

- Appointing a Mobility Manager.
- Provision of a Welcome Travel Pack for residents.
- Measures to encourage walking, such as the provision of clear signage and maps throughout the site.
- Measures to encourage cycling, including the provision of bike hire hubs on the site, and the provision of cycling signage and maps, showing cycle times to key destinations.
- Measures to encourage Public Transport use, including liaising with local bus operators regarding bus scheduling, routes and school travel.
- The development will be designed to complement and support future transport initiatives such as such as Cork Bus Connects and the Blarney Rail Station.

7.9 Monitoring

A Mobility Manager will be appointed from within the management company to ensure the implementation and monitoring of the Mobility Management Plan. They will act as a point of contact for residents for all mobility and access related issues.

7.10 Residual Effects

Residual impacts are defined as '*effects that are predicted to remain after all assessments and mitigation measures*'. They are the remaining 'environmental costs' of a project and are the final or intended effects of a development after mitigation measures have been applied to avoid or reduce adverse impacts. Potential residual impacts from the Proposed Development were considered as part of this environmental assessment.

With the Mobility Management Plan in place, the residual impact of the Phase 2 Proposed Development will be 'not significant', in terms of the development in isolation.

7.11 Conclusion

The assessment has found that there will no significant negative impact in terms of Traffic and Transportation.

7.12 References

- Design Manual for Urban Roads and Streets (DMURS), (2019).
- Environmental Protection Agency (2022) Guidelines on the Information to be Contained in Environmental Impact Assessment Reports (Draft).
- Institute of Environmental Management and Assessment (IEMA) Guideline: 'Environmental Assessment of Traffic and Movement (IEMA, 2023);
- Government of Ireland, Project Ireland 2040 – National Planning Framework.
- Project Appraisal Guidelines for National Roads Unit 5. 1 - Construction of Transport Models, October 2016, TII.
- Project Appraisal Guidelines for National Roads Unit 5. 3 – Travel Demand Projections, October 2016, TII.
- Transport Infrastructure Ireland (TII) (2014), Traffic and Transport Assessment Guidelines.
- National Cycle Manual (NTA, 2023).

8.0 AIR QUALITY

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8.1 Introduction

This chapter of the EIAR has been prepared by DKP Environmental to identify and assess the potential air quality impacts that the proposed development at Ringwood Blarney may have on the receiving environment during the construction and operational phases of the project. The assessment includes a description of the existing air quality at the subject site, a description and assessment of how the construction phase and the operational phase of the development may impact air quality and the mitigation measures that will be implemented to control and minimise the impact that the development may have on local air quality.

8.2 Approach and Methodology

8.2.1 Guidance and Policy Context

The list of standards and guidance documents below were used to review the baseline conditions and in the assessment of potential impacts on the existing environment:

- Environmental Impact Assessment of Projects Guidance on the preparation of the Environmental Impact Assessment Report, EU, 2017
- Guidelines on the information to be contained in Environmental Impact Assessment Reports (EIAR) (EPA 2022)
- Advice Notes on Current Practice in the preparation of Environmental Impact Statements (2003), EPA.
- Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment August 2018
- Air Quality in Ireland 2020-2024 – Indicators of Air Quality (EPA reports)
- Institute of Air Quality Management (IAQM) Guidance on the Assessment of Dust from Demolition and Construction (IAQM 2024)
- Transport Infrastructure Ireland (TII) Air Quality Assessment of Proposed National Roads – Standard 2022

The assessment on air quality impacts first identifies Irelands national air quality network, detailing relevant air quality standards with a review of air quality around the development site using established long term EPA monitoring. An assessment of the impact on air quality during the construction phase and operational phase is outlined. Air quality impacts during the construction phase follows the approach outlined by the UK Institute of Air Quality Management (IAQM). The main considerations for potential air quality impacts during the construction phase involve dust deposition. The assessment also includes detailed recommended mitigation methods for controlling potential dust and air quality pollution.

For the operational phase the assessment focuses on the potential impacts of emissions from increased traffic. Predictive calculations have been performed to assess the potential air quality impacts associated with traffic alterations associated with the operational phase. The assessment compares changes in pollutant concentrations between the Do Minimal (without the proposed development) and Do Something (with the proposed development) scenarios.

8.2.2 Air Quality Standards Regulations

To reduce the risk of poor air quality impacts, National and European statutory bodies have set limit values in ambient air for a range of air pollutants. EU directives set baseline standards for monitoring air quality and reducing emissions. The applicable standards in Ireland are the national Air Quality Standards Regulations 2022 (S.I No. 739 of 2022) which incorporate the ambient air quality limits set out in 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 (CAFÉ Directive) which has set limit values for a number of pollutants. These limits are for the protection of human health and are presented in Table 8.1. Air quality significance criteria are assessed on the basis of compliance with the standards.

Pollutant	Limit Value Objective	Averaging Period	Limit Value µg/m^3	Limit Value ppb	Basis of Application of the Limit Value
Sulphur Dioxide (SO_2)	Protection of human health	1 hour	350	132	Not to be exceeded more than 24 times in a calendar year
SO_2	Protection of human health	24 hours	125	47	Not to be exceeded more than 3 times in a calendar year
SO_2	Protection of vegetation	calendar year	20	7.5	Annual mean
SO_2	Protection of vegetation	1 Oct to 31 Mar	20	7.5	Winter mean
Nitrogen Dioxide (NO_2)	Protection of human health	1 hour	200	105	Not to be exceeded more than 18 times in a calendar year
NO_2	Protection of human health	calendar year	40	21	Annual mean
NO + NO_2	Protection of ecosystems	calendar year	30	16	Annual mean
Particulate Matter (PM_{10})	Protection of human health	24 hours	50		Not to be exceeded more than 35 times in a calendar year
PM_{10}	Protection of human health	calendar year	40		Annual mean
Particulate Matter ($PM_{2.5}$) Stage 1	Protection of human health	calendar year	25		Annual mean
$PM_{2.5}$ Stage 2	Protection of human health	calendar year	20		Annual mean
Lead	Protection of human health	calendar year	0.5		Annual mean
Carbon Monoxide (CO)	Protection of human health	8 hours	10,000	8620	Not to be exceeded
Benzene	Protection of human health	calendar year	5	1.5	Annual mean

Table 8.1: Air quality standards regulations (S.I.180 of 2011).

8.2.3 National Air Quality Network

The EPA is the authority with responsibility for ambient air quality monitoring in Ireland and measures the levels of a number of atmospheric pollutants. Ambient air quality monitoring is carried out in accordance with the requirements of the CAFE Directive which has been transposed into Irish national legislation by the Air Quality Standards Regulations 2011. For the purposes of detailing ambient air quality in Ireland, it is divided into four zones: Zone A: Dublin, Zone B: Cork, Zone C: Other cities and large towns, Zone D: Rural Ireland. In Ireland, the network is managed by the EPA in partnership with Local Authorities and other public/semi-state bodies. A series of monitoring stations are located across the country, these stations collect air quality data for public information. The proposed development site is located within Zone B, Cork. The EPA monitor at local sites and national sites.

8.2.4 World Health Organisation (WHO) Air Quality Guidelines

In Ireland the Government published the Clean Air Strategy for Ireland (April 2023), which provides a high-level strategic policy framework needed to reduce air pollution. The plan commits Ireland to achieving the WHO Air Quality Guidelines Interim Target 3 (IT3) by 2026, the IT4 targets by 2030 and the final targets by 2040. See Table 8.2 taken from the WHO global air quality guidelines 2021 for $PM_{2.5,}$ PM_{10} and NO_2.

Pollutant	Averaging time	Interim target				Air Quality Guidelines (AQG) Level
		1	2	3	4	
$PM_{2.5}$	Annual	35	25	15	10	5
	24-hour	75	50	37.5	25	15
PM_{10}	Annual	70	50	30	20	15
	24-hour	150	100	75	50	45
NO_2	Annual	40	30	20	-	10
	24-hour	120	50	-	-	40

Table 8.2: WHO global air quality guidelines 2021.

The WHO's air quality guidelines (AQG) serve as a global target for national, regional and city governments to work towards. In general Ireland has work to do to meet our Clean Air Strategy targets. It can be seen that the WHO AQGs will be challenging for Ireland to meet. The EPA Air Quality in Ireland Report 2024 states "Ireland also continues to fall well short of achieving the more stringent World Health Organization (WHO) health-based 2040 guidelines for several key pollutants.

8.2.5 Cork City Council Development Plan 2022-2028

In line with the new development plan prepared for Cork City for the period 2022-2028, the Council has set specific objectives related to air quality. Objective 9.18 reflects the commitment of the Council to:

- *To protect and improve air quality in Cork City in accordance with the provisions of EU Directives and national legislation on air pollution and support the actions of the City Council's Air Quality Strategy 2021-2026, and its successors.*
- *To continue to monitor air quality results submitted from selected locations throughout the City in co-operation with the Environmental Protection Agency and support the creation of a regional air quality and greenhouse gas emissions inventory.*

8.2.6 Dust Deposition Guidelines

The concern from a health perspective is focussed on particles of dust which are less than 10 microns (PM_{10}) and less than 2.5 microns ($PM_{2.5}$). The EU ambient air quality standards 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. 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/(m2*day) averaged over a one-month period at any receptors outside the site boundary.

The construction air quality assessment will follow the procedure, based on the proximity of receptors and baseline conditions in accordance with the IAQM published in their recommendation in the Guidance on the Assessment of Dust Emissions from Demolition and Construction (2024). The use of UK guidance is considered best practice in the absence of applicable Irish guidance.

8.2.7 Construction Phase Dust Assessment Methodology

The Construction Phase dust assessment was conducted in accordance with the IAQM Guidance on the Assessment of Dust from Demolition and Construction (2024) which classifies demolition and construction sites according to the risk of impacts and recommends appropriate mitigation measures that are appropriate to the risk. The guidelines outline a 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 Guidance also defines the assessment criteria for determining the sensitivity of the area to dust-related impacts. The guidance states that dust impacts can occur up to 50m from the site and 50m from site access roads, up to 250m for the site entrance. This is examined further in the impact section.

Construction phase dust sensitive receptors: For the purpose of the Construction Dust Risk Assessment, a human receptor denotes any site where individuals could be subject to the health consequences of airborne particulate matter or disturbances in amenity or properties from dust deposition. An ecological receptor pertains to sensitive habitats that might be influenced by both airborne dust emissions and dust soiling. Proxies are used to represent the most prominent/closest receptors to the Proposed Development. More than 100 human receptors and 1no. ecological receptor were identified at varying distances to the redline boundary and the primary access route. This is discussed further in the construction dust impact assessment.

8.2.8 Operational Phase Dust Assessment Methodology

The assessment of operational phase air quality was conducted with regard to Transport Infrastructure Ireland (TII) guidance document entitled Air Quality Assessment of Specified Infrastructure Projects (2022) which refers to the following road scenarios which may affect local air quality; 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; and or a change in road alignment by 5m or greater. The air quality assessment assessed the changes in concentrations at

sensitive receptors within 200m of the identified traffic links. The assessment has been carried out following procedures described in the guidance documents published by the UK Highways Agency. TII reference the use of the UK Highways Agency guidance and methodology in their document Guidelines for the Treatment of Air Quality During the Planning and Construction of National Road Schemes (2024). The TII guidance states that the assessment must progress to detailed modelling if: Concentrations exceed 90% of the air quality limit values when assessed by the screening method; or Sensitive receptors exist within 50m of a complex road layout (e.g. grade separated junctions, hills etc).

The Design Manual for Roads and Bridges (DMRB) quality spreadsheet was used for the majority of assessments in Ireland with detailed modelling only required if this screening tool indicated compliance issues with the EU air quality standards. The DMRB spreadsheet tool was last revised in 2007 and accounts for modelled years up to 2025 and the model does not account for electric or hybrid vehicle use. However, the LA 105 guidance document (UK Highways Agency DMRB air quality guidance was revised with LA 105 Air Quality 2024) states that the DMRB spreadsheet tool may still be used for modest air quality assessments where there is unlikely to be a breach of the air quality standards. Due to its use of a dirtier fleet, vehicle emissions would be considered to be higher than more modern models and therefore any results will be conservative in nature and will provide a worst-case assessment. The impact of NO_2 and PM emissions for the operating year was predicted at sensitive receptors to the development. TII's document Guidelines for the Treatment of Air Quality during the Planning and Construction of National Road Schemes (2024) detail a methodology for determining air quality impact significance criteria for road schemes and this can be applied to any development that causes a change in traffic. The analysis considered both the Do-Minimum (without the Proposed Development) and the Do-Something Scenario (with the Proposed Development) against the specified baseline. Results are compared in order to determine the degree of impact.

Operational phase sensitive receptors

Human receptors

In the local air quality assessment, receptors sensitive to air quality within 200m of the relevant traffic links were considered. Locations to represent the most prominent receptors to the Proposed Development was examined, 3no. receptor points were modelled for the operational phase in order to predict the impact of NO_2 and PM emissions. This is discussed further in the operational phase impact assessment.

Ecological receptors

Receptors which are sensitive to potential impacts from NOx, nitrogen deposition and ammonia have been included in this assessment. The assessment of NOx and N deposition follows the stepped approach outlined in the TII Guidance (2022). As far as practicable the EPA's Licence Application Instruction Note (IN1) on the Assessment of Impact of Ammonia and Nitrogen on Natura 2000 sites from Intensive Agriculture Installations (EPA 2023) was also followed. This guidance relates to agricultural activities for licensable activities to determine the impacts on Natura 2000 sites (European Protected Sites). The emissions associated with the Proposed Development are not licensable and will not have an effect on Natura 2000 sites, due to their distance from the Proposed Development. However, as this guidance

represents one of the few Irish Guidance's which address critical loads and levels for protected sites, the screening criteria will be followed as far as practicable. No European designated sites are situated within 2km of the proposed development route network. Receptors points for Ardamadane Wood were included however. This is discussed further in the operational phase impact assessment.

In the absence of specific Irish guidelines, a conservative approach was taken by adopting background levels of ammonia, NOx, and nitrogen deposition from the APIS. The following critical thresholds were identified for this assessment based on a review of available guidance (IAQM 2020, CIEEM 2021, EPA 2023): Nitrogen Deposition (critical load): 10kg N/ha/year and 20kg N/ha/year; Nitrogen oxides (NOx) (critical level): 30µg/m3; and, Ammonia (critical level): 3µg/m3. Based on the Ardamadane wood pNHA site synopsis provided by National Parks and Wildlife Service (NPWS N.D), an ammonia critical level of 3µg/m3 was considered appropriate (EPA 2023, IAQM 2020). While the APIS and EPA suggest a range of 10-20kg N/ha/year as a critical load for nitrogen deposition in woodland environments. An average of the 10-20kg N/ha/year thresholds (15kg N/ha/year) was adopted in this assessment, despite not holding European protected status.

8.2.9 Traffic Study Area

Traffic flow information was obtained from Systra Group for the purposes of the operational phase assessment focusing on links associated with the proposed development (Phase 2). The collected data includes the baseline, opening and design periods under both the Do-Minimal (without the proposed development) and Do-Something (with the proposed development) scenarios. Traffic links were identified and screened for inclusion within the operational phase assessment. Predicted concentrations of NO_2, and PM_{10} concentrations were calculated at sensitive receptors.

8.3 Receiving Environment

The proposed development site at Ringwood, Blarney is approximately 8km from Cork City centre. The development site is bordered to the north and west by existing residential dwellings. To the east and north east is heavy woodland and further east is the N20 road. Phase 1 of this project is located south and further south is agricultural fields. The development area is located within an area which includes sources of transportation related air emissions principally from the N20 Road and R617 Road and local sources of domestic heating from nearby residential housing. The main concern for potential future residents is the traffic derived pollutants NO_2 and PM. The site is not in any immediate location (<2.5km) of facilities that generate industrial emissions on a large scale. However other sources of emissions to air in the vicinity of the site include the following listed in Table 8.3.

Licence Number	Name of organisation	Activities associated	Distance to proposed development
P0218	Dulux Paints Ireland Ltd	The manufacture of paints and varnishes	5.7km (southeast)
P0251	Rothbury Manufacturing Ltd	Dyeing, treatment and finishing of textiles	5.9km (southeast)
PO615	True Temper Ltd	The processing of steel in forges	7.8km (northeast)
P0262	MMF Ltd	The rearing of pigs in installations	9.5km (northwest)

Table 8.3: EPA licenced facilities located within 10km of the proposed development.

Organisations mentioned in Table 8.3 above fall outside the 350m maximum extent for dust-generating activities to impact nearby receptors, identified by the IAQM guidelines. The nearest point of emission source from the proposed development, Dulux Paints Ltd, operate within their emission limits, with no reported exceedances according to the EPA's Inspectors report. Therefore, the potential for cumulative emissions associated with nearby IEL licence sites are considered not significant and will not be considered any further.

8.3.1 Background Air Quality Monitoring Results (EPA)

The EPA publish annual reports on air quality in Ireland. These reports can be accessed via the EPA website at www.epa.ie. The most current EPA report Air Quality in Ireland 2024 has been examined in order to help describe the existing air quality conditions and to provide information on background concentrations. The proposed residential development site is located within Zone B, the Cork conurbation. The EPA monitor locally and nationally. These monitoring stations give people a rapid and up-to-date data of air quality in their locality. The 4 no. of closest EPA air quality monitoring stations to the proposed development site is station 56 south link road, Cork Lower Glanmire Road, University College Cork and Heatherton Park, Cork. The ambient air quality data collected and reviewed for the purpose of this study focused on the principal substances NO_2 and PM with data shown in Table 8.4 and PM emission data shown in Table 8.5 and 8.6.

Station	Station Class	Pollutant (µg/m3)	Year 2024	2023	2022	2021	2020	5 year average	(S.I.180) - Annual limit for protection of human health
56 south link road (ca.8.5km southeast)	roadside location	Annual Mean NO_2	17.8	15.0	17.9	16.0	14.0	16.1	40
Cork Lower Glanmire Road (ca.7.6km southeast)	roadside location	Annual Mean NO_2	29.4	23.0	32.1	13.6*	11.0*	21.8	40
University College Cork (ca.6.4km southeast)	background location	Annual Mean NO_2	7.3	7.6	9.0	8.5	8.0	8.1	40
Heatherton Park, Cork (ca.8.8km southeast)	background location	Annual Mean NO_2	13.9*	14.7*	18.7*	13.6*	11.0*	14.4	40
Average Zone B in close proximity to site (per year average values)			17.1	15.1	19.4	12.9	11.0	-	40

Table 8.4: NO_2 annual mean value concentrations measured at nearby zone B sites from years 2024-2020.

*** Monitoring station does not record all ambient air quality parameters outlined in the Directive. Therefore, air quality in the receiving environment was assessed using the average annual mean value concentrations from all measured monitoring stations in Zone B for that year.**

Station	Station Class	Pollutant (µg/m3)	Year 2024	2023	2022	2021	2020	5 year average	(S.I.180) - Annual limit for protection of human health
56 south link road (ca.8.5km southeast)	roadside location	Annual Mean PM_{10}	11.7*	12.0*	15.8	18.0	15.0	14.5	40
Cork Lower Glanmire Road (ca.7.6km southeast)	roadside location	Annual Mean PM_{10}	13.8	13.2	14.1	14.2*	13.3*	13.7	40
University College Cork (ca.6.4km southeast)	background location	Annual Mean PM_{10}	11.7*	12.0*	14.0*	14.2*	13.3*	13.0	40
Heatherton Park, Cork (ca.8.8km southeast)	background location	Annual Mean PM_{10}	11.6	11.0	11.9	11.4	11.0	11.4	40
Average Zone B in close proximity to site (per year average values)			12.2	12.1	13.9	14.5	13.2	-	40

Table 8.5: PM_{10} annual mean value concentrations measured at nearby zone B sites from years 2024-2020.

*** Monitoring station does not record all ambient air quality parameters outlined in the Directive. Therefore, air quality in the receiving environment was assessed using the average annual mean value concentrations from all measured monitoring stations in Zone B for that year.**

Station	Station Class	Pollutant (µg/m3)	Year 2024	2023	2022	2021	2020	5 year average	(S.I.180) - Annual limit for protection of human health
56 south link road (ca.8.5km southeast)	roadside location	Annual Mean $PM_{2.5}$	6.4*	6.7*	8.0*	7.2*	7.5*	7.2	20
Cork Lower Glanmire Road (ca.7.6km southeast)	roadside location	Annual Mean $PM_{2.5}$	7.8	6.7*	8.0*	7.2*	7.5*	7.4	20
University College Cork (ca.6.4km southeast)	background location	Annual Mean $PM_{2.5}$	6.4*	6.7*	4.8	6.7	7.0	6.3	20
Heatherton Park, Cork (ca.8.8km southeast)	background location	Annual Mean $PM_{2.5}$	5.0	5.8	5.4	7.7	8.0	6.4	20
Average Zone B in close proximity to site (per year average values)			6.4	6.5	6.6	7.2	7.5	-	20

Table 8.6: $PM_{2.5}$ annual mean value concentrations measured at nearby zone B sites from years 2024-2020.

*** Monitoring station does not record all ambient air quality parameters outlined in the Directive. Therefore, air quality in the receiving environment was assessed using the average annual mean value concentrations from all measured monitoring stations in Zone B for that year.**

Current air quality trends in Ireland are currently good relative to other EU States. The ambient air quality pollutants of most concern on an EU-wide level are nitrogen dioxide and particulate matter. Nitrogen oxides are gaseous pollutants associated with traffic exhaust emissions. Nitrogen oxides include the gases nitrogen oxide (NO) and nitrogen dioxide (NO_2). Both pollutants are emitted to ambient air when petrol/diesel is burned. NO_2 is more important than NO from the EPA's point of view as its impact on health is higher. In terms of ambient air quality, the main source of nitrogen oxides in Ireland is road transport, with diesel vehicles producing more nitrogen oxides than petrol vehicles. PM consists of small particles that are suspended in the air. There are two main types, PM_{10} (diameter less than 10µm) and $PM_{2.5}$ (diameter less than 2.5µm). There are many sources of PM, in Ireland the dominant sources of PM from human activities are solid fuels used in home heating in winter and the transport sector.

8.3.2 Review of Available Background Monitoring Data

The existing ambient air quality in the vicinity of the site has been characterised with information obtained from the EPA's Annual Air Quality in Ireland Reports 2024-2020. The existing ambient air quality at and in the vicinity of the site is typical of a town location. Domestic heating sources and road traffic are identified as the main contributors to emissions to ambient air quality with the recent EPA's report on air quality in Ireland 2024 the report suggests that the burning of fossil fuels and road traffic are the principal sources of air pollution in Ireland. The review of EPA data of pollutants show air quality parameters are all well below the air quality limit values. It can be seen that the existing baseline air quality at the site locality can be characterised as being good with no exceedances of the current National Air Quality Standards Regulations limit values of individual pollutants.

- Long term NO_2 average results range from 8.1 – 21.8µg/m3, for this five year period long term average NO_2 concentrations are significantly below the annual average limit of 40µg/m3. A conservative estimate of the current background NO_2 concentration for the region of the proposed development is 15.1µg/m3.
- Long term PM_{10} average results range from 11.4 – 14.5µg/m3, for this five year period long term average PM_{10} concentrations are significantly below the annual average limit of 40µg/m3. A conservative estimate of the current background PM_{10} concentration for the region of the proposed development is 13.2µg/m3.
- Long term $PM_{2.5}$ average results range from 6.3 – 7.4µg/m3, for this five year period long term average $PM_{2.5}$ concentrations are significantly below the annual average limit of 20µg/m3. A conservative estimate of the current background $PM_{2.5}$ concentration for the region of the proposed development is 6.8µg/m3.

WHO Guidelines

The findings of the long-term baseline data show that the proposed development site has met the current EU legal air quality limits in 2024, 2023, 2022, 2021 and 2020. In Ireland the Clean Air Strategy Ireland committed to achieving the WHO guideline values by 2040, with interim targets for 2026 and 2030. Based on the summary findings in Table 8.4 to 8.6 above, IT3 (2026) & IT4 (2030) targets are achieved for PM_{10} and $PM_{2.5}$, the final target for 2040 has not been achieved based on the recent 2024 average findings. Current NO_2 findings and annual estimate for the proposed site has met the current EU legal air quality limits and IT3 (2026) targets are achieved, however the data suggests an exceedance with the IT4 (2030) targets and final T (2040) target. Achieving the WHO targets is a national concern. In terms of outdoor ambient air quality, the main source of NO_2 in Ireland is road transport, other forms of transport and

stationary sources also contribute to emissions. For road transport, diesel engines emit more NO_2 than petrol engines. Other sources of NO_2 include electricity and heat production.

8.3.3 Meteorological Data

The meteorological station closest to the proposed site collecting detailed weather records is Cork Airport, which is located approximately 11km southeast of the site. The long term meteorological data has been examined to identify the prevailing wind direction, average wind speeds and average rainfall. Recent meteorological data sets for Cork Airport were obtained from Met Éireann for the purposes of this assessment study. Long term measurements for this location are considered representative of prevailing conditions experienced at the development site.

Temperature: The annual mean temperature at Cork Airport for the years 2004-2024 is 10.7ºC with a mean maximum of 14.0ºC and a mean minimum of 7.4ºC over the past 20 years. Given the close proximity of this meteorological station to the proposed development site, similar conditions would be observed. Table 8.7 details the past 20 years average of meteorological data for Cork Airport.

Temp ºC	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Mean temperature	6.0	6.3	7.1	9.2	11.9	14.7	16.3	15.9	14.3	11.6	8.3	6.7
Mean daily max	8.7	9.3	10.5	12.8	15.6	18.6	20.2	19.6	17.8	14.6	11.0	9.3
Mean daily min	3.2	3.4	3.7	5.6	8.0	10.8	12.5	12.1	10.8	8.5	5.5	4.1

Table 8.7: Temperature data at Cork airport 2004-2024, average values.

Rainfall: Precipitation data from the Cork airport meteorological station for the period 2004-2024 (Table 8.8) indicates a mean monthly total of ~112mm.

Rainfall (mm)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Mean monthly total	137.7	113.0	106.1	86.6	87.2	86.8	90.1	94.9	98.7	156.2	140.4	157.3
Greatest daily total	45.7	49.9	55.2	34.2	34.9	59.7	73.2	60.9	58.9	52.1	47.9	41.9
Mean no of days with>=0.2mm	20	17	19	16	15	14	15	15	16	19	19	19
Mean no of days with>=1.0mm	16	13	14	11	12	10	10	11	11	15	14	15
Mean no of days with>=5.0mm	9	6	5	5	5	5	5	5	5	8	7	8

Table 8.8: Rainfall data at Cork airport 2004-2024, average values.

Wind: Cork airport data has been examined to identify the prevailing wind direction and average wind speeds. Table 8.9 shows the averages over a 20-year period. The prevailing winds are from a south south-westerly direction with a recorded average wind speed of 10.3 knots or 19km/h. The site of the proposed development can be characterised as a site which experiences average wind speeds of Beaufort scale 3,

which is described as a 'gentle breeze' on the Beaufort scale. Receptors located to the northeast have increased sensitivity to the effects of dust from the proposed development.

Wind (knots)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Mean monthly speed	10.7	11.8	11.0	10.3	10.0	9.4	9.1	9.4	9.5	10.1	10.9	11.6
Max gust	57.2	52.0	50.2	48.2	40.9	39.5	36.5	41.2	43.2	49.6	50.5	54.0

Table 8.9: Wind data at Cork airport 2004-2024, average values.

8.4 Characteristics And Potential Impact Of Development

The development will provide for a largescale residential development (LRD), representing Phase 2 of development in the Blarney East / Ringwood Expansion Area. A full description of the development is available in Chapter 4. Impacts to air quality can occur during both the construction and operational stages of the development.

8.4.1 Potential Construction Stage Impacts

Potential construction stage impacts will primarily relate to fugitive dust emissions from construction works and vehicle and machinery emissions. The construction phase will involve multiple activities across various stages, that have the potential to generate dust and impact air quality. These include movement of soils for earth working, construction and use of concrete and, movement of trucks to and from the site. To adopt a conservative approach, all stages of construction associated with the development will be amalgamated and are collectively assessed in the impact section with mitigation measures adapted for a worst-case scenario. In summary, the construction phase of the development has the potential to generate short-term fugitive dust emissions. However, these emissions will be controlled by appropriate mitigation techniques throughout the duration of the construction phase.

8.4.2 Potential Operational Stage Impacts

Operational phase impacts are deemed to be long-term and will involve a change in traffic levels and associated emissions on the roads in the vicinity of the proposed development. The potential impact of the proposed development has been assessed by modelling emissions from the traffic generated as a result of the development. The impact of NO_2 and PM emissions for the operating year was predicted at sensitive receptors to the development. Results are compared against the 'Do-Minimum' scenario, which assumes that the proposed development is not in place in future years, in order to determine the degree of impact.

8.5 Air Quality Impact – Construction Phase

8.5.1 Construction Traffic

Vehicles such as HGV's travelling to and from the site during the construction phase have the potential to cause an increase to pollutant concentrations at nearby receptors. The evaluation of construction related traffic considered the following threshold identified within the TII guidance, that Heavy Duty vehicles (HDV) flows will change by more than 200AADT or more. Traffic data for the baseline, the period

when construction activities will be most prominent, indicates that HGV AADT will not exceed a change of 200AADT on any of the identified links as a result of the proposed development. Predicted construction traffic AADF for HGV for any identified link is on average 30 in total. Given that this specified threshold was not surpassed, the impact of construction related traffic on air quality associated with the proposed development is deemed not likely and not significant.

8.5.2 Construction Dust Risk Assessment

The construction phase of the development has the potential to generate dust emissions and may have the potential to impact air quality in the short term. The construction phase will involve multiple activities across various stages, that have the potential to generate dust and impact air quality. These include movement of soils for earth working, construction and use of concrete and, movement of trucks carrying goods to and from the site. Table 8.10 below outlines the definition of these activities for the purpose of the risk assessment as indicted by the guidelines in IAQM (2024).

Activities	Definition
Demolition	Any activity involved with the removal of an existing structure (or structures). This may also be referred to as de-construction, specifically when a building is to be removed a small part at a time
Earthworks	Any activity involved with the provision of a new structure (or structures), its modification or refurbishment. A structure will include a residential dwelling, office building, retain outlet, road etc.
Trackout	Covers the process of soil stripping, ground levelling, excavation, and landscaping.
Construction	The transport of dust and dirt from the construction/demolition site onto the public road network, where it may be deposited and then re-suspended by vehicles using the network. This arises when heavy good vehicles (HGVs) leave the construction/demolition site with dust materials, which may then spill onto the road, and/or when HGVs transfer dust and dirt onto the road having travelled over muddy ground onsite.

Table 8.10: Classification of Residual Source Emission.

These activities were rated based on their potential dust emission magnitude. The magnitude of the potential dust emission requires the scale of the works to be classified as Small, Medium or Large (IAQM) which are defined in Table 8.11.

Large	Medium	Small
Earthworks		
Site Area >10,000m2 potentially dusty soil prone to suspension (e.g. clays) >10 earth moving vehicles operating simultaneously	Site Area 2500m2 – 10,000m2 moderately dusty soil (e.g. silts) 5- 10 earth moving vehicles operating simultaneously	Site Area <2500m2 Large grain size (e.g. sands) <5 earth moving vehicles operating simultaneously
Construction		
Total Building Volume >100,000m3	Building Volume 25,000m3 - 100,000m3	Total Building Volume <25,000m3
Trackout		
>50 HGV outward movements per day of potentially dusty clays on unsealed road >100m	10 - 50 HGV outward movements per day of potentially dusty clays on unsealed road 50 - 100m	<10 HGV outward movements per day of potentially dusty clays on unsealed road >50m

Table 8.11: IAQM requirements to identity the order magnitude of the potential dust emissions.

As there are no demolition works, the risk of potential dust impacts occurring has been determined for earthworks, construction and trackout. The activities for the Construction Phase and the associated dust emission magnitude in accordance with the IAQM methodology has been evaluated. To summarise, the dust emission magnitude for earthworks is large, the dust emission magnitude for construction is medium and the dust emission magnitude for trackout is medium. Table 8.12 outlines this potential dust emission magnitude and the justification for it.

Activity	Potential Dust Effect Magnitude	Justification
Earthworks	Large	Total site area >10,000 m2 >10 heavy earth moving vehicles are anticipated to be in operational at any one time.
Construction	Medium	Total building volume predicted at >75,000 m3, with on site concrete batching.
Trackout	Medium	Estimated number HGVs travelling per day (maximum no. of 30 for any of links) traversing over unpaved road

Table 8.12: Dust emission magnitude for the proposed development.

Sensitivity Of The Area

The sensitivity of the area (high, medium, low) was determined in accordance with IAQM Guidelines. Sensitive receptors within 200 m of the boundary of the site were identified in Table 8.13 and indicted in Image 8.1. Ardamadane Wood which is a Proposed Natural Heritage Area (pNHA) code 001799 and contains native woodland.

Receptors	Number of receptors	Distance to Site boundary	Comments
Residential Properties	>100	Ca. Between 6m and 200m from site boundary	Considered a High sensitivity receptor: Residential receptors: 13 no. of properties are <20m 28 no. of properties are <50m 24 no. of properties are <100m remaining no. of properties are >200m
Schools	4	Ca. Between 390m and 550m from site boundary	All schools in the locality are beyond 250m of the site boundary. No futher consideration taken.
Proposed Natural Heritage Area	1	Ca. Between 60m and 900m from site boundary	Considered a Medium sensitivity receptor: Ardamadane Wood is a location with a national designation where the features may be affected by dust deposition.
Woodland area to the South	1	Ca. Between 85m and 400m from site boundary	Considered a Medium sensitivity receptor: Woodland features may be affected by dust deposition.
Woodland area to the East / North east	1	borders site boundary (east)	Considered a Medium sensitivity receptor: Woodland features may be affected by dust deposition.

Table 8.13: Table of sensitive receptors.

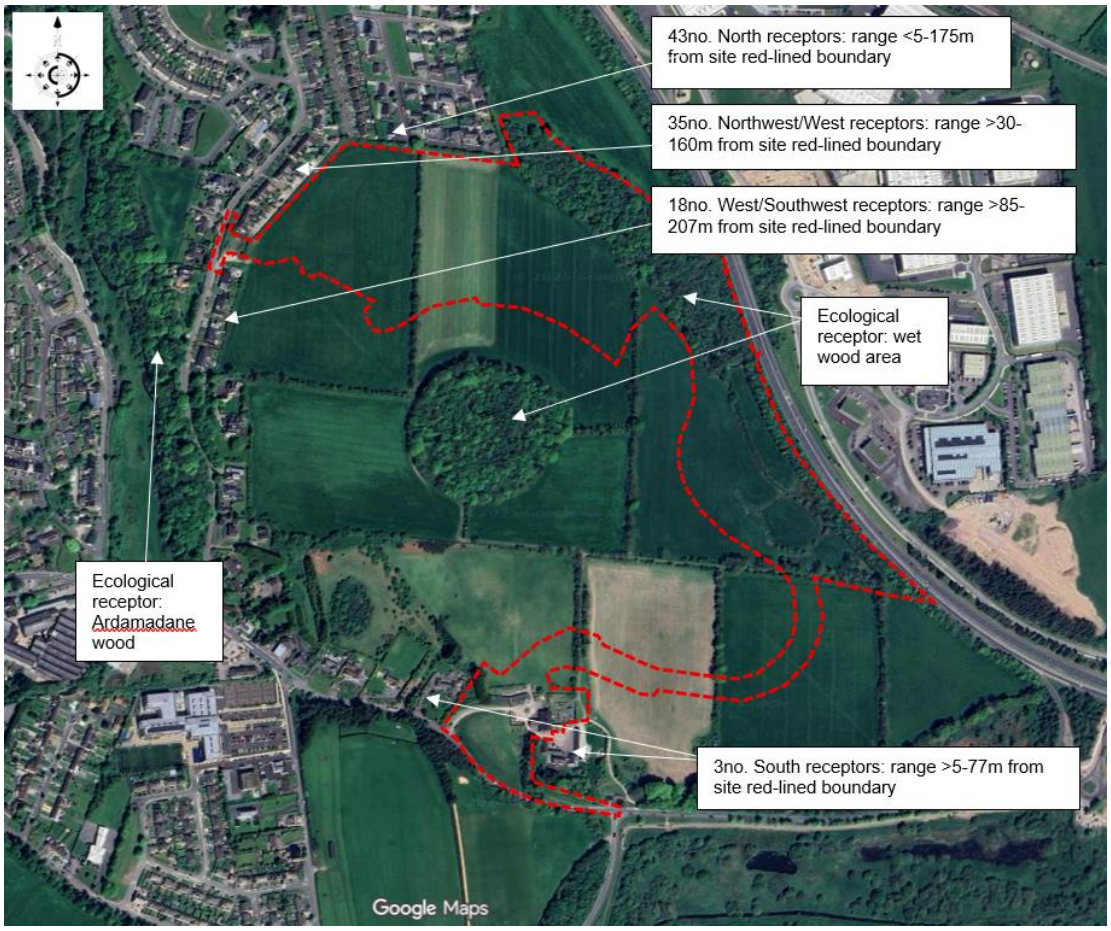


Figure 8.1: Proposed development site boundary (Imagery © Google 2025) with general location points of sensitive receptors.

The following effects are considered when assessing the sensitivity of area, sensitivity of people to dust soiling and sensitivity of human health to the effects of PM_{10} exposure and harm to Ecological receptors. The sensitivity of the area was determined in accordance with IAQM Guidelines (2024) as per the guidelines replicated in Table 8.14, 8.15 and 8.16.

- Sensitivity of the area to dust soiling effects on people and residential property: As per the IAQM Guidelines the highest sensitivity rating considered for all receptors reflects the sensitivity of the area and therefore the sensitivity of the area to dust soiling effects on people and residential property was considered to be high.
- Sensitivity of the area to human health impacts: To assess the sensitivity of individuals to potential PM_{10} exposure, from the construction phase it includes background concentrations for the area, established as 13.2µg/m3 for PM_{10} . As per the IAQM Guidelines the highest sensitivity rating considered for all receptors reflects the sensitivity of the area and therefore the sensitivity of the area to human health impacts was considered to be medium.
- Sensitivity of the area to ecological impacts: As per the IAQM Guidelines the highest sensitivity rating considered for all receptors reflects the sensitivity of the area and therefore the sensitivity of the area to ecological impacts was considered to be high.

Receptor Sensitivity	Number of Receptors	Distance from the 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

Table 8.14: Sensitivity of the area to dust soiling effects on people and property (IAQM 2024)

Receptor Sensitivity	Annual Mean PM_{10} concentration	Number of Receptors	Distance from the Source (m)			
			<20	<50	<100	<250
High	>32 µg/m3	>100	High	High	High	Medium
		10-100	High	High	Medium	Low
		1-10	High	Medium	Low	Low
	28-32 µg/m3	>100	High	High	Medium	Low
		10-100	High	Medium	Low	Low
		1-10	High	Medium	Low	Low
	24-28 µg/m3	>100	High	Medium	Low	Low
		10-100	High	Medium	Low	Low
		1-10	Medium	Low	Low	Low
	<24 µg/m3	>100	Medium	Low	Low	Low
		10-100	Low	Low	Low	Low
		1-10	Low	Low	Low	Low
Medium	>32 µg/m3	>10	High	Medium	Low	Low
		1-10	Medium	Low	Low	Low
	28-32 µg/m3	>10	Medium	Low	Low	Low
		1-10	Low	Low	Low	Low
	24-28 µg/m3	>10	Low	Low	Low	Low
		1-10	Low	Low	Low	Low
	<24 µg/m3	>10	Low	Low	Low	Low
		1-10	Low	Low	Low	Low
Low	-	>1	Low	Low	Low	Low

Table 8.15: Sensitivity of the area to human health impacts (IAQM 2024).

Receptor Sensitivity	Distance from the Source (m)	
	<20	<50
High	High	Medium
Medium	Medium	Low
Low	Low	Low

Table 8.16: Sensitivity of the Area to Ecological Impacts (IAQM 2024).

Risk of Impact:

To identify the risk of impacts from dust emissions in accordance with IAQM Guidelines, Table 8.17 was used. The outcomes highlight the level of risk with no mitigation measures implemented. The dust magnitude and sensitivity of the area determined previously is used to determine the risk of impact occurring for each of the activities for dust soiling, human health and ecological impacts.

Sensitivity of area	Dust emission magnitude		
	Large	Medium	Small
High	High	Medium	Low
Medium	Medium	Medium	Low
Low	Low	Low	Negligible

Table 8.17: Risk of dust impacts – Earthworks / construction / trackout (IAQM 2024).

The risk of impacts from dust emissions with no mitigation measures implemented is summarised in Table 8.18.

- The risk of dust soiling due to trackout is medium risk.
- The risk of dust soiling due to construction is medium risk
- the risk of dust soiling due to earthworks is high risk.

Risks associated with dust emissions causing exposure to PM_{10} with no mitigation measures implemented is summarised in Table 8.18.

- The risk of PM10 exposure due to trackout is medium risk.
- The risk of PM10 exposure due to construction is medium risk.
- The risk of PM10 exposure due to earthworks is medium risk.

Risks associated with dust emissions causing exposure to ecological impacts with no mitigation measures implemented is also summarised in Table 8.18.

- The risk of an ecological impact due to trackout is medium risk.
- The risk of an ecological impact due to construction is medium risk
- the risk of an ecological impact due to earthworks is high risk.

Potential Impact	Activity		
	Earthworks	Construction	Trackout
Risk of dust soiling effect	High	Medium	Medium
Risk of human health effects PM_{10}	Medium	Medium	Medium
Ecology	High	Medium	Medium

Table 8.18: Summary risks of impacts from potential fugitive dust with No mitigation measures implemented.

To mitigate these risks best practice dust mitigation measures appropriate for the proposed development will be implemented to ensure there are no significant impacts at nearby sensitive receptors. Measures are outlined where avoidance and mitigation actions will be put in place to reduce the impact levels such as wind breaks, barriers and frequent cleaning and watering of the construction site roads, further mitigation measures are detailed in Section 8.7. Provided the dust minimisation measures outlined in the dust management plan are adhered to, the air quality impacts during the construction phase will likely not be significant.

8.6 Air Quality Impact – Operational Phase

The operational phase of the proposed development has the potential to result in an impact on local air quality primarily as a result of the increased traffic movements associated with the development and as a result of the requirements of new buildings to be heated.

8.6.1 Increased Residential Dwellings

The design and construction of buildings in accordance with National Building Regulations (The Irish Building Regulations Technical Guidance Document L – Conservation of Fuel & Energy – Dwellings) will ensure that modern building materials are used. In order to counteract the impact of the development on the existing and future air quality the design of the proposed residential apartments and houses has considered a number of sustainable heating and energy saving features, such as efficient heating systems throughout the development and the use of photovoltaic panels. Given that the proposed development is designed under the guidelines to be thermally efficient resulting in a reduction in the volume of fossil fuels required to heat the buildings the impact on air quality due to the increase in residential dwellings is deemed not significant.

8.6.2 Increased Vehicle Emissions

The operational phase of the proposed development has the potential to result in an impact on local air quality as a result of the increased traffic movements associated with the proposed development. The DMRB screening air dispersion model from the U.K Highway Agency Design Manual for Roads and Bridges Air Quality Assessment was used to assess the impact of increased traffic movements associated with the development. Projected transport figures from Systra Group were used to predict the concentrations of traffic-derived pollutants in future years. The following model inputs are required to complete the assessment using the DMRB spreadsheet tool; road layouts, receptor locations, annual average daily traffic movements (AADT), percentage heavy goods vehicles (%HGV), annual average traffic speeds and background concentrations. Background concentrations of pollutants, sourced from the EPA reports (5-year average values were used) and results were generated using an average speed of 30 km/h assuming congested traffic conditions. Using the DMRB screening air quality spreadsheet, future pollutant concentrations were predicted at three high sensitivity residential receptors (R1, R2 and R3), see receptor location on Image 8.2.

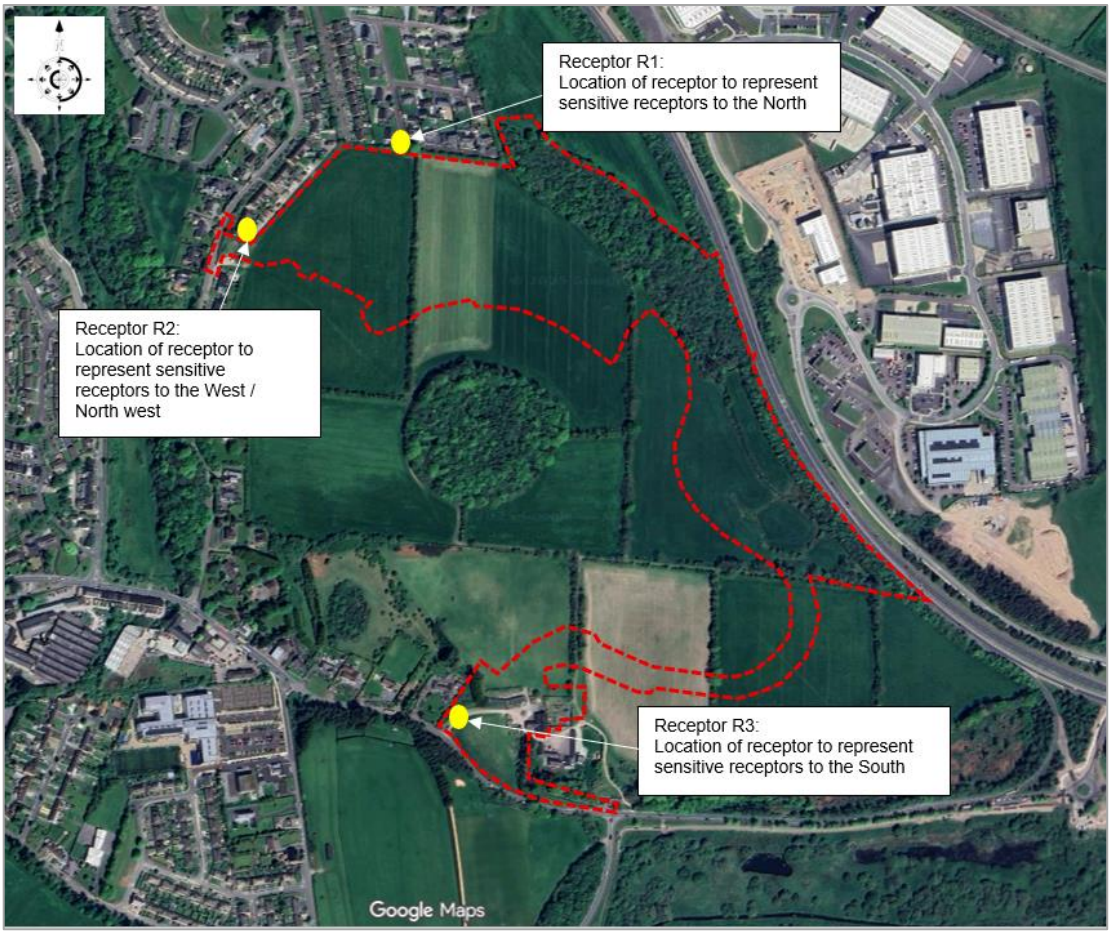


Figure 8.2: Proposed development site boundary (Imagery © Google 2025) with receptor locations, R1, R2 and R3-sensitive receptors used in local air quality modelling assessment.

Using site specific input data, the model predicts the road traffic contribution to ambient ground level concentrations at the sensitive receptor points using generic meteorological data for Ireland. These road contributions are then added to the existing background concentrations to give the worst-case predicted ambient concentrations. The worst-case ambient concentrations are then compared with the relevant ambient air quality standards to assess the compliance of the proposed development. Air quality significance criteria are assessed on the basis of compliance with the national air quality limit values. The TII document Air Quality Assessment of Proposed National Roads - Standard (2022) 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 impact descriptors in Table 8.19 are used to describe the impact at each receptor location, which takes into consideration the percentage change in concentration relative to the air quality standards of the pollutant.

Long term average concentration at receptor in assessment year	% Change in concentration relative to Air Quality Standard 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

Table 8.19: Impact descriptors (TII 2022).

The results of the impact assessment arising from increased transport are presented in Table 8.20, 8.21 and 8.22. The results predict future air quality relative to the existing baseline.

Receptor R1	Annual Average NO_2 (µg/m3)	Annual Average PM_{10} (µg/m3)
Background (2025)	15.1	13.2
Air Quality Standard Limit	40	40
Do Minimum (2035)	15.36	13.35
Percentage change	0.65	0.38
Impact Description	Neutral	Neutral
Do Something (2035)	15.54	13.58
Air Quality Standard Limit	40	40
Percentage change	2.90	2.86
Impact Description	Neutral	Neutral

Table 8.20: Modelled results for receptor R1.

Receptor R2	Annual Average NO_2 (µg/m3)	Annual Average PM_{10} (µg/m3)
Background (2025)	15.1	13.2
Air Quality Standard Limit	40	40
Do Minimum (2035)	15.2	13.25
Percentage change %	0.65	0.38
Impact Description	Neutral	Neutral
Do Something (2035)	15.70	13.69
Air Quality Standard Limit	40	40
Percentage change %	3.95	3.69
Impact Description	Neutral	Neutral

Table 8.21: Modelled results for receptor R2.

Receptor R3	Annual Average NO_2 (µg/m3)	Annual Average PM_{10} (µg/m3)
Background (2025)	15.1	13.2
Air Quality Standard Limit	40	40
Do Minimum (2035)	15.36	13.35
Percentage change %	0.65	0.38
Impact Description	Neutral	Neutral
Do Something (2035)	15.63	13.64
Air Quality Standard Limit	40	40
Percentage change %	3.49	3.31
Impact Description	Neutral	Neutral

Table 8.22: Modelled results for receptor R3.

Human Receptors

NO_2 concentrations at sensitive receptors: During the Do-Minimum scenario the highest NO_2 was assessed as 15.20µg/m3, contributing to 0.65% increase. Under the Do-Something Scenario the highest NO_2 was assessed as 15.70µg/m3, contributing to 3.95% increase. This equates to a 0.6µg/m3 increase in concentrations as a result of the proposed development. Receptors modelled are below 75% of the AQS of 40µg/m3 for NO_2. Therefore, the effects are determined as not likely and not significant. As the

percentage difference between the scenarios are all below 5%, the description of impacts can be classified as neutral under TII (2022) impact descriptors guidelines.

PM_{10} concentrations at sensitive receptors: During the Do-Minimum scenario the highest PM_{10} was assessed as 13.35µg/m3, contributing to 0.38% increase. Under the Do-Something Scenario the highest PM10 was assessed as 13.69µg/m3, contributing to 3.69% increase. This equates to a 0.49µg/m3 increase in concentrations as a result of the proposed development. Receptors modelled are below 75% of the AQS of 40 µg/m3 for PM_{10}. Therefore, the effects are determined as not likely and not significant. As the percentage difference between the scenarios are all below 5%, the description of impacts can be classified as neutral under TII (2022) impact descriptors guidelines.

Overall, the modelled results do show a predicted increase in annual NO_2 and PM_{10} but each remain comfortably below the limit values for Irish and EU regulations. The model predicts a neutral impact in terms of local impact as a result of increased traffic from the proposed development and would not result in a perceptible change in the existing local air quality environment.

WHO Guidelines

The modelled results suggest the WHO targets are achieved for PM_{10}. NO2 modelled results are well below the approaching IT3 (2026) target, however it exceeds with the future IT4 (2030) targets following similar national forecasted trends in that prediction. It is worth noting the model does not take into account the continued transition to electric vehicles and cleaner car models which will reduce car engine exhaust emissions significantly, specifically NO2 emissions, along with the continued availability of public transport which can also help to reduce a large number of private vehicles travelling on the R617, Station Road and N20.

Ecological Receptors

The assessment examined the impact of emissions resulting from traffic associated with the Proposed Development, on the nearby pNHA site, Ardamadane Wood. Adhering to the TII, IAQM and CIEEM Guidance, the effects of air pollution from traffic emissions on nearby ecological receptors are discussed and outlined below. Background concentrations related to NOx, ammonia (NH3) and nitrogen deposition were identified through the Air Pollution Information Service. Key observations regarding background concentrations include: Background NOx concentrations (4.3µg/m3) contribute to 14.3% of the critical levels (30µg/m3) identified for NOx. Background NH3 concentrations (2.8µg/m3) contribute to 93.3% of the critical levels of ammonia(3µg/m3) as per the IAQM Guidance (IAQM 2020). Nitrogen deposition background levels (12.6kg N/ha/yr) contribute to 84.0% of the average critical load level for broadleaf deciduous forests (15 kg N/ha/yr).

The EPA's Ireland's Air Pollutant Emissions (1990-2030) (EPA 2023) report states that ammonia emissions, are currently non-compliant with the National Emissions Ceiling. Grasslands receive the bulk of the 47 million tonnes of annual manures produced annually in Ireland along with nitrogen fertilisers. The agricultural sector is identified as the dominant contributor to ammonia emissions, accounting for up to 99.4% of all ammonia emissions. According to an Teagasc report, An Analysis of the Cost of Abatement of Ammonia Emissions in Irish Agriculture to 2030 (An Teagasc 2020), identify key mitigation measures with regards to Ammonia abatement such as use of food processing waste streams as slurry abatements and the use of injection techniques to land-spread slurry on grassland. These abatement measures are

significant within the Agricultural industry and are outside of the scope measures relating to the Proposed Development. It is reasonable to assume that the elevated levels of background ammonia near the Proposed Development are primarily from agricultural activities rather than directly from the existing traffic study area.

Receptor E1	Annual Average NOx (µg/m3)	Annual Average ammonia NH3 (µg/m3)	Annual Average N /ha/yr
Background (2025)	4.3	2.8	12.6
Do Minimum (2035)	4.3	2.8	12.6
Do Something (2035)	4.94	2.75	12.61
Critical levels	30	3	15
Receptor E2			
Background (2025)	4.3	2.8	12.6
Do Minimum (2035)	4.3	2.8	12.6
Do Something (2035)	5.11	2.89	12.85
Critical levels	30	3	15

Table 8.23: Modelled results for receptor E1 and E2.

Following the IAQM Guidance (IAQM 2020), the significance assessment for ecological receptors involves measuring the development's contribution (Do-Something minus Do-Minimum) to critical levels/loads associated with the ecological receptors.

- For NOx concentrations, the largest difference between the Do-Minimum and Do-Something scenario is measured at 0.81µg/m3. The total PEC at these receptors (inclusive of background concentrations of 4.3µg/m3) was 7.57µg/m3, representing 25.2% of the critical levels of NOx.
- For NH3 emissions, the largest difference between the Do-Minimum and Do-Something Scenario was recorded at 0.09µg/m3. This difference accounts for 2.94% of the critical levels of NH3 identified (3µg/m3). The total PEC recorded at the receptors was 2.68µg/m3 (inclusive of background concentrations of 2.8µg/m3), representing 90% of the critical levels for NH3.
- For nitrogen deposition, the largest difference between the Do-Minimum and Do-Something Scenario was calculated at 0.25kg N/ha/yr at receptors. This difference accounts for 1.68% of the 15kg N/ha/yr average threshold. The total PEC recorded at this receptor (inclusive of background concentrations of 12.6kg N/ha/yr) is 11.4kg N/ha/yr.

The EPA's IN1 states that nitrogen deposition is considered acceptable if it is <=5% of the nitrogen deposition critical load level, and <=4% for ammonia concentrations critical level (EPA 2023). Under the Do-Something Scenario, the PC contributions to the nitrogen deposition critical load and ammonia critical level fall well below these EPA specified thresholds. At the time of writing, there were no critical levels for pNHA sites specific to Ireland, such as the one under examination. Therefore, the habitat was compared against the definitions of a woodland habitat in accordance with UK Guidance, with the average (15kg N/ha/yr) of the lower and upper threshold limits of 10kg N/ha/yr and 20kg N/ha/yr considered applicable. It is important to note that background concentrations for emissions like ammonia and nitrogen deposition were modelled by the APIS as the monitoring data for the Site is not available. Due to the dominance of background concentrations in the modelled results, almost entirely attributed to agriculture, and the low contribution of the Do-Something Scenario PC to the critical load/level defined

by the EPA IN1, the effects of traffic related to the Proposed Development on ecological receptors are considered not likely and not significant.

8.7 Mitigation Measures

8.7.1 Dust Mitigation Measures

In order to mitigate dust emissions and minimise air quality impacts during the construction phase, standard mitigation measures would be implemented onsite to control emissions during construction. The dust management plan as detailed in Appendix 8.1 will also be implemented to reduce dust impacts. In the dust management plan the mitigation measures have been divided into general measures applicable to the entire site for the duration of the Construction Phase and measures applicable specifically to the earthwork, construction and trackout activity. In summary the measures which will be implemented will include:

- Hard surface roads will be swept to remove mud and aggregate materials from their surface while any un-surfaced roads will be restricted to essential site traffic.
- Avoid unnecessary vehicle movements and limit speeds on site so as to minimise the generation of airborne dust.
- Use of rubble chutes and receptor skips during construction activities.
- Site roads shall be regularly cleaned and maintained as appropriate, especially during dry and/or windy conditions. Any unsurfaced roads shall be restricted to essential site traffic only.
- Vehicles exiting the site shall make use of a wheel wash facility where appropriate, prior to entering onto public roads.
- The overloading of tipper trucks exiting the site shall not be permitted and aggregates will be transported to and from the site in covered trucks.
- Material handling systems and site stockpiling of materials will be designed and laid out to minimise exposure to wind, stockpiles holding fine or dusty elements including top soils shall be covered with tarpaulins. Water misting or sprays will be used as needed if particularly dusty activities are necessary during dry or windy periods.
- Where drilling or pavement cutting operations are taking place, measures to control dust emissions will be used to prevent unnecessary dust emissions by the erection of wind breaks or barriers.
- All vehicles which present a risk of spillage of materials, while either delivering or removing materials, will be loaded in such a way as to prevent spillage.
- Public roads outside the site will be regularly inspected for cleanliness and cleaned as necessary.
- A complaints log shall be maintained by the construction site manager and in the event of a complaint relating to dust nuisance, an investigation shall be initiated.

With the implementation of the above mitigation measures, the effects of the construction phase on air quality will be not significant, and the risk of impacts reduced to Negligible.

8.7.2 Operational Phase

As outlined in the impact assessment no mitigation measures are required as the operational phase of the proposed development as it is predicted the operational phase will not generate air emissions that would have an adverse impact on local ambient air quality under current EU standards.

In terms of nationally reducing emissions that could help contribute towards achieving WHO targets some measures are outlined below as suggested by the latest EPA's 2024 report on air quality in Ireland which include improvements for individuals and local authorities. Particularly the NO_2 reducing measures are most relevant currently in helping to work towards the WHO final target 2040.

- Reduce home heating pollution (PM reduction measures): Avoid the use of solid fuels and use cleaner heating systems. Change how dwelling/homes are heated, by using cleaner fuel choices. Make residential units more energy efficient with thermally efficient materials.
- Reduce car pollution (NO2 reduction measures): Leave the car at home if you can for one day a week. Carpool and reduce the number of cars on the road. Use public transport or walk or cycle. Work from home (if possible) for part of your working week. This helps reduce the number of vehicles on the road. Use cleaner transport options i.e. replace diesel vehicles to electric vehicles. Reduce car idling and switch off the engine when the vehicle is stopped.
- Additional facilities to support air emission reduction: Local authorities - provide incentives to reduce car use and support for electric vehicles. Solid fuel regulations – full implementation. Clean/environmentally friendly public transport, maintain and increase investment. Active travel – create more and safer footpaths and cycle lanes for public use.
- All the mitigation measures have the potential to reduce pollutant levels. In concentration reduction terms, none of the measures can be singled out as being more successful than the others, greater reductions could be achieved by implementing multiple measures together.

8.8 Cumulative And In-Combination Effects

8.8.1 Construction Phase

The surrounding landscape, primarily residential with grazing and some tillage to the southeast, is not expected to generate significant dust directly from grazing activities. Potential hay and silage cutting activities, usually occurring in summer, are short-term and pose negligible cumulative and in-combination effects to air quality as a result of the Construction Phase of the Proposed Development.

Assessing the cumulative impacts of the construction phase of the development is contingent on a number of other permitted developments in the area which are detailed in full in Chapter 20. These proposed developments listed are therefore included in this assessment, including the Monacnapa Development (recently refused permission however it has been included as the development has potential for resubmission of a similar scheme in the future). The potential for these cumulative effects, in combination with Phase 1 and Phase 2 of the Ringwood development, are discussed below.

Potential Cumulative Dust Effects

Should the construction phase of the proposed Phase 2 development coincide with the construction of the 4 no. of developments (listed in detail in Chapter 20) in the future then there is the potential for cumulative dust emissions to impact at nearby sensitive receptors. The dust mitigation measures outlined in the dust management plan should be applied throughout the construction phase of the proposed developments, with similar best practice mitigation measures applied for other potential / permitted developments which will avoid any severe or significant cumulative impacts on air quality. The background concentrations of PM_{10} have been identified and justified in section 8.3.1. it is considered that the background concentration of PM_{10} selected from Zone B constitutes the cumulative concentration of PM_{10} from the receiving environment. The cumulative activities do not have the potential to elevate PM_{10} concentrations above the relevant air quality standard given the scale and nature of the developments. With the mitigation measures outlined in the dust management plan it is considered sufficient to manage dust emissions associated with construction of future phases and other permitted developments, the risk of impact can be reduced to Negligible. As such, the potential of cumulative construction phase effects on nearby sensitive receptors is considered not significant.

8.8.2 Operational Phase

Assessing the cumulative impacts of the operational phase of the development is contingent on a number of other permitted developments in the area which are detailed in full in Chapter 20. These proposed developments listed are therefore included in this assessment, including the Monacnapa Development (recently refused permission however it has been included as the development has potential for resubmission of a similar scheme in the future). The potential for these cumulative effects, in combination with Phase 1 and Phase 2 of the Ringwood development, are discussed below.

Potential cumulative operational effects on human receptors

If the proposed phase 1 and 2 of the Ringwood development and the other potential developments are built in the future, this has the potential to add further additional vehicles to the local road network and add to the Annual Average Daily Traffic. In section 8.6.2, the traffic impact for the proposed development has been predicted to be neutral in terms of impact significance. Predicted levels of PM_{10} and NO_2 are comfortably below EU standards and would not result in a perceptible change in the existing local air quality environment. It is unlikely that other future developments of similar scale would give rise to a dissimilar impact on air quality. However, due to potential growth in AADT numbers, increased traffic numbers have been modelled for the cumulative assessment. Table 8.23 below details the changes between the Do-minimum and Do-something scenario. Using the DMRB air dispersion modelling screen, pollutant concentrations were modelled for the combined phase 1 and 2 and other proposed developments. The results predict the future air quality relative to the existing baseline. Modelled receptor R4 is located at the phase 2 site access. The modelled results do show a predicted increase in annual NO_2 and PM_{10} but each remain well below the limit values for Irish and EU regulations.

Receptor R4	Annual Average NO_2 (µg/m3)	Annual Average PM_{10} (µg/m3)
Background (2025)	15.1	13.2
Air Quality Standard Limit	40	40
Do Minimum (2035)	15.36	13.35
Percentage change %	0.65	0.38
Impact Description	Neutral	Neutral
Do Something (2035)	15.76	13.73
Air Quality Standard Limit	40	40
Percentage change %	4.38	4.05
Impact Description	Neutral	Neutral

Table 8.24: Modelled results for receptor R4. Cumulative effects.

NO_2 concentrations cumulative effects: During the Do-Minimum scenario NO_2 was assessed as 15.36µg/m3, contributing to 0.65% increase. Under the Do-Something Scenario NO_2 was assessed as 15.76µg/m3, contributing to 4.38% increase. This equates to a 0.66µg/m3 increase in concentrations as a result of the cumulative vehicles. The receptors modelled are below 75% of the AQS of 40 µg/m3 for NO_2. Therefore, the effects are determined as not likely and not significant. As the percentage difference between the scenarios are all below 5%, the description of impacts can be classified as neutral under TII (2022) impact descriptors guidelines.

PM_{10} concentrations cumulative effects: During the Do-Minimum scenario PM_{10} was assessed as 13.35µg/m3, contributing to 0.38% increase. Under the Do-Something Scenario PM10 was assessed as 13.73µg/m3, contributing to 4.05% increase. This equates to a 0.53µg/m3 increase in concentrations as a result of the cumulative vehicles. The receptors modelled are below 75% of the AQS of 40µg/m3 for PM_{10}. Therefore, the effects are determined as not likely and not significant. As the percentage difference between the scenarios are all below 5%, the description of impacts can be classified as neutral under TII (2022) impact descriptors guidelines.

In summary concentrations for NO2, and PM_{10} fall below 75% of the relevant Air Quality Standard (AQS) at the receptor, in accordance with the TII Guidance, the impacts on air quality can be described as Neutral. As the emissions fall well below the relevant AQS, the effects on air quality as a result of cumulative emissions are deemed not likely and not significant. Furthermore, the government aims to promote sustainability by enhancing public transport with regular and ongoing increases in the public transport capacity, both road and rail and to reduce dependency on the use of the private car. These alternatives as well as the increasing use of electric vehicles could potentially improve the air quality emission impact in the future.

Potential cumulative operational effects on ecological receptors: The pNHA Blarney Bog is located within 200m of the R617 between Lane Cross and N20 Interchange. As a result of cumulative traffic impacts the changes in AADT exceed the AADT threshold prescribed by TII, an additional assessment of the effects of road traffic at the ecological receptor for the pNHA Blarney Bog (closest point) and the 2 no. of receptor points at pNHA site Ardamadane Wood was modelled. Following the same methodology employed for the assessment of effects at the Ardamadane Wood an additional ecological receptor was identified along the boundary of the Blarney Bog (the closest point in order to get the worst-case scenario). The Blarney

Bog site is designated on account of its range of wetland habitats. A desk-based review of available resources (IAQM, EPA Guidance Note and APIS) identified that the critical level/ for such ecosystems as 30 µg/m3 for NOx and 7.5kg N ha-1 year-1 for nitrogen deposition. As lichens and bryophytes are not identified as qualifying interest in the Blarney Bog, a critical level of 3µg/m3 is appropriate regarding ammonia emissions.

Concerning NOx concentrations, the total PEC resulting from cumulative traffic emissions during the Do-Something scenario remained well below the critical levels for both the Ardamadane and Blarney Bog. The largest difference identified between the Do-Minimum and Do-Something scenarios for the Ardamadane Wood and Blarney Bog receptors was an increase of 3.65µg/m3 due to cumulative traffic emissions, 12.2% of the NOx critical load.

For nitrogen deposition (N), background concentrations dominate the signal of deposition for the critical loads for both the Ardamadane Wood and Blarney Bog. The background levels contribute to 84% and 168% of the critical loads for the Ardamadane Wood (15 kg N/ha/yr) and the Blarney Bog (7.5kg N/ha/yr), respectively. The largest PC difference identified between the Do-Minimum and Do-Something scenarios for the Ardamadane Wood was increase in nitrogen deposition by 1.0 kg N/ha/yr due to cumulative traffic emissions. This change contributed to a 6.8% increase in the critical level value. For the Blarney Bog the difference was observed with an increase in nitrogen deposition by 2.23 kg N/ha/yr due to cumulative traffic emissions, which is 30% of the Blarney Bog nitrogen deposition critical load.

Regarding ammonia, as with nitrogen deposition, background concentrations dominate the contribution of PEC to the critical level for ammonia (3µg/m3). The background concentration currently contributes to 93.3% of the total critical levels of ammonia. The largest PC difference identified between the Do-Minimum and Do-Something scenarios for the Ardamadane Wood was an increase in ammonia levels by 0.39µg/m3 due to cumulative traffic emissions. This change contributed to a 13% increase in the PC to the critical level value for ammonia. For the Blarney Bog the difference was an increase in ammonia levels by 0.86µg/m3, which is 30% of the ammonia critical load due to cumulative traffic emissions.

Following the EPA 1NI (EPA 2023), a detectable level of nitrogen deposition is classified as 0.3kg N/ha/yr. The ecological receptors had cumulative traffic contributions from Do-Something scenario below the detection threshold. The highest PC from all roads associated with the cumulative phases reaches a maximum of 30% of the critical load for nitrogen deposition and 30% of the critical levels for ammonia. Therefore, the effects of cumulative emissions on the ecological receptors are considered not likely and not significant.

8.9 Interaction With Other Environmental Attributes

- Chapter 7: Traffic and Transport: Air quality can be impacted by increased traffic volumes. The effects of traffic emissions associated with the proposed development has been assessed under traffic congested conditions and determined that all impacts will be Neutral and the effects not significant.
- Chapter 9: Climate: Potential emissions associated with vehicle movement onsite can influence GHG emissions associated with the Proposed Development. These potential impacts have been further detailed in the climate chapter. Dust impacts are determined to be short term and therefore the impacts on climate are determined as not significant.

- Chapter 11: Biodiversity: Air quality can potentially impact ecosystems; however, this assessment demonstrates that the emissions to air from the proposed development will have neutral impacts in terms of NO_2 and PM_{10} to sensitive receptors.
- Chapter 18: Material Assets: Air quality can be impacted by increased traffic volumes. The effects of traffic emissions associated with the proposed development has been assessed under traffic congested conditions and determined that all impacts will be Neutral and the effects not significant.

8.10 Indirect Effects

Construction Phase impacts will be of short duration, and upon completion, will have no residual impacts on the air quality. Following the implementation of the above mitigation measures, the impact on sensitive receptors from construction activities has been identified as not significant and short-term.

8.11 Residual Effects

Based on the receiving environment, type and intensity of activities (associated with the proposed development), the residual effects on human health will be negligible.

8.12 Monitoring

Construction phase: If the construction contractor adheres to good working practices and the mitigation measures are in place, the levels of emissions generated are assessed to be minimal and are unlikely to cause an impact on air quality during the construction phase, there is no monitoring recommended.

Operational phase: There is no monitoring recommended for the operational phase of the development as impacts to air quality are predicted to be negligible.

8.13 Reinstatement

Reinstatement is deemed not applicable.

8.14 Difficulties Encountered

There were no difficulties met when conducting this assessment.

8.15 References

Environmental Protection Agency (2020) Air Quality Monitoring Report 2019

Environmental Protection Agency (2021) Air Quality Monitoring Report 2020

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Environmental Protection Agency (2017) Guidelines on the Information to be Contained in Environmental Impact Assessment Reports – Draft

National Parks and Wildlife Service: NPWS Protected Sites map-viewer

9.0 CLIMATE

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9.1 Introduction

This chapter of the EIAR provides a description and assessment of the likely effects of the Proposed Development on climate change in the context of national greenhouse gas (GHG) emissions. This chapter also assess the potential effects to the Proposed Development from identified climate hazards.

9.2 Methodology

- International Panel on Climate Change: Guidelines for National Greenhouse Gas Inventories, 2019 (IPCC, 2019);
- IEMA- Environmental Impact Assessment Guide to: Assessing Greenhouse Gases and Evaluation.
- Cork City Council Climate Adaption Strategy, 2019-2024 (CCC, 2019);
- Cork City County Council Development Plan 2022-2028 (CCC, 2022);
- Department of Communication, Climate Action and Environment – National Adaption Framework, Planning for a Climate Resilient Ireland (DCCAE, 2018);
- ISO 14064 2019: Part 1 Specification with guidance at the organisational level for quantification and reporting of greenhouse gas emissions and removals;
- Global Facility for Disaster Reduction and Recovery - ThinkHazard (GFDRR, 2025);
- Department of Communications, Climate Action and Environment – Climate Action Plan 2025 (CAP25);
- Transport Infrastructure of Ireland – Carbon Tool (TII, 2022);
- Government of Ireland – Technical Annex B – Climate Change Risk Assessment (GOI, 2023)
- UK Government GHG Conversion Factors for Company Reporting (UK DBEIS, 2022)

The potential effects of the Proposed Development on climate were determined through an assessment of the sources of GHG emissions from the Proposed Development. The assessment of GHG emissions follows IEMA's *Guidance on Assessing Greenhouse Gas Emissions and Evaluating their Significance* (IEMA, 2022). These guidelines specify the use of emission factors, which were sourced from the Transport Infrastructure of Ireland's (TII) Carbon Tool (TII, 2022). TII's Carbon Tool is primarily used for lifecycle assessments of national road and rail projects but provides a comprehensive list of emission factors and methods to calculate GHG emissions that are relative to the Proposed Development.

The potential risk of the effects of climate change to the Proposed Development have also been assessed by completing a climate change risk assessment. By utilising available policy and guidance documentation, the vulnerability of assets associated with the Proposed Development to potential climate hazards were determined. The identification of climate hazards was achieved through a detailed desk-based review of local, regional and continental scale tools. A Climate Change Risk Assessment, based on the frequency and levels of impact associated with the identified hazards, was carried out following the Annex B Guidelines provided by the Government of Ireland (GOI, 2023).

Due to the size and nature of the Proposed Development, there are no potential impacts on microclimate in terms of wind-tunnelling and shading. As such, the potential effects on microclimate will not be assessed.

9.2.1 Policy Context

Paris Climate Agreement

The Paris Agreement is a legally binding international treaty on climate change that was adopted by 196 parties at the COP 21 in Paris 2015 (COP 21, 2015). The goal of the agreement is to limit global warming to below 2°C, preferably 1.5°C, compared to pre-industrial levels. The agreement aims to reach a global peaking of GHG emissions as soon as possible to achieve climate neutrality by 2050.

The agreement includes commitments from all countries to reduce their emissions and work together to adapt to the impacts of climate change and calls on countries to strengthen their commitments over time. The agreement provides a pathway for developed nations to assist developing nations in their climate mitigation and adaption efforts, while creating a framework for the transparent monitoring and reporting of countries' climate goals.

National Climate Adaption Framework

The National Climate Change Adaption Framework was developed in 2018, under the Climate Action Law and Low Carbon Development Act of 2015 (DCCAE, 2018). The aim of the statutory framework was set out as a national strategy to reduce the vulnerability of the country to the negative effects of climate change and to avail of positive impacts. The strategy also aims at improving the enabling adaption through online engagement and civil society, the private sector and the research community (DCCAE, 2018)

The key objective of the National Adaption Framework is to support climate action by setting out policy with a view to becoming more resource-efficient and contributing to the low carbon economy.

The nature of the Proposed Development warrants a classification under the 'Built Environment – Residential' sector under the Climate Adaption Framework. The built environment comprises of the residential, public and commercial sectors, which account for 12.2% of Ireland's greenhouse gas emissions in 2023. The residential sector comprised 9.7% of these emissions.

According to the latest emission data from the Environmental Protection Agency (EPA), residential emissions (which accounts for fuel combustion in households for domestic space and hot water heating) were 7.2 Mt CO_{2e} in 2023, decreasing by 14.3% since 2021 (EPA, 2023). Under the With Existing Measures scenario, emissions from the residential sector are expected to decrease by 51% between 2023 and 2030. (EPA, 2023)

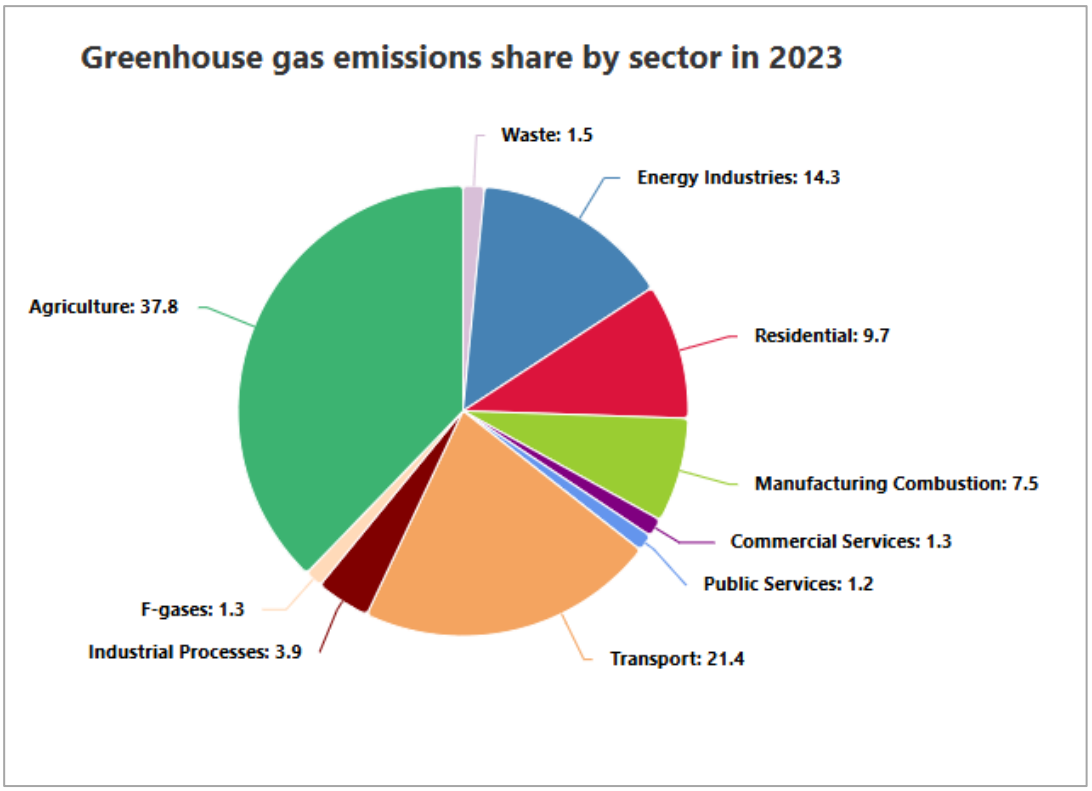


Figure 9.1: Greenhouse Gas Emissions share by sector EPA 2023.

Climate Action Plan 2025

Climate Action Plan 2025 (CAP25) is the third statutory annual update to Ireland's Climate Action Plan under the Climate Action and Low Carbon Development (Amendment) Act 2021.

The Climate Action Plan serves a roadmap to achieve Ireland's climate ambitions and aligns with legally binding economy-wide carbon budgets and sectoral emission ceilings set by the Government in 2025 (CAP25). In the context of the Proposed Development, the 'Build Environment' sector is of particular relevance.

Aims outlined in the 2025 Climate Action Plan for this sector to reduce GHG emissions include:

- Implement the National Residential Retrofit Plan;
- Strengthen the existing Building Regulations;
- Support the growth and development of district heating, electrification of heating, and geothermal energy.

Achieving long-term decarbonisation of the built environment will require addressing emissions associated with production, construction, and demolition. This necessitates significant changes in construction industry technologies. The following Key Performance Indicators (KPIs) were outlined as part of the Climate Action Plan 2025 (CAP25).

- Ensure that all new dwellings are designed and constructed to Near-Zero Energy Building (NZEB) standards by 2030, with 200,000 new dwellings utilising heat pumps.

- Target the delivery of up to 0.35 terawatt-hours (TWh) of heating through renewable gases, provided via agricultural-based supply chains.
- Reduce energy demand through energy efficiency measures to mitigate reliance on fossil fuels.

The Proposed Development will align with the NZEB standards, as well as the EU Energy Performance of Buildings Directive.

Climate Change Risk Assessment

The minister for the Environment, Climate and Communications has launched a set of guidelines to assist local authorities in preparing climate action plans under the Climate Action and Low Carbon Development Act, (Amendment) 2021.

These guidelines have been issued under the provisions of the Act and are therefore statutory in nature for the respective county council to complete. These are outlined in *Technical Annex B – Climate Change Risk Assessment* (GOI, 2023). The annex was prepared for local councils to aid in preparing climate impact assessments for their constituents and includes the following:

- Identifying the spectrum of climate hazards that have previously impacted the local authority and its administrative area.
- Assessing the exposures and vulnerabilities of the local authority and its administrative area to identify these hazards.

Whilst the Climate Change Risk Assessment has been adapted at a county level and is therefore a much larger scale than that of the Proposed Development, the basic premise of identification and classification of hazards will be completed as far as practicable and as far as applicable to the Proposed Development.

Cork City Development Plan 2022-2028

The Cork City Development Plan 2022 contains the following policies with relation to climate change (CCC, 2022):

SO4 *Transition to a low-carbon, climate-resilient and environmentally sustainable future. Implement climate mitigation and adaption measures that reduce our carbon footprint including sustainable energy consumption, sustainable transport, circular economy, green construction and flood risk mitigation and adaption.*

SO8 *Ensure efficient and sustainable use of water services, enhance water quality and resource management. Manage waste generation and treatment and support the principles of the circular economy.*

Objective 2.3 *Cork City Council will actively support planning, design and delivery of capital investment in the National Development Plan and other investment programmes that maximise the delivery of infrastructure-led growth, deliver compact liveable growth and climate action to make the city an attractive, diverse and resilient place to live.*

Objective 2.11 *Put in mechanisms to support the delivery of a lower carbon, sustainable city where development avoids, mitigates and adapts to the effects of climate change while protecting and enhancing Cork City's environmental assets.*

Objective 2.13 *Follow a design-led approach that delivers sustainable, high quality place marking, urban regeneration and high-quality architecture in this context. Development shall contribute positively to the quality of the surrounding built and natural environment, health and wellbeing, and shall be planned and designed with reference to climate change mitigation measures.*

Cork City Council Climate Adaption Strategy

The Cork City Climate Change Adaption Strategy for the years 2019-2024 was developed to address the current and anticipated impacts of climate change on Cork City's infrastructure (CCC, 2019). This strategy reflects the growing concern about the increasing risks associated with climate change and underscores the city's commitment to effectively reducing and managing these risks at a local level. The approach outlined in the strategy encompasses both mitigation and adaption measures (CCC, 2019).

The strategy has conducted a comprehensive assessment of the impacts of extreme weather events, including storms, floods, and extreme heat events. It acknowledges the importance of understanding and addressing these climate-related challenges within the context of various developments, including ones such as the Proposed Development, to the extent feasible.

This demonstrates the city's proactive stance in preparing for and responding to the consequences of climate change, aiming to create a more resilient and sustainable urban environment. It also emphasises the need for ongoing effects to address climate risks and implement measures that will enhance the city's ability to adapt to a changing climate.

9.2.2 Assessing Greenhous Gas Emissions

Anthropogenic GHG emissions have a global effect when they are released into the atmosphere over time. Therefore, assessing the effects of GHG emissions of the development at a local level are inconsequential to these global emissions.

According to the IPCC 2019 refinement of the 2006 publications of Guidelines for National Greenhouse Gas Inventories (IPCC, 2019), GHG emissions can be split into three categories (or 'scope'[1]):

- **Scope 1:** Direct emissions from sources owned or controlled by the reporting entity, such as emissions from combustion of fuels used in plant and machinery;
- **Scope 2:** Indirect emissions associated with the generation of purchase electricity, heat, and steam and,

[1] Direct and Indirect emissions do not relate to the EIA Directive of "Direct" and "Indirect" effects and are assessed separately

- **Scope 3:** Other indirect emissions that occur in the supply chain.

For this assessment, potential GHG emissions have been categorised into the three scopes identified, as per the ISO 14064 Part 1 Standard (ISO, 2018). In Table 9.1 below, the specific emission sources related to each scope are outlined, which were taken into consideration for both the Construction and Operational Phase of the Proposed Development.

The assessment boundary of for GHG emissions will be confined solely to activities occurring within the boundaries of the Proposed Development. Additional emissions associated with Phase 1 will be discussed as cumulative emissions in section 9.7 below.

Scope	Construction Phase Source	Operational Phase Source
Scope 1 – Direct Emissions	• Operation of onsite plant and generators. • Land cleared for the development; and, • Waste produced.	Traffic associated with the Proposed Development
Scope 2 – Indirect Emissions Associated with the Proposed Development	• Electricity usage.	Electricity usage
Scope 3 – Indirect Emissions	• Movement of HGVs associated with third owner parties. • Embodied carbon. • Disposal of waste.	N/A

Table 9.1: Detail of Scope emissions associated with the Proposed Development

Scope 1 emissions for the Proposed Development are based on the following factors:

- The total land-area modified as a result of the Proposed Development;
- Plant operating during the Construction Phase;
- Additional traffic generated during the Operational Phase; and,
- The volumes of construction and demolition waste considered to leave the site (which will be reviewed pending a successful planning application).

The Proposed Development, currently designated as agricultural land, covers an area of 19.35ha and during the Construction Phase is estimated to use 300 litres of diesel fuel per hour for all onsite plant activities. The Construction Phase is also estimated to produce ca.2,500 tonnes of waste materials, encompassing material such as wood, packaging and windows. During the Operational Phase, changes in traffic generated by the Proposed Development will occur across fourteen (14No.) identified roads (further detailed in Chapter 18). Changes in average annual daily traffic (AADT) for the first year of operation identified (Opening Year -2028) vary from no changes in traffic to a difference of ca -1,800 AADT. The calculation of CO_{2e} emissions from these changes in traffic will be determined using TII's Road Emission Model (REM), which provides cumulative estimations of CO_{2e} for all identified roads in the network based on factors such as vehicle speed, link length, and the proportion of LGVs to HGVs.

Scope 2 emissions are associated with electricity generation during the Operational Phase. It is estimated that an average resident is projected to use 4,500kWh of electricity annually, resulting in a total estimated energy consumption of 4500 x 323 = 1,453,500 kWh per year for the Proposed Development

Scope 3 emissions during the Construction Phase predominately result from external vehicle use, encompassing both employee and heavy good and delivery vehicles (LGVs and HGVs), as well as considerations related to embodied carbon from construction materials. Given the magnitude of the Proposed Development, it's anticipated that the daily peak numbers of HGVs and light good vehicles (LGVs) or staff vehicles will not surpass 30No. vehicles per category, totalling 60No. vehicles per day. It is estimated that HGVs during peak operations will cover an estimated 3,000km per day, within a 50km radius (100km round trip) of the Proposed Development. An average employee/ LGV vehicle is expected to travel approximately 15km per day (30km round trip), based on data from the Central Statistics Office. Therefore, the total distance travelled by employee vehicles during the entire Construction Phase is estimated at 2,181,300km.

9.2.3 Climate Risk Assessment

The IPCC define three key components for identifying climate risk that interact to generate the risk of climate impact. These include:

- Hazard: The Potential occurrence of a natural or a human induced physical event or trend (such as a heatwave, heavy rainfall event, or sea level rise) 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 (e.g., homes in a flood plain); and,

- Vulnerability: The propensity or predisposition to be adversely affected (e.g., peoples underlying health conditions can be worsened by high temperatures or heatwaves).

Figure 9.2 below displays the framework for identifying potential climate risk associated with the Proposed Development.

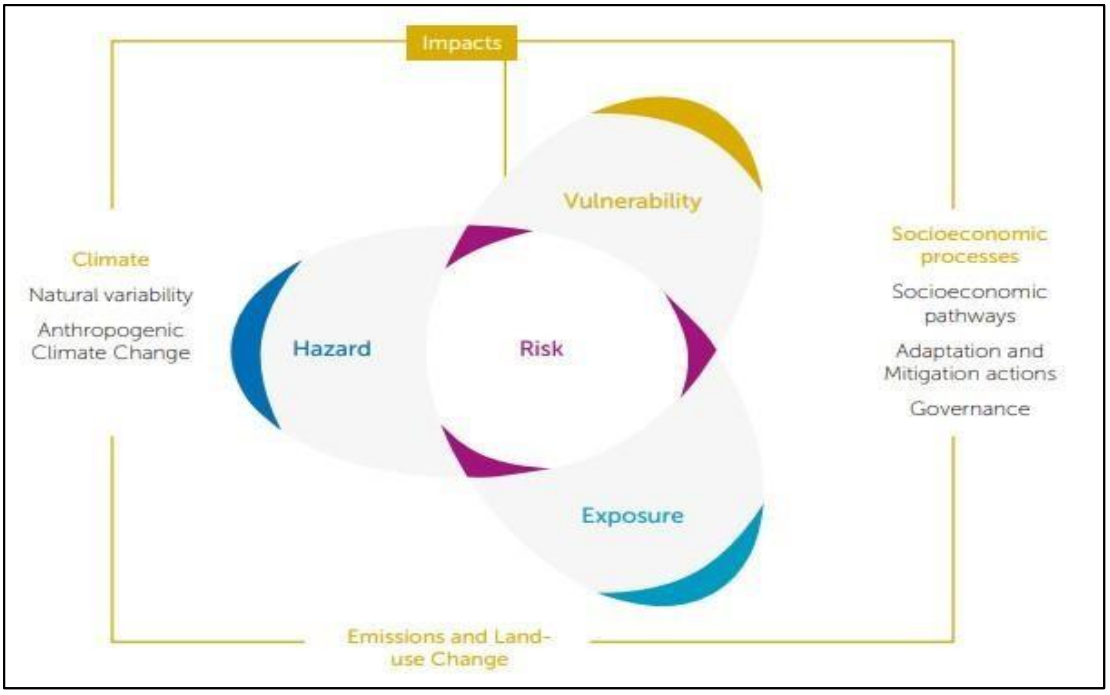


Figure 9.2: IPCC Sixth Assessment Report 'Risk Propellor'

In adherence to the Annex B guidelines provided for local councils, the assessment process entailed the identification and characterisation of climate hazards. This involved assessing both the frequency and magnitude of impacts across the 'Asset Damage" risk area.

Given the extensive scale and nature of the Proposed Development, the climate risk assessment will focus exclusively on the physical vulnerabilities of the Proposed Development to climate hazards, both present and future. According to Annex B these physical vulnerabilities are described as:

> *Properties of an asset related to the structure or facilities can be exacerbate/reduce the impacts before, during or after a hazard event e.g., poor design and construction of building provision of active cooling.*

The primary focus of this assessment will be to gauge the impact of climate risks that could potentially result in damage to assets associated with the Proposed Development. Societal impacts and the potential vulnerabilities to future residents of the Proposed Development has been extensively covered in the Cork City Council Climate Impact Assessment.

Frequencies of potential climate hazards will be based on a desk-based review of available resources, such as local weather data. The impact of climate risks that will potentially result in asset or social damage associated with the Proposed Development are considered as the main focus of this assessment.

Future changes in climate hazards will be identified as likely to be of significance if the current climate hazards exposure to the Proposed Development are determined to be significant. A detailed desk-based review of available resources (Climate Ireland, Think Hazard, Climate-ADAPT) will be used to determine

the potential climate hazards that the Proposed Development may be exposed to in the present and future.

9.3 Receiving Environment

9.3.1 Baseline Climate

The climate of Ireland is primarily driven by ocean influences, mainly the Atlantic, resulting in maritime climate conditions. This results in relative warm summers and mild winters. The wettest months of the year typically occur between November to January. The prevailing wind direction is from the southwest, contributing heavily to the wet weather experienced in the spring and warmer temperatures in the summer.

Typically, climate is averaged weather data over a 30-year period to determine long-term trends in important variables such as temperature, precipitation and windspeed. The nearest station to the Proposed Development, which has the 1991 to 2024 averages is Cork Airport, located ca. 10km to the southeast of the Proposed Development (Table 9.2 below).

Variable	1991 to 2024 Average
Mean Temperature (°C)	10.1
Precipitation (sum of monthly mean in mm)	1246
Mean of wind speed (kn)	9.6
mean number of days with gale force winds	7.7

Table 9.2: Climate Averaged Data from Cork Airport (1991 to 2020)

According to Met Éireann's Climate Average report, which compares the 1961 to 1990 averages to the 1991 to 2024 averages, the following was noted:

- Annual mean temperature in Ireland has increased by approximately 1.3°C. Spring showed the highest increase (1.1°C), whilst winter showed the smallest increase (0.64°C).

- Annual average rainfall has increased by approximately 7% between the two periods. The greatest increase was seen in the west and north of the country.

- The average annual distribution of rainfall shows a typical west to east decline in the number of rain days and wet days, with east and southeast regions experiencing the lowest number of rain days and wet days.

- The average annual number of very wet days observed over the period 1991 to 2020 shows that these events are more frequent in the west of the country than in the eastern and midland regions.

9.3.2 Projected Future Climate Change

Observed changes in Ireland's climate over the last century are in line with global and regional trends associated with human induced climate change. Climate projections in Ireland are based on global GHG emission scenarios, predicting the future usage of fossil fuels globally and the corresponding release of GHG gases.

The Representative Concentration Pathway (RCP) is a trajectory adopted by the IPCC (IPCC, 2019). RCP scenario 4.5 (RCP4.5) represents an intermediate scenario with emissions expected to peak in 2040 and then decline (IPCC, 2019). RCP scenario 8.5 (RCP8.5) is the worst-case scenario approach based on an overestimation of projected coal outputs (IPCC, 2019). The range of these scenarios provide an intermediate and worst-case estimation of potential changes in the environment in response to climate change. Based on this range, the following projections were made regarding Ireland's climate:

- Projected average seasonal changes in temperature range from 0.9°C to 1.9°C (RCP8.5), with an increase in the duration and intensity of heatwaves expected; and,

- Projected changes in the frequency of very wet days (>30mm of precipitation) range between a 21% increase (RCP4.5) and a 31% increase (RCP8.5).

- Projections regarding regional scale sea-level risk and changes in wind speed require more comprehensive research to determine the long-term trends.

9.3.3 Climate Hazards

As outlined in the IPCC's Sixth Assessment Report of 2022, climate impacts are intensifying and accelerating. These impacts, often intertwined with various human activities, can trigger cascading effects on both natural and human systems. The IPCC defines risk as the potential for adverse consequences to human and ecological systems, recognising the diverse values and objectives associated with these systems (IPCC, 2022).

The hazards deemed relevant to the Proposed Development are grouped as follows:

- Temperature (Extreme Highs, Extreme Lows, Droughts);
- Flooding (Pluvial, Coastal, Fluvial and Storms); and,
- Wildfires.

Certain categories of hazards, such as ocean acidification and sea level rise, will not directly impact the Proposed Development due to the nature of its activities and its location relative to the coast. Similarly, there are no recordings of landslides occurring within 10km of the Proposed Development, according to the GSI's Landslide Susceptibility Map.

Consequently, these have been excluded from consideration when evaluating the level of risk associated with the Proposed Development.

9.3.4 National Sectoral Ceiling

The National Sectoral Emission Ceiling denote the maximum allowable GHG emissions for each sector of the economy during the specified timeframe.

As per section 6C of the Climate Action Law and Low Carbon Development Act (as amended), sectoral emissions ceilings delineate the upper limits of GHG emissions permissible within the different sectors of the Irish Economy. Ireland has committed to achieving climate neutrality no later than 2050.

This commitment is outlined within the carbon budget program, which consists of three consecutive 5-year periods featuring national emission ceilings, measuring in terms of tonnes of carbon dioxide equivalent (tCO_{2e}). Table 9.3 below details the National Climate Budget for the period 2021 to 2030, split between three distinct phases.

National Climate Budget	Emission Ceiling for Assessment Period (tCO_{2e})
First Carbon Budget (2021 to 2025)	295,000,000
Second Carbon Budget (2026 to 2030)	200,000,000
Third Carbon Budget (2031 to 2035)	151,000,000

Table 9.3: National Carbon Budgets (2021 to 2035)

It is outlined within the Climate Action Plan 2025 that emissions may evolve beyond the year 2030 to establish a foundation for proposals regarding the provisional Third Carbon Budget (2031 to 2035).

Sectoral emission ceilings within the national carbon budgets have been designed to align with the EPA's National Emission Inventory. Currently, these ceilings are applicable for the initial two carbon budget periods, spanning from 2021 to 2025 and from 2026 to 2030. Given the timeline, emissions from the Construction Phase will extend from the conclusion of the second budget period in 2027 (when works commence) through the initiation of the second carbon budget period in 2030 (when works will finish). Consequently, emissions associated with the Construction Phase will be allocated between these two periods as far as practicable. For the Operational Phase of the Proposed Development, which is scheduled to begin in 2027, emissions will be extrapolated for the second carbon budget period only.

Regarding GHG emissions associated with the Proposed Development, emissions from transportation (both Construction and Operational Phase) will be assessed in relation to the emission ceiling allocated to the Transport sector. Electricity generated during the Operational Phase of the Proposed Development will be evaluated in accordance with the emissions ceiling designated for the Electricity sector covering the period from 2025 to 2030. Waste generated as a result of construction waste will be compared to the other sector (includes waste generated). According to the climate action plan, one of the key objectives of the industry sector is to reduce the embodied carbon of construction materials and therefore, emissions associated with embodied carbon for the Proposed Development will be compared to the industry sector. There is no description of plant emissions detailed in any of the sectoral emission ceilings and therefore they will be compared against the National Carbon Budgets outlined Table 9.3 above. Similarly, emissions associated with land clearance will also be measured against the National Carbon Budget, as ceilings associated with the Land-Use, Land-Use Change and Forestry sector (LULUCF) have yet to be quantified.

Sectors	First Sectoral Emission Ceiling (2021 to 2025) (tCO_{2e})	Second Sectoral Emission Ceiling (2026 to 2030) (tCO_{2e})
Transport	54,000,000	37,000,000
Electricity	Not applicable to assessment	20,000,000
Industry	30,000,000	24,000,000
Other (Waste)	9,000,000	8,000,000

Table 9.4: Sectoral Emission Ceilings relative to the Proposed Development

It is anticipated that emissions beyond 2030 will be shaped by improvements in plant performance, advancements in energy sources, and a higher utilisation of renewable energy. As a result, it is not feasible to extrapolate the emissions calculated for a typical operating year beyond the year 2030.

9.4 Characteristics and Potential Impact of Proposed Development

9.4.1 Characteristics of the Proposed Development

The potential effects of the Proposed Development on climate will be through GHG emissions will primarily result from the following activities associated with the Proposed Development:

- Vehicle movement during the Construction and Operational Phases;
- Embodied carbon linked to the construction of 323 dwellings associated with the Proposed Development; and,
- Energy and water consumption during the Construction and Operational Phases of the Proposed Development.

The current Phase 2 of the development at Ringwood is anticipated to include a link road, Primary Centre, Retail Pharmacy and Café / restaurant. Phase 1, Phase 2 are outlined and detailed in Chapter 3.

Construction Phase

The Construction Phase of the Proposed Development is anticipated to last a period of ca. 36 months. The Proposed Development is part of a Large-Scale Residential Development (LRD) and will contribute to 323No. of units.

The anticipated construction of the Proposed Development is expected to extend over approximately 36 months (2027 to 2030). During the Construction Phase, the Site will adhere to the following operating hours:

- Monday to Friday: 07:00 to 18:00;
- Saturdays: 07:00 to 14:00; and,
- Sundays and Bank/Public Holidays: Closed.

As a conservative estimation, plant operations during the Construction Phase are assumed to occur between 12-13 hours throughout the entire Construction Phase, which spans ca 600 days. Since construction activities are not anticipated until 2026, relevant emissions will be compared to the respective sectoral emission ceilings for the final year of the first carbon budget in 2025 and the first year of the second carbon budget in 2026. Comprehensive details on the cumulative emissions are provided in section 9.7 below.

Operational Phase

The Operational Phase of the Proposed Development is intended to be permanent and will involve activities characteristics of a residential estate. Each available property will be equipped with high efficiency heat pumps, and all doors and windows will be uPVC triple glazed.

Whilst the Construction Phase is expected to cease in 2028, it is anticipated that some degree of houses will be occupied during the final construction activities associated with the Proposed Development. In order to be conservative in the estimation of CO_{2e}, emissions will be calculated from the year 2026 and compared to the respective sectoral emissions ceiling. Regarding CO_{2e} generated from electricity, a typical year will serve as the initial basis, and then the figures will be extrapolated over the relevant carbon budget period.

To model the GHG emissions relating to traffic generated by the Proposed Development, two years of traffic data were provided for use in the REM (2027 and 2030). Additional calculations were performed to incorporate projected traffic volumes from 2026 to 2030 for estimating CO_{2e} emission. This involved extrapolating traffic volumes for each route included in the assessment, extending the data beyond 2026 up to 2030 using linear interpolation, and then inputting these figures into the REM model. These calculations provide a more comprehensive understanding of the anticipated carbon emissions associated with the Proposed Development's traffic during the specified second carbon budget period.

To calculate GHG emissions associated with electricity used during the Operational Phase, a typical year will serve as the initial basis, and then the figures will be extrapolated over the relevant carbon monitoring period.

The GHG emissions associated with the Operational Phase Proposed Development will encompass Scope 1 to Scope 2 emissions, as previously identified and discussed in section 9.2.2 above. Cumulative emissions linked to the remaining activities will be further detailed in section 9.6 below.

9.5 Potential Effects of/to the Proposed Development

9.5.1 Climate Change Risk Assessment

The Climate Change Risk Assessment assesses the frequency of identified climate hazards along with their potential impacts. To gauge the potential physical vulnerabilities of the Proposed Development to these hazards, the following representative receptors were identified:

- Property and Assets;
- Public Services (Electricity and Water); and,
- Transport Links.

9.5.2 Frequency of Climate Hazards

Based on the Annex B Guidance on current climate hazards, the frequency of the climate hazards were quantified through an analysis of available information. The frequency scores assigned, rated between 15 for each hazard, are justified below.

Climate Hazard	Frequency Score	Frequency	Justification
Temperature (High and Low)	3	Common	An analysis of temperature data from Cork Airport showed that daily maximum temperatures have surpassed 27°C (tiggering a yellow weather warning) on 11 occasions since 1961. Notably, four of these instances occurred in August 2022, indicating a heightened frequency of extreme high temperature events. The analysis also showed that temperatures dropped below -4°C (triggering a yellow weather warning) were recoded 58 times since 1961. However, the frequency of such occurrences has declined over time. The last recorded instance of numerous yellow warnings for cold temperature in a single year was in 2010.
Wildfires	1	Rare	According to data from the Global Wildfire Information System, there have been no recorded instances of reoccurring wildfires within a 5km radius of the Proposed Development between 2002 and 2022.
Flooding	2	Occasional	The Lee, Cork Harbour & Youghal Bay River Basin, located ca. 1.5km to the southeast of the Proposed Development, is prone to flooding according to the Flood Risk Management Plan prepared for the area. Historic and predicted flood mapping published by OPW on the Flood Hazard Mapping Website has been reviewed and is further derails in the Flood Risk Assessment Report submitted with the planning application Historic flood data indicates that there are no previous flood events within the boundary of the Proposed Development. There have been four previously identified flood events in the vicinity, and one recurring event being road flooding on the N20 at the Dairygold Factory, north of the site. None of these events are know to have impacted the site. Although the Proposed Development does not fall directly within these extents, their frequency has been taken into consideration.

Table 9.5: Classification of the frequency of climate hazards

It is important to acknowledge that there can be instances of co-occurring multiple hazards, for example, dry temperatures increasing the risk of wildfires. Whilst important to consider, these impacts were not incorporated into the climate risk assessment as they are adequately covered at a high level under the Cork City Council Climate Risk Assessment.

9.5.3 Potential Impacts of Current Climate Risks

The assessment of climate risks has considered the potential implications for critical infrastructure, including roads, as well as the properties under construction and public services that could be affected. In this evaluation, the impacts on the three receptors identified: Properties and Assets, Public Services, and Transport Links, within the risk area scale for 'Asset Damage' will be evaluated, as delineated under Annex B (GOI, 2023).

Receptor	Climate Hazard	Impact Score	Classified Impact	Justification
Properties and Assets	Temperature	1	Negligible	Flooding and wildfires can have a significant impact on homes, businesses and people, with the extents complex and varied.
	Wildfire	3	Moderate	
	Flooding	3	Moderate	
Public Services	Temperature	2	Minor	Damage to electricity infrastructure resulting from flooding or wildfires has the potential to extend beyond the immediate vicinity of the impacted areas. The risk of flood damage to gas infrastructure is considered to be low. Temperature impacts primarily pertain to infrastructure damage resulting from extreme cold events or low water supply due to droughts/heatwaves.
	Wildfire	3	Moderate	
	Flooding	3	Moderate	
Transport Links	Temperature	2	Minor	Flooding has the potential to result in substantial damage to road networks linked to the Proposed Development, leading to disruptions for travellers on these routes.
	Wildfire	1	Negligible	
	Flooding	3	Moderate	As per the Cork City Council Climate Change Risk Assessment, heatwave and drought events are rated as having impacts ranging from Negligible to Minor, whereas cold temperatures fall within the Minor to Moderate impact range.

Table 9.6: Potential impacts of receptors to Asset Damage as a result of Climate Hazards.

Using a conservative estimation of the impact on assets across all identified receptors, the frequency and impact scores for each hazard were determined and classified for the Proposed Development (Table 9.7). an illustrative graph is presented in Figure 9.2.

Hazard Type	Current Frequency	Current Frequency Score	Average Impact Score (Across All receptors)
Temperature	Common	3	1.6
Wildfires	Rare	1	2.3
Flooding	Occasional	2	3

Table 9.7: Summary of Current Climate Impacts for hazards identified.

Based on the information presented above, the hazard with the potential to inflict the highest level of impact on the identified receptors is categorised as 'Flooding', while the most frequent hazard is classified as 'Temperature'.

9.5.4 Potential Future Climate Risks and Impacts

Understanding how climate change risks are likely to evolve is essential for recognising potential shifts in existing risks due to climate change. The identification of current climate hazards should prioritise those that hold significance in the present. Based on the results of the current climate risk assessment, the 'Temperature' hazard and 'Flooding' hazard will be examined further.

Table 9.8 below presents the projected changes in climate hazards attributed to climate change, based on data from the Climate Ireland Platform. These projections compare climate variables for the period 2041-2060 with a baseline period of 1981-2010. For the projected changes in future flooding, scenarios were obtained from the Office of Public Works. All climate hazards were assessed in relation to the area where the Proposed Development is located, to the extent feasible.

Climate Hazard	Current Frequency	Projected Frequency	Justification
Temperature	Common	Frequent	• Under RCP4.5, average temperature is expected to increase by 1.2°C in the area associated with the Proposed Development. • The number of heatwave events within the area of the Proposed Development is expected to increase by ca.7 events for the period 2041 to 2060. • The number of frost days in the area associated with the Proposed Development is expected to decrease by 48.9% and the number of ice days decrease by 76.3%.
Flooding	Occasional	Occasional	• The Proposed Development is not located within the National Fluvial Mapping – Mid Range Future Scenario (Low or Medium Probability) which accounts for a 20% change in rainfall. • The Proposed Development is not located within the CFRAM River Flood Extents – Mid Range Future Scenario (Low to High Probability), which considers the potential effects of climate change on increases in rainfall of 20% and sea level rise of 500mm. The Proposed Development is located within 100m of the river Martin, which shows a

	high probability flooding range, but does not extend to the Proposed Development. The Proposed Development is not located within any extent of the CFRAM River Flood Extents – High-End Future Scenario, which takes into account the potential effects of climate change using an increase in rainfall of 230% and a sea level rise of 1,000mm.

Table 9.8: Classification of Hazard Frequency under future climate conditions.

Based on the available evidence, the frequency of temperature hazards, which have the potential to effect the Proposed Development, has been updated to 'Frequent'. This change is due to the increasing occurrence of heatwaves that could potentially impact the capacity of services to supply the Proposed Development. On the other hand, the frequency of cold weather events, which might impact the transport network, is expected to decrease under changing climate conditions.

As temperatures rise, the impact of droughts and heatwaves may increase potentially effecting the vulnerability of the local area. According to the Cork City Council Climate Risk Assessment, the following classifications for future impacts related to extreme high temperatures have been identified:

- Heatwaves would escalate from 'Minor' to 'Moderate' impacts in the Asset Damage category.
- Droughts are projected to increase from 'Negligible' to 'Minor' impacts to the Asset Damage category.

Due to the nature of the identified hazards and their recognition in the Cork City Council Climate Risk Assessment, the impacts of climate change on the Proposed Development are considered to be not likely and not significant, when considering the implementation of adaption strategies implemented by the local authority.

9.6 Greenhouse Gas Assessment

9.6.1 Construction Phase

In this assessment, emissions related to construction activities are categorised based on the three recognised scopes: Scope 1 (involving plant and equipment operation), Scope 2 (related to electricity), and Scope 3 (including embodied carbon and construction vehicle movements). Table 9.9, as presented below, specifies the CO_{2e} emissions as tonnes attributed to each emission source throughout the entire Construction Phase, which spans approximately 36 months.

The information presented in Table 9.9 offers a comprehensive overview of the emissions generated by various aspects of the construction activities, facilitating an assessment of the carbon footprint associated with the Construction Phase of the Proposed Development.

Description	Relevant Carbon Budget Period Assessed Against	Tonnes of carbon dioxide equivalent (tCO_{2e})
Land Area Cleared	Second	3.92
Plant Operations	Second	16,384
Total Vehicle Movements	Second	3,232
Total Embodied Carbon	Second	1372
Total Waste	Second	6.6
Total tCO_{2e} from Construction Phase		**20,870.52**

Table 9.9: Estimations tCO_{2e} during the Construction Phase (36 months)

During the Construction Phase of the Proposed Development, it is anticipated that the entire 24 month duration will result in the generation of approximately 20,870 tCO_{2e}. The Construction Phase spans a single carbon budget 2026-2030, emissions for each year were allocated to the respective section.

Table 9.10 below details the contribution of the individual emission sources to the respective sectoral emission ceiling (Built Environment and Transport).

Description	Emission Description from Proposed Development	Budget Period	Sectoral Carbon Budget (tCO_{2e})	Proposed Development emissions (tCO_{2e})	Contribution to Sectoral Carbon Budget
Transport	Construction Vehicle Movement	2026 to 2030	37,000,000	3232	0.007%
Industry	Embodied Carbon	2026 to 2030	24,000,000	1372	0.004%
National Climate Budget	Plant Operations and Land clearance	2026 to 2030	200,000,000	16,384	0.007%
Other	Waste Generated	2026 to 2030	8,000,000	6.6	0.0012%

Table 9.10: Contribution of Construction Phase Emissions to the relevant sectoral emission ceilings

The GHG emissions associated with various aspects of the Construction Phase of the Proposed Development have been evaluated. The contributions to different sectoral emission ceilings for the second carbon budget (2026 to 2030) periods are as follows:

- Traffic-related emissions (HGV and LGV vehicle movement): 0.007% (second carbon budget) of the Transport sector.
- Industry related emissions (embodied carbon): 0.004% second carbon budget of the industry sector.
- National Climate Budget related emissions (plant usage and land clearance): 0.007% second carbon budget of the National Climate Budget.
- Other related emissions (Waste generation): 0.0012% second carbon budget of the other sector.

These contributions suggest that the effects of the Construction Phase on climate, in terms of GHG emissions, are not likely and not significant in relation to the relevant sectoral emissions ceiling.

9.6.2 Operational Phase

Emissions of tCO_{2e} were calculated for the years 2026 and 2031 based on available AADT data. Table 9.11 below provides a comprehensive overview of the emissions associated with the AADT included in the model compared to the baseline (Without the Proposed Development), allowing for an assessment of the impact of the Proposed Development's resulting increase in traffic on emissions in the specific years relevant to the sectoral emission ceiling period. Additional annual daily traffic as a result of the proposed project was estimated at 11,110.

Details	Total AADT	Road Emissions (tCO_{2e})	Total AADT 2031	Road Emissions 2031 (tCO_{2e})
Without the Proposed Development (Do-Minimum)	119,487	2297.4	121,003	2303.3
With the Proposed Development (Do Something)	130,597	2504.7	132,113	2487.8
% Change as a result of the Proposed Development	9.3%	9.2%	9.2%	8.0%

Table 9.11: tCO_{2e} as a result of traffic during the Operational Phase of the Proposed Development

The estimated impact of the Proposed Development on traffic-related emissions is as follows:

- For the Opening Year (2027), there is an estimated increase of 8.2% in tCO_{2e} emissions due to the increased traffic flow resulting from the Proposed Development when compared to emissions that will occur without the Proposed Development.

- For the year 2031, there is an estimated increase of 8.0% in tCO2e emissions due to the increased traffic generated as a result of the Proposed Development, when compared to emissions that will occur without the Proposed Development.

To assess the impact on the second carbon budget for the Transport sector, AADT data for each road link was calculated for the period 2027 to 2030, and tCO_{2e} emission were based on these values, as detailed in Table 9.12.

Year	Modelled Total AADT (Without Development)	Modelled Total AADT (With the Proposed Development)	tCO_{2e} without the Proposed Development	tCO_{2e} with the Proposed Development	% Change in tCO_{2e}
2028	119,487	130,597	2292.1	2478.0	8.11%
2029	119,993	131,103	2293.4	2478.7	8.08%
2030	120,498	131,608	2296.8	2481.5	8.04%
tCO_{2e} Emissions without the Proposed Development			6882.3		
tCO_{2e} Emissions with the Proposed development			7438.2		
Second Carbon Budget for the Transport Sector (tCO_{2e})			37,000,000		
Contribution to Transport Sector Without the Proposed Development			0.0186%		
Contribution to the Transport Sector with the Proposed Development			0.0201%		

Table 9.12: Contribution of the Proposed Development to Traffic sectoral emissions.

The modelled data for the period from 2028 to 2030 indicates that the Proposed Development is expected to result in annual changes of tCO_{2e} at ca 8% compared to emissions without the development. Despite these changes, the contribution of the Proposed Development to the Transport sector's second carbon budget (covering 2026 to 2030) is estimated at 0.0201%, which is 0.0015% higher than without the Proposed Development. The impacts of the Proposed Development on climate change are therefore considered negligible in the context of the relevant sectoral emission ceiling.

Concerning energy, it is estimated that a single household would consume approximately 4,500kWh of energy per year, totalling 1,453,500 kWh across the entire Phase 2 of the Proposed Development. These houses will use heat-pumps as opposed to gas heating. Table 9.13 below indicates estimations of emissions within the context of the sectoral emissions for the Electricity sector.

Details	tCO_{2e}
tCO_{2e} associated with the Proposed Development per year from 1,453,500 kWh of electricity . Carbon factor = 0.224kgCO2/kWh	325.6
tCO_{2e} extrapolated across the Operational Phase (2028-2030)	883
Electricity Second Carbon Budget (2028-2030)	12,000,000
Contribution of Proposed Development to sectoral emissions ceiling	0.007%

Table 9.13: Contribution of the Proposed Development to Electricity sectoral emissions.

The contribution of the Proposed Development to emissions associated with the second sectoral emission ceiling carbon budget for the Electricity sector is estimated at 0.007%. This does not consider any potential updates in renewable energy sources and is therefore considered as a conservative estimation of emissions.

Based on the contributions of the Operational Phase emissions to the relevant sectors, the effects of the Proposed Development on climate, in terms of GHG assessments, is considered to be not likely and not significant.

9.6.3 Cork City Council Climate Adaption Strategy

As discussed above, the Cork City Council Climate Adaption strategy has identified best adaption practices for reducing the vulnerabilities of receptors to the adverse effects of climate hazards. Of which are most relevant to the Proposed Development (extreme temperatures and flooding) the following adaption measures have been identified:

To build capacity within Cork city Council to respond effectively to extreme weather events.

- Support existing extreme weather event response arrangements and investigate further deployment of early warning systems (e.g., Flood Early Warning Systems (FEWS), along with reviewing and collating information on existing warning systems.
- Assist in building resilience and capacity within local businesses and communities to enhance the overall response to extreme weather events taking into consideration climate equality and justice.

To increase the resilience of roads and transport infrastructure:

- Communicate with external stakeholders on assets that would be required during an extreme weather event.
- Integrate climate considerations into the design, planning and construction of all transport infrastructures.

- Home or hub or remote working should be promoted and instituted by relevant organisations and firms. This will help to reduce congestion and carbon emissions associated with using commuting for work.

To increase the resilience of Cork City Council buildings, housing stock, architectural heritage and other capital assets:

- Develop a system, in the context of climate vulnerabilities, for the management of capital assets, including buildings, housing stock, fleet, creation areas and public amenities.
- Support the rollout of electric vehicle and electric vehicle charging infrastructure and the rollout of compressed natural gas usage and corresponding infrastructure in Cork City.

To adapt to the increased risk and impact of flooding due to climate change:

- Ensure that flood event emergency response plans are reviewed on a regular basis to reflect the increase in flood risk.
- Identify areas susceptible to isolation as a consequence of flooding and establish measures to address this issue. Use future scenario flood maps to assist in the identification of potentially vulnerable communities and assets.
- Develop a system for the upgrade of drainage networks, including the separation of sewer and surface water to increase resilience capacity.

9.7 Mitigation Measures

Mitigation measures can be introduced to avoid, reduce, replace and offset carbon emissions associated with the Proposed Development. These measures will follow the mitigation hierarchy, which includes the following approaches:

Avoid: The avoidance of GHG emissions involves strategies to minimise emissions by avoiding or reducing activities that contribute to them, including:

- **Energy Efficiency:** Use high-performance insulation, windows and roofing materials to minimise heat loss and gain, which will reduce the energy required for heating and cooling.
- **Electrical Vehicle Charging:** The Proposed Development will provide electrical vehicle charging infrastructure to encourage residents to use electric vehicles.
- **Waste Management:** Effective waste management practices, including recycling and composting programmes, to minimise landfill waste and associated methane emissions.

Reduce: The reduction of GHG emissions focuses on implementing measures that minimise emissions during the Construction Phase. These include:

- **Local sourcing:** The Proposed Development will source construction material from local sources as far as practicable.
- **Plant and Operations:** The Construction Phase will reduce the idling of onsite plant when not in use.

Replace: The replacement approach involves substituting high-emission activities or materials with lower emission alternatives. These include:

- **Recycled Materials:** The use of recycled materials and aggregates for road pavements and infilling as far as practicable;
- **Site Equipment:** Site equipment worn will be reused as far as practicable.

Offset: Offset measures involve compensating for the unavoidable GHG emissions by investing in activities that reduce GHG emissions elsewhere. These include:

- **Landscaping:** Facilitate landscape design that promotes tree and shrub growth as far as practicable.

9.8 Cumulative and In-Combination Effects

For Phase 1 and Phase 2, the construction phase is expected to involve multiple activities, with a conservative estimation of the maximum number of plants that will be used concurrently. To compare these emissions, with the relevant sectoral emission ceiling carbon budget periods, cumulative emissions will be assessed and extrapolated for the second carbon budget period (2026-2030). As the cumulation of these effects will not occur until 2028 at the earliest, the period 2028 to 2030 will only be measured when relevant.

A high-level overview of emissions sources when comparing those included in the cumulative assessment with those included in the assessment for the Proposed Development identified the following:

- An increase in fuel consumption for plant by ca. 1,515,00 litres over the entire construction phase
- Reused materials onsite leading to similar traffic emissions as the Proposed Development but cumulatively assessed for the second carbon budget period (2026-2030);
- Clearance of a total 16.3 hectares of land defined as agricultural in nature;
- Increases electricity consumption during the Operational Phase by ca. 2,560,500 kWh for all 569 residential houses;
- An additional 1095 tonnes of construction waste; Additional quantities of construction materials resulting in increased embodied carbon; and,
- Increase in operational phase AADT to increase in both 2028 and 2031.

9.8.1 Construction Phase

During the construction phase of Phase 1 and Phase 2 of the development at Ringwood, emissions that were included cumulatively were those included in the second carbon budget for the relevant sectors.

Description	tCO_{2e} associated with Proposed Development (2026-28)	tCO_{2e} for Large Residential Development	Cumulative tCO2e emissions
Land Area Cleared	3.92	4.1	8.02
Plant Operations	16,384	18700	35,084
Total Vehicle Movements (HGVs and employees)	3232	3625	6857
Total Embodied Carbon	1372	2250	3622
Total Waste	6.6	8.5	15.1

Table 9.14: Estimations of cumulative tCO_{2e}.

As with the assessment carried out, the cumulative emissions associated with the development at Ringwood will be compared to the Transport, Industry and Other sectoral emission ceilings, along with the National Carbon Budget.

Description	tCO_{2e}	Contribution of cumulative emissions to relevant sector (%)
Cumulative Emissions for Large Residential Development		
Cumulative Emissions relative to Transport Sector	6857	0.018%
Cumulative emissions relative to Industry Sector	3622	0.017%
Cumulative emissions relative to National Carbon Budget	35084	0.018%
Cumulative emissions relative to the other sector	15.1	0.0004%

Table 9.15: Contribution of cumulative emissions to sectoral emission ceiling

Due to the contribution of cumulative emissions associated with Phase 1 and Phase 2 of the development at Ringwood to the relevant sectoral emissions ceilings, effects on climate are not likely and not significant.

9.8.2 Operational Phase

Based on the cumulative emissions associated with 569 No. total houses using electricity during the second carbon budget period, it is determined the Proposed Development, Phase 1 and Phase 2 would emit a total of 1782 of tCO_{2e} for the second carbon budget period. This assumes that all houses will be occupied during the period 2028 to 2030, which is not the case, and therefore represents a conservative estimation. When compared to the sectoral emission ceiling for the Electricity sector (20,000,000 tCO_{2e}), the Proposed Development would contribute to 0.0078% of the emissions allocated for this period.

With regards to traffic, total AADT for the cumulation of all traffic is expected to range between 130,597 to 131,608 between 2028 and 2030. The total cumulative emissions for this period were 9,943 tCO_{2e}. When comparing the cumulative emissions for the Proposed Development, Phase 1 and Phase 2 to the sectoral emissions ceiling for the Transport sector, the contribution was 0.025%.

Due to the contribution of cumulative operational emissions associated with the Proposed Development, Phase 1 and Phase 2, the effects on climate are determined as not likely and not significant.

9.9 Interactions with other Environmental Variables

- Chapter 11 Biodiversity: Climate Change has the potential to impact ecosystems. However, the effects of GHG emissions associated with the Proposed Development were determined as not likely and not significant.
- Chapter 14 Water: Climate Change can have a direct impact on water shown to be influencing the Proposed Development. The frequency of extreme rainfall events is expected to increase under changing climate conditions. The impact of Climate Change on the Proposed Development, with respect to flooding, was considered to be not likely and not significant.
- Chapter 18: Materials Assets – Traffic and Transport: Climate Change is directly linked to GHG emissions, with road traffic considered one of the highest contributors to national emissions. The assessment of GHG emissions from vehicle movements associated with the Proposed Development has determined effects to be not likely and not significant.

9.10 Indirect Effects

All significant and likely effects have been considered in this chapter. No additional indirect effects were identified during the assessment.

9.11 Residual Effects

The effects of the GHG emissions as a result of the Proposed Development will be not likely and not significant in the context of the sectoral emissions ceilings. It is estimated that 16,500 houses would be needed to meet demand during the period 2026 to 2030. GHGs will be generated as a result of the Operational Phase of the Proposed Development, however given the design of the houses and the advancements of renewable energy infrastructure, these emissions are considered to be not significant.

9.12 Difficulties Encountered

Estimations of GHG emissions were made based on the quantities and estimations of materials to be used during the Construction Phase and electricity used during the Operational Phase. This information is subject to change upon the appointment of a contractor.

9.13 References

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10.0 NOISE AND VIBRATION

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10.1 Introduction

This chapter provides a noise and vibration impact assessment of the Proposed Development, Phase 2 of a Large-Scale Residential Development (LRD) and all associated works in the vicinity of the Site at Ringwood, Blarney, Co. Cork. It also considers the additive impact of Phase 1 of the Proposed Development that was assessed in the EIAR Noise & Vibration Chapter issued for Phase 1 in June 2024.

10.2 Methodology

The following documentation was reviewed and utilised in the preparation of this report:

- BS 4142:2014 'Methods for rating and assessing industrial and commercial sound 2014; (BSI 2019)
- BS 8233:2014 Guidance on sound insulation and noise reduction for buildings (Institution 2014);
- WHO Environmental Noise Guidelines for Europe, 2018; (World Health Organization 2009);
- European Communities (Environmental Noise) Regulations 2018;
- TII's Environmental Assessment and Construction Guide-lines, including the Good Practice Guidance for the Treatment of Noise during the Planning of National Road Schemes (March 2014);
- ISO 9613 Parts 1 & 2 'Acoustics – Attenuation of sound during propagation outdoors' (ISO 2017, ISO 1996);
- ISO 1996-1:2016 'Acoustics – Description, measurement, and assessment of environmental noise – Part 1: Basic quantities and assessment procedures' (ISO 2016);
- ISO 1996-2:2017 'Acoustics – Description, measurement, and assessment of environmental noise – Part 2: Determination of sound pressure levels' (ISO 2017);
- EPA 'Guidance Note for Noise: Licence Applications, Surveys, and Assessment in Relation to Scheduled Activities (NG4)', 2016 (EPA 2016);
- BS 5228-1:2009+A1:2014, Code of practice for noise and vibration control on construction and open sites, Noise (British Standard 2009);
- Cork City Development Plan 2022-2028 (Cork Agglomeration Area Noise Action Plan 2018-2023); and
- Cork Agglomeration Area Noise Action Plan 2018-2023 (Cork County Development Plan 2022).

A glossary of terms of the main parameters utilised in this chapter are detailed below:

- **LAeq,T** is the equivalent continuous sound level, used to describe the fluctuating noise in terms of a single noise level over the same sampling time period (T); and,

- **LA90,T** is the A-Weighted noise level in the lower 90 percentile of the sampling interval 'T', excludes intermittent features typical of traffic and typically utilised to describe background noise.

- **Rw** is the weighted sound reduction index used to rate the sound proofing effectiveness of a material. The higher the Rw number, the better a sound insulator the material is.

10.2.1 Competency

The desk-based assessment and monitoring programme, analysis of the data and project management was conducted by an Acoustic Specialist with 30+ years' experience and whom is a corporate member of the Institute of Acoustics (MIOA). It can therefore be confirmed that the noise impact assessment detailed in this chapter has therefore been completed by a 'competent person'.

10.3 Noise & Vibration Impact Assessment Criteria

This report looks at the following key aspects of the Proposed Development:

- The potential for noise impact during construction;
- The potential for noise arising from the operation of the Proposed Development on existing or other known future residents / developments in the locality.
- The potential for noise impact from the existing ambient environment on future use of the Proposed Site; and

The methodologies used for each of these key stages are presented below.

10.3.1 Construction Criteria Assessment

There is no published statutory Irish guidance relating to the maximum permissible noise levels 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 may 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 - Part 1: 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, indicates a significant noise impact is associated with the construction activities. Table 10.1 below sets out the values which, when exceeded, indicate a significant effect at the facades of residential receptors as recommended by *BS 5228 - 1*. Please note that these are cumulative levels, i.e. the sum of both ambient and construction noise levels.

Assessment category & Threshold Value Period (L_{Aeq})	Threshold Value, in decibels (dB) ($L_{Aeq,T}$)		
	Category A[A)]	Category B[B)]	Category C[C)]
Night Time (23:00-07:00)	45	50	55
Evening and Weekends [D)]	55	60	65
Daytime (07:00-19:00) and Saturday (07:00-13:00)	65	70	75

Table 10.1: *BS 5228* Construction Noise Emission Criteria

Note 1: A potential significant effect is indicated if the $L_{Aeq,T}$ noise level arising from the site exceeds the threshold level for the category appropriate to the ambient noise level. If the ambient noise level exceeds the Category C threshold values given in the table (i.e., the ambient noise level is higher than the above values), then a potential significant effect is indicated if the total LAeq,T noise level for the period increases by ≥3dB due to site noise.

Note 2: Applied to all residential receptors only.

Note 3:

A) Category A: Threshold values to use when ambient noise levels (when rounded to the nearest 5dB) are less than these values.
B) Category B: Threshold values to use when ambient noise levels (when rounded to the nearest 5dB) are the same as Category A values.
C) Category C: Threshold values to use when ambient noise levels (when rounded to the nearest 5dB) are higher than Category A values.
D) 19:00-23:00 weekdays, 13:00-23:00 Saturday and 07:00-23:00 Sunday. For the appropriate period (e.g. daytime), the ambient noise level is determined and rounded to the nearest 5dB.

Note that this method requires an understanding of the receiving environmental at Noise Sensitive Receptors (NSRs) to allocate suitable construction noise limits.

10.3.2 Operational Criteria Assessment

There is no Irish Standard containing guidance for appropriate noise limits for residential developments. In the absence of such standards, best practice dictates that the potential noise impact of the proposed development is assessed against appropriate British and / or International Standards.

Appropriate guidance is contained within *BS 8233 (2014): Guidance on Sound Insulation and Noise Reduction for Buildings*. This British Standard sets out recommended noise limits for indoor ambient noise levels in residential dwellings as detailed in Table 10.2 below.

Activity	Room Type	Design Criterion (dB $L_{Aeq,T}$)	
		Daytime (07:00 - 23:00hrs)	Night Time (23:00 - 07:00hrs)
Resting / Sleeping Conditions	Living Room	35dB $L_{Aeq,16hr}$	-
	Bedrooms	35dB $L_{Aeq,16hr}$	30dB $L_{Aeq,8hr}$

Table 10.2: Indoor Ambient Noise Level Criteria from *BS 8233*

For the purposes of this assessment, it is necessary to derive external limits based on the internal criteria noted in the paragraph above. This is done by factoring in a degree of noise reduction afforded by an open window, which is defined in *BS 8233* as being 15dB.

Applying the 15dB factor to the values in Table 10.2, the following criteria would therefore apply at the façades of the nearby residential dwellings:

- **Daytime (07:00 to 23:00 hours) 50 dB $L_{Aeq,16hr}$**
- **Night-time (23:00 to 07:00 hours) 45 dB $L_{Aeq,8hr}$**

10.3.3 Traffic Noise Criteria on Surrounding Roads

There are no specific guidelines or limits relating to traffic related sources along the local or surrounding roads. Given that traffic from the development will make use of existing roads already carrying traffic volumes, it is appropriate to assess the calculated increase in traffic noise levels that will arise because of vehicular movements associated with the development. The Proposed Development will also create a new road for site access located to the western boundary of the Site.

To assist with the interpretation of the noise associated with additional vehicular traffic on public roads, Table 10.3 is taken from DMRB Design Manual for Roads and Bridges (DMRB), Highways England Company Limited, Transport Scotland, The Welsh Government and The Department for Regional Development Northern Ireland, (Highways England Company Limited, Transport Scotland, The Welsh Government and The Department for Regional Development Northern Ireland 2020).

Change in Sound Level (dB)	Subjective Reaction	Magnitude of Impact	EPA Glossary of Effects[1]
10+	Over a doubling of loudness	Major	Significant
5 - 9.9	Up to a doubling of loudness	Moderate	Moderate
3 - 4.9	Perceptible	Minor	Slight
0.1 - 2.9	Imperceptible	Negligible	Imperceptible
0	None	No Change	Neutral

Table 10.3: Significance in Change of Noise Level

The guidance outlined in Table 10.3 will be used to assess the predicted increases in traffic levels on public roads associated with the Proposed Development and to provide comment on the likely long term noise impacts during the operational phase.

Note that the N/M20 Cork to Limerick Project is a key element in Project Ireland 2040, the Government's long-term overarching strategy to make Ireland a better country for all of its people. The Strategy comprises the National Planning Framework (NPF) to 2040 (Department of Housing, Local Government and Heritage 2020) and the National Development Plan (NDP) 2021-2030 (Department of Public Expenditure, NDP Delivery and Reform 2021).

TII's response to the Ringwood scoping consultation as part of the preparation of the Phase 2 EIAR stated:

[1] EPA Guidelines on the Information to be contained in Environmental Impact Assessment Reports, (Draft August 2017).

- *The EIAR should have regard to TII's Environmental Assessment and Construction Guide-lines, including the Good Practice Guidance for the Treatment of Noise during the Planning of National Road Schemes (March 2014).*

- *The EIAR should consider the European Communities (Environmental Noise) Regulations 2018 (S.I. No. 549 of 2018)) and how the development will affect future action plans by the relevant competent authority. The developer may need to consider the incorporation of noise barriers to reduce noise impacts (see Good Practice Guidance for the Treatment of Noise during the Planning of National Road Schemes (March 2014))*

10.3.4 Cork City Development Plan 2022-2028

The following Cork City Council strategic objectives have been identified and reviewed as part of the assessment:

> *Objective 8: Environmental Infrastructure*
> *Proposals for new development in Cork City will not be permitted where they would have an unacceptable detrimental impact on water resources or infrastructure, water quality or air quality, have inadequate waste management mitigation, generate excessive noise or otherwise have an unacceptable detrimental impact on the environmental infrastructure of Cork City.*
>
> *Objective 9.20: Noise*
> *To support the implementation of the objectives of The Cork Agglomeration Noise Action Plan 2018 - 2023 and promote the pro-active management of noise where it is likely to have significant adverse impacts on health and quality of life.*

10.3.5 Vibration Criteria

Vibration standards come in two varieties: those dealing with human comfort and those dealing with cosmetic or structural damage to buildings. In both instances, it is appropriate to consider the magnitude of vibration in terms of Peak Particle Velocity (PPV).

Guidance relevant to acceptable vibration within buildings is contained in the following documents:

- British Standard *BS 7385-2 (1993): Evaluation and measurement vibration in buildings Part 2: Guide to damage levels from ground borne vibration*;

- British Standard *BS 5228-2 (2009): Code of practice for noise and vibration control on construction and open sites Part 2: Vibration*;

BS 7385 states there should typically be no cosmetic damage if transient vibration does not exceed 15mm/s at low frequencies rising to 20mm/s at 15Hz and 50mm/s at 40Hz and above. These guidelines relate to relatively modern buildings and should be reduced by 50% or less for more critical buildings or structures that are considered to be compromised.

BS 5228 recommends that for soundly constructed residential property, light commercial buildings 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 particle velocity of 15mm/s at 4Hz increasing to 20mm/s at 15Hz and increasing to 50mm/s at 40Hz and above for intermittent vibration.

For reinforced or framed structures or industrial and heavy commercial buildings 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 particle velocity of 50mm/s at 40Hz and above again for intermittent vibration.

In the case of continuous vibration, it states that these figures may need to be reduced by up to 50%. Below these vibration magnitudes minor damage is unlikely, although where there is existing damage, these limits may be reduced by up to 50%.

10.4 Receiving Environment

Noise Sensitive Receptors

To assess potential acoustic impacts during the construction and operational stages, the closest Noise Sensitive Receptors (NSRs) were considered (as NSRs situated further from the Site will experience lower noise levels as distance from the Site increases)

The identified noise sensitive receptors are described below and shown in Figure 10.1 below.

NSR 1 are the residential dwellings located along Ard Na Greine and Aisling Geal that border the Site to the north.

NSR 2 are the residential dwellings located along Station Road that border the Site to the northwest.

NSR 3 are the Phase 1 development residential dwellings that border the Site to the southwest.

NSR 4 are the Phase 1 development residential dwellings that border the Site to the southeast.

NSR 5 are the residential dwellings that border the commercial area at the far south of the Site along the R617.



Figure 10.1: Phase 2 Noise Sensitive Receptors

Note that NSR 1 and NSR 2 are identical to the noise sensitive receptors in the Phase 1 noise and vibration chapter.

10.4.1 Baseline Ambient Sound Assessment

The Proposed Development will be located on a Site covering an area of approximately 19.35ha to the northwest of Blarney, Co. Cork. The centre of Blarney is located approximately 600m to the southwest and west of the Site and Cork is located approximately. 7.5km southeast of the Site. The site is situated just to the west of the N20, a National Primary Road that is the direct route from Cork to Limerick.

10.4.2 Strategic Noise Mapping

The following strategic noise maps (Enivronmental Protection Agency n.d.) were reviewed to assess the baseline noise environment:

- Round 4: Road Noise Maps;

Figures 10.2 and 10.3 below show road noise contours relevant to the built up areas of the Site (L_{den} and L_{night}). Rail strategic noise maps were not included to the closest track to the Proposed Development.

Regarding airport noise, the Site is notably beyond the Zone A, B or C noise zones shown in the Cork City Development Plan Figure 10.33; however, the Site is adjacent to the Outer Public Safety Zone of Cork Airport Area as presented in the governments Public Safety Zone mapping (gov.ie - Public Safety Zones (www.gov.ie)) for Cork Airport, and Figure 10.33 of the City Development Plan.

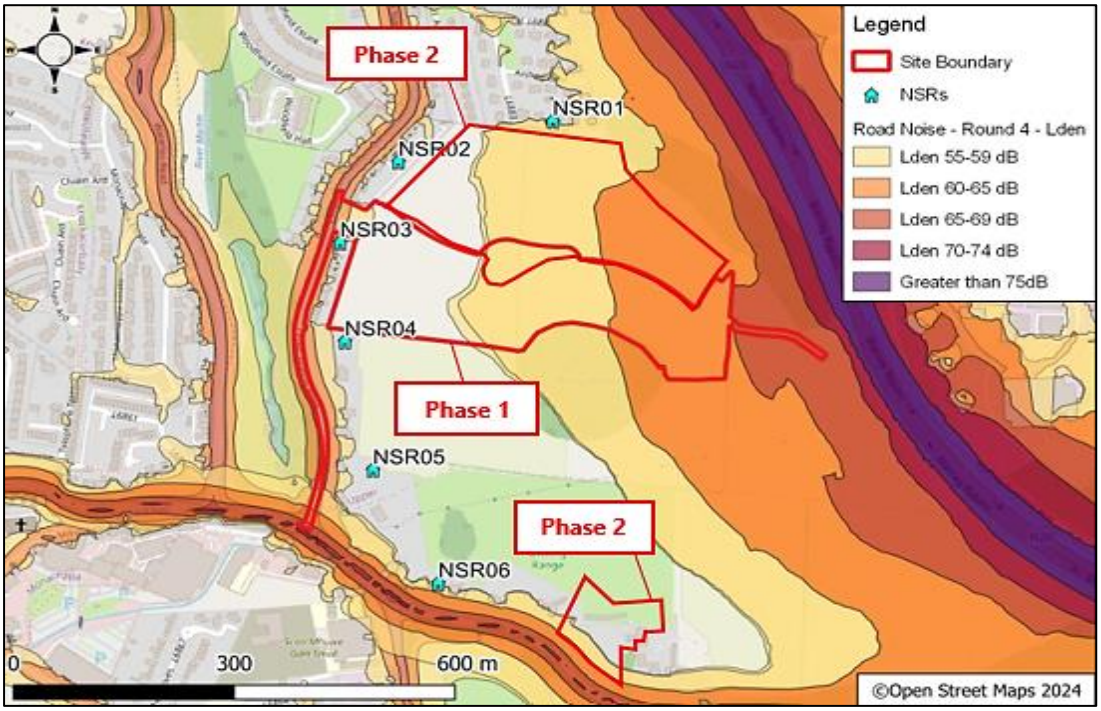


Figure 10.2: Road Noise Contours - L_{den}

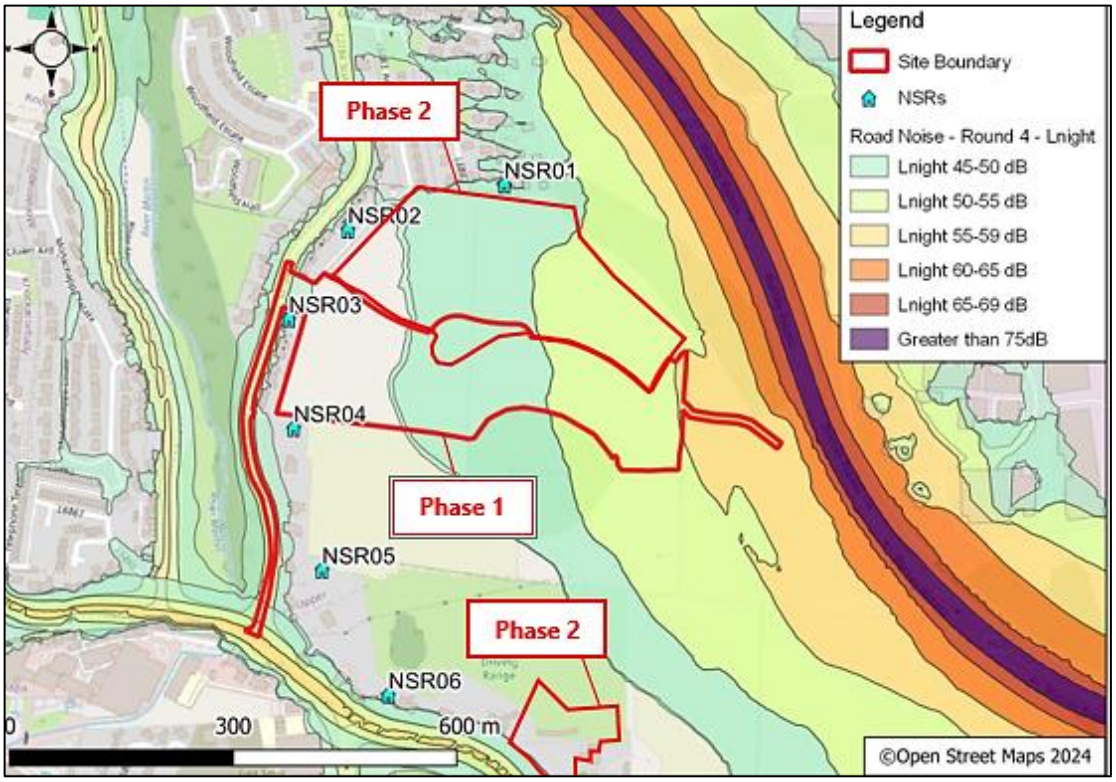


Figure 10.3: Road Noise Contours - L_{night}

10.4.3 Baseline Ambient Acoustic Environment Survey

A detailed noise survey was completed by a competent acoustician on 23 / 24 October 2025 in accordance with *ISO 1996-2:2017*. This survey was completed during daytime hours (07:00 - 23:00) and night-time hours (23:00 - 07:00).

The noise measurement locations are described below and detailed in Figure 10.4 on the following page. Note that NML 1, NML 2 and NML 3 are relatively consistent with those carried out for the Phase 1 noise assessment.

NML 1 in the vicinity of the Phase 1 dwellings bordering the Site to the southeast.

NML 2 in the vicinity of the dwellings located along Ard Na Greine and Aisling Geal that border the Site to the north.

NML 3 in the vicinity of the dwellings located along Station Road that border the Site to the northwest.

NML 4 in the vicinity of the Phase 1 development dwellings that border the Site to the southwest.

NML 5 in the vicinity of the dwellings along the R617 by the commercial area at the far south of the Site

Daytime and night-time measurements were carried out at the five locations for daytime and night-time periods.



Figure 10.4: Noise Measurement Locations

Two rounds of 30min each was conducted for daytime monitoring and two rounds of 15min each were conducted for night-time monitoring similar to the approach adopted for the Phase 1 assessment. The results are summarised in Table 10.4 below.

Noise Monitoring Location	$L_{Aeq,T}$		$L_{A90,T}$	
	Daytime	Night-time	Daytime	Night-time
NML 1	52 - 54	44 - 45	44 - 45	33
NML 2	48 - 51	40 - 41	42 - 43	31 - 33
NML 3	50 - 52	41 - 42	39 - 40	35 - 36
NML 4	47 - 49	38 - 41	39 - 41	32 - 34
NML 5	52 - 53	46 - 48	44 - 46	35

Table 10.4: Noise Monitoring Results

10.4.4 Characterisation of the Ambient Acoustic Environment

The ambient sound survey found that the local ambient acoustic environment was influenced by:

- Traffic noise from the N20 and surrounding road networks. There were also occasional contributions from overhead planes;
- Bird song / bird call and occasional sounds of children playing in nearby areas.

Slightly higher levels of ambient noise were observed along the eastern boundary of the Site due to its proximity to the N20 national road.

The monitoring locations recorded $L_{Aeq,T}$ values of 47dB to 54dB for daytime periods and 38dB to 48dB for night time periods.

The background ambient acoustic environment for all monitoring locations ($L_{A90,T}$) ranged from 39dB to 46dB for daytime periods and 31dB to 36dB during night time periods.

10.4.5 Conclusion of Existing Ambient Acoustic Environment Assessment

Based on subject observations of the area and the baseline survey results, it is reasonable to conclude that the ambient existing sound levels surrounding the Site are typical for a suburban environment in proximity to a major road (N20).

Note that the measured results are relatively similar (i.e. ≤ 3dB) to those measured in similar locations for the Phase 1 survey except for the night time $L_{Aeq,T}$ measurements at NM2 & NM3 which were 4 - 5dB higher on average. However, note that this slight increase in ambient noise level does not have any significant effect on the established construction / operational phase criteria or the findings / conclusions of the Phase 1 assessment.

10.5 Characteristics & Impacts of Proposed Development

10.5.1 Construction Phase Noise

When the baseline measurement and strategic noise mapping results are compared with the ambient noise level ranges in Table 10.1 (refer to Section 10.3.1), it can be confirmed that all the noise sensitive receptors in the vicinity of the site would be classified as Category A.

The following threshold values will therefore apply at all the NSRs:

- Daytime (07:00 -19:00) and Saturday (07:00 -13:00) 65dB
- Evening (19:00 - 23:00) and weekends[2] 55dB
- Night-time (23:00 - 07:00) 45dB

[2] 13:00 - 23:00 Saturday and 07:00 - 23:00 Sunday.

Construction noise will arise where heavy machinery will be in use to move soils, site levelling, and the creation of infrastructure and buildings onsite. Much of the material encountered during site clearance works will likely be removed by excavators and bulldozers. This noise assessment was based on the notable noise emission sources anticipated during the construction works which are outlined in Table 10.5 on the following page.

Construction Phase working hours are anticipated to be as follows:

- 7:00am to 7:00pm Monday to Friday; and,
- 7:00am to 4:00pm on Saturdays.[3]
- No work on Sundays or public holidays.

The movement of workers to and from the Site was not assessed within this report. All worker movements will likely peak during the 30 minutes prior to, and following construction start and finish hours, with associated vehicle movement on the public road network. These movements will be in keeping with local commercial employee traffic and are therefore not deemed likely to have any significant impact on local road noise.

The permissible levels of construction-related noise, as stipulated in Section 10.3.1, will vary based on the designated time frame. Specifically, as Category A, a noise limit of $L_{Aeq,1hour}$ will typically apply except for works undertaken during the hours of 13:00 to 16:00 on Saturdays, when a more stringent noise restrictions shall be enforced. For this timeframe of 13:00 to 16:00 on Saturdays, the maximum allowable noise level will be 55dBA $L_{Aeq,1hr}$.

This Noise Impact Assessment has utilised sound pressure values detailed in *BS 5228* as specific plant equipment is currently unknown. This is deemed a worst-case scenario as newer plant released to the market typically implement tighter controls on nose emissions.

The following standard noise equation was used to assess the sound pressure (Lp2) at a distance r2 from a known sound pressure (Lp1) at distance r1 at the various NSRs:

$$Lp2 = Lp1 - 20\log 10\,(\frac{r2}{r1})$$

The distances considered for each calculation represent the closest distance of the nearest proposed development building to each noise sensitive receptor. It must be stated that, for most of the time, plant and equipment will be at a greater distance than these and, consequently, will have a lesser impact. This allows consideration of a "worst-case" scenario in respect of construction noise emissions.

The following assumptions have also been made in the preparation of these construction noise prediction calculations:

- utilisation of all equipment of 66% of the 12-hour working day (i.e. 8 hours)
- the site will be surrounded by a 2.4m high solid hoarding

Table 10.5 indicates typical worst case noise levels that would be expected from the proposed construction site during the various phases of the construction project and their predicted level at each of the nearest noise sensitive receptors.

Phase	Plant Item (BS 5228 Ref)	dB $L_{Aeq,T}$ at 10m	NSR 1	NSR 2	NSR 3	NSR 4	NSR 5
Site Clearance	Tracked Excavator (C.6.37)	72	70	63	66	69	63
	Dumper (C3.100)	74					
	Wheeled Loader Lorry (D3.1)	75					
General Construction	Compressor (C6.19)	72	72	66	68	71	65
	Poker Vibrator (C6.40)	73					
	Cement Mixers (C6.6)	71					
	Diesel Hoist (C7.97)	73					
	Pneumatic Circular Saw (C7.79)	75					
	Generator (C7.51)	72					
	Dumper (C3.100	74					
Roadworks	Surfacing	73	59	52	57	68	51

Table 10.5: Typical Construction Stage Predicted Noise Emissions

The values presented in Table 10.5 represent the worst case condition when construction plant / activities will be operational at the nearest proposed development building to the NSRs without provision of noise control measures or mitigation factors.

The closest NSRs (NSR 1, NSR 2, NSR 3 & NSR 4) will experience construction sound emissions levels above 65dB L_{Aeq} during the Site Clearance and General Construction phases. The magnitude of these levels at these NSRs is due to the proximity of the proposed development buildings to the Proposed Development site boundary. Although this will be for a short duration when construction works are being carried out near the NSRs located on the other side of the Site boundary, the mitigation measures for construction works outlined in Section 10.6 should still be provided.

Note that this assessment only considers Phase 2 construction activities. Reference to Table 10.8 in the proposed development Phase 1 EIAR chapter confirms that there will also be a 7dB exceedance at NSR 4 due to the Phase 1 works.

The remaining phases will be compliant with the 65dB L_{Aeq} limit and will not require any additional mitigation; however, mitigation incorporated to the Proposed Development will still benefit these NSRs. In respect of vibration, the potential for impact at neighbouring sensitive locations during construction will be limited to excavation works and lorry movements on uneven road surfaces. However, lorry movements will be mostly on existing roads which are free of significantly sized speed bumps and other similar impediments so any potential vibration impact will therefore be negligible.

10.5.2 Operational Phase Noise

There are four principal sources of noise that are expected to arise during the operational phase of the proposed development in this instance. These are as follows:

- Building Services Plant for Residential Buildings
- Pumping Station Noise Emissions
- Café / Retail & Primary Care Centre Noise Emissions
- Additional Traffic on Adjacent Roads

Each one of these potential sources of noise is considered in turn in the following sections.

Residential Buildings Building Services Plant

It is expected that the principal items of building services plant will be associated with ventilation and heating of the apartment blocks and houses. Though specific plant / items will be selected at a later stage, a review of typical noise associated with such confirms that it is likely that such plant will contribute negligibly to the internal environment of the rooms assuming measures outlined within Technical Guidance Document E, 2014 (Department of Housing, Local Government and Heritage 2014) are provided which states:

> *"Structure borne noise is a common cause of complaints and the most effective approach is to structurally de-couple service installations and mechanical equipment from separating walls and separating floors."*

In addition to the heating / cooling building services plant, solar panels and string inverters will also be located on the apartment unit roofs and heat pumps will be located in each back garden for the dwellings.

The operational sources detailed in Table 10.6 (on the following page) have been modelled to assess the impact from all of these building services equipment proposed at the Proposed Development.

Type of Noise Source	Description	Location	Sound Pressure Level
Solar Panels	Solar panels to be used on apartments for heating of common areas,	2-3 panels per core	No associated noise.
String Inverters	Mini inverters to be positioned on roof along with solar panels,	With solar panels	10dB(A) at 1m
DCMV	Demand Controlled Mechanical Ventilation	To be used in residential units.	47dB $D_{n,e}$
Heat Pumps	Houses with External Unit (Generation 6 Samsung Heat Pump)	Located in back garden, one metre away from building and from garden boundaries	48dB(A) at 1m

Table 10.2: Residential Building Services Noise Source Summary

Based on the source noise levels detailed in Table 10.6 and considering a worst case scenario where all heat pumps in a given block of units are operating continuously over the entire period of interest, the resultant noise levels at the nearest noise sensitive receptors have been calculated and are predicted to be as follows:

Noise Sensitive Receptor	**Noise Level**
NSR 1	36 dB $L_{Aeq,T}$
NSR 2	33 dB $L_{Aeq,T}$
NSR 3	35 dB $L_{Aeq,T}$
NSR 4	37 dB $L_{Aeq,T}$
NSR 5	<10 dB $L_{Aeq,T}$

All the predicted levels above are below both the daytime and night time criteria at all nearby noise sensitive receptors and would therefore be considered acceptable. They are also below the ambient noise levels measured in the vicinity of the Site.

In respect of tonal noise emission elements, it is not possible to carry out a tonal analysis of building services plant during the planning stage since actual unit selections are not made until the detailed design stage of a project. Whilst it is not expected that low level building services plant of this nature will contain tonal elements that would be significant enough to manifest above the background noise levels in the vicinity, it is nonetheless recommended that a noise assessment be carried out by a qualified acoustic consultant during the design stage to confirm.

No impulsive elements are expected from building services plant.

Mechanical plant noise emissions are therefore expected to have a negligible long-term effect at all nearby noise sensitive receptors.

Pumping Station Noise Emissions

There is a pumping station located on the west side of the new Phase 2 entrance. This pumping station will be an Irish Water standard Type 3 pump station with all main component (i.e. noise producing elements) to be located under ground level. The only pumping station elements above ground level will be an enclosure which will include a control kiosk and flat access manholes.

The pumping station will be unmanned and automatically operated with submersible pump configurations in a wet well. There will be a minimum of two submersible pumps in a duty / standby arrangement.

Irish Water have not confirmed specifics regarding pump makes or models but pumps must comply with WIMES 1.02 (submersible pumps for wastewater) and be high-efficiency (IE3 or better), submersible units with automatic decoupling and guide rails. Indicative examples used in Irish wastewater pumping stations include Flygt series or Grundfos series submersible wastewater pumps. Noise levels for these units are typically in the range of 70 - 80 dB(A) at 1m. However, they will be submerged, located underground and enclosed, so predicted noise emission levels outside the enclosure are therefore expected to be negligible above the existing ambient noise level.

There are no impulsive elements associated with pump operation and, given that the pump noise emission levels are expected to be below the ambient noise level, no tonal elements would be expected to manifest.

Pumping station noise emissions are therefore expected to have a negligible long-term effect at all nearby noise sensitive receptors.

Café / Retail & Primary Care Centre Noise Emissions

There is a Primary Care Centre and a Café / Retail Building located on the east side of the new Phase 2 entrance, located far to the south of the Phase 2 residential area along the R617. As part of the design of these buildings, there will be a limited number of electrical / mechanical plant operating to service it; most of it will be capable of generating noise to some degree.

Although the building services design for these buildings is not sufficiently developed at this stage, it is expected that the building services plant for this development will mostly consist of air handling units, heat pumps and ventilation / exhaust fans that will either be located internally or on the roof of each building.

Given the lack of plant selection for assessment, it is therefore recommended that the selected plant have noise emission levels no louder than 65dB L_{Aeq} at a distance of 1m from the unit or building façade (or have noise control measures incorporated to achieve the same).

Based on this source noise level and considering a worst case scenario where the units are operating continuously over the entire period of interest, the resultant noise levels at the nearest noise sensitive receptors have been calculated and are predicted to be as follows:

Noise Sensitive Receptor	**Noise Level**
NSR 1	<10 dB $L_{Aeq,T}$
NSR 2	<10 dB $L_{Aeq,T}$
NSR 3	<10 dB $L_{Aeq,T}$
NSR 4	<10 dB $L_{Aeq,T}$
NSR 5	29 dB $L_{Aeq,T}$

All of the predicted levels above are below both the daytime and night time criteria at all nearby noise sensitive receptors. They are also below the ambient noise levels measured in the vicinity of the Site.

In respect of tonal noise emission elements, it is not possible to carry out a tonal analysis of building services plant given the lack of plant selections. Whilst it is not expected that low level building services plant of this nature will contain tonal elements that would be significant enough to manifest above the background noise levels in the vicinity, it is nonetheless recommended that a noise assessment be carried out by a qualified acoustic consultant during the design stage to confirm.

No impulsive elements are expected from building services plant.

Café / Retail and Primary Care Centre building services plant noise emissions are therefore expected to have a negligible long-term effect at all nearby noise sensitive receptors.

Additional Traffic on Adjacent Roads

During the operational phase of the Proposed Development, there will be an increase in vehicular traffic associated with the site on some surrounding roads. An assessment of the traffic impact of the Proposed Development has been carried out by SYSTRA and is presented in Chapter 7 - Traffic and Transport of this EIAR. Using this information, the related noise impact along the relevant road links has been assessed.

The relevant road links are detailed in Figure 10.5 and the predicted noise emission level increases at each one are presented in Table 10.7; both on the following page.

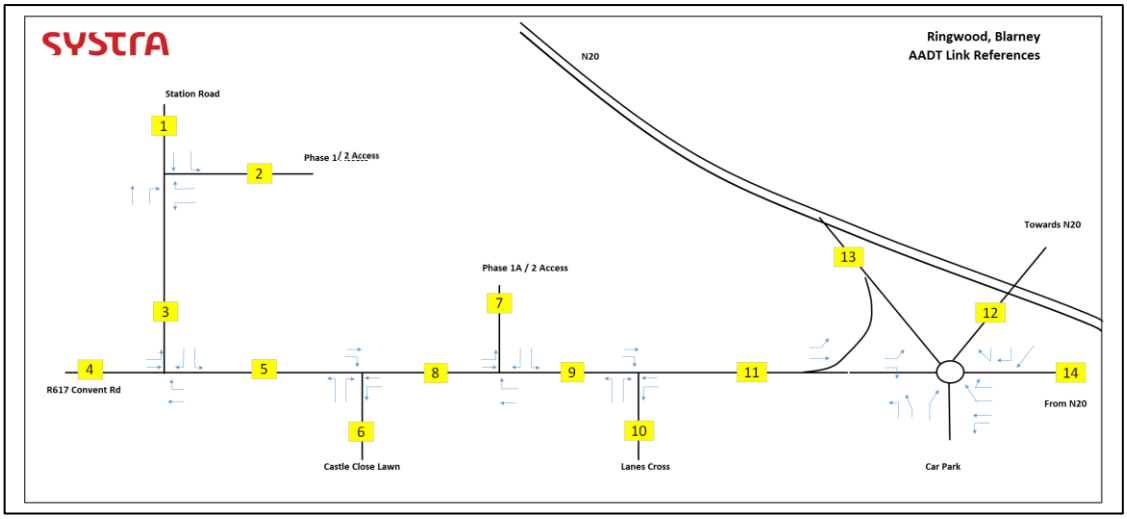


Figure 10.5: Road Links associated with the Proposed Development (Both Phases)

Ref.	Road Link	Do Nothing: AADT 2028 without Proposed Development (Phase 2)	Do Something: AADT 2028 with Proposed Development (Phase 2)	Change in Noise Level (dB)
1	**Station Road north of site access**	6,180	6,551	+ 0.3
2	**Phase 1 / 2 Site Access**	1,871	3,447	+ 2.7
3	**Station Road between Phase 1 and R617**	7,865	5,210	- 1.8
4	**R617 west of Station Rd**	17,098	17,705	+ 0.2
5	**R617 between Station Rd and Castle Close Lawn**	18,460	15,817	- 0.7
6	**Castle Close Lawn**	7,383	7,500	+ 0.1
7	**Phase 2 Site Access**	-	4,746	49dB L_{den} at closest NSR
8	**R617 Convent Road between CCL and Phase 1A access**	14,661	12,956	- 0.5
9	**R617 Convent Road between Phase 1A access & Lanes Cross**	14,774	16,635	+ 0.5
10	**Lanes Cross**	5,800	6,327	+ 0.4
11	**R617 between Lanes Cross and N20 interchange**	20,016	21,349	+ 0.3
12	**R617 underneath N20**	11,638	12,340	+ 0.3
13	**N20 NB on slip**	3,684	3,917	+ 0.3
14	**N20 WB off slip**	5,985	6,402	+ 0.3

Table 10.7: Predicted Change in Noise Level Associated with Vehicular Traffic - Year 2028

The results show that only Link 7 will result in a noticeable change in road traffic noise as this road will be a new access road developed to access Phase 2 as part of the Proposed Development.

The NRA Guidelines detail a design goal of a L_{den} 60dB (NRA 2004) for any road improvement and new road projects to meet, or a requirement for mitigation needs to be included in the design. The predicted level for Link 2 will be 49dB L_{den} at the closest NSR and is therefore in line with Best Practice for roads without further mitigation.

The change in noise levels for the remaining Links will all be below 3dB; these changes are therefore not significant.

Cumulative Operational Noise Levels

The total level of combined noise emissions from the proposed development noise sources can be determined by summing together all their individual contributions. The total levels of each are summarised and totalled in Tables 10.8 & 10.9 below.

Noise Source	Daytime Period Noise Level Emissions (dB $L_{Aeq,T}$)				
	NSL 1	NSL 2	NSL 3	NSL 4	NSL 5
Residential Bldg Building Services	36	33	35	37	< 10
Pumping Station	< 10	< 10	< 10	< 10	
Café / Retail & Primary Care Centre	< 10	< 10	< 10	< 10	29
Additional Traffic on Adjacent Roads			Negligible		≈ 39
Cumulative Noise Level	**36**	**33**	**35**	**37**	**40**

Table 10.8: Proposed Development Cumulative Noise Level Summary (Daytime Period)

Noise Source	Night Time Period Noise Level Emissions (dB $L_{Aeq,T}$)				
	NSL 1	NSL 2	NSL 3	NSL 4	NSL 5
Residential Bldg Building Services	36	33	35	37	< 10
Pumping Station	< 10	< 10	< 10	< 10	
Café / Retail & Primary Care Centre	-	-	-	-	-
Additional Traffic on Adjacent Roads			Negligible		≈ 32
Cumulative Noise Level	**36**	**33**	**35**	**37**	**32**

Table 10.9: Proposed Development Cumulative Noise Level Summary (Night Time Period)

These cumulative noise levels are compared with the established project noise emission criteria in Table 10.10 below.

Location	Predicted Noise Level	Noise Emission Criteria	Compliant?
NSL 1	36 dB $L_{Aeq,T}$		✓
NSL 2	33 dB $L_{Aeq,T}$		✓
NSL 3	35 dB $L_{Aeq,T}$	50dB $L_{Aeq,16hr}$ [Daytime] / 45dB $L_{Aeq,8hr}$ [Night Time]	✓
NSL 4	37 dB $L_{Aeq,T}$		✓
NSL 5	32 - 40 dB $L_{Aeq,T}$		✓

Table 10.10: Proposed Development Cumulative Noise Level Criteria Comparison Summary

As can be seen in Table 10.10, the expected levels of noise emissions from the proposed development are within the established criteria at all adjacent noise sensitive receptors during all time periods.
The predicted cumulative noise levels for the proposed development have also been compared with the measured ambient noise levels measured in their vicinity in Tables 10.11 & 10.12 below.

Location	Period	Predicted Noise Level	Measured Ambient Noise Level Range	Noise Level Above or Below Ambient?
NSL 1		36 dB $L_{Aeq,T}$	52 - 54 dB $L_{Aeq,T}$	Below
NSL 2		33 dB $L_{Aeq,T}$	48 - 51 dB $L_{Aeq,T}$	Below
NSL 3	Daytime	35 dB $L_{Aeq,T}$	50 - 52 dB $L_{Aeq,T}$	Below
NSL 4		37 dB $L_{Aeq,T}$	47 - 49 dB $L_{Aeq,T}$	Below
NSL 5		40 dB $L_{Aeq,T}$	52 - 53 dB $L_{Aeq,T}$	Below

Table 10.11: Noise Emission Level Comparison with Daytime Period Ambient Noise Levels

Location	Period	Predicted Noise Level	Measured Ambient Noise Level Range	Noise Level Above or Below Ambient?
NSL 1		36 dB $L_{Aeq,T}$	44 - 45 dB $L_{Aeq,T}$	Below
NSL 2		33 dB $L_{Aeq,T}$	40 - 41 dB $L_{Aeq,T}$	Below
NSL 3	Daytime	35 dB $L_{Aeq,T}$	41 - 42 dB $L_{Aeq,T}$	Below
NSL 4		37 dB $L_{Aeq,T}$	38 - 41 dB $L_{Aeq,T}$	Below
NSL 5		32 dB $L_{Aeq,T}$	46 - 48 dB $L_{Aeq,T}$	Below

Table 10.12: Noise Emission Level Comparison with Night Time Period Ambient Noise Levels

As can be seen in the preceding tables, the predicted levels of noise emissions from the proposed development are consistent with or below the existing ambient noise levels at the nearest noise sensitive receptors in the vicinity and would therefore be expected to be nominally inaudible for the vast majority of the time.

It should also be highlighted that the noise level conditions that were assessed would be considered worst case.

There are therefore no significant operational noise impacts that are expected from the proposed development on any of the identified adjacent noise sensitive receptors.

10.5.3 Operational Phase Vibration

There are no significant sources of vibration associated with the proposed development during the operational phase.

10.6 Mitigation Measures

10.6.1 Construction Phase

The assessment of the proposed development has identified construction stage noise will not be compliant with typical limit values at most NSRs. The following measures are therefore recommended to minimise the potential for disturbance due to noise emissions from the proposed development. Proper application of these measures should reduce noise emissions less than those predicted in this report.

In advance of construction phase commencement, the appointed contractor will submit a CEMP to the Council for approval. Reference should be made to *BS 5228: Noise control on construction and open sites* which provides detailed guidance on the control of noise from demolition and construction activities.

In particular, it is proposed that various practices be adopted during general construction activities which include (but are not limited to) the following:

- Establishing channels of communication between the contractor / developer, Local Authority and residents.
- Appointment of a site representative responsible for matters relating to noise.
- Provision of 2.4m high perimeter hoarding around the site boundary.
- Selection of plant with low inherent potential for generation of noise.
- Erection of barriers as necessary around items such as generators or high duty compressors.
- Placement of noisy plant as far away from sensitive properties as permitted by site constraints.
- Avoiding unnecessary revving of engines and switch off idling engines / equipment when not in use.
- Restricting construction activities to daytime periods only.
- Use of acoustic enclosure for high noise impact activities, such as breaking;
- Turning off / powering down plant when not in use;
- Turning off HGVs when not in use;
- Reduction in drop heights of incoming materials;

- Appointing project liaison officer to communicate with locals regarding noise works, their duration and organising construction phase noise monitoring;
- Strict controls on construction hours to prevent noise works occurring early morning or into the evening period; and,
- Inclusion of response procedure within CEMP to noise complaints and noise breaches.

The Contractor will ensure these measures required to control noise emissions will be in place and all workers on the Site are kept aware of them through on-site toolbox talks.

It is also recommended that when construction activities are carried out in the vicinity of the residential dwellings near each common boundary, that they be managed / coordinated with local residents of the adjacent dwellings in order to minimise potential noise impact as far as practicable.

10.6.2 Operational Phase

Based on the results of the assessment, all operational noise emission levels are predicted to be with the established criteria limits and below the ambient noise levels in the vicinity of the nearest residential receptors.

The only mitigation measures that were deemed to be required in this instance were as follows:

- Residential building heat pumps shall be selected to have maximum sound pressure levels no louder than 48dB $L_{Aeq,T}$ at 1m.
- A noise assessment of the proposed development building services should be carried out by a qualified acoustic consultant during the design stage to confirm compliance with the relevant criteria established in this chapter.
- Primary Care Centre & Café / Retail Building services plant shall be selected to have maximum sound pressure levels no louder than 65dB LAeq at a distance of 1m from the unit or building façade (or have noise control measures incorporated to achieve the same).

10.7 Inward Noise Impact Assessment

The following section presents a detailed assessment that assesses the potential for inward noise impact for the development.

10.7.1 Site Context & Identified Noise Sources

The proposed residential development is proposed to be located on existing greenfield lands to the northeast of Blarney town centre with the nearest proposed development buildings located at a distance of approximately 130m from the N20 national road which is shielded by extensive tree grown on the east side of the Proposed Development. The N20 is the only major or minor road located in the vicinity that needs to be considered in this instance since the other roads in the vicinity are all local roads and well shielded by existing residential dwellings.

The proposed development site is bordered in all other directions by residential dwellings. There was no other noise sources of any significance identified in the vicinity of the proposed development.

10.7.2 N20 Noise Level Monitoring Survey

As stated in the previous section, the proposed development is located a distance of approximately 130m from the N20 national road. In order to quantify the noise emission levels from the road, a noise monitoring survey was carried out.

Specific details of this survey are set out in the following sections.

Noise Monitoring Location

The noise monitoring position was located near the closest proposed development dwelling façade to the N20. Refer to Figure 10.6 below which shows the specific location.



Figure 10.6: Noise Monitoring Location

Survey Periods

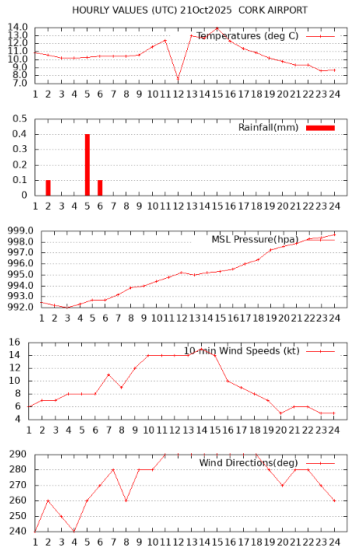
Noise monitoring was conducted continuously on three mid-week days between 00:00hrs on 21 October 2025 and 00:00hrs on 24 October 2025.

The meteorological conditions that were observed at Cork Airport over the course of the survey period are detailed in Figure 10.7 on the following page.

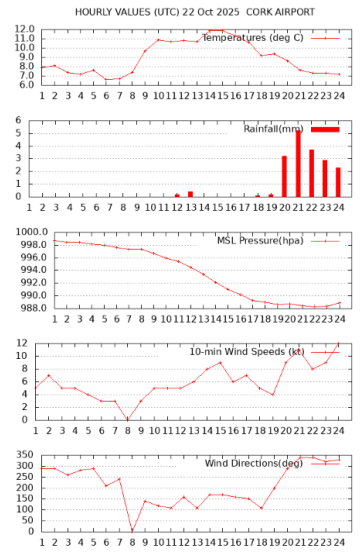
Procedure

Measurements were conducted on a continuous basis. Sample periods for the noise measurements were 15 minutes. The results were saved to the instrument memory for later analysis.

Date	Rainfall (mm)	Max Temp (°C)	Min Temp (°C)	Grass Min Temp (°C)	Mean Wind Speed (knots)
21/10/2025	0.6	13.9	8.5	6.0	9.4



Date	Rainfall (mm)	Max Temp (°C)	Min Temp (°C)	Grass Min Temp (°C)	Mean Wind Speed (knots)
22/10/2025	18.2	13.1	6.4	0.8	5.8



Date	Rainfall (mm)	Max Temp (°C)	Min Temp (°C)	Grass Min Temp (°C)	Mean Wind Speed (knots)
23/10/2025	4.4	8.9	3.7	1.2	12.7

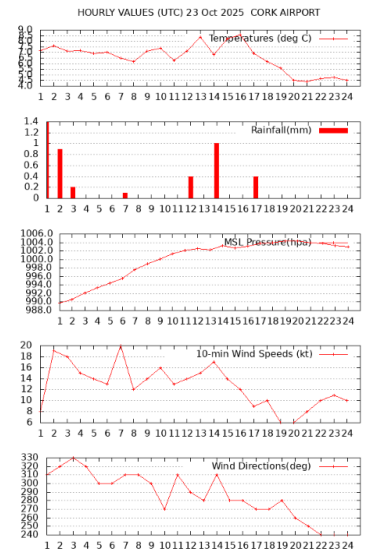


Figure 10.7: Meteorological Conditions Observed at Cork Airport During Noise Monitoring

Measurement Results

A summary of the noise monitoring results is presented in Table 10.13 below.

Day	Daytime Period		Night Time Period	
	Range	Average	Range	Average
Tuesday (Oct 20)	48 - 54 dB $L_{Aeq,15min}$	52 dB $L_{Aeq,16hr}$	41 - 58 dB $L_{Aeq,15min}$	50 dB $L_{Aeq,8hr}$
Wednesday (Oct 21)	49 - 58 dB $L_{Aeq,15min}$	54 dB $L_{Aeq,16hr}$	40 - 56 dB $L_{Aeq,15min}$	49 dB $L_{Aeq,8hr}$
Thursday (Oct 22)	46 - 57 dB $L_{Aeq,15min}$	53 dB $L_{Aeq,16hr}$	39 - 53 dB $L_{Aeq,15min}$	46 dB $L_{Aeq,8hr}$

Table 10.13: Summary of Daytime & Night Time Period Noise Monitoring Results

The average noise level results obtained during daytime and night time periods were very similar. This is typical of ambient noise environments that are located far away from significant noise sources and are mainly controlled by distant traffic noise, birdsong and insect noise.

10.7.3 ProPG 2017 Acoustic Design Statement – Stage 1

In order to provide an indication of the likely risk of adverse effects from external noise, a comparison is carried out between the measured daytime and night time period noise levels against noise risk assessment indicators detailed in *ProPG 2017* in accordance with Stage 1 of standard Acoustic Design Statement procedure.

The results of this comparison are detailed in Figure 10.8 on the following page. Note that the predicted level ranges are for the worst case condition of the nearest Phase 2 dwelling to the N20. N20 roadway

noise level emissions across the remainder of the development would be less (and more consistent with those measured during the attended survey detailed in Table 10.4).

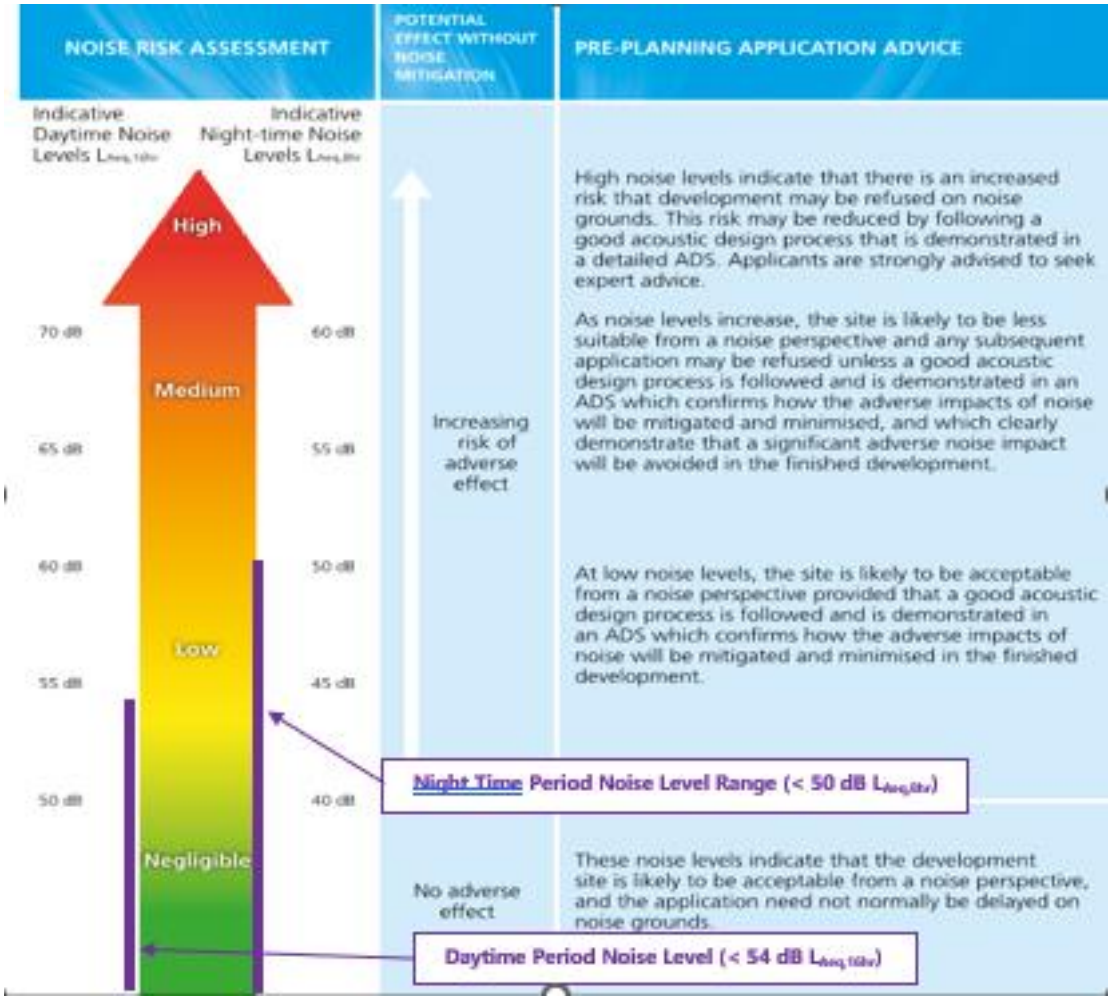


Figure 10.8: *ProPG 2017* - Noise Risk Assessment for Proposed Development

Overall, the noise level ranges of < 54 dB $L_{Aeq,16hr}$ for daytime periods and < 50dB $L_{Aeq,8hr}$ for night time periods would be within the 'Negligible' to 'Low' magnitude ranges.

Ambient noise levels in this range indicate that the site is expected to be acceptable from a noise perspective provided appropriate noise mitigation provisions are being incorporated into the proposed development design. An assessment of these provisions is detailed in the following sections.

10.7.3 External Area Acoustic Design Assessment - ADS Stage 2

Guideline criteria for external noise levels in external balcony, patio and amenity areas can be referenced directly from *ProPG 2017: Planning & Noise (Professional Guidance on Planning & Noise For New Residential Developments)* as follows:

> *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 $L_{Aeq,16hr}$.*

In this instance, reference to Table 10.13 confirms that the highest daytime noise level measured in the vicinity of the nearest Phase 2 dwelling to the N20 was 54 dB $L_{Aeq,16hr}$. Noise levels at all other Phase 2 development areas are predicted to be (and have been measured via survey) to be lower than this level. This confirms that ambient noise levels in all Phase 2 development balcony, patio and external amenity areas will be consistent with or below the maximum 50 - 55 dB $L_{Aeq,16hr}$ range recommended by *ProPG 2017* even before additional acoustic shielding is considered by the proposed development buildings.

The proposed Phase 2 development external noise level ambient environment would therefore be fully compliant with *ProPG 2017* and no further mitigation measures would be required in this instance.

10.7.4 Internal Area Acoustic Design Assessment - ADS Stage 2

In setting appropriate target internal noise levels, *ProPG 2017* refers to *BS 8233*. The *BS 8233* recommended noise limits for indoor ambient noise levels in residential buildings are similar to those applied to the proposed development outward impact assessment and are reproduced as Table 10.14 below.

Activity	Room Type	Design Criterion (dB $L_{Aeq,T}$)	
		Daytime (07:00 - 23:00hrs)	Night Time (23:00 - 07:00hrs)
Resting / Sleeping Conditions	Living Room	35dB $L_{Aeq,16hr}$	-
	Bedrooms	35dB $L_{Aeq,16hr}$	30dB $L_{Aeq,8hr}$

Table 10.14: Indoor Ambient Noise Level Criteria from *BS 8233*

Note that these criteria are for residential buildings only.

In consideration of the proposed development cafe / retail unit, there is no specific criteria guidance provided in *BS 8233*. However, the standard does list 'typical' internal noise level design ranges of 50 - 55dB L_{Aeq} and 40 - 55dB L_{Aeq} for a department store and restaurant respectively. An external noise break-in criterion of **40dB L_{Aeq}** was therefore considered in this instance. Note that the café / retail unit will likely not be in use during night time periods but for both time periods as a worst case approach in this instance.

In respect of the Primary Care Centre, appropriate noise criteria can be adopted directly from *Health Technical Memorandum 08-01: Acoustics guidance document*. *HTM 08-01* which recommends maximum internal criteria of **40dB L_{Aeq}** for consulting rooms. Although the specific criteria for other internal Primary Care Centre building spaces will vary, the adopted criterion was still considered for all Primary Care Centre internal areas as a worst case approach.

The established internal noise level criteria for the proposed development spaces are summarised in Table 10.15 on the following page.

Development Building	Design Criterion (dB $L_{Aeq,T}$)	
	Daytime (07:00 - 23:00hrs)	Night Time (23:00 - 07:00hrs)
Residential Buildings	35dB $L_{Aeq,16hr}$	30dB $L_{Aeq,8hr}$
Café / Retail Building	40dB L_{Aeq}	
Primary Care Centre	40dB L_{Aeq}	

Table 10.15: Internal Noise Level Criteria Summary

In order to demonstrate ADS compliance with the *ProPG 2017* and *BS 8233* internal noise level criteria, the glazing and external façade elements of the proposed development buildings must be designed to ensure that the maximum levels in the above table are achieved throughout.

Based on the worst case measured levels of 54dB $L_{Aeq,16hr}$ and 50dB $L_{Aeq,8hr}$ for daytime and night time periods respectively, the minimum façade insulation required in this instance would 19dB R_w and 14dB R_w for the residential buildings and café / retail buildings respectively. Based on the proposed building fabric design, the use of mechanical ventilation and the targeted low energy loss homes, the only element that will be critical to achieving the sound reduction level will be the external glazing.

A review of available options shows that standard double glazed windows will typically achieve a minimum sound insulation performance value of 30dB R_w. This means that all the proposed development buildings can be built to provide a comfortable living environment with provision of standard double glazing.

The proposed Phase 2 development building internal noise level ambient environments are therefore expected to be fully compliant with *ProPG 2017* and no further mitigation measures would be required in this instance (apart from provision of standard double glazed windows).

10.7.5 Conclusion

Based on the results of the inward noise impact assessment detailed in this section, the ambient noise environment at the proposed development due to its proximity to the N20 national road and all other minor noise sources have been demonstrated as being below threshold criteria detailed in *ProPG 2017*, *Environmental Protection Agency* and *BS 8233* guidance documents. The proposed development would therefore be considered acceptable from an inward noise impact standpoint.

10.8 Cumulative & In-Combination Effects

The surrounding area from the Proposed Development is primarily residential. Due to the nature of surrounding activities, the noise associated with these developments have been considered with the ambient monitoring undertaken and presented in Section 10.4.2.

Application Register Reference: ABP-312893-22. Permission was initially granted for 113 no. residential units at Monacnapa, Blarney, Co. Cork on 19th July 2022 (143 no. units were applied for but Condition

No. 2 of the grant of permission for this development omitted 30 no. Apartments). However, this permission was refused following a judicial review. Although there is potential for resubmission of a similar scheme in the future, the only potential for a cumulative / in-combination effect is for there to be slight increases in traffic noise emission levels. However, given the size of this development, it is not expected that this increase would be significant.

The biggest consideration for a cumulative effect would be from Phase 1 of the Ringwood development; however, noise emissions from this development has been directly considered both in this chapter and the Phase 1 chapter.

Note also that a planning submission is expected by TII regarding the provision of the improved N20.

10.9 Interactions with Other Environmental Attributes

- Chapter 17 – Population and Human Health: Noise is closely linked with human beings. Residential receptors are the primary noise sensitive receptors and have been discussed as the primary receptor in this chapter.
- Chapter 11 – Biodiversity: Noise can influence fauna, through disturbance of animals. Effects of the Proposed Development on specific species have been outlined in Chapter 11 Biodiversity where relevant. The modelling shows no significant noise effects beyond the local environment therefore no noise impact at the SAC or SPAs identified within 15km.
- Chapters 7 & 18 – Material Assets (Transport and Traffic): Noise and traffic are closely linked in terms of noise generation, the assessment of noise impact arising from proposed traffic flows has been completed with review and consultation with the traffic assessment completed in Chapter 7.

10.10 Residual Effects

The residual noise effect, based on the proposed emissions, phasing and intensity of the site, the mitigation and practices to be employed and within the context of the existing ambient environment, is deemed to be negligible, negative and local during the operational phase.

No significant effect, in relation to noise from the Proposed Development is likely, arising from the assessment findings.

10.11 Monitoring

The operator should consider conducting noise monitoring for the construction phase to assure that limits will not be exceeded at the Phase 2 boundaries.

This monitoring should be undertaken during the construction phase, particularly during critical periods and at sensitive locations. The proposed monitoring locations are shown in Figure 10.9 below, subject to the appointed contractors programme of works and agreement with the Competent Authority.



Figure 10.9: Proposed Monitoring Locations for Construction Compliance

No operational noise monitoring is required.

10.12 Difficulties Encountered

There were no difficulties of any significance encountered in the preparation of this chapter.

10.13 References

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11.0 BIODIVERSITY

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11.1. Introduction

This chapter of the EIAR comprises an assessment of the effects of the proposed development with respect to biodiversity. The proposed development is located at Ringwood, Blarney, to the northwest of Cork City (see Figure 1.1 for extent of development lands). Please refer to Chapter 4 of the Environmental Impact Assessment Report for the full Development Description.

The proposed development will consist of a large-scale residential development (LRD), representing Phase 2 of development in the Blarney East / Ringwood Expansion Area, and comprising the construction of (i) 323 no. residential dwellings comprising of 157 no. terraced, end-of-terrace, and semi-detached houses (including 129 no. 3-bed and 28 no. 4-bed units); 52 no. duplexes provided in 5 no. 3-storey buildings (including 26 no. 2-bed and 26 no. 3-bed units) and 114 no. apartments provided in 2 no. 5-storey buildings (including 54 no. 1-bed and 60 no. 2-bed units); (ii) a primary care centre, over 2 stories and 1,724sqm in area, incorporating GP services (iii) the refurbishment and redevelopment of existing farm outbuildings for conversion to a retail/pharmacy use, 80sqm in area, and café/restaurant use, 380sqm in area; (iv) a new access roadway into the site from the R617 with associated pedestrian and cyclist infrastructure, which will form the 1st phase of the proposed Stoneview Access Link Road, (v) a new signalised junction on the R617 road which will provide a single lane approach to the west and a two lane approach to the east, comprising one lane for through traffic on the R617 and a right turn lane for traffic turning into the site, and associated footpath improvements and cycle lane provision (vi) a new signalised junction at the R617 and Killard Road junction which will provide a two lane approach from the west, one lane for through traffic heading eastbound on the R617 and a right turn lane onto the Killard Road, with associated footpath improvements and pedestrian and cyclist infrastructure; (vii) a new signalised junction on Station Road that reflects the junction permitted under the Phase 1 LRD scheme (Reg. Ref. 2443031); (viii) private, communal, and public open spaces and hard and soft landscaping, boundary treatments and amenity areas, including a new wetland public amenity area, (ix) drainage works and nature-based SuDS measures (x) foul sewer infrastructure, including 1no. pump station, the diversion of existing foul and water sewers and other new network works, (xi) car parking, including EV charging points, bicycle parking, and motorcycle parking bays (xii) 2no. substations, all associated ancillary site, drainage and development works.

The site location and context is described in detail in Section 4.2 of the EIAR; refer also to Section 13.3.2.1 Subject Site in the landscape and visual impact assessment chapter which also describes the site context and how it fits within the landscape. The site will drain west to the River Martin and east to the Shean Upper Stream.

This chapter of the Environmental Impact Assessment Report (EIAR) was prepared by Paul O'Donoghue, BSc MSc PhD CEnv MCIEEM of AtkinsRéalis with support from Caroline Downey, BSc of AtkinsRéalis. Paul has over 20 years' experience as an environmental / ecological consultant and has worked on numerous projects involving preparation of Biodiversity chapters for Environmental Impact Assessments. Caroline has worked in ecological consultancy since January 2023 and has experience in delivering a range of ecological reports and surveys including AA Screenings, Biodiversity Chapters, PEAs, NISs and EcIA for a wide range of developments. Further specialist support was provided by Karen Banks (Greenleaf Ecology; bats), Ross Macklin (Triturus Environmental; aquatic ecology) and John Deasy (badger, birds).

Karen is an ecologist with 19 years' experience in the field of ecological assessment. She holds a BSc in Environment and Development from Durham University and is a full member of the Chartered Institute of Ecology and Environmental Management. Karen is an experienced and skilled bat surveyor, first gaining a scientific licence to disturb bats from Natural England, UK in 2008. Karen is trained in bat handling and capture methods and currently holds a bat disturbance licence granted by the NPWS (Licence number: DER/BAT 2023-55 (survey licence)). Karen has undertaken bat survey and assessment for numerous projects, including bridge repair and replacement works, domestic dwelling repair and demolition works, wind farm developments and large-scale infrastructure projects such as flood relief schemes, road developments and pipeline schemes. Karen has also represented Cork County Council as an expert witness for bats at an Oral Hearing.

Ross Macklin is a graduate of University College Cork. He has a BSc in Applied Ecology, Higher Diplomas in Integrated Pest Management and Geographical Information Systems. He is completing a PhD in fisheries science at UCC. His expert areas are aquatic ecology and fisheries science. Ross has 18 years of professional experience and worked on many of Ireland's largest infrastructure projects including flood relief schemes, renewables (solar & wind farms), greenways, blueways, residential, roads and biodiversity. He has also worked on projects in the waste management, petrochemical, pharmaceutical, agricultural and aquaculture industry sectors. Ross has held over 30 NPWS national licences for freshwater pearl mussel (*Margaritifera margaritifera*), white-clawed crayfish (*Austropotamobius pallipes*) and amphibian species holding full national licences for all these species. He also has held over 30 NPWS wildlife filming licences, numerous derogation licences and over 200 Section 14 licences for fisheries related work.

John is an independent ecological consultant with experience across a range of ecological disciplines including botanical and habitat surveys, bird surveys, mammal surveys and protected invertebrate surveys. He has over 8 years of experience as a professional ecologist and has undertaken a range of baseline ecological surveys for renewable energy projects, shared-use greenways and domestic and commercial property developments. These surveys have included non-native invasive species surveys, rare and protected species surveys. John holds a MSc in Ecological Assessment and BSc in Earth and Environmental Science from University College Cork.

11.2. Methods

11.2.1. Study Area

The lands subject to this application are in the townland of Shean Upper to the north of Blarney. It is bordered by the N20 to the east; the R617 and Blarney Bog pNHA to the south; and Station Road to the west. The lands are also known as Ringwood by virtue of a circular area of mature woodland located between Shean Upper and Shean Lower (refer to Figure 1.1). Watercourses within the site are limited to a small stream known as the Shean Upper Stream located close to the eastern boundary of the Ringwood land parcel, within the east of the lands subject to this application. Surface water management systems will drain the site west to the River Martin and east to the Shean Upper Stream (refer also to accompanying surface water management drawings). Due to the latter's connectivity to Blarney Bog pNHA detailed consideration of water quality and aquatic ecology of this watercourse is also considered below.

11.2.2. Guidance

This chapter was prepared with due regard to the relevant guidance, including but not limited to:

- All-Ireland Pollinator Plan 2021-2025. *National Biodiversity Data Centre Series* 25. National Biodiversity Data Centre, Waterford. March 2021.
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- TII (2006). *A Guide to Landscape Treatments for National Road Schemes in Ireland. GE-ENV-01102. February 2006.* Transport Infrastructure Ireland, Dublin.
- TII (2012). *Guidelines on the Implementation of Landscape Treatment on National Road Schemes in Ireland. GE-ENV-01103. July 2012.* Transport Infrastructure Ireland, Dublin.
- TII (2020a). *The Management of Invasive Alien Plant Species on National Roads – Standard. GE-ENV-01104. December 2020.* Transport Infrastructure Ireland, Dublin.
- TII (2020b). *The Management of Invasive Alien Plant Species on National Roads – Technical Guidance. GE-ENV-01105. December 2020.* Transport Infrastructure Ireland, Dublin.

This bat survey was cognisant of the following guidelines:

- BTHK. (2018). *Bat Roosts in Trees – A Guide to Identification and Assessment for Tree-Care and Ecology Professionals.* Pelagic Publishing, Exeter UK.
- Collins, J. (ed.) (2016). *Bat Surveys for Professional ecologists: Good Practice Guidelines (3rd ed.).* The Bat Conservation Trust, London[1].
- Collins, J. (ed.) (2023). *Bat Surveys for Professional Ecologists: Good Practice Guidelines (4th edition).* Bat Conservation Trust, London.
- Marnell, F., Kelleher, C. & Mullen, E. (2022) Bat mitigation guidelines for Ireland v2. *Irish Wildlife Manuals*, No. 134. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage, Ireland.

The application also accompanied by a Screening for Appropriate Assessment Report (AtkinsRéalis, 2025), the legislative framework for which is discussed in Section 1.4.3 of the EIAR.

11.2.3. Desk Study

A desk study was carried out to collate information available in the vicinity of the proposed project. These areas were viewed using Google Earth, Google maps[2] and Bing maps[3]. The Environmental Protection Agency (EPA) mapping[4] system was used to identify any hydrological connection between the proposed project and Natura 2000 sites.

[1] *Bat Surveys for Professional Ecologists: Good Practice Guidelines 4th ed.* was published in September 2023, after the surveys for this project were completed.

[2] https://www.google.ie/maps

[3] http://www.bing.com/maps/

[4] https://gis.epa.ie/EPAMaps/

Locations and boundaries of all Natura 2000 sites were identified and reviewed using the NPWS online map viewer. Boundary shapefiles were also downloaded from this site to facilitate the preparation of project graphics.

Desktop information on relevant Natura 2000 sites were reviewed on the NPWS website, including the site synopsis for each SAC/SPA, the conservation objectives, the site boundaries as shown on the NPWS online map viewer, the standard Natura 2000 Data Form for the SAC/SPA which details conditions and threats of the sites, and published information and unpublished reports on the relevant Natura 2000 sites.

The National Biodiversity Data Centre (NBDC) were accessed for information on protected habitats and species known from the 2km and 10km grid squares which the site is located.

The conservation status of mammals within Ireland and Europe is evaluated using the following documents: Wildlife Acts (1976 – 2012), the Red List of Terrestrial Mammals (Marnell *et al*., 2019) and the EU Habitats Directive 92/43/EEC. Birds of Conservation Concern in Ireland 4, 2020-2026 (BoCCI), published by BirdWatch Ireland and the RSPB NI, is a list of priority bird species for conservation action on the island of Ireland (Gilbert *et al*., 2021). The BoCCI lists birds which breed and/or winter in Ireland and classifies them into three separate lists; Red, Amber and Green; based on the conservation status of the bird and hence their conservation priority. Birds on the Red List are those of highest conservation concern, Amber List are of medium conservation concern and Green List are not considered threatened (see Table 11-1). Reporting under Article 17 of the Habitats Directive (NPWS, 2019a-c; ETC/DB, 2022a) and Article 12 of the Birds Directive (ETC/BD, 2022b) provided further information on the habitats and species concerned at the national level.

A pre-survey bat data search was conducted to collate existing information from the study area and the surrounding area on bat activity, roosts and landscape features that may be used by bats. The data search comprised the following information sources:

- Collation of known bat records from within a 4km radius[5] of the study area from the National Bat Database held by the National Biodiversity Data Centre (www.biodiversityireland.ie).
- Review of Ordnance Survey mapping and aerial photography of the study area and its environs.
- Records of European and nationally designated sites from within a 4km radius of the study area where bats form part or all of the reason for designation (https://www.npws.ie/protected-sites).
- Review of bat survey data from environmental assessments (including Ecological Impact Assessments, Environmental Impact Assessments and Appropriate Assessment) in respect of other proposed and permitted developments in the general area of the study area.

With respect to aquatic ecology a desktop review was undertaken to collate and review available information, datasets and documentation sources relating to existing water quality that is summarised in Section 11.3.3 of the results. Data relating to the presence of rare invertebrates and or non-native invertebrate species from the desktop review recorded in the biological water sampling are presented

[5] A 4km radius search distance was selected to encompass records of bat roosts within Core Sustenance Zones (CSZ) of the study area for Irish species of bat. A CSZ refers to the area surrounding a communal bat roost within which habitat availability and quality will have a significant influence on the conservation status of the colony using the roost (Collins, 2023).

below. These included for example national red list publications for beetles (Foster *et al*., 2009), stoneflies (Feeley *et al*., 2020a), mayflies (Kelly-Quinn & Regan, 2012), non-marine molluscs (Byrne *et al*., 2009); Odonata (Nelson *et al*., 2011) and occasional publications from the Irish Biogeographical Society (e.g. caddisfly; O'Connor 2020).

11.2.4. Field Surveys

Habitats, Flora & Fauna

An ecological walkover survey of the site was initially conducted by John Deasy on the 26th of August and 5th of September 2021. The purpose of the survey was to characterise and record the habitats and sensitive ecological receptors within and adjacent to the lands subject to this application. All lands within the applicant's ownership (as shown in Figure 1.1) were surveyed to fully understand the potential for ecological impacts to arise from this proposal and to consider future potential applications (as discussed under In-Combination Impacts). Changes in habitats and land use from 2021 were noted in March 2023 by AtkinsRéalis ecologists while onsite and by John Deasy when visiting the site for the purpose of undertaking surveys for field feeding waterbirds in November and December 2023 (no material changes noted at this time apart from the harvesting of maize, BC1). In terms of habitat assessment, the site was most recently visited by AtkinsRéalis ecologists on 16th April 2025 for the purpose of validating habitats first identified in 2021. As discussed elsewhere ecologists were also on site on a range of other dates between 2021 and 2025 to undertake targeted ecological survey work.

A Phase 1 habitat survey was undertaken in line with published practice (Smith *et al*., 2011), with habitats classified in line with the Heritage Council Classification scheme (Fossitt, 2000). Dominant plant species in each habitat type were recorded. Plant nomenclature follows the Botanical Society of Britain and Ireland's List of Accepted Plant Names (Botanical Society of Britain and Ireland, 2007). Habitats were later mapped using MapInfo v16 GIS software. During the ecological survey the presence of invasive plant species as listed on the 3rd Schedule of the Natural Habitats Regulations (S.I. 477 of 2011), as well as other potentially significant invasive plant species as listed by Invasive Species Ireland, was noted. All data is within the range of *age of data* specified for use of ecological data in CIEEM's *Advice Note on the Lifespan of Ecological Reports and Surveys* (CIEEM, 2019).

Incidental sightings and signs of birds, mammals, invertebrates and amphibians were noted during the walkover survey to further evaluate the importance of the site to flora and fauna [in line with the approach set out in the *Guidelines for Preliminary Ecological Appraisal* (CIEEM, 2017) and *Guidelines for Ecological Impact Assessment* (CIEEM, 2018)]. The landscape value for bats was also considered (after Entwhistle *et al*., 2001; etc.). With respect to terrestrial mammals the survey searched for mammal signs, such as badger setts, latrines etc., otter holts, rabbit burrows etc.

Following this survey work undertaken in 2021, the site has been visited on numerous occasions for additional and targeted surveys including terrestrial mammals, woodland survey and wintering and breeding birds in the period from 2022 to 2025.

Survey of northeastern woodland

A targeted woodland survey was undertaken on the 12th September 2024 for the area to the northeast of the site by John Deasy on behalf of AtkinsRéalis.

Wintering Birds and Breeding Birds

Wintering bird usage of the site was assessed in November and December 2023 and repeated in January and February 2024 by John Deasy on behalf of AtkinsRéalis. Particular attention was paid to the potential presence of field feeding waders.

The most recent targeted breeding bird survey was conducted by John Deasy of behalf of AtkinsRéalis in May 2024 and again across April and May 2025.

Terrestrial Mammal

Targeted terrestrial mammal surveys were originally undertaken by John Deasy in 2021 with trail cameras deployed from the 16th to the 25th of March at the Shean Upper Stream site and from the 16th and 31st March 2022 at a potential sett site along the southern boundary of the Ringwood land holding. These surveys confirmed badger activity at the southern site. A licence was received from the NPWS under Section 23(6)(b) of the Wildlife Act, 1986 (as amended) to undertake updated mammal survey trail camera work (licence no. 090/2025) in 2025 given the results from the 2022 survey in which an active badger sett was confirmed.

This trail camera survey was undertaken by AtkinsRéalis ecologists from 25th July to 12th September 2025. A trail camera survey was also undertaken from 12th September to 30th September 2025 for a location along the Shean Upper Stream where apparent burrows were identified in earlier site visits.

Cameras were deployed for a period of between two to four weeks, and when necessary, replaced by another camera in the same location of installation to avoid any lapse in days with recording availability. Cameras were installed from 4-7 metres away from each potential sett, with a clear view of the entrance. Care was taken to avoid any disturbance to the sett and the entrance of the sett when establishing the position of the cameras.

A Spypoint ® Flex E-36 camera was deployed to the southern sett location on the 25th of July 2025 and in-position until the 15th August 2025. This was immediately replaced by a Bushnell ® trail camera (Model: 119987M 32MP CORE DS-4K), which in-position until being retrieved on the 12th September 2025. The footage was subsequently reviewed for mammals with specific behaviours also being noted. As noted above these deployments were undertaken under license (090/2025), given existing evidence for the presence of badgers within the area. Thus, the aim for the camera trap surveys at this sett location was to establish the current level of badger activity at the sett and if the sett was being used by other mammals. Survey work was undertaken under Licence No. 090/2025 (Wildlife Acts 1976 to 2018 - Sections 9 and 23 (6) (b); issued by Department of Housing, Local Government and Heritage).

The Spypoint ® Flex E-36 camera was then deployed to the northern potential sett location on 12th September 2025 before being collected on the 30th September. As there was no evidence of badgers within the area of the northern sett, a license was not required to conduct the camera trap surveys at this location as the survey was purely determinative to establish if badgers may be present within the vicinity of the potential sett.

Bats

A bat survey of the current lands at Ringwood was undertaken by Greenleaf Ecology on behalf of AtkinsRéalis spanning from October 2021 to June 2022. This bat survey work was further updated from September 2024 to September 2025. The objectives of the bat survey were to:

- Establish the location of any actual or potential bat roosts at the proposed site.
- Establish the value of the proposed site to bats for foraging and commuting.
- Assess the results of the survey and determine the potential impact of the proposed development on any bats that might use the site.
- Provide recommendations for the project design considering the survey results as appropriate.
- Provide recommendations for mitigation measures.

Bat Roost Survey

Preliminary Ecological Appraisal

A walkover survey of areas within the study area identified as potential roosting, foraging and commuting habitats during the desktop study was undertaken on (site boundary illustrated in (the baseline bat survey included the entire Ringwood site; as shown in Figure 11.1). Potential bat habitat was assessed using the criteria outlined in Table 11.1 below (from Collins, 2023).

Potential Suitability	Roosting Habitats in structures	Potential flight-paths and Foraging Habitats
None	No habitat features on site likely to be used by any roosting bats at any time of the year (i.e. a complete absence of crevices/suitable shelter at all ground/underground levels).	No habitat features on site likely to be used by any commuting or foraging bats at any time of the year (i.e. np habitats that provide continuous lines of shade/protection for flight-lines, or generate/shelter insect populations available to foraging bats).
Negligible[6]	No obvious habitat features on site likely to be used by roosting bats; however, a small element of uncertainty remains as bats can use small and apparently unsuitable features on occasion.	No obvious habitat features on site likely to be used as flight-paths or by foraging bats; however, a small element of uncertainty remains in order to account for non-standard bat behaviour.

[6] Negligible is defined as 'so small or unimportant as to be not worth considering, insignificant'. This category may be used where there are places that a bat could roost or forage (due to one attribute), but it is unlikely that they actually would (due to another attribute).

Potential Suitability	Roosting Habitats in structures	Potential flight-paths and Foraging Habitats
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically at any time of the year. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions[7] and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity and not a classic cool/stable hibernation site, but could be used by individual hibernating bats[8].	Habitat that could be used by small numbers of bats as flight-paths such as gappy hedgerows r unvegetated stream, but isolated, i.e. not very well connected to the surrounding landscape by other habitat. Suitable, but isolated habitat that could be used by small numbers of foraging bats such as a lone tree (not in a parkland situation) or a patch or scrub.
Moderate	A structure with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only, such as maternity and hibernation – the categorisation described in this table is made irrespective of species conservation status, which is established after presence is confirmed.	Continuous habitat connected to the wider landscape that could be used by bats for flight-paths such as lines of trees and scrub or linked back gardens. Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.
High	A structure with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat. These structures have the potential to support high conservation status roosts, e.g. maternity or classic cool/stable hibernation site.	Continuous, high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by bats for flight-paths such as river valleys, streams, hedgerows, lines of trees and woodland edge. High quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats such as broadleaved woodland, tree-lined watercourses and grazed parkland. Site is close to and connected to known roosts.

Table 11.1: Criteria for Assessing the Potential Suitability of the Study Area for Bats.

[7] For example, in terms of temperature, humidity, height above ground level, light levels or levels of disturbance.

[8] Evidence from the Netherlands shows mass swarming events of common pipistrelle bats in the autumn followed by mass hibernation in a diverse range of building types in urban environments (Korsten *et al*, 2016 and Jansen *et al.,* 2022). Common pipistrelle swarming has been observed in the UK (Bell, 2022 and Tomlinson, 2020) and winter hibernation of numbers of this species has been detected at Seaton Delaval Hall in Northumberland (National Trust, 2018). This phenomenon requires some research in the UK, but ecologists should be aware of the potential for larger numbers of this species to be present during the autumn and winter in prominent buildings in the landscape, urban or otherwise.

Bat Roost Inspection Survey

Trees

A detailed inspection of the exterior of trees was undertaken during the study area walkover on 1st October 2021 and 26th October 2024 to ascertain whether any features that bats could use for roosting (Potential Roost Features, or PRFs) were present. The objective of the survey was to determine the actual or potential presence of bats to carry out an impact assessment and determine the need for further survey and/or mitigation.

A detailed inspection of each potential tree roost within the study area was undertaken. The inspection was carried out in daylight hours from ground level, and information was compiled on the tree, PRFs and evidence of bats. All trees supporting PRFs were numbered and marked on a map and a description of each PRF observed was recorded. PRFs that may be used by bats include:

- Rot holes
- Hazard beams
- Other horizontal or vertical cracks or splits (e.g. frost cracks) in stems or branches
- Lifting bark
- Knotholes arising from naturally shed branches or branches previously pruned back to the branch collar
- Man-made holes (e.g. flush cuts) or cavities created by branches tearing out from parent stems
- Cankers in which cavities have developed
- Other hollows or cavities
- Double leaders forming compression forks with included bark and potential cavities
- Gaps between overlapping stems or branches
- Partially detached ivy with stem diameters in excess of 50mm; and
- Bat or bird boxes

Signs of a bat roost (excluding the actual presence of bats), include:

- Bat droppings in, around or below a PRF
- Odour emanating from a PRF
- Audible squeaking at dusk or in warm weather
- Staining below the PRF

It should be noted that bats or bat droppings are the only conclusive evidence of a roost, and many roosts have no external signs. In the current survey, potential roost sites were viewed by a bat specialist working from ground level. Trees were categorised according to the highest suitability PRF present.

Structures

Buildings within the study area were surveyed for potential roost sites and signs of bats on 1st October 2021 and 5th November 2025 (farm buildings at southern end of the site). The survey utilised a high-powered torch, close focussing binoculars and an endoscope (Explorer Premium 8803 with 9mm camera)

where appropriate. The external inspection involved looking for bat droppings on the ground, stuck to walls, windowsills or in crevices in the stonework and recording suitable entry and exit points. Where buildings were accessible, the internal inspection involved looking for features that may be suitable for roosting bats, such as joints and crevices in wood, holes or crevices between stonework in the walls and searching for bat droppings, urine stains and feeding signs on the floor.

The only buildings within the footprint of Phase 2 of the proposed development at Ringwood are two barns in the farmyard at the southern end of the access road. All other building around the periphery of the site and adjacent to the red line boundary are private dwellings not in the ownership of the applicant / landowner of the subject site.

Bat Activity Survey

Bat activity surveys were conducted within the study area using Anabat Walkabout detectors, which record bat echolocation calls directly on to an internal SD memory card. Each time a bat is detected, an individual time-stamped (date and time to the second) file is recorded. Data was then downloaded, and all recordings were analysed using the Anabat Insight spectrogram sound analysis software Version 2.0.1. Dusk activity surveys (from sunset, for a minimum of 90 minutes) were conducted. Dusk activity surveys enable a determination of the approximate numbers and species of bats present within the site; areas used for foraging and commuting routes to and from roosts. The approximate flying height and direction taken by bats were estimated and detailed where possible.

Assessment of bat activity was undertaken on 2nd October 2021, 5th May 2022, 11th May 2022, 12th June 2022, and 20th June 2022, 19th September 2024, 7th October 2024, 27th May 2025, 11th August 2025 and 13th September 2025. The surveys were conducted in appropriate weather conditions (avoiding periods of very heavy rain, strong winds (> Beaufort Force 5), mists and dusk temperatures below (10°C).

To supplement the information gathered from the manual activity survey, a passive monitoring system of bat detection was also deployed for this survey scheme (i.e. a bat detector is left in the field, there is no observer present and bats which pass near enough to the monitoring unit are recorded and their calls are stored for later analysis). This results in a far greater sampling effort over a shorter period of time. Bats are identified by their ultrasonic calls. The passive detectors record bat ultrasonic calls on a continuous basis and store the information onto an internal SD card. Each time a bat is detected, an individual time-stamped (date and time to the second) file is recorded.

Passive monitoring was completed in October 2021, May 2022, and June 2022, September 2024, May 2025, August 2025 and September 2025 using the Anabat Express and Anabat Swift bat monitors. The passive monitoring survey was undertaken in accordance with Bat Surveys for Professional ecologists: Good Practice Guidelines (Collins, J. (2016) and its subsequent update in 2023. Anabat Express and Anabat Swift monitors were deployed for the survey and were positioned in treelines and within woodland at three different locations within the study area in October 2021, and nine different locations within the study area in May 2022 and June 2022 and nine different locations within the study area between September 2024 and September 2025. The detectors were set to record from approximately 30 minutes before sunset until sunrise and recorded for 5 nights at each location. Data was then downloaded, and

bat echolocation calls were later analysed by the Anabat Insight software analysis programme. Each time-stamped file was analysed and the species of bat recorded was noted as a bat pass.

The location of the monitors recording in 2021 and 2022 is illustrated in Figure 11.1. The location of monitors recording in 2024 and 2025 are illustrated in Figure 11.2. While parts of Station Road and the R617 are included within the development boundary (Figure 1.1), as there are no interventions that might affect bats, it is not included within the bat study area.

Bat Survey Limitations

Brown long-eared bats can be difficult to detect as they echolocate at a low-amplitude, and foraging bats often make no sound. The survey design aimed to increase the likelihood of recording this species by the employment of full spectrum monitoring and the positioning of passive monitors at commuting routes, natural corridors through or adjacent to vegetation and suitable brown long-eared bat habitats (such as woodland edge and treelines).

The activity surveys were undertaken in the autumn, late spring and summer seasons. No significant constraints on the survey data gathered are noted.

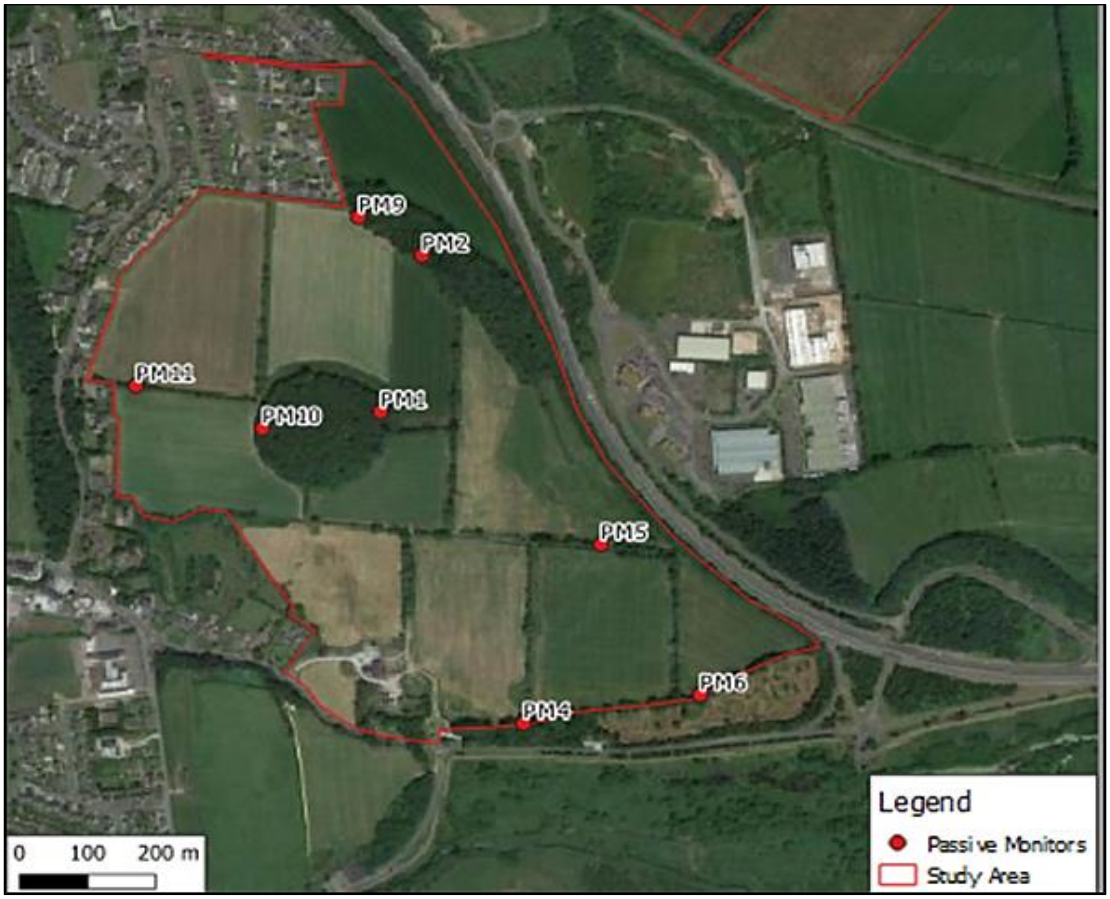


Figure 11.1: Location of passive monitors within the study area, October 2021-June 2022.



Figure 11.2: Location of passive monitors within the study area, September 2024 – September 2025.

Aquatic Ecology

To ascertain the baseline water quality status of the Shean Upper Stream, Blarney Stream and Clogheenmilcon Fen Lake, physiochemical water sampling was undertaken and assessed by Ross Macklin of Triturus Environmental on behalf of AtkinsRéalis on 28th September and 9th November 2023. This work will be updated for any future phases of development.

As noted, due to site topography, it will be necessary to drain the eastern end of the site to the Shean Upper Stream which lies ca. 150m to the east of the site of the proposed development. The following section characterises this watercourse and discusses methods used for water quality and aquatic ecological diversity sampling with the Shean Upper Stream, as well as downstream within Blarney Bog pNHA to which it discharges. The western part of the site discharges to an existing surface water outlet to the River Martin.

It was only possible to survey two areas within the Shean Upper Stream catchment given extensive culverting of the watercourse (Table 11.2 and Figure 11.2). This included site 1 at a short section of open water upstream of the N20 culvert at the Blarney Business Park and site 2 immediately upstream of the confluence with Clogheenmilcon Fen Lake. A third riverine sampling location (site 3) was taken

downstream of the confluence of the Shean Upper Stream with the Blarney River. Three lake survey locations were selected within the eastern, central and western areas of the lake basin (Table 11.2 and Figure 11.2).

Site no.	Watercourse	EPA code	Location	Samples Collected	X (ITM)	Y (ITM)
1	Shean Upper Stream	19S17	In short open section at Blarney Business Park	Physiochemical & Q sampling	562160	576339
2	Shean Upper Stream	19S17	Immediately upstream of confluence with Clogheenmilcon Fen Lake	Physiochemical & Q sampling	562561	575567
3	Blarney River	19B02	In Blarney River downstream of confluence with Shean Upper Stream	Physiochemical & Q sampling	561951	575430
A	Clogheenmilcon Fen Lake	N/A	Eastern basin	Physiochemical	562410	575569
B	Clogheenmilcon Fen Lake	N/A	Central basin	Physiochemical	562782	575583
C	Clogheenmilcon Fen Lake	N/A	Western basin	Physiochemical	563199	575682

Table 11.2: Location of biological and physiochemical survey locations on the Shean Upper Stream, Blarney River & Clogheenmilcon Fen Lake (see also Figure 11.2).

Physiochemical water quality

Ecological status is directly linked to water quality and ecological diversity within a watercourse. To ascertain the baseline water quality status of the Shean Upper Stream, the Blarney River and Clogheenmilcon Fen Lake composite physiochemical surface water samples were collected on the 28th September 2023 and 9th November 2023. The samples were tested for a suite of physiochemical parameters as listed below. Handheld meters were used to record dissolved oxygen (DO) levels (mg O2/l) and water temperature ranges (°C) during the survey period.

- pH
- Total alkalinity (mg CaCO3/l)
- Conductivity (@25°C µs/cm)
- Total ammonia (mg N/l)
- Ortho-P (mg P/l)
- Total P (mg P/l)
- Total oxidised nitrogen (TON) (mg N/l)
- BOD (mg O2/l)
- Chlorophyll a (µg/l)
- Suspended solids (mg/l)
- Dissolved oxygen (mg/l)

Q-sampling surveys

Q-sampling was undertaken at n=3 riverine sites, two on the Shean Upper Stream and at one site downstream of the confluence of the Shean Upper Stream with the Blarney River. The surveys were repeated over two periods on the 28th of September 2023 and 9th November 2023. The two repeat survey periods facilitated a better understanding in the temporal change of biological water quality between summer and autumn at the riverine survey sites.

Macro-invertebrate samples were converted to Q-ratings as per Toner *et al.* (2005). All riverine samples were taken with a standard kick sampling hand net (250mm width, 500µm mesh size) from areas of riffle/glide utilising a three-minute sample sampling effort. This included the washing of large cobble and or small boulder at each survey site, where present. All samples were elutriated and fixed in 70% ethanol for subsequent laboratory identification.

An Ecological Quality Ratio (EQR) was also calculated for each sample over both survey periods. This allows for the conversion of a Q-rating class to a numerical value to correspond with targets as specified within the European Communities Environmental Objectives (Surface Water) Regulations (S.I. No. 272 of 2009) as amended by the S.I. No. 77/2019. An EQR Ratio is expressed by a numerical value between 0 and 1 in the case of Q-sampling by dividing the recorded Q-rating by the maximum reference value (i.e. Q5 or 1.0 when converted to a numerical value). In the case of the Surface Water Regulations 2019, minimum targets are specified as 0.75 for the moderate to good class boundary and 0.85 for the good to high status boundary. While these targets are specified for intermediate boundaries, an EQR of 0.8 can be considered as the target for 'good status' (Feeley *et al.*, 2020a; see Table 11.3 below).

The severity of anthropogenic pollution can be determined based on deviation from target reference conditions, as outlined above (Feeley *et al.*, 2020a). In this respect, 'good or high status' can be is defined as the biological, chemical and morphological conditions associated with limited human pressure, while at the other extreme 'bad status' would be representative of severe anthropogenic pressures on a river. Our results are presented in terms of EPA Q-rating and EQR for each survey site.

Q-value	EQR	WFD status	Pollution status	Condition
Q5 or Q4-5	≥0.9	High	Unpolluted	Satisfactory
Q4	0.8*[9]	Good	Unpolluted	Satisfactory
Q3-4	0.7	Moderate	Slightly polluted	Unsatisfactory
Q2-3 or Q3	0.5-0.6	Poor	Moderately polluted	Unsatisfactory
Q1, Q1-2 or Q2	0.2-0.4	Bad	Seriously polluted	Unsatisfactory

Table 11.3: Reference Categories for EPA Q-Ratings (Q1 to Q5).

[9] 0.75 represents the 'moderate-good class boundary' according to S.I. No. 77 of 2019, therefore those values equating to 0.8 are considered of 'good status' (Feeley *et al.*, 2020a) and meeting the minimum target required under the Water Framework Directive.

Biosecurity

A strict biosecurity protocol following Inland Fisheries Ireland best practice (IFI, 2010) in addition to the Check-Clean-Dry approach was employed during the survey. This included visual examination of equipment and the removal of debris and vegetation. Equipment and PPE used was disinfected with a 5% Virkon® solution between survey sites to prevent the transfer of pathogens and/or invasive species between survey areas. Equipment was be dried in sunlight for 72 hours in natural light before and after surveys with two sets of equipment used moving between the Shean Upper and Blarney River sub-catchments. Surveys were undertaken at sites in a downstream order (i.e. uppermost site surveyed first etc.) to prevent the upstream mobilisation of invasive propagules and pathogens. All surveyors have University of Leeds aquatic biosecurity training certification.

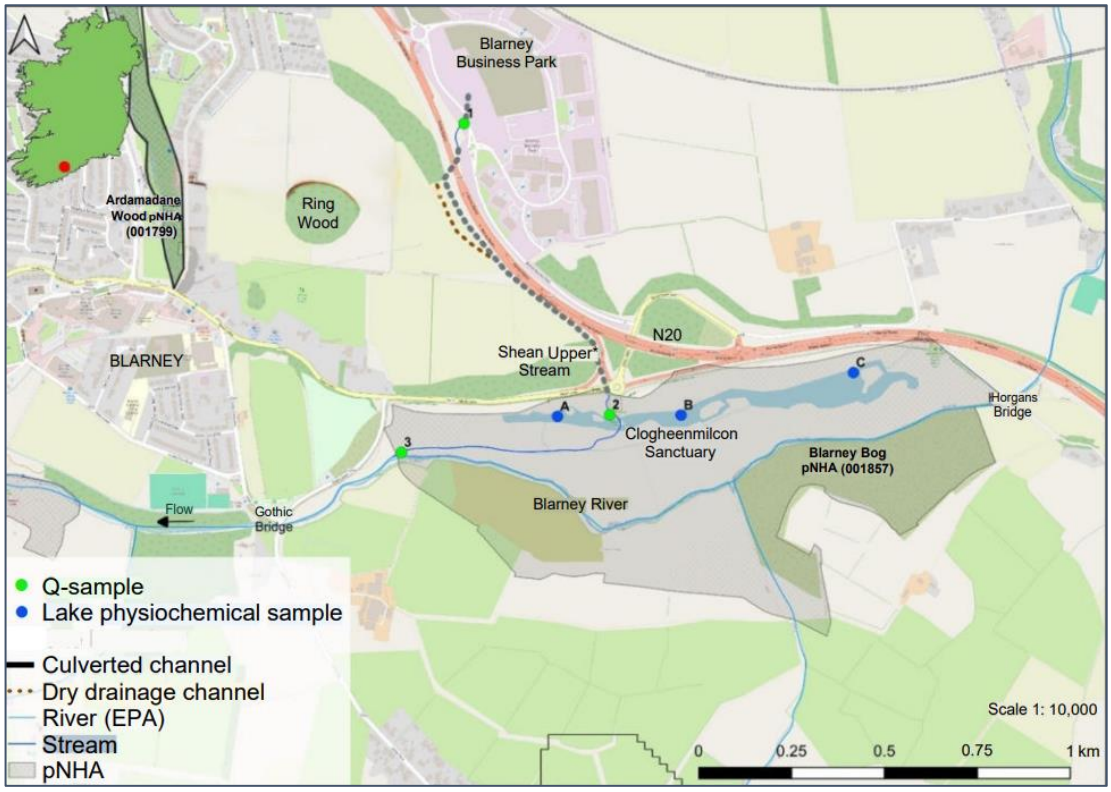


Figure 11.3: Location of the water quality survey sites on the Shean Upper Stream, Blarney River and Clogheenmilcon Fen Lake.

11.2.5. Assessment of Impacts on Biodiversity

The overall methodology followed in the preparation of this chapter was informed by the most recent guidelines for ecological assessment in the UK and Ireland, i.e. the CIEEM (2024) guidelines, as updated in September 2024. In additional, the methods for specific aspects of the assessment, e.g. evaluation of receptors, assessment of impacts and effects, and development of mitigation and enhancement measures, had regard to appropriate guidelines from the National Roads Authority (now Transport Infrastructure Ireland) and the EPA. These methods are described below.

Evaluation of Ecological Receptors

The evaluation of the importance of ecological features present within the footprint of the proposed development and the Zone of Influence followed *Ecological Surveying Techniques for Protected Flora and Fauna during the Planning of National Road Schemes* (NRA, 2009a). The geographic frame of reference for evaluating ecological importance is summarised in Table 11.4.

Level	Examples (non-exhaustive)
International Importance	• European (Natura 2000) sites or sites which fulfil the criteria for such a designation. • Features essential to the coherence of the Natura 2000 network. • Best examples of natural habitat types listed on Annex I to the Habitats Directive ("Annex I habitats"). • Resident of regularly occurring populations of bird species listed on Annex I to the Birds Directive or animal or plant species listed on Annex II or IV to the Habitats Directive ("Annex II/IV species") (in numbers of national importance). • Wetlands of International Importance (under the Ramsar Convention). • UNESCO World Heritage Sites or Biosphere Reserves.
National Importance	• Designated or proposed Natural Heritage Areas (NHA/pNHA), statutory Nature Reserves or sites fulfilling the criteria for such a designation. • Resident or regularly occurring populations of species protected under the Wildlife Act, 1976 (as amended) or listed on the relevant national Red List (in numbers of national importance). • Viable examples of Annex I habitats.
County Importance	• Areas of Special Amenity, areas subject to a Tree Preservation Order and Areas of High Amenity. • Resident or regularly occurring populations of protected or threatened species (in numbers significant at the county level, e.g. >1% of the county population). • Examples (not of National or International Importance) of Annex I habitats. • Other features of ecological interest identified in relevant local or national biodiversity action plans. • Sites or habitats of high biodiversity value or degree of naturalness in a county context or species which are uncommon in the county. • Sites containing habitats or species which are in decline nationally.
Local Importance (Higher Value)	• Ecological features identified in the relevant local biodiversity action plan. • Resident or regularly occurring populations of protected or threatened species (in numbers significant at the local level). • Sites habitats of high biodiversity value or degree of naturalness in a local context or species which are uncommon locally.

Level	Examples (non-exhaustive)
Local Importance (Lower Value)	• Sites or features containing common or lower value habitats which provide connectivity between features of higher ecological value. • Sites containing small areas of semi-natural habitat that are of some local importance for wildlife. • Sites or features containing non-native species that are of some importance in maintaining habitat links.

Table 11.4: Geographic frame of reference for evaluating the importance of ecological features (following NRA, 2009a).

Accordingly, factors which were considered when evaluating importance included the following:

- National or international designations on sites, or identification of sites in local plans,
- Level (if any) of statutory protection of the habitats and species concerned,
- Conservation status and trends in habitats and species in a local, national and international context,
- Quality and extent of habitats and numbers of individuals of species within the study area,
- Likely future prospects of habitats and species in the study area in the 'do-nothing' scenario, and
- Inter-relationships between habitats, species and other ecological features in the study area and wider landscape.

Assessment of Impacts & Effects

Once the importance of ecological features in the study area had been evaluated, the assessment of the potential impacts focussed on key ecological receptors (KERs), i.e. ecological features of at least Local Importance (Higher Value), in accordance with *Guidelines on the information to be contained in Environmental Impact Assessment Reports* (EPA, 2022a). The assessment of impacts is carried out in three stages, as follows:

1. First, potential impacts are identified by the examination of possible source-pathway-receptor chains.
2. Then, impacts and their effects are characterised in terms of the following:
    a. Nature (type) and quality (whether positive, neutral or negative),
    b. Probability of occurrence,
    c. Intensity, magnitude and/or spatial extent,
    d. Timing, duration and frequency, and
    e. Reversibility or potential for recovery.
3. Finally, the significance of effects is evaluated by considering their characteristics in the context of the particular sensitivities of the relevant KERs.

Regarding the duration of effects, EPA (2022a) specifies the following definitions for what may be considered as "temporary", "short-term", "long-term" etc.:

- 'Momentary' – Seconds to minutes.
- 'Brief' – Less than a day.
- 'Temporary' – Less than 1 year.
- 'Short-term' – 1 to 7 years.
- 'Medium-term' – 7 to 15 years.

- 'Long-term' – 15 to 60 years.
- 'Permanent' – Over 60 years.

EPA (2022a) also provides definitions for other relevant terms which might otherwise be subjective. Regarding defining levels of significance, EPA (2022a) provides for the following scale:

- 'Imperceptible' – Capable of measurement but without significant consequences.
- 'Not significant' – Causes noticeable changes in the character of the environment but without significant consequences.
- 'Slight' – Causes noticeable changes in the character of the environment without affecting its sensitivities.
- 'Moderate' – Alters the character of the environment in a manner that is consistent with existing and emerging baseline trends.
- 'Significant' – Alters a sensitive aspect of the environment.
- 'Very significant' – Significantly alters most of a sensitive aspect of the environment.
- 'Profound' – Obliterates sensitive characteristics.

The significance of an impact or effect may also be evaluated on the same geographical scale as the importance of ecological features. However, as noted in NRA (2009a), "*significance* […] *is determined empirically, on the basis of an analysis of the factors which characterise it, irrespective of the value of the receptor.* […] *If impacts are not found to be significant at the highest geographical level at which the resource has been valued, they may be significant at a lower level.*"

Mitigation & Enhancement

The development of the mitigation measures followed the "*mitigation hierarchy*", which prioritises avoidance over reduction, and actions at source over pathway over receptor, as follows:

1. Eliminate the source of the impact,
2. Minimise or reduce the impact at its source,
3. Block or weaken the pathway for effects, and
4. Abate effects at the receptor.

This approach assists with more complete removal of negative effects, minimises the risk of effects occurring by less obvious pathways, protects non-target receptors, and minimises the risks of unintended harm associated with measures focussed at or near receptors.

The enhancements outlined in this chapter have been developed with due regard to the policies and objectives of the Cork City Development Plan, 2022-2028 in relation to sustainable drainage systems (SuDS), green and blue infrastructure, biodiversity on Council lands, and Biodiversity Net Gain, as well as the following action plans and guidance (as demonstrated throughout this chapter):

- All-Ireland Pollinator Plan 2021-2025. *National Biodiversity Data Centre Series* 25. National Biodiversity Data Centre, Waterford. March 2021.
- Cork City Council (2021). *Cork City Heritage and Biodiversity Plan, 2021-2026*. Cork City.

- *Cork County Council Recommended List of Native Tree and Shrub Species for Residential & Industrial Developments, Version 2*. Ecology Office, Cork County Council, Cork. June 2022[10].
- TII (2006). *A Guide to Landscape Treatments for National Road Schemes in Ireland. GE-ENV-01102. February 2006.* Transport Infrastructure Ireland, Dublin.
- TII (2012). *Guidelines on the Implementation of Landscape Treatment on National Road Schemes in Ireland. GE-ENV-01103. July 2012.* Transport Infrastructure Ireland, Dublin.

In accordance with NRA (2009a), it is recognised that ecological mitigation and enhancement measures "*may have a significant beneficial impact, but at a higher or lower geographic scale than the value of the receptor to which they have been applied*."

11.3. Receiving Environment

11.3.1. Zone of Influence

The "*Zone of Influence*" of a plan or project is the area which may experience ecological effects as a result of its implementation, including any ancillary activities. The various impacts of a plan or project will each have their own characteristics, e.g. nature, extent, magnitude, duration etc. Accordingly, the area subject to each impact ("zone of impact") will vary depending on characteristics of the impact and the presence of pathways for its propagation. Ecological features within or connected to one or more zones of impact could, depending on their sensitivities, be affected by the plan or project under consideration. The area containing such features may be regarded as the Zone of Influence. As such, in establishing the Zone of Influence for a plan or project, regard must be had to the characteristics of its potential impacts, potential pathways for impacts and the sensitivities of ecological features in the receiving environment.

Box 10 of Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine (CIEEM, 2024) lists useful questions which should be asked to assist in establishing the Zone of Influence for a proposal under consideration. This is reproduced in Figure 11.3 below. Consideration must be given to all phases, e.g. ground investigations, site preparation, construction, operation, decommissioning, of proposal under consideration (NRA, 2009a; CIEEM, 2024).

[10] Study area is now in the City, but the County guidance is relevant to this site which is located on the edge of the City.

Box 10: Ecological considerations for establishing the zone(s) of influence

The following questions will help to determine the zone(s) of influence on ecological features:

- What 'important' ecological features (see Chapter 4) are known to occur within the project site and the surrounding area?
- What other 'important' ecological features could occur within the project site and surrounding area based on knowledge of the local distribution of relevant habitats and species?
- What activities may generate ecological impacts and which of these might have an influence on ecological features beyond the site boundaries? (see Box 9)
- Is the project likely to affect migratory species?
- Is the area used by mobile species that make regular movements to, from, or across the site?
- What are the key ecological processes or species activity periods? Are there seasonal variations in distribution, abundance and activity?
- Does peatland occur within the project site and surrounding area? If so, the extent of the hydrology associated with the habitat should be included in the zone of influence. Any assessment of impacts should include a buffer beyond the project site determined by the topography, hydrology and the project, for example the UK Peatland Code uses a 30m buffer for a ditch.
- What are the key hydrodynamic processes at the site (e.g. tidal currents, wave activity)? Are there seasonal or cyclic variations in these?
- Does the project affect any sites, directly or indirectly, that are designated or likely to be designated in the foreseeable future? What are the reasons for designation?
- What is required for the maintenance of particular ecosystems, networks, habitats or species populations? How would these be affected by project activities?
    - What are their distribution and status elsewhere for comparison?
    - What were their historical distributions, status and management compared with present?
    - Is anything known about the key factors influencing distribution and abundance of the feature(s)?
    - What are their scales of variation, vulnerability and likely exposure to the project?
- Are there any features whose disappearance would have significant consequences for other features?
- Are there any other projects planned within the same area or time-frame that may contribute to cumulative effects? (see 5.19 - 5.22)

Figure 11.4: Factors in establishing the Zone of Influence. Source: CIEEM (2018; as updated in 2024).

Following the guidance in NRA (2009a) and CIEEM (2024), and based on the description of the proposed development and an examination of potential pathways for ecological impacts in the receiving environment, the likely zones of impact from the proposed development were defined as follows:

- For habitat loss and fragmentation, all areas within the proposed development boundary, including any areas temporarily required during construction,
- For disturbance to birds and other fauna, all areas within a precautionary buffer of 500m from the proposed development,
- For water quality impacts, all surface waters which intersect the proposed development or are located within 100m thereof, as well as connected upstream and downstream stretches, and
- For the introduction or spread of invasive alien species, the proposed development site, and adjoining areas, as well as likely haul routes to/from the construction site.

The Zone of Influence was defined as the above zones of impact as well as other areas with potential ecological connectivity to them, i.e., woodlands and other semi-natural habitats connected to the proposed development by proximity or linear landscape features such as hedgerows or treelines and connected wetlands and waterbodies. Publicly available spatial data for river, transitional and coastal

waterbodies (EPA Maps) was used in conjunction with aerial imagery to identify pathways and zones of impact for disturbance and water quality impacts from the proposed development. These were then mapped in relation to designated sites. In addition, the Zone of Influence was examined to identify any other sites or sensitive ecological features with potential ecological connections to these zones of impact.

11.3.2. Desktop Review

Statutory Conservation Sites

European (Natura 2000) Sites

The Habitats Directive (Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora) forms the basis for the designation of Special Areas of Conservation. Similarly, Special Protection Areas are classified under the Birds Directive (Council Directive 2009/147/EEC on the Conservation of Wild Birds). The Habitats and Birds Directives are transposed into Irish law by the EC (Birds and Natural Habitats) Regulations 2011 (Statutory Instrument No. 477/2011). Collectively, Special Areas of Conservation (SAC) and Special Protection Areas (SPA) are referred to as the Natura 2000 network. In general terms, they are of exceptional importance for rare, endangered or vulnerable habitats and species within the European Community.

Guidance on the AA process was produced by the European Commission (EC, 2001; 2018), which was subsequently used to develop guidance for Ireland by the Department of Environment, Heritage and Local Government in 2009 (DEHLG, 2009) More recently the Office of the Planning Regulator published Appropriate Assessment Screening for Development Management (OPR Practice Note PN01; OPR, 2021).

The proposed development site is not located within or in the immediate environs of any Natura 2000 sites. There are three Natura 2000 sites located within the environs of the site; namely Great Island Channel SAC (NPWS, 2014a), River Blackwater Cork / Waterford) SAC (NPWS, 2012) and Cork Harbour SPA (NPWS, 2014b) (see Table 11.5; Figure 11.5).

The Great Island SAC[11] (site code 001058) is located ca. 14.2km to the southeast of the site of the proposed development; around the north and west sides of the Great Island in Cork Harbour (Figure 11.5). Great Island SAC is designated for the protection of Mudflats and sandflats not covered by seawater at low tide (1140) and Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) (1330); neither of which habitat occurs within the site of the proposed development.

Cork Harbour SPA (site code 004030) is composed of several discrete areas including a number of estuaries within the broader harbour region (Figure 11.5). The closest part of the Cork Harbour SPA complex to the site is Douglas Estuary – 9.7km to the southeast; while the closest part via the River Lee is around Blackrock / Dunkettle at the mouth of the River Lee (where it enters Lough Mahon). Cork Harbour SPA[12] is designated for a range of wintering waterbirds; for breeding Common tern (*Sterna hirundo*) and Wetland & Waterbirds.

[11] https://www.npws.ie/protected-sites/sac/001058

[12] https://www.npws.ie/protected-sites/spa/004030

- Little Grebe (*Tachybaptus ruficollis*)
- Great Crested Grebe (*Podiceps cristatus*)
- Cormorant (*Phalacrocorax carbo*)
- Grey Heron (*Ardea cinerea*)
- Shelduck (*Tadorna tadorna*)
- Wigeon (*Mareca penelope*)
- Teal (*Anas crecca*)
- Pintail (*Anas acuta*)
- Shoveler (*Anas clypeata*)
- Red-breasted Merganser (*Mergus serrator*)
- Oystercatcher (*Haematopus ostralegus*)
- Golden Plover (*Pluvialis apricaria*)
- Grey Plover (*Pluvialis squatarola*)
- Lapwing (*Vanellus vanellus*)
- Dunlin (*Calidris alpina*)
- Black-tailed Godwit (*Limosa limosa*)
- Bar-tailed Godwit (*Limosa lapponica*)
- Curlew (*Numenius arquata*)
- Redshank (*Tringa totanus*)
- Black-headed Gull (*Chroicocephalus ridibundus*)
- Common Gull (*Larus canus*)
- Lesser Black-backed Gull (*Larus fuscus*)
- Common Tern (*Sterna hirundo*)

The River Blackwater (Cork / Waterford) SAC is located ca. 13.6km to the northeast of the proposed development. However, the site of the proposed development does not lie within the catchment of the River Blackwater and its tributaries. This Natura 2000 site is not therefore within the potential zone of influence of this project. There are several other sites in the wider environment, including sites within the catchment of the River Lee, such as the Gearagh SAC (000108) (NPWS, 2016) and the Gearagh SPA (004109) (NPWS, 2025). Such sites were also considered in the Screening for Appropriate Assessment (AtkinsRéalis, 2025).

Site	Number	Distance (straight-line)
Special Areas of Conservation		
Great Island Channel SAC	001058	14.2 km SE
River Blackwater (Cork / Waterford) SAC	002170	13.6 km NE
Special Protection Area for birds		
Cork Harbour SPA	004030	9.7 km SE

Table 11.5: Natura 2000 sites in the Zone of Influence of the site of the proposed development.

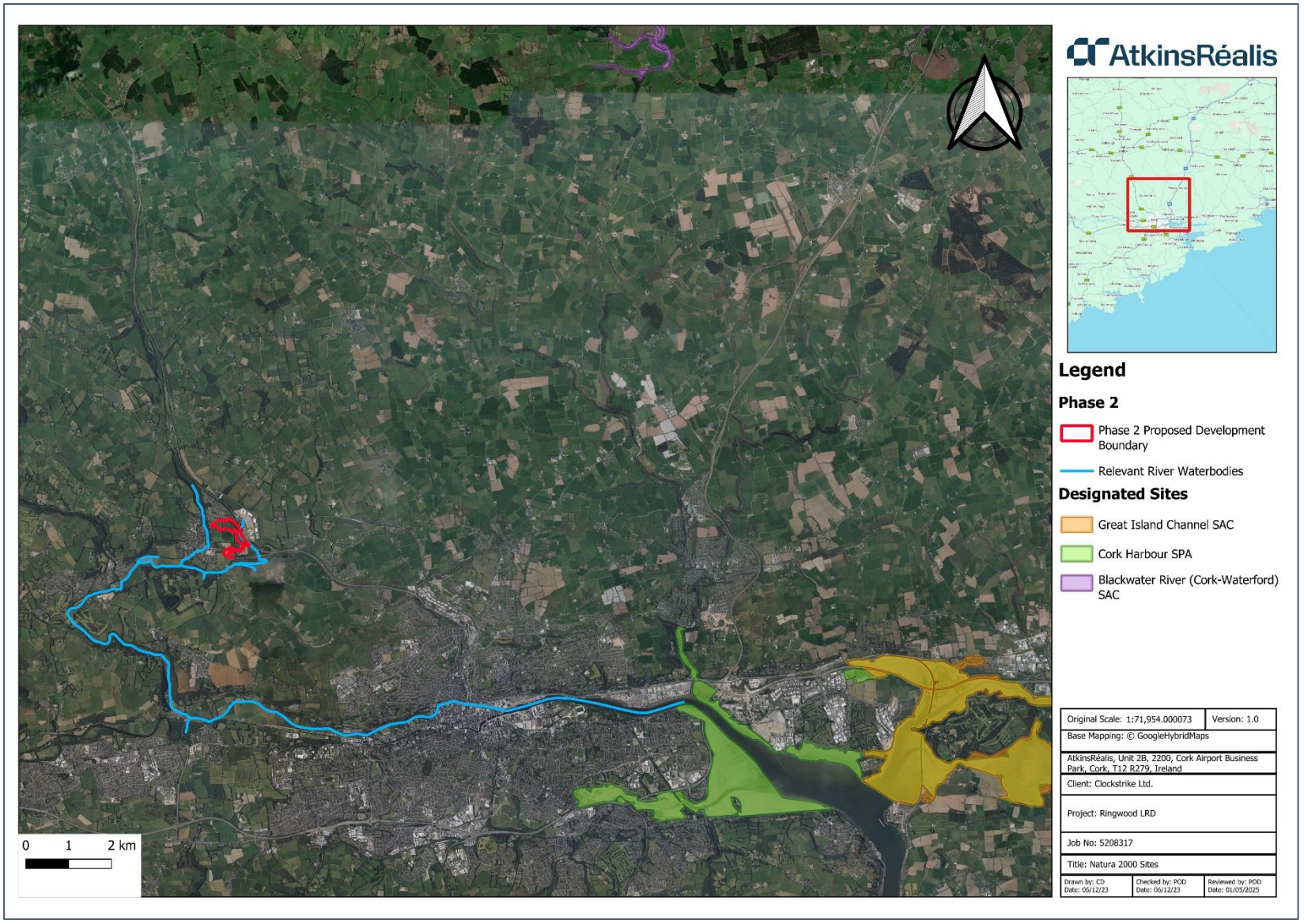


Figure 11.5: Natura 2000 sites in environs of the site of the proposed development.

Nationally Important Sites

Natural Heritage Areas (NHAs) are nationally designated sites, which are considered important for the habitat, species or geological heritage. NHAs are legally protected under the Wildlife Amendment Act 2000. Proposed Natural Heritage Areas (pNHAs) are sites that are of significance for wildlife and habitats, but which have not yet been statutorily designated; however, their ecological value is recognised by Planning and Licencing Authorities. Sites in the environs of the site of the proposed development are discussed below (see Table 11.6) and shown on Figure 11.6.

Blarney Bog pNHA (001857) is located ca. 40m southeast of the proposed development site; on the southern side of the R617 / N20. The site is also known locally as Clogheenmilcon Fen or Inchacomain Marsh. The NPWS site synopsis describes the key habitats on site as follows (NPWS, 1993):

> *The main habitats of the area are lowland wet grassland, both grazed and ungrazed and freshwater marsh/fen. The dominant species of the wet grassland are Reed grass (*Phalaris anundinacea*), Soft Rush (*Juncus effusus*) and grasses such as Creeping Bent (*Agrostis stolonifera*), Tufted Hair-grass (*Deschampsia caespitosa*) and Yorkshore Fog (*Holcus lanatus*). Land to the west is generally wetter with herbs such as Greater Tussock-Sedge* (Carex paniculata*), Greater pond-sedge (*Carex riparia*) and Bladder-sedge (*C. vesicana*); commonly occurring herbs are Meadowsweet (Filipondula almaria) and Common Valenian (*Valeniana efficinalis*), locally distributed in the sward are Yellow Loosestrife (*Lysimachia vulgaris*) and Purple Loosestrife(*Lythrum salicana*). The land nearer the Blarney road is drier with a mixture of grasses and sedges, the ungrazed areas are more tussocky with herbs such as Common Sand (*Rumex acetosa*) and Tormentil (*Potentilla erecta*). There is a new road development occurring in the north of the site and soil/subsoil has been bulldozed onto some of this grassland, there is considerable disturbance to the area (see Ranger Photograph 2).*
>
> *South of the river the land is wetter with scattered Willow Trees (*Salix *sp.), Purple moor-grass (*Molinia caerulea*), Tufted Hair-grass (*Deschampsia caespitosa*) and Soft rush (*Juncus effusus*) dominate the vegetation, the wetter areas supporting the growth of March cinquefoil (*Potentilla palustris*), Bog bean (*Menyanthes trifoliata*), Devil's-bit scabious (*Succisa pratensis*) and Common yellow-sedge (*Carex demissa*). Towards Horgan's bridge in the east of the site, is an area dominated by tussocks of Greater tussock-sedge (*Carex paniculata*). The water course flora is not particularly rich but contains Common duckweed (*Lemna minor*), Floating sweet-grass (*Glyceria fluitans*) and Fool's Watercress (*Apium nodiflorum*), less frequently found are Branched and Unbranched bur-reed (*Sparganium erectum *and* S. emersum*) and Pondweeds (*Potamogeton *sp.*).

The Bog has been subject to a recent study by the City Council – Clogheenmilcon Fen Ecological and Tourism Plan (Lauder *et al*., 2021). In the summer of 2021, the City Council tendered for the preparation of further ecological surveys of Blarney Bog. Part of the site lies within the City Council's ownership.

The Shean Upper Stream (EPA Code - 19S17) rises to the north of the N20 (close to the Blarney Business Park). It flows south under the N20. It runs within the site of the proposed development loosely along the eastern boundary. To the south it crosses under the R617 / New Mallow Road slip before discharging

to the lake in Blarney Bog. The Shean Upper Stream joins the Blarney River, which in turn is a tributary of the Shournagh River and this in turn is a tributary of the River Lee.

Ardamadane Wood pNHA (001799) is located on the western side of Station Road outside the boundary of the site of the proposed development (ca. 60m at its nearest point). The NPWS site synopsis describes the site as follows (NPWS, 1995):

*Ardamadane Wood is located north of Blarney village, 6km north-west of Cork City. It is situated along the banks of the River Martin. The site is bounded in parts by the river, the old Blarney-Mallow road and on the eastern side by an embarkment and the new Cork road. This site comprises mainly dry deciduous woodland of Oak (*Quercus petraea*) and Birch (*Betula pubescens*) with some scrub woodland and improved agricultural grassland. Threats to this particular site include eutrophication of the river from fertilizer run off and litter/domestic rubbish dumping in the woodland adjacent to roads.*

The following description is compiled from the An Foras Forbatha (1972) report for 3 sites around Blarney - Ardamadare Woods (1799) north of the village and 2 sites to the south - Blarney Castle Woods (1039) and Blarney Lake (1798). Together they encompass some 53 ha.

*The woodland at Blarney has a rich soil due to the influence of the nearby limestone and is able to support a wide variety of plants and animals. Blarney Castle Woods comprises an old estate woodland with Oak, Ash (Fraxinus excelsior), Sycamore (*Acer pseudoplatanus*) and Beech (*Fagus sylvatica*). Ardamadare Woods consists of a patch of scrub with Hazel (*Corylus avellana*) and Ash and a linear Oak and Birch Wood stretching northwards along the R. Martin towards Waterloo (the river is also included in this site). The Blarney lake site includes the artificial lake near the Castle.*

*The base-rich woodland of Blarney Castle Wood is probably the most interesting site botanically, with a species-rich ground flora. Species include Pignut (*Conopodium majus*), Sanicle (*Sanicula europaea*), Garlic mustard (*Alliana petiolata*), Goldilocks buttercup (*Ranunculus auricomus*) and the Violets - Common dog-violet (*Viola tiviniana*) and Early dog-violet (*V. reichenbachiana*). The two parasitic species - Ivy broomrape (*Orabanche hederae*) and Toothwort (*Lathraea squamaria*) are found occasionally, usually in places with deeper soils, while the rocky areas support the growth of wood melic (*Melica uniflora*) and Bearded Couch (*Elymus caninus*).*

*The flora of Ardamadare Wood is not as species-rich and includes species of more acid conditions such as Great Wood-rush (*Luzula sylvatica*). The three sites are of some importance to birds with Woodcock using the area in winter and a variety of species breeding in the area.*

*Near the river and lake the aquatic communities include beds of sedges (e.g. Greater pond-sedge (*Carex riparia*), Bladder-sedge (*C. vesicaria*), Smooth-stalked sedge (*C. laevigata*) and Great Fen-sedge (*Cladium mariscus*) and stands of tall herbs such as Meadowsweet (*Filipendula ulmaria*), Great willow herb (*Epilobium hirsutum*) and Hemp-agrimony (*Eupatorium cannabinum*). At the river's edge are found Nodding bur-marigold (*Bidens annua*), Blue water-speedwell (*Veronica anagallis-aquatica*) and Mints (*Mentha *sp.*).*

Threats to the survival of these sites are - coniferous afforestation of the woodland communities and the encroachment of agricultural activity e.g. grazing pressures, clear felling and agricultural improvement. Where possible, management agreements should be made with the landowners.

As a whole, the three sites compose a very caved area including interesting aquatic and terrestrial habitats. The base-rich woodland (Blarney Castle Woods) is an example of a type not widely found in Cork County, where acid upland woods are more common. The sites are all easily accessible and close to Cork city, and they could therefore form a useful environmental education resource within the area.

To the west of Blarney there are two no. pNHAs on the grounds of Blarney Estate, namely Blarney Castle Woods pNHA (001039) and Blarney Lake pNHA (001798).

The NPWS site synopsis describes **Blarney Castle Woods pNHA** as follows (NPWS, n.a.):

This site is situated 1km. south-west of Blarney in the grounds of Blarney Castle. The wood is bounded to the north by the Blarney River and to the south by the parklands surrounding the castle. The wood is situated on limestone which is exposed in several places. Within this rich area of limestone two other Natural Heritage Areas occur, Blarney lake (1798) and Ardamadane Wood (1799).

In 1986 An Foras Forbartha provided the following description of the woodland.

*The influence of the nearby limestone gives the woodland at Blarney a rich soil able to support a wide variety of plants and animals. The site is an old estate woodland with Oak (Quercus sp.), Ash (Fraxinus excelsior), Sycamore (*Acer pseudoplatanus*) and Beech (*Fagus sylvatica*). The ground flora in this base - rich woodland contains many species including Pignut (*Conopodium majus*), Wood Sanicle (*Sanicula europaea*), Garlic Mustard (*Alliaria petiolata*), Goldilocks Buttercup (*Ranunculus auricomus*) and the violets - Common Dog-violet (*Viola riviniana*) and Early Dog-Violet (*V. reichenbachiana*). In rocky areas of shallow soils Wood Meliek (*Melica uniflora*) and Wood Scutch (*Agropyron caninum*) grow. Two parasitic plants occur within the wood Toothwort (*Lathraea squamaria*) and Ivy Broomrape (*Orobanche hederae*) in areas of deeper soils.*

*Ivy Broomrape (*Orobanche hederae*) is listed in the Irish Red Data Book and is associated with areas where Ivy, and its accompanying woodland have persisted for long periods of time.*

The woodland is of interest for its birdlife. Woodcock occur within the woodlands during winter. The main land uses within this site are fishing, shooting, grazing by sheep and cattle and amenity use.

This site is very scenic and seen by many tourists who visit Blarney Castle. Its position close to Cork city and nearby roads make it of considerable educational value. The base-rich woodland is an example of a habitat not widely found in Cork where acid uplands predominate.

The NPWS site synopsis describes **Blarney Lake pNHA** as follows (NPWS, n.a.):

> *This site is situated 1km south west of Blarney, close to Blarney Castle. This site is one of three sites occurring in close proximity to one another and includes. Blarney Castle Woods (1039) and Ardamadane Wood (1799). The area is underlain by limestone which produces a rich soil able to support a wide variety of plants and animals.*
>
> *Blarney Lake is an artificial lake surrounded by a narrow band of woodland predominantly Oak (*Quercus *sp.), Beech (Fagus sylvatica) and Silver Fir (*Abies *sp.). The outflow of the lake is also included within the site.*
>
> *In 1986 An Foras Forbatha provided the following description of the wetlands near Blarney Castle. Aquatic communities near the river and lake include beds of Sedges (*Carex riparia*,* C. vesicaria*,* C. laevigata *and* Cladium mariscus*), tall herb stands of Meadow Sweet (*Filipendula ulminaria*), Great Willowherb (*Epilobium hirsutum*) and Hemp Agrimony (*Eupatarium cannabinum*) and river edge groups of Bur Marigold (*Bidens cernua*), Water Speedwell (*Veronica anagallis-aquatica*) and Mints (Mentha sp.). Rigid Hornwort (*Ceratophyllum demersum*) grows in Blarney lake.*
>
> *A recent survey of the lake noted a good deal of waterfowl on the lake including Tufted duck, Teal and Mallard.*
>
> *The main land uses within the site are boating, fishing and shooting.*
>
> *This site contains an interesting wetland community which is one of three closely situated rich and varied sites.*

Blarney Lake lies on a tributary of the Blarney River; consequently, there is no direct hydrological connection between the Site and Blarney Lake pNHA.

As noted, surface water from the eastern portion of the site of the proposed development with discharge to the Shean Upper Stream which is located within the east of the site proposed for development. The stream discharges to the Blarney River which in turn enters the Shournagh River to the southwest of Blarney (west of Blarney Bog). Between Tower and its confluence with the River Lee there are several sections of woodland and riparian habitat designated as Shournagh Valley pNHA (000103).

Further downstream the Lee Valley pNHA (000094) is located along the main channel of the River Lee. This site occupies five separate sections of the valley of the River Lee, immediately to the west of Cork City. One section passes close to Ballincollig, and the Ballincollig Regional Park makes up a portion of the site. A diverse range of semi-natural habitats occur including broad leaved woodland, wet grassland areas subject to flooding, Unimproved dry grassland and freshwater marsh (NPWS, 1999), which in turn provide habitat to a diverse range of animals.

By virtue of a surface water connection to the Shean Upper Stream which discharges to Blarney Bog pNHA, the site of the proposed development is hydrologically connected to Blarney Bog pNHA, which is located south of the R617 / N20 (this is considered in detail un the aquatic ecology assessment below,

as well as in Chapter 15.0 Water). There is a more remote connection to downstream sites such as Shournagh Valley pNHA and Lee Valley pNHA which are located within the catchment of the River Lee.

Site	Number	Distance (straight-line)
Blarney Bog pNHA	001857	ca. 40m
Ardamadane Wood pNHA	001799	ca. 60m
Blarney Castle Woods pNHA	001039	ca. 700m
Blarney Lake pNHA	001798	ca. 1.2km
Shournagh Valley pNHA	000103	ca. 2.4km
Lee Valley pNHA	000094	ca. 3.2km

Table 11.6: Proposed Natural Heritage Areas close to the site of the proposed development.

National Parks

Ireland currently has 6 no. nationally recognised National Parks. The site does not lie within any of these sites and there is no hydrological or ecological connectivity between the site or any National Park. The closest National Park is Killarney National Park which lies c. 40km west over land from the site of the proposed development.

Nature Reserves

First established under the 1976 Wildlife Act, by 1996 Ireland had 78 no. sites covering 18,000 hectares designated as statutory Nature Reserves[13] . There is no Nature Reserve directly connected to or are associated with the site at Ringwood or any that lie within 5km of the proposed project. The Gearagh Nature Reserve is the closest statutory Nature Reserve, lying ca. 29.2km west from the site of the proposed development.

Other non-statutory designated sites of ecological value

There are 68 no. designated Wildfowl Sanctuaries[14] in Ireland which are areas that have been excluded from the 'Open Season Order' so that game birds can rest and feed undisturbed e.g., shooting of birds is banned all year round. There are currently 6 no. of these sites in County Cork. The site of the proposed development does not lie within 5km of any Wildfowl Sanctuary; the closest Wildfowl Sanctury is The Lough, Cork (WFS-12) which lies ca. 6.6km southeast over land from the proposed development.

Several other sites are noted by Wetland Surveys Ireland[15] in the environs of the proposed development. Just under 1.8km to the north of the proposed development an area is identified as Ballygibbon Wetland (WMI_CO282). Key habitats include river, marsh, wet grassland and scrub. The ecological value of the site is unknown. To the west of the River Martin an area is noted as Waterloo Fen cNHA (WMI_CO8). This small site comprises fen and marsh habitat along a natural watercourse ca. 2.1 km northwest of Blarney, Co. Cork. It is rated as Nationally important. Key habitats included marsh, transition mire, alkaline fen,

[13] https://www.npws.ie/nature-reserves

[14] https://www.npws.ie/protected-sites/wildfowl-sanctuaries

[15] https://www.wetlandsurveys.ie/

river and wet grassland. Additional wetland sites within 5km of the proposed development include Garrycloyne Wet Woodland (MIW_CO233), Loughane West (MIW_CO286), Farranastig West (MIW_CO234), Inchigaggin Wetland (MIW_CO974), and Coolymurraghue Wetland (MIW_CO975) (non-exhaustive list).

No other sites of ecological value are located within the 5km of the proposed project.

Aquatic Sites

The first order Shean Upper Stream (River Waterbody code: IE_SW_19M010600) is located within the site of the proposed development (Phase 2) to the east. The stream flows from north to south rising north of the N20 before being culverted under the N20. The stream enters Blarney Bog and Blarney Stream south of the R617 / N20 (ca. 350m southeast of the site of the proposed development). The site of the proposed development is in the Manin subcatchment (Manin_SC_010; Subcatchment_Id 19_5). To the west (ca. 120m) of the proposed development site the River Martin (also identified according to the EPA as the Manin River and Martin_040 according to the WFD) flows in a southerly direction, joining the Blarney Stream downstream of the confluence of Shean Upper Stream and Blarney Stream. The closest hydrologically connected record of water quality is Q-value records of the Blarney Stream upstream and downstream of the confluence with the Shean Upper Stream. These records date from 2023 for both the upstream and downstream site. Both sites were assigned a Q-value of 4 (Good). Meanwhile, a Q-value of 4-5 (High) was assigned to the River Martin downstream of the confluence between the Shean Upper Stream and the Blarney Stream.

All waterbodies in the vicinity of the proposed site have been assigned Moderate Status under the Water Framework Directive.

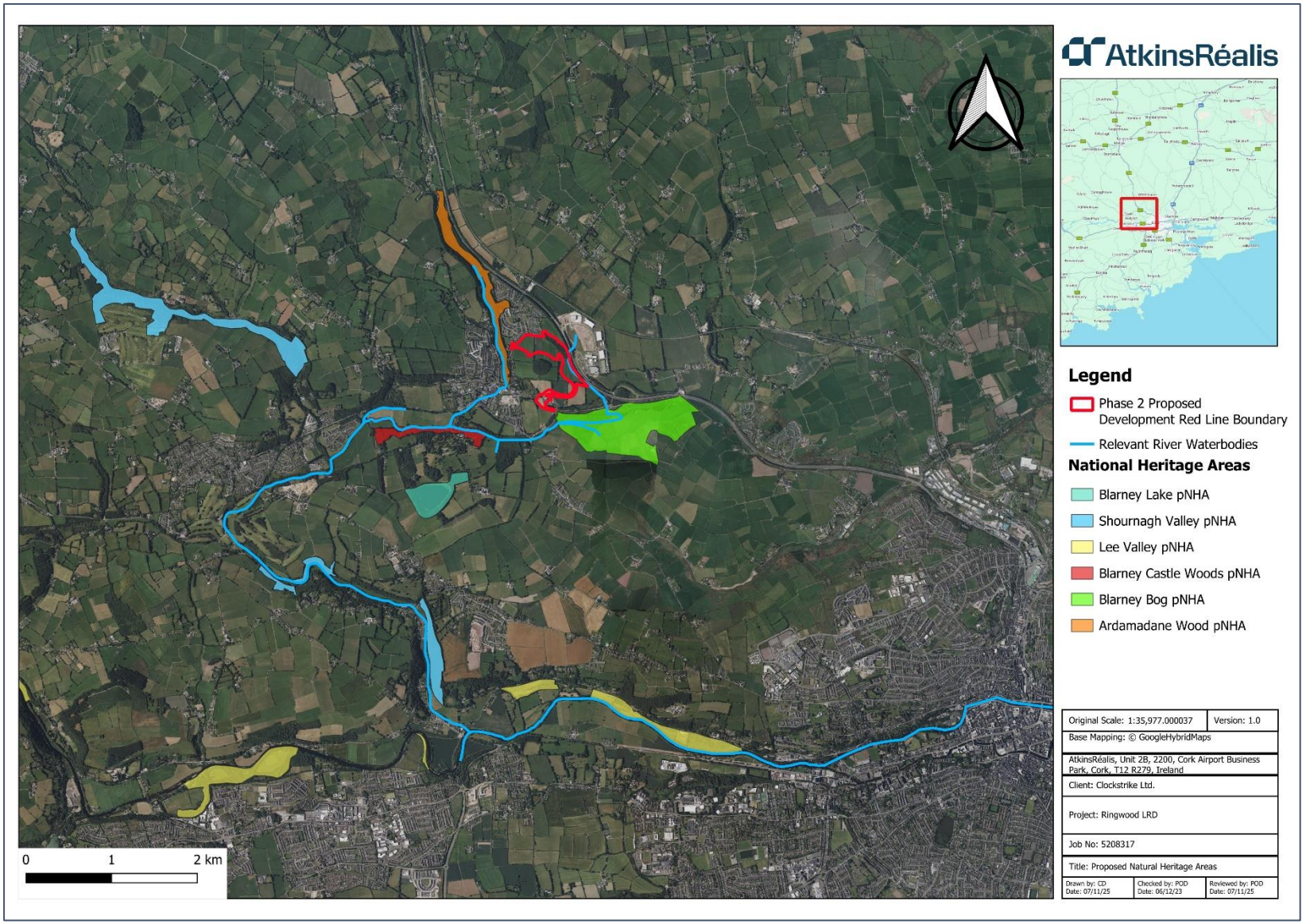


Figure 11.6: Proposed Natural Heritage Areas in the environs of the site of the proposed development.

Desktop Review – Fauna

Mammals

According to the NBDC online database, records of mammals within the 4 no. 1km grid squares across which the proposed project at Ringwood is located, include species such as Red squirrel (*Sciurus vulgaris*), Red fox (*Vulpes vulpes*), Hedgehog (*Erinaceus europaeus*), Badger (*Meles meles*), Otter (*Lutra lutra*) and Greater white-toothed shrew (*Crocidura russula*). Further within 10km grid square W67, additional species include Wood mouse (*Apodemus sylvaticus*), Sika deer (*Cervus nippon*), Stoat (*Mustela erminea* subsp. *hibernica*), and Hare (*Lepus timidus* subsp. *hibernicus*). It is clear by records that a variety of mammals utilise the area at for commuting, foraging and likely breeding purposes. The full list of species within 10km grid square W67 are presented below in Table 11-7.

Species	Date of most recent record	Designation
American Mink (*Mustela vison*)	24/10/2017	• High Impact Invasive Species • Invasive Species - Regulation S.I. 477 (Ireland)
Bank Vole (*Myodes glareolus*)	06/07/2016	• Medium Impact Invasive Species
Brown Long-eared Bat (*Plecotus auritus*)	21/05/2016	• Protected Species: EU Habitats Directive Annex IV • Protected Species: Wildlife Acts
Brown Rat (*Rattus norvegicus*)	19/05/2018	• High Impact Invasive Species • Invasive Species - Regulation S.I. 477 (Ireland)
Common Pipistrelle (*Pipistrellus pipistrellus sensu stricto*)	29/05/2018	• Protected Species: EU Habitats Directive Annex IV • Protected Species: Wildlife Acts
Coypu (*Myocastor coypus*)	14/07/2018	• High Impact Invasive Species • Invasive Species - EU Regulation No. 1143/2014 • Invasive Species - Regulation S.I. 477 (Ireland)
Daubenton's Bat (*Myotis daubentonii*)	01/09/2014	• Protected Species: EU Habitats Directive Annex IV • Protected Species: Wildlife Acts
Eurasian Badger (*Meles meles*)	09/08/2017	• Protected Species: Wildlife Acts
Eurasian Pygmy Shrew (*Sorex minutus*)	19/07/2017	• Protected Species: Wildlife Acts
Eurasian Red Squirrel (*Sciurus vulgaris*)	01/04/2023	• Protected Species: Wildlife Acts
European Otter (*Lutra lutra*)	26/11/2023	• Protected Species: EU Habitats Directive Annexes II & IV • Protected Species: Wildlife Acts
European Rabbit (*Oryctolagus cuniculus*)	08/03/2017	• Medium Impact Invasive Species
Feral Ferret (*Mustela furo*)	31/03/2007	• High Impact Invasive Species

Species	Date of most recent record	Designation
Feral Goat (*Capra hircus*)	08/01/2014	• Medium Impact Invasive Species
Greater White-toothed Shrew (*Crocidura russula*)	20/09/2019	• Medium Impact Invasive Species
House Mouse (*Mus musculus*)	03/04/2016	• High Impact Invasive Species
Irish Hare (*Lepus timidus* subsp. *hibernicus*)	08/01/2014	• Protected Species: Wildlife Acts
Irish Stoat (*Mustela erminea* subsp. *hibernica*)	12/04/2024	• Protected Species: Wildlife Acts
Lesser Noctule (*Nyctalus leisleri*)	07/11/2015	• Protected Species: EU Habitats Directive Annex IV • Protected Species: Wildlife Acts
Natterer's Bat (*Myotis nattereri*)	01/08/2006	• Protected Species: EU Habitats Directive Annex IV • Protected Species: Wildlife Acts
Pipistrelle (*Pipistrellus pipistrellus sensu lato*)	01/06/2009	• Protected Species: EU Habitats Directive Annex IV • Protected Species: Wildlife Acts
Red Fox (*Vulpes vulpes*)	27/04/2023	n.a.
Sika Deer (*Cervus nippon*)	31/12/2008	• High Impact Invasive Species • Invasive Species - Regulation S.I. 477 (Ireland) • Protected Species: Wildlife Acts
Soprano Pipistrelle (*Pipistrellus pygmaeus*)	07/11/2015	• Protected Species: EU Habitats Directive Annex IV • Protected Species: Wildlife Acts
West European Hedgehog (*Erinaceus europaeus*)	20/09/2023	• Protected Species: Wildlife Acts
Whiskered Bat (*Myotis mystacinus*)	17/07/2022	• Protected Species: EU Habitats Directive Annex IV • Protected Species: Wildlife Acts
Wood Mouse (*Apodemus sylvaticus*)	26/06/2017	n.a.

Table 11.7: Terrestrial mammal results from 10km grid square W67 (according to the NBDC, 2025).

Species such as otter are widely distributed across freshwater habitats and are well documented along the River Martin, the River Shean and further within the River Lee and Douglas Estuary, using waterways for commuting, breeding, and foraging purposes. Given that the site of the proposed development is bounded by agricultural fields, hedgerows and scrub habitat, there is potential for mammals such as badger, fox, rabbit, hare, and hedgehog.

According to a submitted NPWS data request, within W67 grid square mammal species including badger, Irish hare and otter have been recorded.

There are several records of the badger from the roadkill survey along the N20 east of the site of the proposed development.

Birds

According to the NBDC database, within the 1km grid squares W6175, W6176, W6275 and W6276, bird species recorded are presented below in Table 11.8. Species designations according to Birds of Conservation Concern in Ireland 4 (2020-2026), as compiled by Birdwatch Ireland (Gilbert *et al*., 2021) are also presented. There were no bird records from 1km grid square W6276.

Grid square(s)	Species	Scientific Name	BoCCI Status
W6175	House Martin	*Delichon urbicum*	Amber
W6175	White-throated Dipper	*Cinclus cinclus*	Green
W6175/W6176/W6275	Common Swift	*Apus apus*	Red
W6176	Common Bullfinch	*Pyrrhula pyrrhula*	Green
W6176	Eurasian Spoonbill	*Platalea leucorodia*	Not Assessed
W6176	Blackbird	*Turdus merula*	Green
W6176	Blackcap	*Sylvia atricapilla*	Green
W6176	Blue Tit	*Cyanistes caeruleus*	Green
W6176	Chaffinch	*Fringilla coelebs*	Green
W6176	Chiffchaff	*Phylloscopus collybita*	Green
W6176	Goldcrest	*Regulus regulus*	Amber
W6176	Hooded Crow	*Corvus cornix*	Green
W6176	Rook	*Corvus frugilegus*	Green
W6176	Swallow	*Hirundo rustica*	Amber
W6176	Woodpigeon	*Columba palumbus*	Green
W6176	Wren	*Troglodytes troglodytes*	Green
W6275	Barn Owl	*Tyto alba*	Red
W6275	Black-headed Gull	*Larus ridibundus*	Amber
W6275	Common Coot	*Fulica atra*	Amber
W6275	Common Moorhen	*Gallinula chloropus*	Green
W6275	Eurasian Curlew	*Numenius arquata*	Red
W6275	Eurasian Teal	*Anas crecca*	Amber
W6275	Eurasian Wigeon	*Mareca (Anas) penelope*	Amber
W6275	Gadwall	*Anas strepera*	Amber
W6275	Great Cormorant	*Phalacrocorax carbo*	Amber
W6275	Grey Heron	*Ardea cinerea*	Green
W6275	Greylag Goose	*Anser anser*	Amber
W6275	Herring Gull	*Larus argentatus*	Amber
W6275	Lesser Black-backed Gull	*Larus fuscus*	Amber
W6275	Mallard	*Anas platyrhynchos*	Amber
W6275	Mew Gull	*Larus canus*	Amber
W6275	Mute Swan	*Cygnus olor*	Amber
W6275	Northern Lapwing	*Vanellus vanellus*	Red
W6275	Northern Pintail	*Anas acuta*	Amber
W6275	Northern Shoveler	*Spatula clypeata*	Red
W6275	Tufted Duck	*Aythya fuligula*	Amber
W6275	Whooper Swan	*Cygnus cygnus*	Amber

Table 11.8: Records of bird species within W6175, W6176 and W6275 1km grid squares (Source: NBDC, 2025).

Pintail, Shoveler have both been recorded in small numbers from open water habitats in Clogheenmilcon Fen (Blarney Bog) to the south; they are not known to breed at the site (both species are red listed as breeding birds). Curlew and Lapwing are also Red listed as breeding birds; they do not breed in the environs of Ringwood, but can be recorded

more widely in wetland habitats, as well as field feeding, during winter months. While Swift forage over the site and nearby areas, there is no suitable nest sites at Ringwood. While Barn owl is Red listed in recent years it has been showing a strong recovery in numbers, helped in many areas by the placement of nest boxes.

Within the 10km grid square W67, additionally BoCCI Red List species include Common redshank (*Tringa totanus*), Corn Crake (*Crex crex*; 1st Breeding Atlas, 1968-72 Atlas), Golden plover (*Pluvialis apricaria*), Grey partridge (*Perdix perdix*; 2nd Breeding Atlas, 1988-91), Hen harrier (*Circus cyaneus*), and Yellowhammer (*Emberiza citrinella*). Records of Corn crake and Grey partridge are historical; neither species currently occurs in the area. Hen harrier has been recorded during the winter from Blarney Bog to the south; they do not breed at the site. Common redshank and Golden plover both occurs in winter in Cork Harbour. While Redshank favour estuarine habitats, Golden plover does feed in fields in the wider environment away from Cork Harbour SPA. Both species are red listed as breeding birds, neither species nests near the site. Grey wagtail has been recorded along the Blarney River to the south and potentially use the Shean Upper Stream to the east of the site.

Birdwatch Irelands Irish Wetland Bird Survey (I-WeBS) annually monitor a site c. 380m south of the site of the proposed development within Blarney Bog pNHA named Blarney Fen – Clogheenmilcon (site code: 0L320). The site was most recently surveyed in 2014/2015 wintering bird season in which species Mute swan, Gadwall, Teal, Mallard, Grey heron, and Moorhen were recorded in September of 2014. At nearby (c. 1.5km to the southwest over land) I-WeBS site Blarney Lake (site code: 0L040) additional species recorded include Shoveler, Pochard, Tufted duck, Scaup, Great crested grebe, Cormorant, Little egret, Coot, Black-headed gull and Common/Mew gull.

Amphibians & Reptiles

According to the NBDC, a single species of amphibian has been recorded within 10km grid square, Common frog (*Rana temporaria*), most recently in February 2023. In terms of reptiles, Common lizard (*Zootoca vivipara*) has been recorded as well as three records of reptiles that were likely captive or at one point dumped from captivity, Yellow-bellied Slider (*Trachemys scripta scripta*), Red-eared Terrapin (*Trachemys scripta (elegans)* and Cooter Turtle (*Pseudemys* sp.).

Similarly, according to the NPWS, both common frog and common lizard have been recorded within grid square W67; frog most recently in 2003 and lizard most recently in 1974.

Aquatic Species

Fish species which have been recorded within 10km of the site of the proposed development include Carp (*Cyprinus carpio*), European eel (*Anguilla anguilla*), Perch (*Perca fluviatilis*), Pike (*Esox lucius*), Rudd (*Scardinius erythrophthalmus*), Tench (*Tinca tinca*), Thornback ray (*Raja clavata*), and Sea lamprey (*Petromyzon marinus*); as according to the NBDC. Downstream of the site of the proposed development on the River Lee via the Shournagh River, Blarney Stream and the River Martin, was surveyed by Inland Fisheries Ireland in 2013. 12 no. species were recorded at the time, with Minnow (*Phoxinus phoxinus*) the most abundant, followed by Salmon (*Salmo salar*), Three-spined stickleback (*Gasterosteus aculaeatus*), European eel, Gudgeon (*Gobio gobio*), Stone loach (*Barbatula barbatula*), Brown trout (*Salmo trutta*), Perch, Lamprey sp., Pike, Bream (*Abramis brama*) and Roach.

The site of the proposed development and the surrounding watercourses do not lie within a *Margaritifera*-sensitive Area. Freshwater Pearl Mussel are not present within the lower reaches of the River Lee or its tributaries such as the Blarney River (NPWS, 2013). There are no records of this species within watercourses in the environs of Ringwood or

at any point downstream according to the NPWS and the NBDC; Freshwater Pearl Mussel is not a Qualifying Interest of any European site connected to the proposed project.

There are no records according to the NBDC or the NPWS of White-clawed crayfish (*Austropotamobius pallipes*) downstream from the site of the proposed development according to the NBDC or the NPWS. White-clawed crayfish is not a Qualifying Interest of any European site connected to the proposed project.

Bats

Existing Bat Data

The review of existing records of bat species in the study area and its environs indicates that five six of the ten known Irish species of bat have been recorded within a 4km radius of the study area (last checked December November 20252023). These bats include common pipistrelle species (*Pipistrellus pipistrellus sensu lato*), and soprano pipistrelle (*P. pygmaeus*), Leisler's bat (*Nyctalus leisleri*), brown long-eared bat (Plecotus auritus), Natterer's bat (*Myotis nattereri*) and Daubenton's bat (*Myotis daubentonii*) as shown in Table 11.9 below. Of these species, Daubenton's bat has been recorded roosting in a building located c. 0.9km to the south-west of the study area.

Common Name	Scientific Name	Present (Y/N)	Known Roost	Date of Last Record
Pipistrelle sp.	*Pipistrellus pipistrellus sensu lato*	Y	N	6/10/2015
Common Pipistrelle	*Pipistrellus pipistrellus*	Y	N	12/07/2016
Soprano Pipistrelle	*Pipistrellus pygmaeus*	Y	N	12/07/2016
Nathusius's Pipistrelle	*Pipistrellus nathusii*	N	N	N/A
Leisler's Bat	*Nyctalus leisleri*	Y	N	03/07/2021
Brown Long-eared Bat	*Plecotus auratus*	Y	N	17/09/2015
Daubenton's Bat	*Myotis daubentoniid*	Y	Y	31/08/2021
Whiskered Bat	*Myotis mystacinus*	N	N	N/A
Natterer's Bat	*Myotis nattereri*	Y	N	01/08/2006
Lesser Horseshoe Bat	*Rhinolophus hipposideros*	N	N	N/A
Brandt's Bat	*Myotis brandtii*	N	N	N/A

Table 11.9: NBDC bat records from within a 4km radius of the proposed study area (Source: NBDC, 2025).

The bat landscape association model (Lundy *et al.,* 2011) suggests that the north of the study area is part of a landscape that is of moderate suitability for bats and the south of the study area is part of a landscape of moderate to high suitability for bats including common pipistrelle (*Pipistrellus pipistrellus*), soprano pipistrelle, brown long-eared, Leisler's, Daubenton's, natterer's and whiskered bat. The study area and its environs are of low suitability for Nathusius' pipistrelle and is outside of the core distribution range for lesser horseshoe bat (*Rhinolophus hipposideros*) (Roche *et al.*, 2015).

A bat assessment was undertaken for a proposed residential development at St. Ann's Hydro Hill at Tower (Abbott, I., 2017), located c.2.8km to the west of the site of the proposed development. Eight species of bat were recorded during the site surveys: common pipistrelle, soprano pipistrelle, Leisler's, brown long-eared, whiskered, natterer's, Daubenton's and a single occurrence of lesser horseshoe bat. Evidence of minor bat roosts of brown long-eared bat and whiskered bat in stone ruins on site was found, indicating use as small day-time roost and as a 'night roost'. These species may also roost adjacent to the site. Summer roosts of common pipistrelle, soprano pipistrelle and Leisler's bat also occur just off-site to the west, within close vicinity, with the exact roost locations remaining unknown. Natterer's bat social calls associated with roost behaviour were recorded at a veteran Monterey Pine on site. Repeat surveys conducted by DixonBrosnan in 2025 confirmed the presence of a minor whiskered bat roost at the site, but no evidence of roosting brown long-eared bat was recorded.

Bat surveys undertaken to inform Clogheenmilcon Fen Ecological and Tourism Plan (Lauder *et al*., 2021) recorded soprano pipistrelle, common pipistrelle, Leisler's bat, brown long-eared bat and *Myotis* species at the site. Blarney Bog pNHA / Clogheenmilcon Fen is located 550m south of the site of the proposed development.

Bat surveys undertaken to inform the Cork City Lesser Horseshoe Bat Project (O'Donnell Environmental, 2022) recorded lesser horseshoe bat to the west of Blarney Castle, 1.1km to the south-west of the site of the proposed development.

Desktop Review – Flora

Protected Habitats

Some protected habitats such as 'Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation [3260]' occur widely throughout Ireland along waterways, as according to available NPWS data (2023) and therefore there is potential for this habitat to occur along the River Martin and River Shean (Upper) as well as associated watercourses adjacent to the site of the proposed development.

According to the NPWS, areas of protected wood land such as old sessile oak woods [91A0] occur immediately to the west of the proposed site at Ringwood within Ardamadane Wood pNHA. Approximately 9km downstream lies another pocket of oak woods [91A0] occurs along the Shournagh River. According to the NPWS, c. 12.5km downstream lies the only section of alluvial woodland [91E0] hydrologically and ecologically connected to the site of the proposed development via the River Lee, however there are several pockets of semi-natural woodland along the riparian corridors of rivers in the area (NPWS, 2023). Woodland areas also occur within Blarney Castle Woods pNHA and downstream on the River Shournagh at Coolatanavally.

There are no records (according to the NPWS) of habitats such as yew woodland [91J0], juniper scrub [5130], wet heath [4010], dry heath [4030] or bog woodland [91D0] anywhere upstream or downstream from the site of the proposed development.

Habitat types of Qualifying Interest as listed within the Great Island Channel SAC such as mudflats and sandflats [1140], and Atlantic salt meadows [1330], are coastal and estuarine habitats that do not occur >15km upstream and inland.

Rare and Protected Plants

The current list of plant species protected by Section 21 of the Wildlife Act 1976 is set out in the Flora Protection Order 2022 (FPO), which gives legal protection to 65 species of bryophytes and 89 species of vascular plants in Ireland. According to the NPWS Flora Protection Order Map Viewer[16], there are no protected bryophyte flora species (in accordance with the FPO) located within the bounds of the proposed site at Ringwood, however single record of protected bryophyte *Entosthodon muhlenbergii* was recorded in 1815, within what is now Woodfield residential estate.

According to a data request submitted to the NPWS there are several FPO vascular plant species and rare plant species recorded within 10km grid square W67 within which the site of the proposed development is situated; these are presented below in Table 11.10. For full details of protected status refer to Wyse-Jackson *et al*., 2016.

Species	Database	Year of Record (most recent)	Flora Protection Order, 2022	Wyse-Jackson *et al*. 2016
Meadow Saxifrage (*Saxifraga granulata*)	NPWS	1845	Yes	Regionally Extinct
Irish Spleenwort (*Asplenium onopteris*)	NPWS	2008	No	Vulnerable
Henbane (*Hyoscyamus niger*)	NPWS	1818	No	Near Threatened
Heath Cudweed (*Gnaphalium sylvaticum*)	NPWS	1844	Yes	Endangered
Weasel's-snout (*Misopates orontium*)	NPWS	1898	No	Endangered
Annual Knawel (*Scleranthus annuss*)	NPWS	1883	Yes	Vulnerable
Killarney Hawkweed (*Hieracium argentatum*)	NPWS	1905	Yes	Vulnerable
Bur Chervil (*Anthriscus caucalis*)	NPWS/NBDC	1850	No	Near Threatened
Wood Club-rush (*Scirpus sylvaticus*)	NPWS	2005	No	Near Threatened
Little-robin (*Geranium purpureum*)	NPWS/NBDC	1971	No	Endangered
Chives (*Allium schoenoprasum*)	NBDC	2012	Yes	Vulnerable

Table 11.10: Records of Protected Flora from 10km grid square W67 (Source: NPWS data request and FPO Vascular Plant Viewer).

According to the NBDC, additional plant species as listed on Wyse-Jackson *et al*, 2016 Irish Red list include the Near Threatened Allseed (*Radiola linoides*) (in 2016 along the Carrigrohane Road), Corn Marigold (*Glebionis segetum*) (in 2008 within the grounds of Blarney Castle), Green Field-speedwell (*Veronica agrestis*) (in 1999 to the north close to Whitechurch), and Pale flax (*Linum bienne*) (in 2012 along Distillery Fields in Cork City). The NBDC also hold records for the Endangered Round-leaved Crane's-bill (*Geranium rotundifolium*) (in 2023 along the Lee Fields and the River Lee within Cork City). An 1845 record for Critically Endangered moss, the Lance-leaved Pottia (*Tortula lanceola*) also occurs within the W67 hectad. Bee orchid (*Ophrys apifera*) has been recorded in 2017 to the east of the site of the proposed development in Kilbarry, greater than 5km away (over land).

[16] https://dahg.maps.arcgis.com/apps/webappviewer/index.html?id=71f8df33693f48edbb70369d7fb26b7e

Invasive Species

Invasive alien plant species (IAPS) are species which are caused to spread outside their natural range due to human activities and become problematic in their new habitats. Such species can have significant negative effects on biodiversity and related ecosystem services, human health and safety, and the economy. Ireland's invasive and non-native species – trends in introductions (O'Flynn *et al*., 2014) presents a risk assessment of 377 recorded non-native species and 342 non-native potential invaders and categorised them as 'High-impact', 'Medium-impact' and 'Low-impact' species, according to their environmental, social, and economic impacts. Regarding site development and construction works, invasive alien plant species (IAPS) are of particular concern.

Part 1 of the Third Schedule to the European Communities (Birds and Natural Habitats) Regulations, 2011 (as amended) ("the Habitats Regulations") lists IAPS requiring legal restrictions to prevent their spread. Section 49(2) and (3) of the Habitats Regulations make it an offence to cause or allow the spread the of any of the species (or their hybrids, cultivars etc.) listed in Part 1 of the Third Schedule, except where all reasonable steps have been taken and due diligence exercised to avoid committing the offence. As such, these species are of particular concern with regard to site development and construction works.

In addition, the EU Invasive Alien Species (IAS) Regulation (No. 1143/2014) (as amended) establishes rules to prevent, minimise and mitigate the negative effects of IAS within the EU. The species to which this Regulation applies are included in the official List of Invasive Alien Species of Union concern (DC Env, 2022). Given the environmental, social, and economic effects of these species and the legal restrictions on them at an EU level, they are also of concern for planning and development.

According to NBDC records, within 1km grid square W6176, 5 no. records of legally restricted Japanese Knotweed (*Fallopia japonica*) exist; most recently from 2024. Within 1km grid square W6275 8 no. records of legally restricted Water Fern (*Azolla filiculoides*) exist, most recently from 2012. Results of invasive species records from the wider 10km W67 grid square are presented below in Table 11.11, along with the relevant designations.

Species	Third Schedule of Regulations	O'Flynn *et al*. (2014)	Union Concern
Curly Waterweed (*Lagarosiphon major*)	Yes	High Impact	Yes
Giant Hogweed (*Heracleum mantegazzianum*)	Yes	High Impact	Yes
Giant-rhubarb (*Gunnera tinctoria*)	Yes	High Impact	Yes
Nuttall's Waterweed (*Elodea nuttallii*)	Yes	High Impact	Yes
Indian Balsam (*Impatiens glandulifera*)	Yes	High Impact	Yes
Japanese Knotweed (*Fallopia japonica*)	Yes	High Impact	No
Canadian Waterweed (*Elodea canadensis*)	Yes	High Impact	No
Rhododendron (*Rhododendron ponticum*)	Yes	High Impact	No
Bohemian Knotweed (*Fallopia japonica* x *sachalinensis* = *F.* x *bohemica*)	Yes	High Impact	No
American Skunk-cabbage (*Lysichiton americanus*)	Yes	Medium Impact	Yes
Himalayan Knotweed (*Persicaria wallichii*)	Yes	Medium Impact	Yes
Water Fern (*Azolla filiculoides*)	Yes	Medium Impact	No

Species	Third Schedule of Regulations	O'Flynn *et al.* (2014)	Union Concern
Brazilian Giant-rhubarb (*Gunnera manicata*)	Yes	Medium Impact	No
Three-cornered Garlic (*Allium triquetrum*)	Yes	Medium Impact	No
Spanish Bluebell (*Hyacinthoides hispanica*)	Yes	Low Impact	No
Cherry Laurel (*Prunus laurocerasus*)	No	High Impact	No
Douglas Fir (*Pseudotsuga menziesii*)	No	Medium Impact	No
Butterfly-bush (*Buddleja davidii*)	No	Medium Impact	No
Canadian Fleabane (*Conyza canadensis*)	No	Medium Impact	No
Common Broomrape (*Orobanche minor*)	No	Medium Impact	No
Evergreen Oak (*Quercus ilex*)	No	Medium Impact	No
Himalayan Honeysuckle (*Leycesteria formosa*)	No	Medium Impact	No
Least Duckweed (*Lemna minuta*)	No	Medium Impact	No
Narrow-leaved Ragwort (*Senecio inaequidens*)	No	Medium Impact	No
Red Oak (*Quercus rubra*)	No	Medium Impact	No
Russian-vine (*Fallopia baldschuanica*)	No	Medium Impact	No
Sycamore (*Acer pseudoplatanus*)	No	Medium Impact	No
Traveller's-joy (*Clematis vitalba*)	No	Medium Impact	No
Wall Cotoneaster (*Cotoneaster horizontalis*)	No	Medium Impact	No
Winter Heliotrope (*Petasites fragans*)	No	Low Impact	No
Snowberry (*Symphoricarpos albus*)	No	Low Impact	No

Table 11.11: Records of invasive plant species from 10km grid square W67 (Source: NBDC).

Aquatic Ecology

Existing water quality

The Shean Upper Stream is situated in the Manin subcatchment (Manin_SC_010) which itself is situated in hydrometric area 19 (Lee, Cork Harbour & Youghal Bay). The Manin sub-catchment forms part of the EPA monitoring under the Water Framework Directive (2000/60/EC) (hereafter WFD) and is currently in its 3rd cycle (2022-2027). According to the EPA Corine land cover data, the Manin subcatchment which includes the Shean Upper Stream, Clogheenmilcon Fen Lake and the Blarney River comprises a fabric of Heterogenous Agricultural Areas[17] (243), non-irrigated arable land (211), pastures (231) and Industrial & commercial units (121). This provides a context for current land uses practices and associated threats to water quality which are summarised below from EPA data in addition to extant water quality data.

Currently the Manin_SC_010 sub-catchment is considered 'at risk' of meeting its targets under the WFD by 2027 (EPA, 2023). Ten catchments of forty catchments in hydrometric area 19 including the River Manin sub-catchment (i.e. Manin_SC_010) require nitrogen reductions for Transitional and Coastal (TRACs) waterbodies to achieve their WFD environmental objective (EPA, 2023). According to the EPA source load apportionment modelling, the main sources

[17] Land principally occupied by agriculture with significant areas of natural vegetation

of N in hydrometric area 19 are 76% pasture, 8% arable, 12% Urban wastewater and 3% from miscellaneous sources (EPA, 2023). In addition to nitrogen inputs in the wider Martin_040 sub-catchment, river urban run-off pressures that include nutrient, organic and sediment pressures have been identified as a specific threat in the Shean Upper Stream by the EPA. The connecting Blarney River has hydromorphological threats from historical drainage in addition to agriculturally derived nutrient pressures.

With regards to nutrient pressures the Ringwood area west of the N20 Blarney Bypass (in the vicinity of the proposed housing development) is considered a high-ranking pollution impact pressure (PIP) zone for nitrates (ranging from rank 1 to 3) given free draining soil and moderate to high livestock intensity that increase risk potential[18]. While the PIP ranking for phosphorus in the same area was rank 3 and considered a lower pressure than that of nitrates, it nonetheless remains a significant pressure on the west side of the Shean Upper Stream. Of note higher PIP risks for phosphorous have also been identified draining into the Blarney River from the agricultural lands south of Clogheenmilcon Fen. This area has the most significant pollution impact potential from phosphorus by both rank and area, given most of the land bordering the Blarney River south of Clogheenmilcon Fen was PIP rank 13.

The WFD is enforced under the European Union Environmental Objectives (Surface Waters) (Amendment) Regulations 2019 which sets targets for Q4 and above (i.e. Q4-5 & Q5) for riverine sites. No biological water quality data was available at the time of the survey for the Shean Upper Stream. Biological water quality was, however, available for the connecting Blarney River. According to the EPA the biological water quality on the Blarney River (station RS19B020500) east of Clogheenmilcon Fen at the Blarney Bypass had Q4 (good status) water quality in 2023. Water quality was also collected at Bawnafinny Bridge on the Blarney River (station RS19M010600) near local road (L2780) c. 2.5km west of Clogheenmilcon Fen. The biological water quality at this downstream site was also of Q4 (good status) in 2023.

No water quality data exists for Clogheenmilcon Fen Lake given the EPA only carries out surveillance monitoring on lakes over 50 hectares. However, the Clogheenmilcon Fen Ecological and Tourism Plan (Lauders *et al*., 2021) recorded mean total phosphorous as (0.07±0.03 mg/l) and mean nitrate as (10.38±2.14 mg/l) during sampling in February and March 2023, supporting eutrophic conditions at the lake.

[18] Source accessed 6th November 2025; https://gis.epa.ie/EPAMaps/Water



Plate 11.1: Marsh and fen habitat adjoining the historically drained Shean Upper Stream and Blarney River showing intensive pasture in the right background of image.

11.3.3. Field Survey Results

Habitats

The original habitat survey was 26th of August and 5th of September 2021. However, field ecologists were also on-site undertaking mammal survey work in March 2023 (between 16th and 31st March 2023); as well as for wintering bird surveys in November 2023 to February 2024. No major changes to the Ringwood site except for the harvesting of the maize crop were noted. A habitat validation survey was most recently undertaken in April 2025 by AtkinsRéalis ecologists for the purpose of updating and validating habitat survey data of previous years; the below habitat description corresponds to the most recent survey in April 2025. Within the following sections, the entire Ringwood land holding (under applicant ownership) outside of the proposed development boundary is referred to as 'wider Ringwood lands and the site of the proposed development is referred to as 'Ringwood Phase 2'. This section should be read in conjunction with the *Landscape Design Rationale* and *Tree Survey* report prepared by Cunnane Stratton Reynolds (CSR, 2025a & b), which accompany this application; this *Landscape Design Rationale* document includes useful background context on the site with associated photographs.

Arable crops (BC1)

This habitat was recorded in a single location within the Ringwood Phase 2 site in the form of a recently cut field to the south of the site; maize was recorded planted here previously. A range of arable weed and ruderal species were recorded around. the margins of the fields including redshank, field pansy, knotgrass (*Polygonum* sp.), corn marigold, tall fescue, small canary grass, marsh cudweed and pineapple weed. This habitat is of **negligible ecological value**. Given the area BC1 covers within the site, it is one of the primary habitat types behind improved agricultural grassland (GA1) (Figure 11.7a-b).



Plate 11.2: BC1 habitat within proposed development site.

Improved agricultural grassland (GA1)

The improved agricultural grassland habitat was recorded widely across the Ringwood Phase 2 site and wider Ringwood lands and consisted of species-poor, intensively managed fields some of which had been recently cut for silage. Perennial rye grass was dominant along with annual meadow grass which was recorded occasionally. White clover was frequently recorded. Broad-leaved dock, groundsel, common chickweed, curled dock, creeping buttercup and dandelion (*Taraxacum* sp.) were rarely recorded. This habitat is of **negligible ecological value**. This is the dominant habitat within the Ringwood Phase 2 site and the wider Ringwood lands (Figure 11.7a-b).



Plate 11.3: GA1 habitat within proposed development site.

Amenity Grassland (improved) (GA2)

This habitat was recorded in a single area within wider Ringwood lands and is contained within a private garden at the southern end of the access road where the proposed development joins with the existing R617 road. Given the nature of this habitat as a private managed lawn it is relatively species poor and appears to be regularly mown. This habitat provides some food resources for birds and invertebrates. Therefore, this habitat is considered as being of **local importance (lower value)**. This habitat lies within the site of the Phase 2 proposed development.

Scrub (WS1)

This habitat was recorded in small discrete patches around the wider Ringwood lands and Ringwood Phase 2 site. Close to the Shean Upper Stream this includes an area where mainly grey willow and birch scrub has become dense and impenetrable with bushes growing to c. 3 m, particularly around the margins of the site. Scrub habitat also contained frequent bramble and nettle as well as rosebay willowherb, sycamore, hazel, ash and alder, all of which were rarely recorded. This habitat provides some food and shelter resources to birds, invertebrates and local mammal communities. Therefore, this habitat is considered as being of **local importance (higher value)**.

Two areas of scrub habitat occur along the Ringwood Phase 2 site boundary and therefore lie within the site of the proposed development. These include a parcel along the back of residential houses along Station Road and a parcel close to the Shean Upper Stream along the east of the Ringwood Phase 2 site boundary.



Plate 11.4: WS1 habitat within wider lands at Ringwood.

Hedgerow (WL1)

This habitat was widely recorded across the wider Ringwood lands and the Ringwood Phase 2 site in the form of field boundaries and along the margins of the old farm tracks. The habitat contained frequent hawthorn along with occasional blackthorn, holly, elder, hazel, gorse and grey willow. Mature ash and sycamore trees were occasionally recorded. Bramble was abundant along with frequent nettle, ivy, bracken and dog rose. The hedgerows were c. 4-6 m high and well developed.

In addition to the semi-natural hedgerows, boundary hedges composed of non-native, ornamental species were also recorded around the boundary of the land parcels, often associated with adjacent dwellings. Cherry laurel was dominant in this habitat type, varied in height from 2-5 m high and were at various stages of development.

This habitat provides an important linear habitat within the local area. While the habitat is frequently available in rural settings, it is becoming less common in suburban areas. Therefore, given the continued development in the Blarney area, this habitat is considered as being of **local importance (higher value)**. This habitat lies within the Ringwood Phase 2 site proposed for development (Figure 11.7a-b).



Plate 11.5: WL1 habitat within hedgerow at Ringwood.

Treelines (WL2)

As with the hedgerow habitat, the treeline habitat was widely recorded across the wider Ringwood lands and the Ringwood Phase 2 site in the form of field boundaries and along the margins of the old farm tracks. Ash was abundant. Sycamore and Oak were recorded occasionally. Beech, elm, birch, Sitka spruce, Douglas fir, Scots pine was rarely recorded. Hawthorn was abundant under the treelines with occasional blackthorn, elder, crab apple and holly.

Hawthorn was frequently recorded growing beneath along with frequent bramble, common hogweed, herb Robert, nettle, ivy and dog rose. Hart's tongue fern and lords and ladies were rarely recorded. The treeline habitats within the site were mature and ranged from 15-25 m high.

The habitat was also recorded in the northern land where double treelines separated by c. 5 m were recorded between the former fields. These mature treelines enclose bramble dominated scrub between them.

This habitat provides an important linear habitat within the local area. While the habitat is frequently available in rural settings, it is becoming less common in suburban areas. Therefore, given the continued development in the Blarney area, this habitat is considered as being of **local importance (higher value)**. This habitat lies within the Ringwood Phase 2 site proposed for development (see Figure 11.7a-b).



Plate 11.6: WL2 habitat within treeline at Ringwood.

Mixed broadleaf woodland (WD1)

This woodland habitat was recorded in the distinctive circular woodland on the hilltop (known as the Ring Wood) and also recorded adjacent to the Ringwood Phase 2 and wider Ringwood lands site boundary, as screening planting from the adjacent N20 (north-eastern side of the site). The Ringwood lies outside the proposed development site as does most of the screening planting to the east, apart from a small strip of boundary section which lies within the boundary of the proposed development.

The woodland in the circular woods consisted of frequent ash and sycamore along with occasional beech and larch. The broadleaved trees were often multi-stemmed and semi-mature to mature in age. This woodland was surrounded at the edge by mature ash, sycamore, oak, horse chestnut, beech and elm. The understorey consisted of holly and elder which were rarely recorded. The field layer was composed of abundant Ivy and frequent bramble. Bluebell, primrose, broad buckler fern, scaly male fern, nettle, wood sorrel, herb Robert and common dog-violet were occasionally recorded. Foxglove, greater stitchwort, lords and ladies, honeysuckle and enchanter's nightshade were rarely recorded. The mature trees grew to c. 15-25 m. This circular woodland is visible in OSI maps dating from the 1830s. The Ringwood does not occur within the Ringwood Phase 2 site but rather within the wider Ringwood Lands.

The woodland screening the N20 consisted of a semi-mature and immature mixed woodland of beech, sycamore, ash, oak, downy birch, silver birch and hawthorn. The trees were c. 8-15 m high. This habitat provides an important linear habitat within the local area. While the habitat is frequently available in rural settings, it is becoming less common in suburban areas. This habitat provides an important ecological feature for mammals within the local environment. This habitat is of **local importance (higher value)** as it represents an important ecological corridor. A

small strip of this screening planting lies within the Ringwood Phase 2 site between the wet woodland (see below) and N20 (Figure 11.7a-b) (Note also that a Woodland Management Plan has been prepared by NewGen Forestry for Ringwood and was included in the permitted Phase 1 application).



Plate 11.7: WD1 habitat within wider lands at Ringwood.

Wet willow-alder-ash woodland (WN6) (incl. areas of WN4 & WD1).

This woodland is found as a linear strip along the northeastern side of the site. It is a mix of different elements of woodland, but the core of the wood (particularly along it central area where there is also a small stream) is dominated by wet willow-alder-ash woodland (WN6), with abundant alder in the centre with downy birch and ash rarely recorded. The understorey consisted of grey willow bushes along with immature ash and sycamore trees. The field layer contained frequent bramble patches along with grassy patches between which contained frequent remote sedge along with occasional creeping buttercup, creeping bent, broad buckler fern, wild angelica, ivy, marsh bedstraw, hard rush and soft rush. Bugle, lesser spearwort, yellow pimpernel and lady fern were rarely recorded. Two streams flowed through the woodland, one in a north to south direction which appears to correspond to the Shean Upper (EPA maps) and another unnamed watercourse (near dry during the site visit) that flowed downhill along the main axis of the woodland before joining with the Shean Upper on the southern side of the woodland. The eastern and south-eastern side were the most low-lying and therefore damp parts of the woodland. The elevation rose on the boundaries of the woodland and here mature oak, ash and sycamore were recorded along with Sitka spruce which was rarely recorded. The field layer around the woodland margins consisted mainly of bramble and nettle.

Correspondence with Annex I Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion*, *Alnion incanae*, *Salicion albae*) [91E0] has been considered. Given the origin of this woodland, and that it is not located on alluvial

deposits it is not considered to correspond with this Annexed habitat. The Annex I habitat is generally well drained and periodically inundated, while the wet woodland present at the Ringwood Phase 2 site, shows signs of permanent inundation. However, this habitat is an important component of the overall hydrological regime of the site and provides a rare resource of its kind in the surrounding area and is therefore considered as being of **local importance (higher value)**. Along the western side of the woodland there is also a narrow strip of mature oak and ash (more akin to WN4, wet pedunculate oak-ash woodland, though to the south non-native trees, such as firs, become more prominent (WD1, (Mixed) broadleaved woodland). This woodland is discussed in greater detail below with respect to potential impacts.

This habitat lies entirely within the Ringwood Phase 2 boundary proposed for development (refer to Figure 11.7a-b). This woodland will be considered further as part of the assessment of any such future phases of the project.



Plate 11.8: Example of the WN6 habitat within the woodland on the eastern boundary of the site.

Dry meadows and grassy verges (GS2)

This habitat was recorded to the south of the Ringwood in a field that was formerly used for a golf driving range. The southern section of this habitat type lies within the Ringwood Phase 2 site. The species present included frequent common bent and sweet vernal grass. False oat grass and Yorkshire fog were recorded occasionally. Yarrow, common knapweed and cat's ear were recorded frequently. Dandelion was recorded occasionally. Common ragwort, cocksfoot, birds foot trefoil, broad-leaved dock, common sorrel, ribwort plantain, red clover and common mouse ear were rarely recorded. The margins of the field remained uncut and indicated that the sward had recently been rank and lodged in places with coarser grass species increasing. Overall, the habitat was dominated by a small number of grass species with a small number of forbs being regularly recorded. The species present are indicative of a neutral

grassland community but due to the only management evident being mowing, the habitat was classified as dry meadow and grassy verge. Due to the low species richness present, this habitat is of **negligible ecological value**. As noted, this habitat is located within the Ringwood Phase 2 development boundary crossed by a section of proposed access road to the R617 to the south (see Figure 11.7a-b).



Plate 11.9: GS2 habitat south of the Ring Wood.

Wet grassland (GS4)

This habitat occurs within the Ringwood Phase 2 site in a small parcel to the east, close to the Shean Upper Stream and drainage ditch network present (see FW4 discussed below). Soft rush was abundant along with creeping bent grass and creeping buttercup which were frequently recorded. Yorkshire fog, lesser spearwort, sharp-flowered rush and greater birds-foot-trefoil were recorded occasionally. White clover, meadow buttercup, common sorrel and marsh thistle were rarely recorded. The sward was c. 50-60 cm high. An area adjacent had been recently mown but still held the same species.

This habitat provides important food and shelter resources to birds, invertebrates and local mammal communities. Therefore, this habitat is considered as being of **local importance (higher value)**. The area of wet grassland close to the stream lies within the Ringwood Phase 2 site proposed for development (see Figure 11.7a-b).



Plate 11.10: GS4 habitat within wider lands at Ringwood.

Lowland/Depositing Stream (FW2)

This habitat was recorded along the east within the wider Ringwood lands and Ringwood Phase 2 site. The stream is the Shean Upper (EPA maps) which rises on the eastern side of the N20; it is culverted under the N20 entering the Phase 2 Ringwood site close to the southern end of the WN6 woodland. The stream turns south before passing under the N20 slip road / R617 and entering the lake at Clogheenmilcon Fen (Blarney Bog) (designated as a proposed Natural Heritage Area). Here it joins eventually with waters from the lakes and Blarney River. To the southwest of Blarney this is joined by the River Martin. These are in turn joined by the Owennagearagh River before the combined flows become the River Shournagh, a tributary of the River Lee.

During the site visits, the Shean Upper stream was c. 1.5 m wetted width and c. 5-10 cm deep with a pool riffle glide morphology. The banks of the stream have been steepened and deepened and were c. 2 m high. The instream and marginal vegetation consisted of frequent fool's-watercress as well as occasional water mint, great willowherb and nettle. The vegetation on the banks had been recently cut back but appeared to consist of frequent soft rush, wild angelica, bramble, gorse and occasional willow. The stream bed consisted mainly of cobble and gravel with lesser proportions of fine sediments. A near dry unnamed stream which was a tributary stream to the Shean Upper was also recorded in the alder dominated wet woodland.

Given the hydrological linkage and linear corridor provided by the stream within the local area, this habitat is considered as being of **local importance (higher value)**. This stream lies within the Ringwood Phase 2 site proposed for development (see Figure 11.7a-b). The proximity of the proposed surface water drainage pipes, outfall and sustainable urban drainage system which will address waters from the eastern portion of the site are discussed in the

accompanying *Drainage Impact Assessment* (MHL, 2025c) and below. There is no affinity with the Annexed habitat Annex I vegetation of flowing waters (3260).



Plate 11.11: Stream (FW2) to the east of the proposed development.

Drainage ditch (FW4)

A network of channels was located on the eastern side of the Phase 2 Ringwood site and consisted of c. 1 m deep drains which contained slow flowing or stagnant water. Some of the drains had been recently cleared of vegetation or had vegetation cut back. The remaining drains held occasional Grey willow, Gorse along with frequent Creeping buttercup, Soft rush and Fool's-watercress.

Given the hydrological linkage and linear corridor provided by the drains within the local area, this habitat is considered as being of **local importance (higher value)**. These features lie within the Ringwood Phase 2 site of the proposed development (see Figure 11.7a-b).



Plate 11.12: Drain (FW4) within the site of the proposed development.

Spoil and bare ground (ED2) / Recolonising bare ground (ED3)

This mosaic habitat was recorded in two areas within the Ringwood Phase 2 site, including at the site entrance off Station Road to the northwest and along a section of access track between the fields where the drainage ditch (FW4) habitat occurs and the GA1 habitat to the south. This habitat had elements of both ED2 and ED3 in those sections where regular disturbance is occurring, some spoil heaps and bare ground (ED2) is present while fringe areas were >50% dominated by recolonising herbaceous ruderals and weed plants. Species including greater plantain, pineappleweed, willowherbs and ragworts were present. This habitat provides some shelter and food source for invertebrates and birds and provides a unique habitat for flora species which may be outcompeted in other more densely vegetated habitats. Therefore, this habitat is considered as being of **local importance (lower value).** Both instances of this habitat recorded occur within the Ringwood Phase 2 site proposed for development.

Scrub (WS1) / Recolonising bare ground (ED3)

This mosaic habitat was recorded within a single section to the northwest of the wider Ringwood lands and Ringwood Phase 2 site close to the access point from Station Road along the back of residential houses on the edge of GA1 habitat. This habitat was dominated by herbaceous plants including a large number of willowherbs, nettles, ragwort, some trees were also scattered within this habitat (Salix spp.). Bramble and some gorse present. In 2021 this area was identified as ED3 however natural progression of vegetation has created scrub dominant habitat with fringe areas of recolonising bare ground. This habitat provides cover and some feeding opportunities for birds and invertebrates. Therefore, this habitat is considered as being of **local importance (lower value).** This habitat occurs within the Ringwood Phase 2 proposed development boundary.

Recolonising bare ground (ED3)/Semi-natural grassland (GS)/Scrub (WS1)

This habitat was recorded around the southern margins of the maize field within the wider Ringwood lands and consisted of a mix of abundant creeping thistle as well as frequent nettle, rosebay willowherb, prickly sow thistle and creeping bent. Common ragwort, cocksfoot, bramble, Bilbao fleabane, cat's ear, Yorkshire fog, silverweed and red bartsia were recorded occasionally. False oat grass, mouse ear hawkweed, spear thistle, daisy and musk mallow were rarely recorded.

This habitat provides some species diversity in an otherwise uniform landscape. Therefore, this habitat is considered as being of **local importance (lower value)**. This habitat does not lie within the Ringwood Phase 2 site proposed for development; it occurs within the wider Ringwood lands in a single area close to the proposed access road which will provide connectivity with the R617.

Stone walls and other stonework (BL1)

This habitat was recorded in the Ringwood Phase 2 site and wider Ringwood lands along several field boundaries and consisted of a stone and mortar wall c. 2 m high with abundant Ivy along with occasional herb Robert and navelwort. Bramble scrub often grew adjacent to the wall. A stone wall of placed boulders also occurred along the boundary between the wet woodland to the northeast and GA1 fields in the north of the site.

Stone walls provide habitat and linear corridors for invertebrates and sometimes reptiles. Therefore, this habitat is considered as being of **local importance (lower value)**. This habitat occurs within the Phase 2 proposed development boundary (see Figure 11.7a-b).

Buildings and artificial surfaces (BL3)

This habitat was recorded to the south within the Ringwood Phase 2 site proposed for development and includes the built land of existing access roads, entrances to private dwellings, as well as residential and farm structures present. Within this habitat, an old barn (see Plate 11.13 below) is present. It is proposed to retain this structure. Artificial surfaces provide little habitat for invertebrates or floral species however structures including the old barn can be important for nesting birds and roosting bats; therefore, this habitat is considered as being of **local importance (lower value).** The barn structure seen in Plate 11.13 was surveyed as part of the bat assessment of the site; further details on this survey are provided below. This habitat occurs within the Ringwood Phase 2 site proposed for development to the south of the proposed access road close to the R617 road.



Plate 11.13: BL3 habitat within the site of the proposed development.

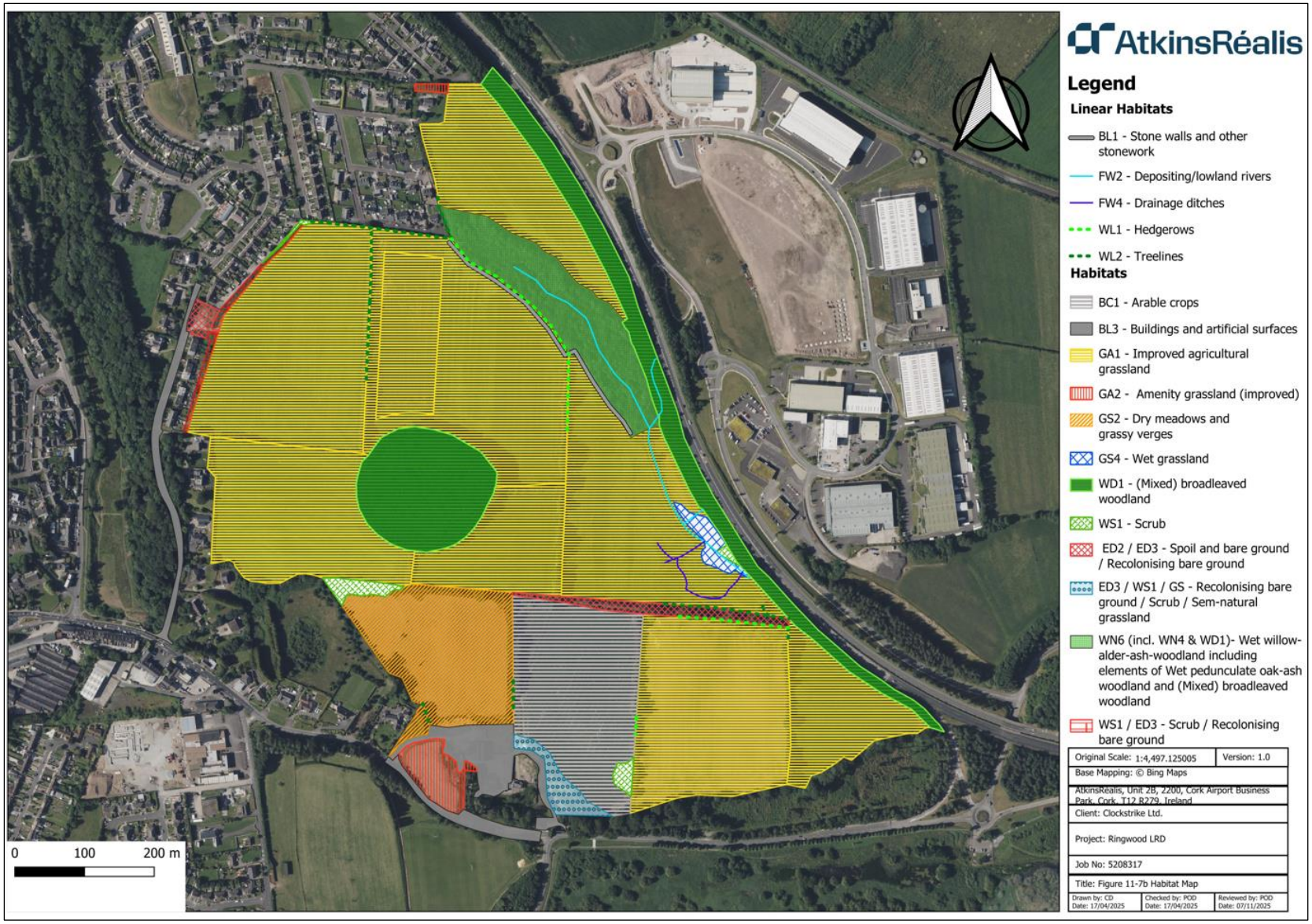


Figure 11.7a: Habitat Map – wider Ringwood lands.

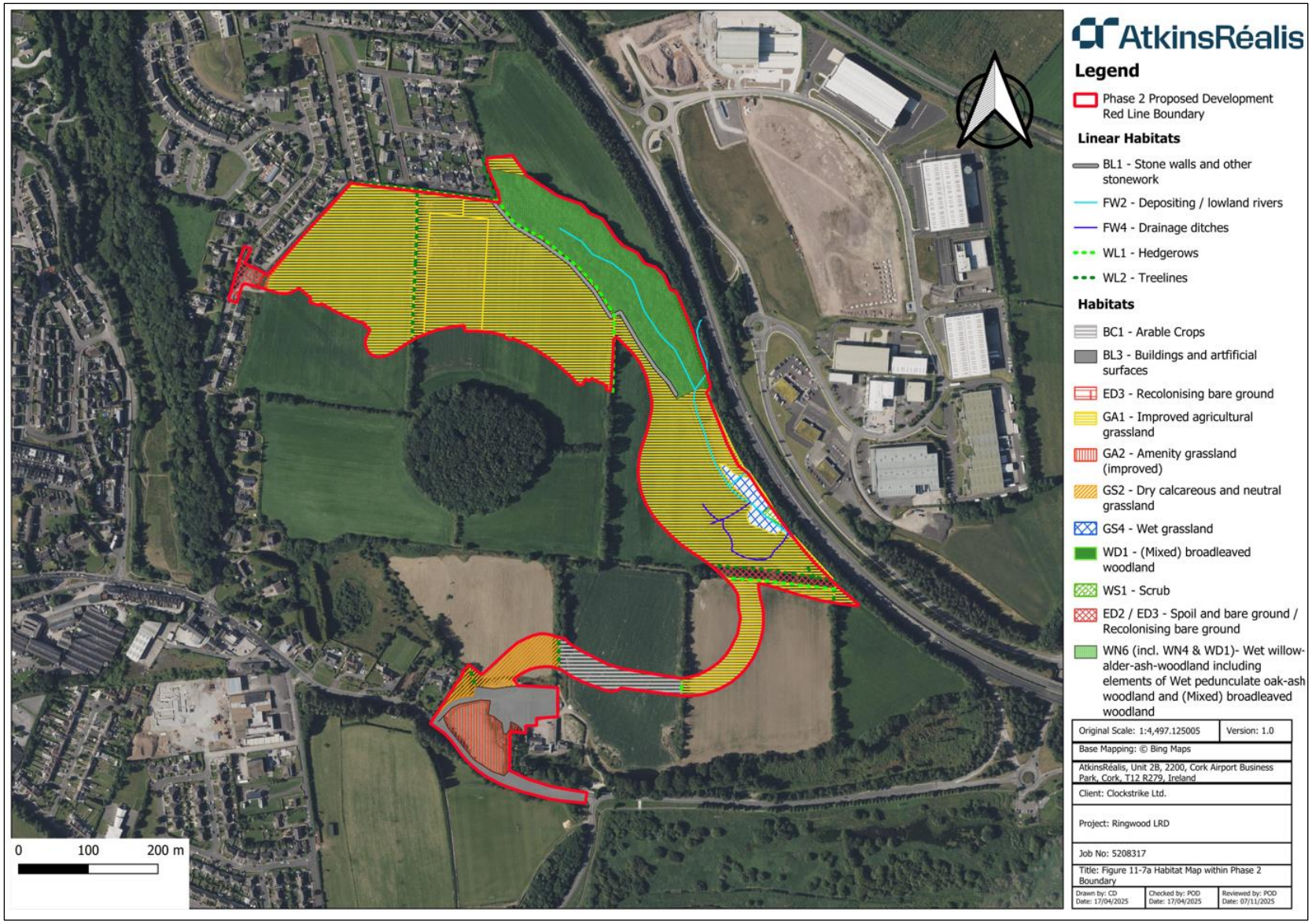


Figure 11.7b: Habitat Map – site of the proposed development.

Targeted Woodland Survey

The north-eastern block of woodland block within the Ringwood site was not recorded as being present in the first edition of the OSi (now Tailte Éireann) 6" maps (GeoHive online maps)[19] in contrast to the Ring Wood to the southwest (see Figure 11.8). The woodland was mapped as present in the last edition of the OSi 6" map with a 'mixed' (deciduous and coniferous) woodland symbology (see Figure 11.9). In the late edition map, a pathway is shown along the western margin of the woodland (still present) and another track running east to west through the woodland which divides the woodland into two blocks: a north-western and south-eastern block. This path is not present in the present day but the nature of the woodland habitats on either side of the area of the old track show slightly different characteristics and marks the location of the two main areas of proposed tree removal which are linked with a narrower corridor of tree removal.

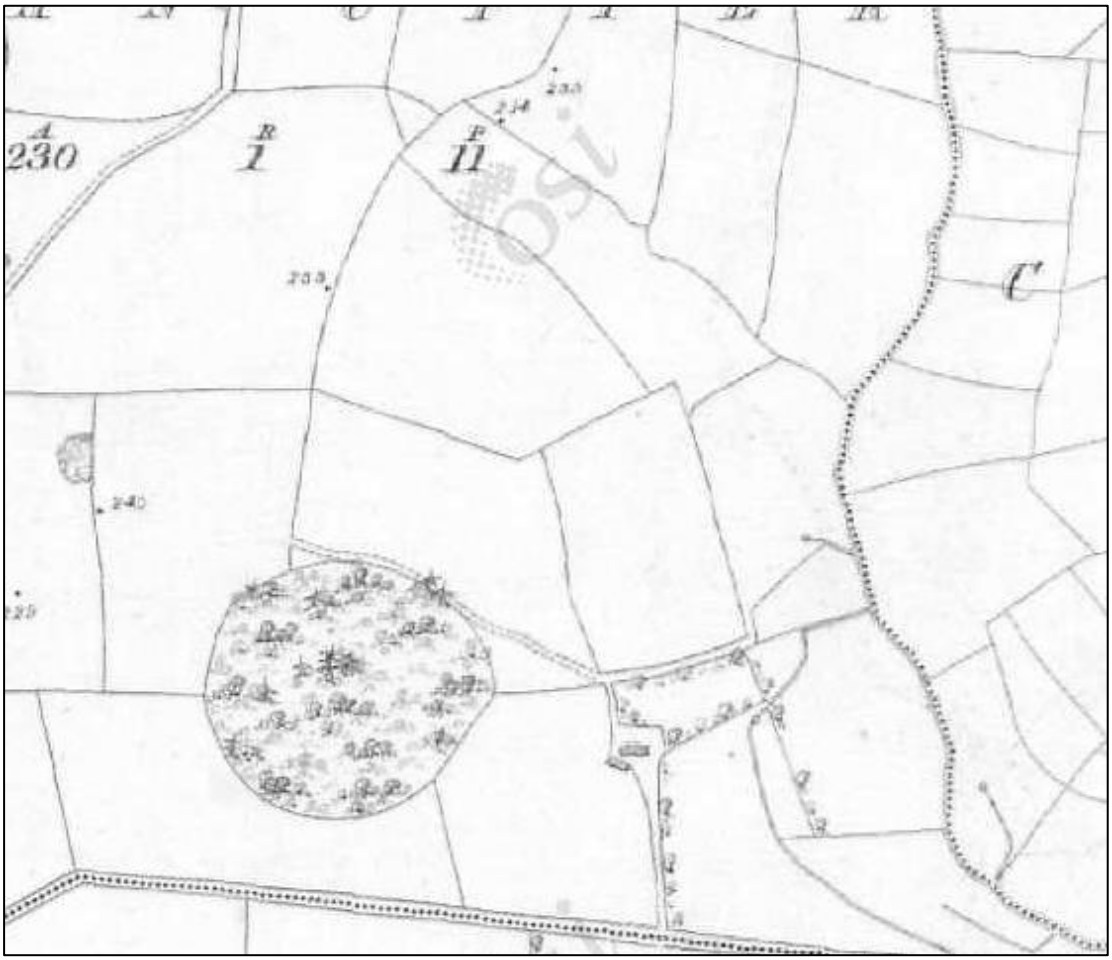


Figure 11.8: First Edition 6" Ordnance Survey of Ireland map from GeoHive - Ringwood.

[19] https://www.arcgis.com/apps/webappviewer/index.html?id=3ae19cc156bf4706a929304bf8fcc4f6 (accessed 15/10/2024).

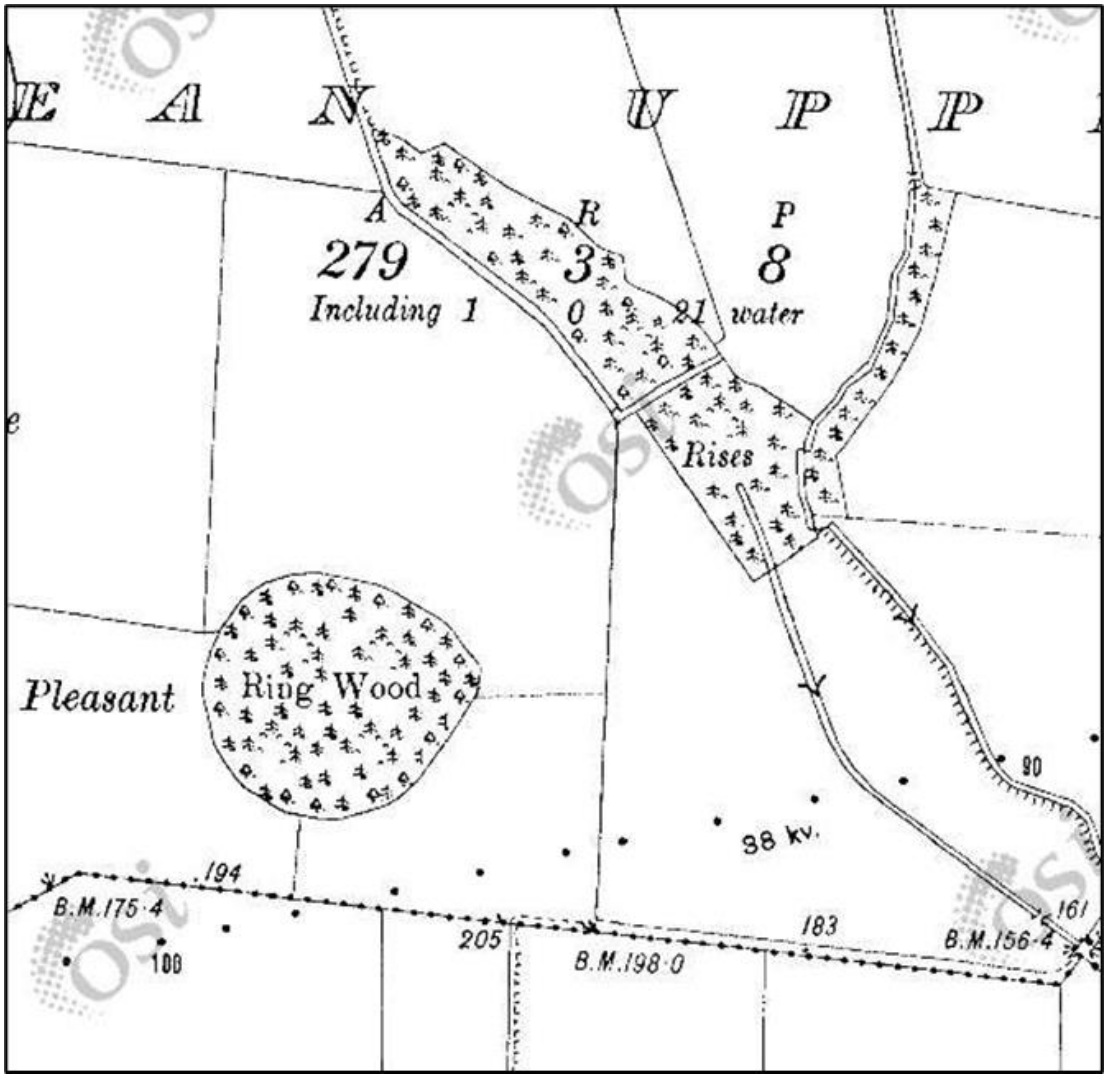


Figure 11.9: Last Edition 6" Ordnance Survey of Ireland map from GeoHive – Ringwood & northeasterly woodland block.

Most of the mature trees within the proposed tree removal area are mainly located along the boundaries/edges of the block of woodland which correspond to the old field boundaries and/or trackway boundaries/hedgerows (as seen in historic OSi maps). Using a combination of the historic mapping and the growth form observed in the trees in the woodland, it appears the infill planting of the woodland was undertaken sometime after with mature trees previously existing along the boundary. These mature trees on the boundaries are dominated by Pedunculate Oak (*Quercus robur*), while Ash (*Fraxinus excelsior*) and Sycamore (*Acer pseudoplatanus*) rarely recorded.

The north-western side of woodland block consisted of these mainly mature Oak trees around the margins. The canopy trees of the infill woodland consisted of occasional semi-mature Ash and Pedunculate Oak along with Sycamore and Downy Birch (*Betula pubescens*) which were rarely recorded. The shrub layer consisted of occasional Blackthorn (*Prunus spinosa*), Hawthorn (*Crataegus monogyna*) and immature Sycamore. Elder (*Sambucus nigra*) and Holly (*Ilex aquifolium*) were rarely recorded. The field layer consisted of abundant Ivy (*Hedera hibernica*) as well as frequently recorded Bramble (*Rubus fructicosus* agg.) and Soft Shield Fern (*Polystichum setiferum*). Blackthorn and Sycamore saplings were occasionally recorded. Male Fern (*Dryopteris filix-mas*), Broad Buckler-fern (*Dryopteris dilatata*), Hart's-tongue Fern (*Asplenium*

scolopendrium) and Herb Robert (*Geranium robertianum*) were rarely recorded. There was evidence of littering and historic infill at the woodland edge.

Along the inner edge of the proposed tree removal area, the canopy was composed of a mix of Grey Alder (*Alnus incana*) and Common Alder (*Alnus glutinosa*) along with Ash. Birch and Pedunculate Oak were rarely recorded. The shrub layer was similar to the areas previously described on higher ground but also contained rarely recorded Grey Willow (*Salix cinerea*). The field layer was again dominated by Bramble as previously described above but contained additional species such as Honeysuckle (*Lonicera periclymenum*), Enchanter's Nightshade (*Circaea lutetiana*), Lords and Ladies (*Arum maculatum*), Wood Avens (*Geum urbanum*), Creeping Buttercup (*Ranunculus repens*), Remote Sedge (*Carex remota*), Violets (*Viola* sp.) and Meadowsweet (*Filipendula ulmaria*) which were all recorded rarely. The wetland species were often restricted to small patches within the more frequent Bramble-dominated patches. The wetter patches were indicative of the increasing soil moisture and/or restricted drainage as the land level dropped down toward the southeast. This area of the woodland was mainly dominated by relatively narrow-boled and/or multi-stemmed trees which grew vertically, up to c. 10-15 m.

The north-western portion of this block of woodland could be classified as Wet pedunculate oak-ash woodland (WN4[20]) habitat but also the presence of non-native species such as rarely occurring Sycamore, Beech (*Fagus sylvatica*) and occasional Grey Alder indicates that the habitat retains some elements of the more modified/non-native influenced Mixed Broadleaf Woodland (WD1), possibly related to the origins of the woodland.



Plate 11.14: Wet pedunculate oak-ash woodland habitat in the north-eastern woodland block within the tree removal area.

The south-eastern portion of this woodland block consisted of a mixed species woodland with Pedunculate Oak, Ash, Birch, Common Alder, Beech, Sitka Spruce (*Picea sitchensis*), Larch (*Larix* sp.), Grey

[20] While this woodland was previously mapped entirely as WN6 (see Section 4.0) – the more detailed field survey work has allowed us to refine this habitat classification as discussed above, with the western side of the woodland being mapped as WD1, and that to the rear outside the zone of impact of the proposed access road, remaining as WN6.

Willow and Sycamore all recorded. A dry drainage ditch (FW4) was observed along the southern boundary of the woodland. The shrub layer consisted of mainly Grey Willow (often self-coppiced) and Hawthorn which were occasionally recorded. Yew (*Taxus baccata*), Holly and immature Sycamore were rarely recorded. The field layer in this block of woodland was similar to that which was previously recorded with abundant Ivy and frequent, dense Bramble. Broad-buckler fern was occasionally recorded. Hard Fern (*Blechnum spicant*), Male Fern, Honeysuckle, Violets, Soft Rush (*Juncus effusus*), Lady Fern (*Athyrium filix-femina*), Enchanter's Nightshade, Sanicle (*Sanicula europaea*) and Wood Sorrel (*Oxalis acetosella*) were rarely recorded. The mixed species of both deciduous and coniferous, native and non-native species means that this area could be classified as Mixed Broadleaf Woodland (WD1) but with evidence of the influence of the wetter soil conditions also present.

To the east of the potential zone of impact, the woodland consisted of frequent Common Alder and Ash in the canopy. The field layer in these areas held species more typical of a wet woodland with patches which held frequent Remote Sedge along with occasional Creeping Buttercup. Wild Angelica (*Angelica sylvestris*), Herb Robert and Marsh Bedstraw (*Galium palustre*) were rarely recorded. These more open areas were surrounded by areas of dense Bramble. These areas show more correspondence to Wet willow-alder-ash woodland (WN6) but as previously noted, Grey Alder becomes the most dominant Alder recorded in the wetter areas in the lower lying, wetted areas of the north-western woodland block. Both of these areas are outside of the proposed tree removal area.



Plate 11.15: Wet willow alder ash woodland with a high proportion of Grey Alder in the canopy area outside the proposed tree removal area, in the lower, wetter areas of the north-western woodland block.

The area of potential impact where it would be necessary to remove trees was staked out to facilitate surveying of the woodland. The staked-out area also included a linear strip between these two main woodland blocks. This area consisted mainly of the existing hedgerow, adjacent trackway and the more mature trees along the edge of the woodland. The area also included an area which contained frequent mature and semi-mature Sycamore and Beech which was rarely recorded. The dry sloped field layer of this strip of woodland that ran parallel to the existing track along the woodland edge was dominated by Ivy

and Bramble, as seen previously. Further to the northwest, some Alders, Ash and Birch were located inside the boundary mature tree and down at a lower elevation at the edge of the woodland.



Plate 11.16: Woodland adjacent to the existing track between the two main areas identified as woodland removal areas.

The hedgerow habitat was recorded between the existing laneway running next to the woodland and the adjacent improved grassland field. The hedgerow consisted of a dry-stone bank which was c. 1.2 m high with frequent Hawthorn along with rarely occurring Pedunculate Oak and Ash trees. Bramble was frequently recorded along with Ivy. Herb Robert, Hart's-tongue Fern and Navelwort (*Umbilicus rupestris*) were rarely recorded.



Plate 11.17: Existing trail along edge of woodland showing hedgerow on right side and woodland to left. Note the higher, drier elevation of the existing track with the land level sloping down into woodland on the left. Also, the more mature trees which line the trackway.

A stream (FW1) was recorded flowing through the south-eastern woodland block and was a tributary stream for the slight larger Shean Upper stream (EPA code 19S17) that flows north to south and enters the site via an underpass under the N20. The smaller unnamed woodland stream consisted of a c. 1 m wetted width stream which flowed with a depth of c. 5 cm through a deepened and steep sided channel c. 2 m deep through the woodland. The stream bed consisted mainly of gravels and some cobbles with a smaller proportion of fine sediments.



Plate 11.18: Stream exiting the south-eastern woodland block before joining with the Shean Upper stream which flows along the south-eastern boundary of the woodland.

Invasive Species

No invasive species listed on the 3rd Schedule of the Natural Habitats Regulations (S.I. 477 of 2011), such as Japanese knotweed, were recorded on the site of the proposed development (or species listed on EU

Regulation 1143/2014 - on the prevention and management of the introduction and spread of invasive alien species) during any of the site visits).

Invasive plant species noted, which are not listed on the 3rd Schedule of the Natural Habitats Regulations which were noted include Cherry laurel (*Prunus laurocerasus*), Butterfly-bush (*Buddleja davidii*), Pampas grass (*Cortaderia selloana*) and Montbretia (*Crocosmia x crocosmiiflora*). Cherry laurel is categorised as a risk of high impact species (O'Flynn *et al*., 2014); while Butterfly-bush is a medium risk species.

Over the last year Sika deer (*Cervus nippon*) has been recorded using Clogheenmilcon Fen (Blarney Bog) to the south of the site of the proposed development. There were no observations of Sika deer or signs of deer found at the site of the proposed development from the Ringwood site.

Mammals

The site was also subject to a full survey for signs of terrestrial mammals. Several animal burrows were noted on site; many of these were clearly rabbit (*Oryctolagus cuniculus*). Rabbit was found to be widespread across the site with many by burrows, droppings and sightings of live animals. Evidence of fox (*Vulpes vulpes*) was also recorded on site, along with Domestic cat (*Felix catus*).

A potential badger (*Meles meles*) sett was identified on the southern boundary of the Ringwood land holding during 2021 surveys by John Deasy. In line with best practice the exact location of the sett is not illustrated. Badger snuffle holes were also observed in agricultural grassland (GA1) adjoining the conifer woodland which abuts the Ringwood lands and a recent roadkill badger was observed on the N20 next to the entrance to the Blarney Business Park (24/03/2022) indicating the presence of badger in the area. In 2021, there were well worn paths leading down (to the south) from the burrow to the recently clear-felled conifer woodland which lies south of the wider Ringwood land parcel, and which separates these lands from the R617 and Clogheenmilcon Fen (Blarney Bog). While there was possible bedding debris at the entrance with leaves and debris it was unclear if there was any current occupation of the burrow. A trail camera was placed at these burrows to look for any signs of current occupation by badger (or other species). The camera was left in place from 16th March 2022 to 25th March 2022. The 2022 trail camera survey found evidence of use by two badgers (*Meles meles*), so this burrow was classified as an active badger sett[21] (this location is hereafter referred to as the 'Southern Sett'). The 2022 trail camera was also extensively triggered by rabbit and birds, such as Robin, Song thrush and Dunnock.

In 2021, the Shean Upper stream located to the east within the Phase 2 proposed development boundary was also surveyed for signs of mammals, focusing on looking for signs of otter (*Lutra lutra*); as the river corridor is characterised by good cover so the possibility of otter moving along the river corridor was considered. No evidence such as spraints or prints was observed. A mammal burrow on raised bank in woodland adjacent to stream was noted (this location is hereafter referred to as the 'Northern Potential Sett'). Mammal trails were also noted in undergrowth to tunnel, along with signs of some fresh excavation

[21] The sett was classified as an 'outlier sett' – i.e. "*These usually have only one or two holes, often with little spoil outside the hole, and have no obvious path connecting with another sett. Outlier setts are used only sporadically, and, when not in use by badgers, they may be taken over by foxes or rabbits* Oryctolagus cuniculus" (after Smal, 1995).

at entrance. As a result, a trail camera was also placed at this location to find any sign of current use / occupancy by species such as otter. The camera was left in place from 16th March 2022 to 31st March 2022. Elsewhere drains outside the site of the proposed development are characterised by as open drains with Poor/No cover. This trail camera on the Shean Upper Stream recorded no evidence of otter. Both fox and brown rat (*Rattus norvegicus*) were noted. The burrow was occupied by brown rat, with sign of rabbit using it on occasion. Other species noted on the camera included wood mouse (*Apodemus sylvaticus*), Wren, Dunnock and Song thrush.

Given results of 2022 trail camera surveys of the Southern Sett and identified potential burrows along the Shean Upper Stream (Northern Potential Sett) within the northeast woodland, an updated trail camera survey was undertaken on 25th July to 12th September 2025 under licence by the NPWS for the Southern Sett and from the 12th to 30th September 2025 for the Northern Potential Sett.

Southern Sett

It was noted that Southern Sett contained a number of mammal paths leading to and from the entrance. Mammal tracks were oriented heading west, east, northeast and south. Over the period 25th July 2025 to 12th September 2025, 2874 no. photos and 434 no. videos were returned from the Southern Sett location; species recorded are listed in Table 11.12 below. This sett lies outside the development boundary, and it is believe to be an outlying sett (often categorised as being 1-2 holes and not always in use).

Common Name	Scientific Name
American Mink	*Neogale vision*
European Badger	*Meles meles*
European Rabbit	*Oryctolagus cuniculus*
Red Fox	*Vulpes vulpes*

Table 11.12: Mammal species observed in the Southern Sett.

Badger was present intermittently within the sett location throughout the entire survey period. Badgers were generally present for a consistent period of one to three days before moving to other locations, reappearing after two to five days. The badgers recorded by the cameras displayed several behaviours including locomotion, foraging, auto-grooming, digging and sniffing / foraging. The number of badgers captured within the frame at any point in time ranged from 1 no. individual to 2 no. individuals. It was noted that one individual was most likely a sub-adult given its size; it was this individual that was recorded most often. The other individual was noted as being an adult. Activity around the sett was most concentrated between the hours of 1am to 4am during the days where badgers were recorded at the sett, with daylight activity largely concentrated between 10am to 11am, where the badgers would either enter or leave the sett and move to a new location. Given the behaviours exhibited by the badgers on footage returned by the camera traps, such as leaving the sett and returning after numerous days, extensive digging / cleaning of the sett entrance upon return, the southern sett location can be classified as an outlying sett. Trail camera photographs are provided in Figure 11.10 to Figure 11.14 (inclusive) below.

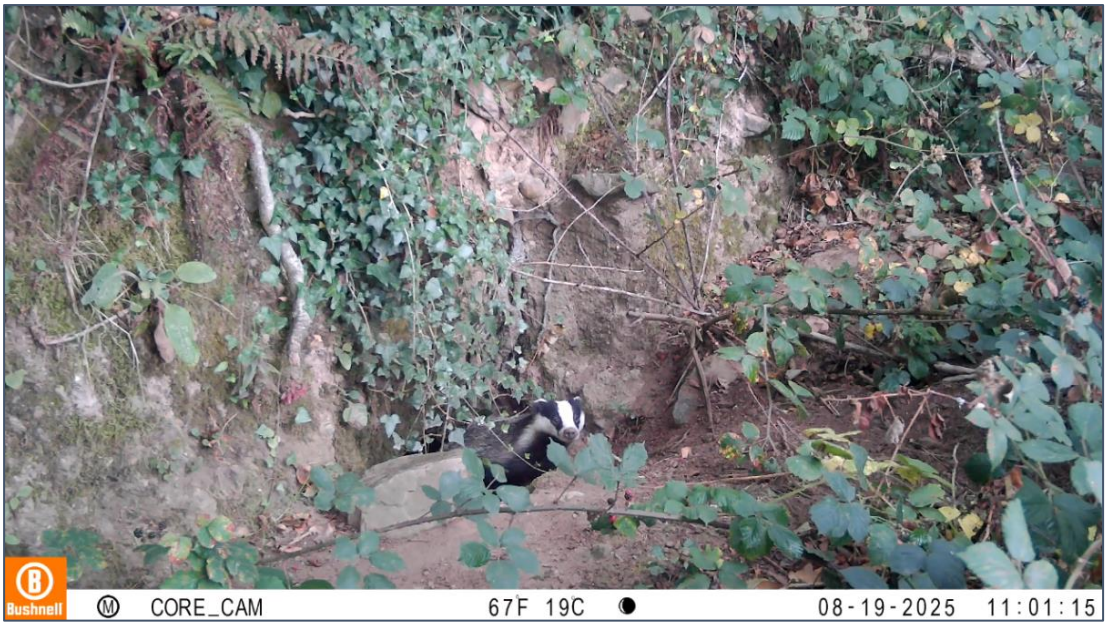


Figure 11.10: Badger (Meles meles) emerging from Southern Sett.



Figure 11.11: Badger (*Meles meles*) digging at Southern Sett entrance.



Figure 11.12: 2 no. badger (*Meles meles*) at Southern Sett entrance. The right-hand individual is auto grooming and left-hand individual digging.



Figure 11.13: European rabbit (*Orytholagus cuniculus*) at the Southern Sett.



Figure 11.14: American Mink (*Neogale vision*) moving westwards past the Southern Section.

Northern Burrow

The northern burrow (potential sett) is located high on the bank of a watercourse, with less clearly defined mammal tracks in comparison to the southern sett. Given its proximity to the watercourse, the area was likely to be visited by a number of mammals. Over the period 12th to 30th September 2025, ca. 70 no. photos were returned from the northern potential sett location. Of these photos, only 7 no. returned evidence of the presence of mammal activity, all of which were from fox (*Vulpes vulpes*) (see Figure 11.15 below). Fox was observed passing through the location of the potential sett over several days at all hours; there was no evidence to suggest that the red fox was using the potential sett as a resting site. Given the lack of activity at this location, badger are not actively using (or have ever used) this potential sett and thus it is more likely to qualify as a burrow of another mammal (although it could not be determined which species this is likely to be based on the photos retrieved from the camera trap).



Figure 11.15: Red fox (*Vulpes vulpes*) showing vigilance at the northern burrow.

Bats

Bat Roost Survey

Preliminary Ecological Appraisal

The area to the west of the N20 comprises fields of improved agricultural grassland (GA1) and arable crops (BC1) bound by hedgerows (WL1) and treelines (WL2). An area of semi-mature planted woodland is present to the north of this portion of the study area, with species present including Silver Birch (*Betula pendula*), Ash and Hawthorn, with a line of mature Oak (*Quercus robur*) on the boundary to an old laneway. A circular area of woodland (Ringwood) is present at the centre of the study area, with species in the canopy including Sycamore, Horse Chestnut (*Aesculus Hippocastanum*), Oak, Beech (*Fagus sylvatica*) and Larch (*Larix* spp). The Shean Upper Stream, which is a first order watercourse, runs along the eastern boundary of the southern portion of the study area. This stream flows to the second order Blarney River to the south of the study area.

The study area supports connectivity to the wider landscape via hedgerows/ treelines, woodland and a stream. The lands to the east of the N20 are situated at 110m above sea level (ASL) at the northern study area boundary and slope down to 80m ASL at the southern boundary and consists of large open fields. The lands to the west of the N20 are situated at 70m ASL and slopes down to the south to 40m ASL. The lands to the south of the study area support low lying fields sheltered by woodland and treelines. In accordance with the criteria outlined in Table 11.1, the commuting and foraging habitats over the lands to the east of the N20 are of moderate suitability for bats and the habitats within the study area to the west of the N20 are of moderate to high suitability for bats.

A summary of foraging and roosting habitats for Irish bats is included in Table 11.13.

Species	Description
Common pipistrelle (*Pipistrellus pipistrellus*)	This species was only recently separated from its sibling, the soprano or brown pipistrelle *P. pygmaeus*, which is detailed below (Barratt *et al*., 1997). The common pipistrelle's echolocation calls peak at 45 kHz. The species forages along linear landscape features such as hedgerows and treelines as well as within woodland. The conservation status of this species is Favourable.
Soprano pipistrelle (*Pipistrellus pygmaeus*)	The soprano pipistrelle's echolocation calls peak at 55 kHz, which distinguishes it readily from the common pipistrelle on detector. The pipistrelles are the smallest and most often seen of our bats, flying at head height and taking small prey such as midges and small moths. Summer roost sites are usually in buildings, but tree holes and heavy ivy are also used. Roost numbers can exceed 1,500 animals in mid-summer. The conservation status of this species is Favourable.
Nathusius' pipistrelle (*Pipistrellus nathusii*)	Nathusius' pipistrelle is a recent addition to the Irish fauna and has mainly been recorded from the north-east of the island in Counties Antrim and Down (Richardson, 2000) and also in Fermanagh, Longford and Cavan. It has also been recorded in Counties Cork and Kerry (Kelleher, 2005). However, the known resident population is enhanced in the autumn months by an influx of animals from Scandinavian countries. The conservation status of this species is Favourable.
Leisler's bat (*Nyctalus leisleri*)	This species is Ireland's largest bat, with a wingspan of up to 320mm; it is also the third most common bat, preferring to roost in buildings, although it is

Species	Description
	sometimes found in trees and bat boxes. It is the earliest bat to emerge in the evening, flying fast and high with occasional steep dives to ground level, feeding on moths, caddisflies and beetles. The echolocation calls are sometimes audible to the human ear being around 15 kHz at their lowest. The audible chatter from their roost on hot summer days is sometimes an aid to location. The conservation status of this species is Favourable.
Brown long-eared bat (*Plecotus auritus*)	This species of bat is a 'gleaner', hunting amongst the foliage of trees and shrubs, and hovering briefly to pick a moth or spider off a leaf, which it then takes to a sheltered perch to consume. They often land on the ground to capture their prey. Using its nose to emit its echolocation, the long-eared bat 'whispers' its calls so that the insects, upon which it preys, cannot hear its approach (and hence, it needs oversize ears to hear the returning echoes). As this is a whispering species, it is extremely difficult to monitor in the field as it is seldom heard on a bat detector. Furthermore, keeping within the foliage, as it does, it is easily overlooked. It prefers to roost in old buildings. The conservation status of this species is Favourable.
Natterer's bat (*Myotis nattereri*)	This species has a slow to medium flight, usually over trees but sometimes over water. It usually follows hedges and treelines to its feeding sites, consuming flies, moths, caddisflies and spiders. Known roosts are usually in old stone buildings, but they have been found in trees and bat boxes. The Natterer's bat is one of our least studied species and further work is required to establish its status in Ireland. The conservation status of this species is Favourable.
Daubenton's bat (*Myotis daubentonii*)	This bat species prefers feeding close to the surface of smooth water, either over rivers, canals, ponds, lakes or reservoirs but it can also be found foraging in woodlands. Flying at 15 kilometres per hour, it gaffs insects with its over-sized feet as they emerge from the surface of the water - feeding on caddis flies, moths, mosquitoes, midges etc. It is often found roosting beneath bridges or in tunnels and also makes use of hollows in trees. The conservation status of this species is Favourable.
Whiskered bat (*Myotis mystacinus*)	This species, although widely distributed, has been rarely recorded in Ireland. It is often found in woodland, frequently near water. Flying high, near the canopy, it maintains a steady beat and sometimes glides as it hunts. It also gleans spiders from the foliage of trees. Whiskered bats prefer to roost in buildings, under slates, lead flashing or exposed beneath the ridge beam within attics. However, they also use cracks and holes in trees and sometimes bat boxes. The conservation status of this species is Favourable.
Brandt's bat (*Myotis brandtii*)	According to NPWS (2013), whiskered and Brandt's bats are cryptic species and can only be told apart using DNA techniques. Brandt's bat has been confirmed only once from Ireland; a single specimen found in 2003 in Wicklow (Mullen, 2006). Following this discovery, an intensive re-survey, involving DNA testing, was undertaken of all known whiskered bat roosts in Ireland, by the Centre for Irish Bat Research. Woodland mist-netting was also conducted for the species. Despite the extensive survey-work, no further Brandt's bats were identified. The most recent Red Data List for Irish Mammals (Marnell *et al*., 2009) lists Brandt's bat as data deficient. There is no evidence of any roosts for this species in the country and at present the single record for the species is considered an anomaly. Boston *et al*. (2010) concluded that "*M. brandtii* cannot currently be considered a resident species. This species is now considered a vagrant to the country and consequently, a detailed assessment has not been carried out.

Species	Description
Lesser horseshoe bat (*Rhinolophus hipposideros*)	This species is the only representative of the Rhinolophidae or horseshoe bat family in Ireland. It differs from our other species in both habits and looks, having a unique nose leaf with which it projects its echolocation calls. It is also quite small and, at rest, wraps its wings around its body. Lesser horseshoe bats feed close to the ground, gleaning their prey from branches and stones. It often carries its prey to a perch to consume, leaving the remains beneath as an indication of its presence. The echolocation call of this species is of constant frequency and, on a heterodyne bat detector, sounds like a melodious warble. The species is confined to six counties along the Atlantic seaboard: Mayo, Galway, Clare, Limerick, Kerry and Cork. The current Irish national population is estimated at 12,500 animals. This species is listed on Annex II of the EC Habitats Directive, and 41 Special Areas of Conservation have been designated in Ireland for its protection. Where it occurs, it is often found roosting within farm buildings. The conservation status of this species is Inadequate.

Table 11.13: Brief description of Irish bat species (conservation status of each species is derived from NPWS (2019)[22].

Bat Roost Inspection Survey

Trees

No trees within the site of the proposed development or within the wider Ringwood lands were being used as roost sites during the course of the surveys undertaken between 2021 and 2025. A total of four trees within the wider Ringwood lands were categorised as being of moderate suitability for roosting bats (as defined in Table 11.1) as they contained one or more potential roost features, but none are suitable for use by larger numbers of bats on a regular basis due to their size and lack of protected, sheltered conditions. Three of these lie outside the site of the current proposed development; one is on the edge of the northeastern wood. One tree was categorised as being of high suitability for roosting bats as it contained a large crevice that would be suitable for larger numbers of bats; it is located on the southern boundary outside of Phase 2. It was further noted that while no PRFs were recorded, mature Oak trees are present on the boundary of the northeastern woodland; these trees are of sufficient size and age to support PRFs. Potential tree roosts within the study area are illustrated in the photographs in Plate 11.19. The location of the trees with suitability for roosting bats is illustrated in Figure 11.16.

[22] For a more comprehensive overview see Roche *et al.* (2015).

PTR Number	Tree Species	BCT Category	PRFs	Relationship to proposed development phases
1	Oak	Moderate	Crack in limb	Impacted by Phase 2. Located within the red line boundary of the proposed development. This tree is proposed for removal.
2	Oak	Moderate	Knot hole	Not impacted by Phase 2. South of Phase 2; on western side of Ring Wood.
3	Ash	Moderate	Knot holes	On southern boundary of land holding – not impacted.
4	Oak	Moderate	Cracked limb	On southern boundary of land holding – not impacted.
5	Beech	High	Rot to main stem	On southern boundary of land holding – not impacted.
6	Oak	Low	Line of trees of sufficient size and age to support PRFs, but none recorded	Impacted by Phase 2. Located within the red line boundary of the proposed development.

Table 11.14: Ringwood Residential Development: potential tree roosts within the study area (see Figure 11.16).



1. Crack in limb of Oak at woodland edge to the north of the Phase 2 site



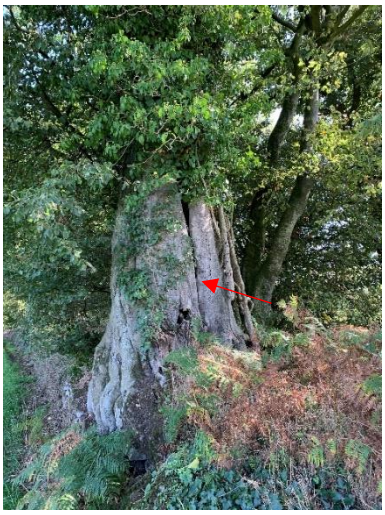
2. Knot hole in limb of Oak in Ring Wood



3. Knot hole in Ash on the southern boundary of the study area



4. Crack in Oak limb on the southern boundary of the study area



5. Large crevice in main stem of Ash on the southern boundary of the study area



6. Line of mature Oak present on boundary of woodland to north of the Phase 2 site

Plate 11.19: Residential Development Ringwood: photographs of potential tree roosts within the study area.



Figure 11.16: Residential Development Ringwood: location of potential tree roosts within the Ringwood land holding.

Structures

A small building with rendered walls and a flat roof is present on the northern boundary of the study area to the east of the N20 (Plate 11.19). No obvious entry or exit points for bats or evidence of use by bat was recorded during the external inspection of the building. The building was not accessible for internal inspection.



Plate 11.20: Small disused building present on the northern boundary of the study area.

Buildings at the south of the Phase 2 site boundary comprise an old driving range shed and a stone outbuilding, as described below.

The old driving range building is a steel frame shed with corrugated sheet walls and roof. This building is constructed entirely of man-made materials and does not support any features that may provide suitable roosting habitat for bats.



Plate 11.21: Old Driving Range Building.

The outbuilding located within the yard is constructed of stone with a slate tile roof. The outbuilding consists of three connected buildings, each with an A-frame roof. The easternmost part of the building is a two-storey structure, while the other two parts of the building are single-storey. There are several slipped and missing tiles on the middle and easternmost roofs which would allow entry/ exit for bats and there is potential roosting space on timber rafters and between the slates and roof membrane. The roof space within the easternmost building was not safely accessible for close inspection.

No evidence of bats was recorded within the outbuilding. As noted, the roof on the middle and easternmost building is in poor condition and there is ingress of light and rain into these areas of the outbuilding. As such, these areas of the outbuilding are suitable to support small numbers/ individual bats roosting opportunistically but are not likely to provide conditions suitable to support a roost of high conservation importance (i.e. a maternity or hibernation roost). The westernmost part of the outbuilding is in good repair, does not support a roof space and is used regularly and as such would be subject to regular noise and light disturbance; this part of the outbuilding may support small numbers/ individual bats roosting opportunistically under the roof tiles but is not likely to provide conditions suitable to support a roost of high conservation importance (i.e. a maternity or hibernation roost).



Plate 11.22: Stone outbuilding.

Activity Survey

Site of proposed development (Phase 2 Lands) 2021/2022 and 2024/2025

Bat species recorded during passive monitoring undertaken in October 2021, May 2022 and June 2022, included common pipistrelle, soprano pipistrelle, Leisler's, brown long-eared, Daubenton's, Natterer's and whiskered bat. Leisler's bat was recorded commuting early in the evening in low numbers on PM2 and were recorded in higher numbers throughout the night on PM9. Soprano pipistrelle was recorded early in the evening (c.14 minutes after sunset in Autumn 2021 and c. 23 minutes after sunset in summer 2022) on PM2 at the north of the site, indicating the likely presence of a roost in the vicinity of the Phase 2 site. Soprano pipistrelle social calls were also recorded on PM2 in October 2021. A notably high level of common pipistrelle activity was recorded on PM5 towards the east of the study area; this species was recorded from 21 minutes after sunset on PM5.

The calls recorded on the passive monitors in 2021 and 2022 are summarised in Table 11.15. The location of the passive detectors is illustrated in Figure 11.1.

Species	PM2 01/10/2021- 05/10/2021	PM5 05/05/2022 – 09/05/2022	PM9 13/06/2022- 17/06/2022	Total
Common Pipistrelle	126 (15%)	12,728 (76%)	107 (12%)	12,961 (71%)
Soprano Pipistrelle	519 (61%)	3,294 (20%)	614 (72%)	4,427 (24%)
Pipistrelle species[23]	42 (5%)	30 (0%)	1	73 (0%)
Leisler's	41 (5%)	537 (3%)	83 (10%)	661 (4%)
Natterer's	0	13 (0%)	0	13 (0%)
Daubenton's	1 (0%)	0	0	1 (0%)
Whiskered	1 (0%)	7 (7%)	1 (0%)	9 (0%)
Myotis Species	143 (17%)	1 (0%)	51 (6%)	195 (1%)
Brown long-eared	0	33 (0%)	0	33 (0%)
No ID	5 (1%)	6 (0%)	0	11 (0%)
Total	878	16,649	857	18,384

Table 11.15: Phase 2 Ringwood Residential Development- summary table of total bat passes recorded on the passive monitors, October 2021 and June 2022.

In addition to the species detailed above, 2 lesser horseshoe bat calls were registered on PM4 recording at a hedgerow to the east of Ring Wood during the monitoring completed in Autumn 2024 (see Figure 11.2).

Common pipistrelle was the most frequently recorded species during the monitoring in 2024 and 2025 (54% of all recordings), followed by soprano pipistrelle (39%); a low level of activity from the other species was recorded at the Phase 2 lands (Table 11.16). The location of the passive monitors recording in 2024 and 2025 is illustrated in Figure 11.2.

[23] *Pipistrellus* spp. which have frequency of maximum energy, FMAXE, of c. 50kHz which cannot reliably be assigned to Common Pipistrelle (typical FMAXE of c. 45kHz) or Soprano Pipistrelle (FMAXE c. 55kHz)

Species	PM1	PM2	PM3	PM4	PM5	PM6	PM7	PM8	PM9	PM10	PM11	PM12	PM13	PM14	PM15	PM16	PM17	Total
	19th – 25th September 2024					27th May – 2nd June 2025				11th – 17th August 2025				4th – 10th September 2025				
Whiskered	28	2	4	6	0	0	0	0	2	0	0	0	0	0	0	0	0	42 (0%)
Daubenton's	64	12	24	6	0	0	2	0	0	2	2	8	14	6	0	6	4	150 (0%)
Natterer's	0	2	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	6 (0%)
Myotis species	203	53	0	0	1	6	4	2	7	5	10	26	39	25	14	2	19	416 (1%)
Leisler's	34	122	58	252	0	1254	204	254	226	302	294	84	194	29	396	98	38	3839 (6%)
Brown long-eared	0	0	4	0	0	20	15	2	0	3	7	2	0	0	0	2	0	55 (0%)
Common Pipistrelle	777	1794	1428	2856	806	3845	8179	862	490	4970	605	892	768	616	2551	2944	324	34707 (54%)
Soprano Pipistrelle	3241	3719	508	3188	307	890	4677	754	1029	817	889	514	939	658	1829	968	548	25475 (39%)
Pipistrelle species	0	3	0	1	7	5	6	0	1	0	17	9	4	1	16	1	1	72 (0%)
Lesser horseshoe	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2 (0%)
No ID	0	0	0	0	1	0	0	0	0	2	2	2	0	0	0	0	0	7 (0%)
Total	4347	5707	2026	6311	1122	6020	13087	1874	1755	6105	1826	1537	1958	1335	4806	4021	934	64771 (100%)

Table 11.16: Phase 2 Ringwood Residential Development - summary table of total bat passes recorded on the passive monitors recording between September 2024 and September 2025.

Three species of bat were regularly recorded within the Phase 2 site during the activity transects undertaken between 2021 and 2025: common pipistrelle, soprano pipistrelle and Leisler's bat. Common and soprano pipistrelle were recorded foraging and commuting along hedgerows across the site and Leisler's bat was recorded commuting overhead. Whiskered bat was also recorded adjacent to the woodland at the north of the site during the transect completed in September 2024.

Survey of adjacent development (Phase 1 Lands) 2021/2022

Seven bat species were recorded during passive monitoring undertaken in October 2021 and June 2022, namely common pipistrelle, soprano pipistrelle, Leisler's, Natterer's, Daubenton's, whiskered and brown long-eared bat. Bat activity was variable within the site of the proposed development and its environs, with a high level of activity recorded within Ring Wood adjacent to the southern site boundary and a relatively low level of activity recorded at the west of the site. As detailed in Table 11.17 the most frequently recorded species was common pipistrelle, followed by soprano pipistrelle.

Natterer's, whiskered, Daubenton's and Myotis species of bat (unidentifiable to species level) were recorded on PM1 and PM10 (see Figure 11.1) located within Ringwood adjacent to the southern boundary of the site of the proposed development. Brown long-eared bat was also recorded on PM10 and PM11, which were recording to the south and west of the site of the proposed development. Leisler's bat was recorded commuting across the site early in the evening in low numbers on PM1 and were recorded in higher numbers throughout the night on PM10 and PM11.

A small number of calls that were not of sufficient quality to enable call identification were also recorded on the monitors.

The calls recorded on the passive monitors are summarised in Table 11.8 and Table 11.19. The location of the passive detectors is illustrated in Figure 11.1.

Species	PM1 01/10/2021-05/10/2021	PM10 13/06/2022-17/06/2022	PM11 13/06/2022-17/06/2022	Total
Common Pipistrelle	1,846 (58%)	344 (32%)	216 (22%)	2,406 (46%)
Soprano Pipistrelle	1,257 (40%)	69 (7%)	120 (12%)	1,446 (28%)
Pipistrelle species[24]	0	4 (0%)	3 (0%)	7 (0%)
Leisler's	3 (0%)	628 (59%)	621 (64%)	1,252 (24%)
Natterer's	3 (0%)	0	0	3 (0%)
Daubenton's	34 (1%)	1 (0%)	0	35 (1%)
Whiskered	3 (0%)	1 (0%)	0	4 (0%)
Myotis Species	18 (1%)	3 (0%)	5 (1%)	26 (1%)
Brown long-eared	0	9 (0%)	6 (1%)	15 (0%)
No ID	3 (0%)	2 (0%)	1 (0%)	6 (0%)
Total	3,167	1,061	972	5,200

Table 11.17: Proposed Ringwood Residential Development - summary table of total bat passes recorded on the passive monitors, October 2021 and June 2022.

Three species of bat were recorded within the site of the proposed development during the activity transect undertaken in October 2021. These species were common pipistrelle, soprano pipistrelle and Leisler's bat The levels of activity in October 2021 were relatively low, with a higher level of activity recorded within Ringwood adjacent to the southern boundary of the Phase 1 site. Common and soprano pipistrelle were recorded foraging at the Phase 1 site and its environs in May and June 2022. Again, levels of activity were relatively low, with most of the activity recorded in more sheltered areas of the site at woodland edge habitat at the southern boundary of the Phase 1 lands and along hedgerows at the west of the site. Whiskered bat and one *Myotis* species of bat were recorded within Ring Wood to the south of the Phase 1 site during the transect undertaken in October 2021.

Potential Future Development Areas

Southern site (Excluding Phase 1 and 2 Lands)

Six bat species were recorded during passive monitoring undertaken in May 2022, namely common pipistrelle, soprano pipistrelle, Leisler's, Daubenton's, whiskered and brown long-eared bat. The most frequently recorded species was common pipistrelle, followed by soprano pipistrelle. Common and soprano pipistrelle were recorded from 21 minutes after sunset on PM4.

Brown long-eared, whiskered, Daubenton's and Myotis species of bat (unidentifiable to species level) were recorded on the monitors in low numbers and a small number of calls that were not of sufficient quality to enable call identification were also recorded (Table 11.18).

[24] *Pipistrellus* spp. which have frequency of maximum energy, FMAXE, of c. 50kHz which cannot reliably be assigned to Common Pipistrelle (typical FMAXE of c. 45kHz) or Soprano Pipistrelle (FMAXE c. 55kHz)

Species	PM4	PM6	Total
	05/05/2022-09/05/2022	05/05/2022-09/05/2022	
Common Pipistrelle	3,793 (63%)	4,860 (81%)	8,653 (72%)
Soprano Pipistrelle	2,052 (34%)	876 (15%)	2,928 (24%)
Pipistrelle species[25]	12 (0%)	13 (0%)	25 (0%)
Leisler's	177 (3%)	200 (3%)	377 (3%)
Brown long-eared	9 (0%)	2 (0%)	11 (0%)
Natterer's	0	0	0
Daubenton's	2 (0%)	2 (0%)	4 (0%)
Whiskered	0	1 (0%)	1 (0%)
Myotis Species	15 (0%)	12 (12%)	27 (0%)
No ID	2 (0%)	3 (0%)	5 (0%)
Total	6,062	5,969	12,031

Table 11.18: Ringwood Residential Development study area to the west of N20 (excluding Phase 1 and Phase 2 lands) - summary table of total bat passes recorded on the passive monitors, May 2022.

During the activity transects, a high level of activity from common and soprano pipistrelle was recorded in sheltered areas along hedgerows and treelines in the study area to the south of Phase 1 and 2 lands. Leisler's bat was recorded occasionally foraging and commuting overhead.

Lands to the east of the N20

A total of five species were recorded during passive monitoring undertaken in lands to the east of the N20. The most frequently recorded species was common pipistrelle, followed by Leisler's bat then soprano pipistrelle. Common pipistrelle was recorded from 16 minutes after sunset and Leisler's bat was recorded c. 7 minutes before sunset on PM12 at the west of the site.

Brown long-eared bat, Daubenton's and Myotis species of bat were also recorded in low numbers. The level of activity at the northern site was generally low, with the highest level of activity recorded on PM12, which was recording at a treeline on the western study area boundary.

The calls recorded on the passive monitors are summarised in Table 11.19. The location of the passive detectors is illustrated in Figure 11.1.

[25] *Pipistrellus* spp. which have frequency of maximum energy, FMAXE, of c. 50kHz which cannot reliably be assigned to Common Pipistrelle (typical FMAXE of c. 45kHz) or Soprano Pipistrelle (FMAXE c. 55kHz)

Species	PM3 1/10/2021- 5/10/2021	PM7 5/5/2022- 9/5/2022	PM8 5/5/2022- 9/5/2022	PM12 13/6/2022- 17/6/2022	PM13 13/6/2022- 17/6/2022	PM14 13/6/2022- 17/6/2022	Total
Common Pipistrelle	11 (50%)	29 (64%)	223 (17%)	2,086 (66%)	782 (74%)	112 (63%)	3,243 (56%)
Soprano Pipistrelle	10 (46%)	12 (27%)	244 (19%)	152 (5%)	36 (3%)	16 (9%)	470 (8%)
Pipistrelle species[26]	0	2 (4%)	0	0	0	0	2 (0%)
Leisler's	0	0	829 (64%)	879 (28%)	235 (22%)	50 (28%)	1,993 (35%)
Brown long-eared	0	0	0	10 (0%)	0	0	10 (0%)
Natterer's	0	0	0	0	0	0	0
Daubenton's	0	0	0	3 (0%)	0	0	3 (0%)
Whiskered	0	0	0	0	0	0	0
Myotis Species	0	0	4 (0%)	36 (1%)	6 (1%)	0	46 (1%)
No ID	1 (4%)	2 (4%)	0	2 (0%)	0	0	5 (0%)
Total	22	45	1,300	3,168	1,059	178	5,772

Table 11.19: Ringwood Residential Development study area to the east of N20- summary table of total bat passes recorded on the passive monitors, October 2021- June 2022.

[26] *Pipistrellus* spp. which have frequency of maximum energy, FMAXE, of c. 50kHz which cannot reliably be assigned to Common Pipistrelle (typical FMAXE of c. 45kHz) or Soprano Pipistrelle (FMAXE c. 55kHz)

Activity levels were variable during the transects undertaken within the lands to the east of the N20 in 2021. No bats were recorded during the bat activity transect survey undertaken on 2nd October 2021 and a low level of foraging activity from common pipistrelle, soprano pipistrelle and Leisler's bat was recorded at field boundaries on 11th May 2022. A slightly higher level of activity from a higher diversity of species was recorded during the transect undertaken on 12th June 2022. Common and soprano pipistrelle were recorded foraging along field boundaries and Leisler's bat was recorded commuting and foraging overhead in low numbers; a single Natterer's bat was also recorded along a treeline at the centre of the site.

Evaluation of Ecological Importance

A review of existing bat records on the NBDC database from within a 4km radius of the study area indicates that five of the ten known Irish bat species had been observed. These include pipistrelle species, soprano pipistrelle, Leisler's, brown long-eared and Daubenton's. Of these species, Daubenton's bat has been recorded roosting within 4km of the site. In addition to these species, whiskered bat and lesser horseshoe bat have been recorded foraging at St. Ann's Hydro Hill at Tower (Abbott, 2017), located c.2.8km to the west of the proposed site. Evidence indicating minor bat roosts of brown long-eared bat and whiskered bat was also recorded St. Ann's Hydro Hill, and summer roosts of common pipistrelle, soprano pipistrelle and Leisler's bat also occurred just off-site to the west. Lesser horseshoe bat has also been recorded to the west of Blarney Castle, c.1.7km to the south-west of the study area (O'Donnell Environmental, 2022) and soprano pipistrelle, common pipistrelle, Leisler's bat, brown long-eared bat and *Myotis* have been recorded at Clogheenmilcon Fen c.550m to the south of the study area (Lauder *et al*., 2021).

Habitats within the study area that are of potential use by foraging and commuting bats include linear features such as the Shean Upper Stream, treelines and woodland, which provide connectivity between the study area and other foraging areas in the wider landscape. Overall, the study area is of moderate to high suitability for foraging and commuting bats due to the presence of connectivity to other suitable habitats in the wider landscape. Roosting opportunities at the site are limited to 5 trees in the field boundaries of the study area to the west of the N20 that support potential roosting features such as cracks in limbs. While no potential roosting features were recorded within mature Oak trees at the edge of woodland, due to their age and size, the potential for roosting features to be present within these trees cannot be excluded.

Site of the proposed development (Phase 2 Lands)

Results from the bat surveys undertaken between October 2021 and September 2025 indicate that eight species of bat, namely common pipistrelle, soprano pipistrelle, Leisler's, brown long-eared, Daubenton's, Natterer's, whiskered bat and lesser horseshoe bat commute to the site and its immediate environs to forage. Of these species, common and soprano pipistrelle and Leisler's bat were recorded regularly foraging at the site. Daubenton's, whiskered, Natterer's and Myotis species were recorded in lower numbers, predominantly at the edge of woodland at the north of the site. A low level of brown long-eared bat activity was recorded across the site. Two lesser horseshoe bat passes were recorded at a hedgerow to the east of Ringwood in September 2024, no other activity from this species was recorded at the site.

Soprano pipistrelle was recorded early in the evening (c. 14-23 minutes after sunset in Autumn 2021, Summer 2022 and Autumn 2024) at the north of the Phase 2 site, indicating the likely presence of a roost in the vicinity of the proposed site. Soprano pipistrelle social calls were also recorded at the woodland edge in October 2021 and September 2024.

The level of activity recorded across the Phase 2 lands was variable; overall, a relatively high level of activity from a high diversity of species was recorded.

Adjacent development (Phase 1 Lands)

Results from the bat surveys undertaken in October 2021, May 2022 and June 2022 indicate that seven species of bat, namely common pipistrelle, soprano pipistrelle, Leisler's, natterer's, Daubenton's, whiskered and brown long-eared bat commute to the site and its immediate environs to forage. Of these species, common and soprano pipistrelle and Leisler's bat were recorded regularly foraging at the site. Brown long-eared bat and Myotis species were recorded in low numbers at the west of the site. Natterer's, Daubenton's, whiskered, Myotis species and brown long-eared bat were also recorded within Ring Wood adjacent to the southern site boundary.

The level of activity recorded across the Phase 1 lands was relatively low, however, a moderate level of activity and relatively high diversity of species was recorded within Ring Wood adjacent to the southern site boundary.

Potential Future Development Area

A total of five species were recorded within the study area to the east of the N20: common pipistrelle, Leisler's bat, soprano pipistrelle, brown long-eared and Daubenton's bat. Common pipistrelle and Leisler's bat were both recorded early in the evening at the west of the site.

The level of activity at most of the study area to the east of the N20 was low; a higher level of activity was recorded at the western study area boundary.

In relation to the foraging and commuting bat species recorded within the study area, the bat populations are of Local Interest (Higher Value) (in accordance with NRA, 2009). The status of Irish bat species (Marnell *et al*., 2019) is summarised in Table 11.20. The bat species recorded at the site are all of Least Concern.

The conservation status of all the bats recorded at the site is Favourable (NPWS, 2019).

Species: Common Name	Irish Status	European Status	Global Status
Resident Bat Species			
Daubenton's bat (*Myotis daubentonii*)	Least Concern	Least Concern	Least Concern
Whiskered bat (*Myotis mystacinus*)	Least Concern	Least Concern	Least Concern
Natterer's bat (*Myotis nattereri*)	Least Concern	Least Concern	Least Concern
Leisler's bat (*Nyctalus leisleri*)	Least Concern	Least Concern	Least Concern
Nathusius' pipistrelle (*Pipistrellus nathusii*)	Least Concern	Least Concern	Least Concern
Common pipistrelle (*Pipistrellus pipistrellus*)	Least Concern	Least Concern	Least Concern
Soprano pipistrelle (*Pipistrellus pygmaeus*)	Least Concern	Least Concern	Least Concern
Brown long-eared bat (*Plecotus auritus*)	Least Concern	Least Concern	Least Concern
Lesser horseshoe bat (*Rhinolophus hipposideros*)	Least Concern	Near threatened	Least Concern
Possible Vagrants			
Brandt's bat (*Myotis brandtii*)	Not Assessed	Least Concern	Least Concern
Greater horseshoe bat (*Rhinolophus ferrumequinum*)	Not Assessed	Near threatened	Least Concern

Table 11.20: Status of Irish Bat Fauna (Marnell *et al.*, 2019).

Birds

Breeding Birds

A list of bird species encountered on site during initial site visits by John Deasy in August and September 2021 are shown in Table 11.21, below.

Species	Scientific Name	BoCCI Status	Notes
Ringwood Land Parcel (including Phase 1-3)			
Robin	*Erithacus rubecula*	Green	
Blackbird	*Turdus merula*	Green	
Chiffchaff	*Phylloscopus collybita*	Green	
House Sparrow	*Passer domesticus*	Amber	
Hooded crow	*Corvus cornix*	Green	
Blue tit	*Cyanistes caeruleus*	Green	
Rook	*Corvus frugilegus*	Green	
Jackdaw	*Corvus monedula*	Green	
Magpie	*Pica pica*	Green	
Grey heron	*Ardea cinerea*	Green	Flying overhead
Goldcrest	*Regulus regulus*	Amber	
Mistle thrush	*Turdus viscivorus*	Green	
Dunnock	*Prunella modularis*	Green	
Grey wagtail	*Motacilla cinerea*	Red	
Blackcap	*Sylvia atricapilla*	Green	
Jay	*Garrulus glandarius*	Green	

Table 11.21: Bird species noted in the site of the proposed development in August / September 2021.

Mallard (*Anas platyrhynchus*) and Song thrush (*Turdus philomelos*) were also noted on the stream trail camera, while Bullfinch (*Pyrrhula pyrrhula*) was also noted on the field trial camera in 2021 on the Shean Upper Stream.

Incidental species recorded in March 2022 when during mammal trail camera work included Jackdaw, Great tit, Blackbird, Wren, Rook, Dunnock, Starling, Blue tit, Dunnock, Mistle thrush, Goldfinch, Robin, Wood pigeon, Hooded crow, Chaffinch, Buzzard, Jay, Magpie, Goldcrest, Long-tailed tit, Chiffchaff, Feral pigeon, Pied wagtail, Siskin, Sparrowhawk, Linnet (flock of c. 20 on maize stubbles, north of Ring Wood woodland), Raven, Stonechat and House sparrow.

Initial targeted breeding bird surveys were undertaken on 14th May 2024 by John Deasy; species recorded included Lesser-black backed gull, Rook, Blackbird, Mistle thrush, Woodpigeon, Blue tit, Fieldfare, Wren, Song thrush, Robin, Snipe, Jay, Chaffinch, Sparrowhawk, Hooded crow, Redwing, Jackdaw, Goldcrest, Long-tailed Tit, Magpie, Great tit, Starling, Dunnock, House sparrow, Buzzard, Goldfinch, Siskin, Feral pigeon, Linnet, and Coal tit. Redwing and Snipe are red listed as according to the BoCCI 2020-2026; this list as compiled by Birdwatch Ireland is for breeding individuals. Redwing was recorded in field 4 and within the wet woodland to the northeast during May 2024, and 2 no. Snipe were flushed from the ground on the western side of field 2.

Targeted breeding bird surveys were undertaken most recently on the 29th April and 30th May 2025. Results are shown in Table 11-20 (April '25) and Table 11-21 (May '25). The location of fields is illustrated in Figure 11.17. The site of the Phase 2 proposed development is within fields 1, 4, 5, 6, 8, and 10. Survey results were divided into distance ranges of 0-25m, 25-100m, >100m and Flying Overhead however for the purpose of reporting have been included as total numbers recorded per field area.

Across both 2025 survey dates a single BoCCI red-listed species was recorded in May; 2 no. swifts were recorded foraging within field 2 over the valley southwest of the southwest corner of the study site. Several amber-listed species were recorded in both April and May including Goldcrest, House sparrow, Linnet, Sand martin, Starling and Swallow. Sand martins were recorded to be utilising the old stone farm building in field 4.

Species	Field 1	Field 2	Field 3	Field 4	Field 5	Field 6	Field 7	Field 8	Field 9	Field 10	Ringwood	NE Woodland
Blackbird	2	1	3	1	3				1	1	1	
Blackcap												1
Blue Tit		1	1					2			1	2
Bullfinch		1										1
Buzzard						1						
Chaffinch		1			1	1	1				1	
Chiffchaff		1				1	1	1		1		2
Coal Tit						1						1
Dunnock	1	2			1							2
Feral Pigeon					6							
Goldcrest			1					1			2	4
Goldfinch					1		1					
Great Tit	1	2	1									
Hooded Crow	2					1			2			
House Sparrow	1											
Jackdaw				7	2				2			
Linnet		1		1								
Long-tailed Tit						2		3				
Magpie					1				1			
Mistle Thrush		2			3					1		1
Robin	2					2	3	2	1	1		
Rook	1				30	1		2				
Sand Martin		3		2								
Song Thrush	1			1		1		1		1		1

Species	Field 1	Field 2	Field 3	Field 4	Field 5	Field 6	Field 7	Field 8	Field 9	Field 10	Ringwood	NE Woodland
Starling	3			28		1			1			
Swallow					2							
Woodpigeon		5	2	2	1	8	4	1	4	1	1	2
Wren	2	2	2	2	1	2	4	4	3	1	5	5

Table 11.22: Bird species recorded on site in April 2025.

Notes:

1. Starling recorded flying over field 1 carrying food.
2. Large rook count in field 5 was due to rookery in trees around farmyard.

Species	Field 1	Field 2	Field 3	Field 4	Field 5	Field 6	Field 7	Field 8	Field 9	Field 10	Ringwood	NE Woodland
Blackbird												
Blackcap	1	1	1	1		1	3	1	9		1	3
Blue Tit									2			1
Bullfinch			1						1	1		
Buzzard					1							
Chaffinch						3						
Chiffchaff		1				1		2			1	1
Dunnock						1						2
Feral Pigeon	2								1	1		1
Goldcrest					14							
Goldfinch					1	1			1			2
Great Tit	1			1	5		1		1			
Hooded Crow												1
House Sparrow		1	1	1	2				3	1	4	
Jackdaw	1											
Jay				1								
Linnet			2									
Magpie	8			1	2		2					
Mistle Thrush	2			1						1		
Robin		1					1					1

Species	Field 1	Field 2	Field 3	Field 4	Field 5	Field 6	Field 7	Field 8	Field 9	Field 10	Ringwood	NE Woodland
Rook	1			1	1	1	2		1		1	2
Sand Martin	4	2			13	5				3	3	2
Song Thrush				5	1							
Starling			1						2			1
Stock Dove	13	16		4			40		13	16		
Swallow					3							
Swift		1	1	1	1	1		1	2	5		
Treecreeper		2										
Woodpigeon												1
Wren			1			6	6	2	1		1	5

Table 11.23: Bird species recorded on site in May 2025.

Notes:

1. Juvenile blue tit present with adult in field 9.
2. 2 no. buzzards were recorded perched in tree within field 6 with 3 no. individuals recorded later in the survey flying overhead.
3. Feral pigeons in field 5 recorded on farm buildings; similarly, stock doves recorded in field 5 were recorded perched on overhead powerlines through the field before flying north.
4. Nesting cavity within wall of old stone outbuilding in farmyard in field 4 is supporting several sand martins.
5. 2 no. swifts were recorded foraging over valley SW of SW corner of the study area (over Blarney area); note that this is offsite of the Ringwood site.

Wintering Birds

Winter bird surveys of the site were undertaken across November / December 2023 and January / February 2024. Results are shown in Table 11.22 (November '23), Table 11.23 (December '23), Table 11.24 (January '24) and Table 11.25 (February '24). The location of fields is illustrated in Figure 11.17. The site of the Phase 2 proposed development is within fields 1, 4, 5, 6, 8, and 10.

In addition, in February 2024 during wintering bird surveys, Snipe (Red List) - were flushed from agricultural grassland (GA1) west of Ring Wood (561608; 57626).

While Snipe is on the Red list of Birds of Conservation Concern (Gilbert *et al*., 2021), this list is for breeding birds. These observations, however, were for wintering birds. Kestrel (also red listed) was recorded hunting over Clogheenmilcon Fen/Blarney Bog to the south.



Figure 11.17: Location of Field numbers referenced in Table 11.24, Table 11.25, Table 11.26, and Table 11.27.

Species	Field 1	Field 2	Field 3	Field 4	Field 5	Field 6	Field 7	Field 8	Field 9	Field 10	Ringwood	NE Woodland	Offsite
Lesser Black-backed Gull	32		1	1									
Rook	1	4	7		30	4	2	12	2	2			
Blackbird	1	1			1		1			6		2	
Mistle Thrush	1					1							
Woodpigeon	4	2	1	3			55	2	2		1	3	
Meadow Pipit	1	4								13			
Blue Tit	1			1	2	1		1				5	
Fieldfare	1												
Wren		2		1				1		1	1	1	
Song Thrush		1										1	
Robin		1	1	1	1	1		1	1	1			
Snipe		1	2							1			
Jay			1				1						
Chaffinch			8	2	12	2		2		1			
Sparrowhawk				1									
Hooded Crow				3	5				1	3			
Redwing				1		5							
Jackdaw					20	4							
Goldcrest					1	1					2	2	
Long-tailed Tit					6								
Greenfinch					1								
Brambling					1								
Pied Wagtail					1					2			
Magpie					1	1					2		
Great Tit					1	1					2	2	
Starling					7								
Dunnock							1				1		
Treecreeper												1	

Species	Field 1	Field 2	Field 3	Field 4	Field 5	Field 6	Field 7	Field 8	Field 9	Field 10	Ringwood	NE Woodland	Offsite
Bullfinch												2	
House Sparrow										1			
Curlew			1										2
Buzzard													1

Table 11.24: Bird species noted in the site of the proposed development 11th November 2023.

Notes:

1. Lesser Black-backed Gulls were all flying over site, majority of birds flying off to NW early in morning. None were recorded on / feeding on the site.
2. Curlew flying over site. Recorded in Field 3 where first seen but fly north over field 10 also. Other 2 Curlews were in the valley below and south of the site boundary.
3. Good numbers of Rooks and Jackdaws roosting/perched in the mature trees around the old farmyard and house as well as the mature trees along the southern boundary of Fields 5, 6 and 7.
4. 3 separate instances of people walking dogs observed. Site therefore appears to be repeatedly disturbed by walkers. Dogs in particular would displace any field feeding birds.

Species	Field 1	Field 2	Field 3	Field 4	Field 5	Field 6	Field 7	Field 8	Field 9	Field 10	Ringwood	NE Woodland	Offsite
Rook	4				12				2	1			
Blackbird	1	2	1	1	2	1	3			1	1	3	
Mistle Thrush							2						
Woodpigeon	3			2	1	5		3		2		5	
Meadow Pipit			2										
Blue Tit				1				1			1	1	
Fieldfare													
Wren			1	1	1			1			1		
Song Thrush	1				1					2			
Robin					1		1			1	1	1	
Snipe		1											
Jay							1	1					
Chaffinch												1	
Sparrowhawk							1						
Hooded Crow	2	2	3								1		
Redwing					2	11	5	15		1		18	
Jackdaw	2				3								
Goldcrest							1				1	1	
Long-tailed Tit	2												
Pied Wagtail					1								
Magpie		2			1					2			
Great Tit		1									1	1	
Starling	2												
Dunnock			1									2	
Treecreeper											1		
Bullfinch												2	
House Sparrow										1			
Curlew									2				2

Species	Field 1	Field 2	Field 3	Field 4	Field 5	Field 6	Field 7	Field 8	Field 9	Field 10	Ringwood	NE Woodland	Offsite
Goldfinch		1			1							1	
Siskin												4	
Feral Pigeon					3								

Table 11.25: Bird species noted in site of the proposed development 5th December 2023.

Notes:

1. 2 Curlew seen at 09:12 flying northwest over the site from Field 1. These appear to have crossed over the northern side of Field 9 before continuing on NW over houses, W of N20.
2. One Snipe flushed from Field 2. Flew to S before looping around and flying around, W of site. Looped back to N and appeared to be dipping down into Field 1. Not seen to confirm if it landed back in site.
3. There was a frost on the fields this morning. In general, birds were in the hedgerows and woodland areas on this visit. Small flocks of species such as Meadow Pipit and Chaffinch flocks which were seen on the maize stubbles the last visit were absent today. These fields of bare earth were frozen, particularly Field 10 which faces north.
4. No walkers or disturbance activities seen on site during the visit. Construction works on house off site adjacent to Field 1 was creating some noise.

Species	Field 1	Field 2	Field 3	Field 4	Field 5	Field 6	Field 7	Field 8	Field 9	Field 10	Ringwood	NE Woodland	Offsite
Rook	3				3		1	3	3				
Blackbird	2	1			1		1	2			1	2	
Mistle Thrush							1	1					
Woodpigeon	5		4		1	3		3		1	11	1	
Meadow Pipit	1	16								4			
Blue Tit	1	2	1			1						2	
Fieldfare	2								1	1			
Wren			1	1			1				2	2	
Song Thrush	2				1		1						2
Robin	1	1							1			1	1
Snipe		5				3							
Jay							1						
Chaffinch										3			
Hooded Crow	2	1	1				2			2	1	1	
Redwing	2		1	1	9	2		10	7	10	5		
Jackdaw	4												
Goldcrest											3		
Greenfinch										3			
Magpie								1		1			
Great Tit			1	1						2	2		
Dunnock	1									1			
Treecreeper											1		
Bullfinch								1		2			
House Sparrow	1												
Curlew	8												
Goldfinch	1			4						4		8	

Species	Field 1	Field 2	Field 3	Field 4	Field 5	Field 6	Field 7	Field 8	Field 9	Field 10	Ringwood	NE Woodland	Offsite
Feral Pigeon				2									
Stonechat								2					
Kestrel								1					
Collared Dove									1	1			
Linnet										6			
Coal Tit											1		

Table 11.26: Bird species noted in site of the proposed development 12th January 2024.

Notes:

1. 3 Snipe flushed from Field 6 with one bird observed to fly in a big loop around before dropping down into Clogeenmilcon fen. A total of 5 Snipe flushed from Field 2 in groups of 3 and 2. Their flushing also flushed 16 Meadow Pipits from same field.
2. One Kestrel seen flying over site seen from Field 8. Continued directly and didn't stop to hunt or hover.
3. Mixed flock of Meadow pipits, Goldfinch and Linnets on the ground in the maize stubbles in Field 10.
4. No Curlew seen on site during the survey period. However, at 13:30 post survey, a small flock of c. 8 Curlew flying south over Field 1. Brief views through the houses adjacent to the public road.
5. No walkers or seen on site during the visit. Some evidence of people using scrambler motorbikes or quads on site with areas of cut up grass from doing donuts, etc. Mainly in Field 8 and 9.

Species	Field 1	Field 2	Field 3	Field 4	Field 5	Field 6	Field 7	Field 8	Field 9	Field 10	Ringwood	NE Woodland	Offsite
Lesser Black-backed Gull		1			31								
Rook	1	1		2					1				
Blackbird		1	1	1				1	1	1	2	2	
Mistle Thrush					2								
Woodpigeon	2							1		4		8	
Meadow Pipit		1		9									
Blue Tit		1	1		3							2	
Fieldfare												2	
Wren				1	1			1		1	3	1	
Song Thrush		1											
Robin	1	1	1				1			1	1	1	
Snipe										1			
Jay											2	11	
Chaffinch		1	1										
Sparrowhawk										2			
Hooded Crow	2							1	3		1		
Redwing	1							9			3	8	
Jackdaw			2		2	2							
Goldcrest			1								1	1	
Long-tailed Tit												1	
Greenfinch										1			
Pied Wagtail												1	1
Magpie											1	3	
Great Tit			2	1		2	1				1	1	
Starling					2								
Dunnock	2						1						
Treecreeper							1						

Species	Field 1	Field 2	Field 3	Field 4	Field 5	Field 6	Field 7	Field 8	Field 9	Field 10	Ringwood	NE Woodland	Offsite
Bullfinch												2	
Buzzard				1								1	1
Goldfinch		3	1										
Siskin					2			1			1		
Feral Pigeon					8								
Stonechat								1					
Coal Tit								1			1	1	
Raven				2									
Peregrine	1												
Mallard								1					
Jack Snipe												1	

Table 11.27: Bird species noted in site of the proposed development 22nd February 2024.

Notes:

1. Buzzard seen in NE woods early in the transect. A Buzzard was soaring over Field 2 and 4 before moving over Ringwood. A second Buzzard was soaring over valley south of the site at the same time.
2. A male Mallard flew over Field 8 and offsite over the N20 to the NE.
3. A probable Jack Snipe was flushed late and silently in the GA1 part of Field 10 (See later in this note). A second Common Snipe was flushed also in Field 10 nearby. The flightlines of both were recorded. Later in the transect I entered the NE wood to try and flush a Woodcock and record the other species. At the location where the probable Jack Snipe flew to, I walked into the area of wet woodland where there are patches of open mud and water pools interspersed with tufts of sedges. Here I nearly stood on a Jack Snipe. Again, it flushed very late, silently and dropped down once it had cleared the edge of the trees in the wood.
4. 1 Lesser Black-backed Gull flew over the west side of the site and off to the south.
5. Small flock of 9 Meadow pipits in Field 4. Single seen in field 2.
6. Peregrine flyover Field 1 at end and moved to west, stooping as it went.

Other Observations

Table 11.28 outlines the invertebrates that were recorded during the site visit, along with the conservation status. No species of conservation concern were recorded on site (Regan *et al.*, 2010; Fitzpatrick *et al.*, 2006; Allen *et al.*, 2016).

Species	Scientific Name	Conservation Status
Butterflies		
Meadow brown	*Maniola jurtina*	Least concern
Common blue	*Polyommatus icarus*	Least concern
Red Admiral	*Vanessa atalanta*	Least concern
Bees		
Common carder bee	*Bombus pascuorum*	Least concern
White-tailed bumblebee	*Bombus lucorum* agg.	Least concern
Beetles		
Hairy shield bug	*Dolycoris baccarum*	
Green shield bug	*Palomena prasina*	
Dock bug	*Coreus marginatus*	
7 Spot ladybird	*Coccinella septempunctata*	
	Chrysolina banksii	
Moths		
Setaceous Hebrew Character	*Xestia c-nigrum*	Least Concern
Straw dot	*Rivula sericealis*	Least Concern
Cinnabar moth	*Tyria jacobaeae*	Least Concern
Grasshoppers		
Common green grasshopper	*Omocestus viridulus*	

Table 11.28: Other observation on the 26th of August and 5th September 2021.

Aquatic Ecology

As noted, surface waters from the eastern side of the site will drain to the Shean Upper Stream which is located to the east within the of the site of the Phase 2 proposed development. The following section presents an assessment of the Shean Upper Stream and Blarney Bog pNHA to which it discharges. Surface water from the western side of the site will discharge to an existing outfall to the River Martin (refer to accompanying surface water drawings and engineering report which accompany this application).

Site Survey Descriptions

Site 1 - Shean Upper Stream, Blarney Business Park

Site 1 was located on the upper reaches of the Shean Upper Stream in Blarney Business Park. The small upland eroding stream (FW1) had been extensively modified historically, with much of the stream headwaters culverted underground via pipe culverts. The small stream was 1m wide and between 0.05-0.15m deep with 1-3m bank heights. It flowed over a moderate to steep gradient downstream of the road crossing (cascading glide and riffle with isolated pool). The substrata were dominated by very heavily bedded (compacted) cobble with scattered boulder and more localised gravels between coarser substrata. Siltation was high despite considerable flow rates (i.e. silt in interstitial spaces and plumes underfoot). No macrophytes were recorded present due to the high energy. However, filamentous algae cover was c. 2% despite shading and high energy supporting enrichment pressures. The stream was heavily shaded by willow-dominated woodland with abundant Chinese bramble (*Rubus tricolor*) and bramble (*Rubus fruticosus*) in the understories.



Plate 11.23: Site 1 on the Shean Upper Stream at Blarney Business Park.

Site 2 Shean Upper Stream, at Clogheenmilcon Fen

Site 2 was located at Clogheenmilcon Nature Reserve ('Blarney Bog') immediately downstream of an extensively culverted section of the watercourse pipe. The stream was 1.5-2m wide and 0.1-0.2m deep with 0.5m high banks. The small, swift-flowing and clear water stream (FW1) had been deepened historically but exhibited good instream recovery with evident flow heterogeneity. The flow profile comprised of shallow riffle, glide and occasional deeper pool. The sandstone substrata were dominated by mixed rounded gravels with occasional cobble and small boulder. The substrata were mobile and moderately silted (silt plumes underfoot) with localised heavier depositions of silt in pool slacks. Given relatively high shading (not excessive), macrophyte cover was moderate with locally frequent fool's watercress (*Apium nodiflorum*). Reed canary grass (*Phalaris arundinacea*) dominated the riparian zones with abundant great willowherb (*Epilobium hirsutum*), nettle (*Urtica dioica*), hedge bindweed (*Calystegia sepium*), greater tussock sedge (*Carex paniculata*) and grey willow (*Salix cinerea* sp. *oleifolia*).



Plate 11.24: Site 2 on the Shean Upper Stream at Clogheenmilcon Fen Lake.

Site 3 Blarney River, d/s Shean Upper Stream confluence

Site 3 was located on the Blarney River downstream of the Shean Upper Stream confluence. The Blarney River was a very heavily modified channel that was historically deepened and realigned. The U-shaped channel was 3-4m wide and between 1.5-2.1m deep with 0.5-2.5m high banks. The bed comprised of deep soft silt with scattered superficial gravel and cobble. The channel was heavily covered with macrophytes including frequent watercress (*Nasturtium officinale*) and fool's watercress (*Apium nodiflorum*) with localised stands of branched bur-reed (*Sparganium erectum*). Common duckweed (*Lemna minor*) was locally abundant. Green filamentous algae covered c. 5% of the riverbed bed despite depth and high turbidity in the water indicating enrichment pressures.



Plate 11.25: Site 3 downstream of the Shean Upper Stream confluence with the Blarney River.

Clogheenmilcon Fen Lake

Clogheenmilcon Fen Lake (Blarney Bog pNHA) was a 3.15 ha lake supporting a mixture of fen, marsh and reed swamp vegetation with pockets of open water. The lake was between 1m and 2m deep with moderate peat staining in the water. The open water of the lake supported abundant duckweed species including common duckweed (*Lemna minor*) and least duckweed (*Lemna minuta*). The non-native and invasive Azolla waterfern (*Azolla filiculoides*) was also present interspersed with duckweed species. The open water of the lake supported occasional common water starwort (*Callitriche stagnalis*), broad-leaved pondweed (*Potamogeton natans*) and fennel pondweed (*Stuckenia pectinata*) with abundant Canadian pondweed (*Elodea canadensis*). The shallow littorals supported watercress, fool's watercress, blue water speedwell (*Veronica anagallis-aquatica*), water mint (*Mentha aquatica*), yellow water-lily (*Nuphar lutea*) and branched bur-reed (*Sparganium erectum*). Common reed (*Phragmites australis*) and bulrush (*Typha latifolia*) were abundant in the eastern part of the basin. The exuberant macrophyte growth inclusive of floating duckweed supported evident eutrophication pressures.



Plate 11.26: Clogheenmilcon Fen Lake (eastern basin).

Biological water quality (Q-samples)

Q-samples were collected and analysed from the *n*=3 riverine survey sites. Cumulatively a total of *n*=43 species across *n*=35 families were recorded in the riverine kick samples during September and November sampling 2023. A summary of the taxonomic composition of the surveys is presented in Appendix 11.1. A higher total species diversity across all sites was recorded in September 2023 (*n*=37) than in November 2023 (*n*=23 species) as would be expected between summer and autumn.

The species compositions were converted into Environmental Protection Agency (EPA) Q-ratings by grouping species assemblages into water quality classes based on their known pollution sensitivities (Appendix 11.1). Following the methodology of Toner *et al.* (2005), the Environmental Protection Agency (EPA) group invertebrates into classes whereby pollution intolerant species are denoted class A, and species with greater pollution tolerance fall into successive classes (B through E, respectively). As such, the presence or absence of these groups and their relative abundance facilitates an assessment of biological river health. Good status (Q4) unpolluted water quality is achieved according to the EPA if at least one Group A taxon is present in, at least, fair numbers (5-10% total sample composition) and Group B taxa (e.g. cased caddis) may be common or absent. The EPA group C invertebrate species, *Baetis rhodani* is often dominant at good status sites (Toner *et al*., 2005). However, other Group C taxa are never excessive and group D / E taxa are present in small numbers or absent (Toner *et. al*., 2005). Our results are discussed in the context the collective community compositions relative to their pollution tolerances.

The Q ratings remained consistent between September 2023 and November 2023 (Table 11.27 & Figure 11.18). Site 1 on the Shean Upper Stream and Site 3 on the Blarney River had an absence of EPA group A indicator species (Appendix 11.1). They also had sample compositions dominated by EPA group C (moderate water quality indicator species including the ubiquitous mayfly, *Baetis rhodani* and caseless caddis species *Diplectrona felix*, *Philopotamus montanus* and *Wormaldia occipitalis*) (Appendix 11.1). Therefore, the Q-Rating at site 1 was **Q3** (poor status) or equivalent EQR of 0.6 and **Q2-3** at site 3 (also of poor status) but at the lower end of the scale (i.e. EQR 0.5) (Table 11.29 & Figure 11.18).

Site 2 on the Shean Upper Stream was of moderate status (**Q3-4**) and thus achieved the best biological water quality of the three sites (EQR of 0.7). This was due to the presence of low numbers of EPA group A taxa that were absent from the other sampling sites and are indicative of improved water quality (Appendix 11.1). The group A taxa were represented solely by the mayfly *Ecdyonurus dispar*, a species intolerant of enrichment and siltation pressures. Furthermore, the sample was represented by low numbers group B clean water cased caddis also present, namely *Agapetus fuscipes* and *Silo pallipes* (Appendix 11.1) and a dominance of EPA group C taxa (i.e. moderate water quality indicators). No rare or protected invertebrate species were recorded based on a review of the compiled species list.

Site no.	Watercourse	Q-rating November 2023	Water quality status	Q-rating September 2023	Water quality status
1	Shean Upper Stream	**Q3 (EQR 0.6)**	Poor status	**Q3 (EQR 0.6)**	Poor status
2	Shean Upper Stream	**Q3-4 (EQR 0.7)**	Moderate status	**Q3-4 (EQR 0.7)**	Moderate status
3	Blarney River	**Q2-3 (EQR 0.5)**	Poor status	**Q2-3 (EQR 0.5)**	Poor status

Table 11.29: Summary of Q-ratings for the Shean Upper Stream and Blarney River on the 28th of September and 9th November 2023.

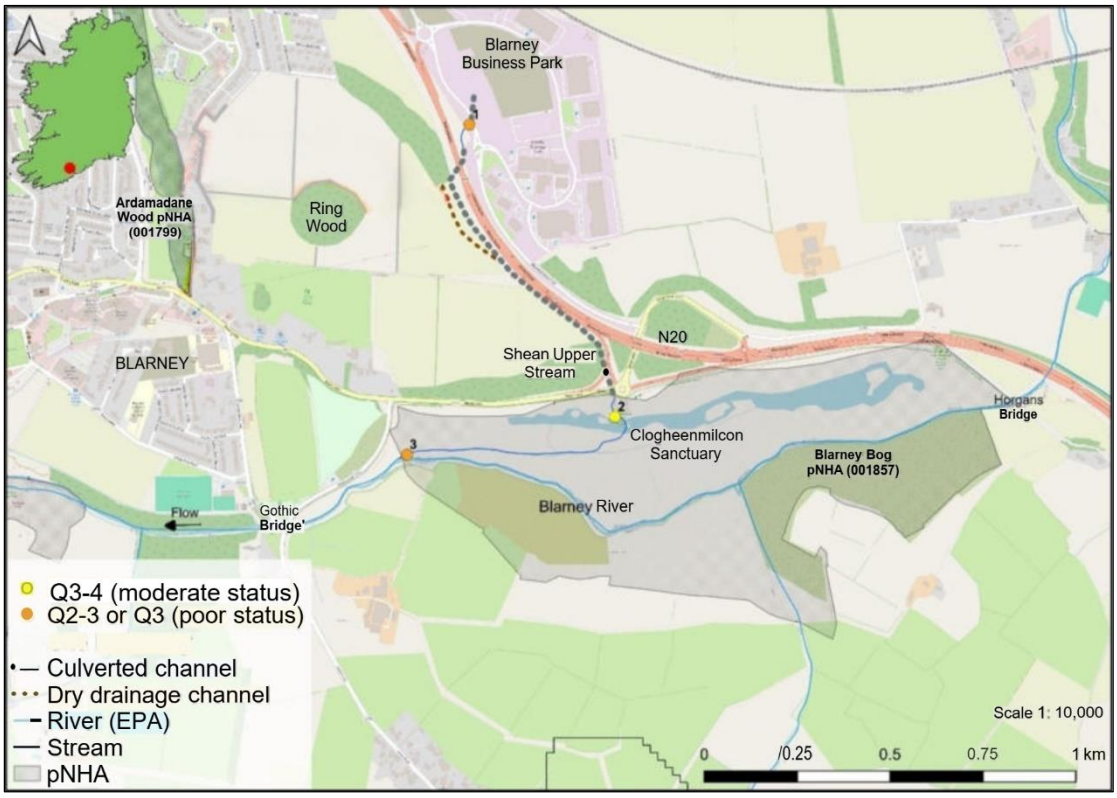


Figure 11.18: Biological water quality status of the n=3 Q sampling sites on the Shean Upper Stream & Blarney River.

Physiochemical water quality

Riverine physiochemical results

The mean physiochemical water quality results recorded at the three riverine survey sites recorded on the 28th of September and 9th November 2023 are summarised below in Table 11.30. Full laboratory physiochemical results for both sampling periods are provided in Appendix 11.2.

The mean pH levels across the three riverine sampling sites were recorded between 7.15 to 7.70 pH units and are as expected for a river flowing over purple mudstone and sandstone geologies (i.e. moderate base influences). The pH levels also align with the alkalinity ($CaCO_3$) levels that were indicative of moderate alkalinity waters, being between 73-82mg/l $CaCO_3$ across all three riverine survey sites.

Only site 2 on the Shean Upper Stream met the good-status targets for total ammonia (i.e. ≤0.065 mg N/l) as set out under the European Union Environmental Objectives (Surface Waters) (Amendment) Regulations 2019 (S.I. No. 77/2019) (Table 3.2). By comparison site 1 on the Shean Upper Stream and site 3 on the Blarney River had elevated total ammonia levels (i.e. 0.088 & 0.093 mg N/l) respectively (Table 11.30).

The European Union Environmental Objectives (Surface Waters) (Amendment) Regulations 2019 (S.I. 77 of 2019) sets no specific boundary conditions for nitrate. However, EPA assessment of high-quality water sources has set boundary conditions of 0.9 mg/l NO_3-N (nitrate as nitrogen) for high quality waters and 1.8 mg/l NO_3-N for good quality waters (EPA, 2022). As TON is comprised mainly of nitrate (N as NO3) given that the concentration of nitrite is typically negligible (O'Boyle *et al.*, 2019), the levels of nitrate as total oxidised nitrogen (TON) were elevated across all three riverine survey sites and recorded between 2.619 and 3.803 mg N/l (Table 11.30). Nitrate levels are now elevated in most rivers in Ireland with the primary contributor being agriculture.

While sites 1 and 2 on the Shean Upper Stream had lower ortho-p than site 3 on the Blarney River, none of the three survey sites had levels ≤0.035mg P/l as set out for good status water quality under the European Union Environmental Objectives (Surface Waters) (Amendment) Regulations 2019 (S.I. No. 77/2019) (Table 11.26). In general, the MRP levels were comparable between the September and November sampling periods but with noticeable elevations in November at site 3 (Appendix 11.2). Total phosphorous should be ≤0.025mg P/l for good status water quality and was also exceeded at all three sites with a significant exceedance at site 3 (0.228mg P/l). The observed elevations in both N and P support significant eutrophication pressures.

Sites 1 and 2 sampling sites (mean values) met the high-status threshold for biochemical oxygen demand (BOD) (i.e. levels ≤1.5mg O_2/l at both sets) as set out under the European Union Environmental Objectives (Surface Waters) (Amendment) Regulations 2019 (S.I. No. 77/2019). However, site 3 on the Blarney River failed to meet the equivalent good (≤1.5mg O_2/l) or high status (≤1.3mg O_2/l) threshold due to elevated mean levels (i.e. 1.9 mg O_2/l). Higher BOD levels are indicative of some form of pollution and reduce the dissolved oxygen available for aquatic biota. However, BOD values of ≤5mg/l were recorded at all survey locations which are considered capable to support healthy salmonid populations according to the European Communities (Quality of Salmonid Waters) Regulations (S.I. No. 293/1988). The dissolved oxygen levels were also good across sites with levels recorded between 9.65mg/l and 10.8mg/l. Levels of

<7mg/l in river are sub-optimal and result in stress to aquatic biota, particularly sensitive invertebrates and salmonid populations (pers. obs.). Suspended solid levels were low across all three riverine survey sites being <5mg/l.

Parameter	Site 1	STDEV	Site 2	STDEV	Site 3	STDEV
pH	**7.70**	0.22	**7.56**	0.03	**7.15**	0.40
Alkalinity (mg CaCO3/l)	**77.00**	7.07	**82.00**	1.41	**73.00**	15.56
Conductivity @25°C (µS/cm)	**255.0**	24.04	**295**	16.97	**273.50**	60.10
Total Ammonia (mg N/l)	**0.088**	0.071	**0.035**	0.025	**0.096**	0.001
Ortho-P (mg P/l)	**0.040**	0.014	**0.039**	0.004	**0.123**	0.110
Total P (mg P/l)	**0.062**	0.021	**0.053**	0.014	**0.228**	0.214
Total Oxidised Nitrogen (mg N/l)	**2.62**	0.49	**3.91**	0.62	**3.80**	2.27
BOD (mg O2/l)	**0.75**	0.07	**0.65**	0.07	**1.90**	1.56
Suspended Solids (mg/l)	**4.60**	1.98	**3.35**	0.21	**4.40**	1.27
Dissolved oxygen (mg/l)	**9.65**	0.78	**10.80**	10.45	**10.10**	10.00

Table 11.30: Mean physiochemical water quality results at riverine survey sites on the Shean Upper Stream (sites 1 & 2) and the Blarney River (site 3).

Lake physiochemical results

Composite physiochemical water quality samples were collected from Clogheenmilcon Fen Lake from the western (site A), central (site B) and eastern basin (site C) (Figure 11.18). The results are summarised as mean values between the three sampling areas for the September and November sampling periods (Table 11.27).

The pH levels were circum-neutral (7.00 & 7.21, respectively) and lower than expected for a higher alkalinity lake (i.e. 86.33 & 92.67 mg $CaCO_3$/l for September and November respectively). The pH may be lower because of humic peat influences in the basin. The higher alkalinity by contrast likely reflects the Waulsortian Limestones and Shales that underly the lake basin (GSI data).

With regards nutrients, levels of total phosphorus were very high with recorded means at 0.13 and 0.22mg P/l respectively for September and November 2023 (Table 11.27). Therefore, the lake failed considerably to achieve good status as required in the European Union Environmental Objectives (Surface Waters) (Amendment) Regulations 2019 (S.I. 77/2019) (i.e., good status is ≤0.025mg P/l).

The chlorophyll a concentration at the time of sampling during September and November 2023 were 10.87 & 4.41µg/l respectively, thus indicating upper mesotrophic conditions overall (8-25µg/l; according to OECD, 1982). However, it should be noted that lake trophic status is only reliably calculated from annual maximum values of chlorophyll a, total phosphorus and water transparency (Secchi disc depth) across ≥10 samples during months with the greatest planktonic growth (O'Boyle *et al.*, 2019).

According to the EPA there are currently no environmental quality standards for nitrate, however, average nitrate concentration values less than 4 mg/l NO_3 (0.9 mg/l N) are considered by the EPA to be indicative

of good quality water (EPA, 2022). The recorded levels are therefore indicative of eutrophic conditions with levels recorded at 4.2 and 4.83 mg N/l respectively (Table 11.31).

Parameter	28th September 2023		9th November 2023	
	Mean	STDEV	Mean	STDEV
pH	**7.00**	0.13	**7.21**	0.27
Alkalinity (mg CaCO3/l)	**86.33**	11.55	**92.67**	8.39
Conductivity @25°C (µS/cm)	**319.67**	40.62	**336.33**	33.31
Total Ammonia (mg N/l)	**0.16**	0.12	**0.09**	0.07
Ortho-P (mg P/l)	**0.12**	0.08	**0.06**	0.03
Total P (mg P/l)	**0.22**	0.13	**0.13**	0.02
Total Oxidised Nitrogen (mg N/l)	**4.20**	2.28	**4.83**	0.47
Chlorophyll a (µg/l)	**10.87**	3.64	**4.41**	3.36
Suspended Solids (mg/l)	**5.50**	2.78	**15.50**	22.95
Dissolved Oxygen (mg/l)	**7.93**	0.76	**8.53**	0.60

Table 11.31: Mean physiochemical water quality results on the 28th of September 2023 & 9th November 2023 at Clogheenmilcon Fen Lake for composite samples A, B and C.

Summary of Water Quality Data

Summary of Biological Water Quality

The biological water quality collected at the three survey sites on the Shean Upper Stream and the Blarney River collected over two time periods on the 28th September and 9th November failed to attain target 'good status' water quality (≥Q4; EQR ≥0.8) as required under the Water Framework Directive (2000/60/EC). Water quality on the Shean Upper Stream at the Blarney Business Park was of poor status (**Q3**) but improved near the confluence point of the stream with Clogheenmilcon Fen Lake. At this location moderate status (**Q3-4**) biological water quality was recorded. The poor water quality in the upper catchment at the Blarney Business Park can be attributed to storm drain pollution that is a known threat to water quality in the sub-catchment (EPA, 2023). Evident storm drain inputs were visible in this area from the site visit where discoloured water was observed entering the stream. A single biological water quality sample was collected on the Blarney River at site 3 downstream of its confluence with the Shean Upper Stream. Poor status (**Q2-3**) water quality was recorded at this site which had the worst water quality of all three riverine survey sites. However, the recorded Q rating was tentative given the absence of suitable riffle and or shallow glide habitat. Nonetheless, hydromorphological impacts, i.e. straightening and deepening of the channel as part of historical drainage works had impacted the rivers natural flow regimes. Furthermore, significant pollution impact potential (PIP's) from diffuse phosphorus at pastures south of Clogheenmilcon Fen have been identified by the EPA. Collectively these pressures have placed the Martin_040 sub-catchment 'at risk' of not meeting the 2027 WFD targets. Unfortunately, rivers suffering from water quality decline are also at risk of losing the rarest invertebrate species that are strongly associated with natural river channel form with associated good or high-status water quality. In the current survey no rare invertebrate species (Feely *et al,*. 2020; Kelly-Quinn *et al.*, 2012; Foster *et al.,* 2009) were recorded in the Q samples collected which may be consequential of the observed poor water quality and associated hydromorphological pressures.

Summary of Physiochemical Water Quality

The riverine physiochemical water quality results largely aligned with the Q sampling results in identifying pollution pressures. Site 1 on the Shean Upper Stream and site 3 on the Blarney River had the poorest physiochemical water quality with observed spikes in total ammonia and total phosphorus. All three survey areas also had elevations in nitrates and phosphate that did not align with good status water quality targets. The most significant eutrophication pressures were observed at site 3 on the Blarney River. Overall, the physiochemical results would support the pollution impact potential (PIP's) documented by the EPA in their surveillance monitoring from diffuse phosphates and nitrates in the Martin_040 catchment. These pressures are associated with diffuse agricultural sources associated with intensively managed pastures in addition to free draining soils where nutrient loss is highest.

11.4 Impacts of the Proposed Development

11.4.1 Types of Impacts to be considered

In the absence of mitigation measures, the project could have a range of potential impacts on the ecological receptors within the zone of influence of the proposed project during the construction and operation phases. The categories below describe the possible impacts which may occur through development onsite. These impacts are further assessed considering desktop and field survey data.

Physical Damage/ Habitat Loss

Physical damage includes the degradation to, modification, fragmentation or loss of habitats. Direct physical damage of habitats could occur within working areas of the proposed project and along access routes where construction works are undertaken. Physical damage of habitats can also be an indirect impact and could occur, for example, through the introduction of fine sediments into an aquatic system, causing changes to the particle composition of the benthic habitats. Physical damage may be temporary or permanent in nature.

Disturbance

Disturbance can cause sensitive species to deviate from their normal and preferred behaviour, resulting in stress and increased energy expenditure. Disturbance can result in species being displaced from suitable habitat areas that provide areas for feeding and foraging, commuting routes, and resting and breeding sites. Physical disturbance of species can also result in direct mortalities of species and thus, disturbance impacts can be both direct and indirect and may be temporary or permanent in nature. Examples of direct disturbance includes activities such as damage to a breeding or resting site of a protected species, e.g. a bat roost, badger sett or otter holt. Indirect disturbance may result from the presence of works crews and personnel on site during construction, noise emanating from a construction site or artificial lighting of a bat foraging area, causing bats to avoid the area.

Changes in Water Quality

The release of pollutants to water can impact upon the relevant waterbodies and the species they support. This can result in impacts such as increased turbidity of the water column, a reduction in photosynthesis, contribution to eutrophication and changes to the species composition of the system as a result. The degree of impact depends on the type of pollutant released and the nature of the receiving receptor. For example, the release of fine sediments to a stream or river is likely to cause siltation of the riverbed and interrupt the functioning of species, from aquatic plants to macroinvertebrates to fish, and larger predators that depend on these biotic groups as a food supply, e.g. otter and kingfisher. Impacts to water quality could be temporary in the form of surface water runoff during construction, or permanent in the form of a continued discharge impacting negatively on the receiving environment during the operation of the project.

Dispersal of Invasive Species

Non-native invasive species can have negative impacts on biodiversity. Negative impacts of non-native invasive species on native biota occur through competition, predation, herbivory, habitat alteration, disease and genetic effects such as hybridisation. In the cases of non-native invasive species, the main impacts are a reduction in species diversity due to dense plant growth, heavy shading and disruption of trophic levels. These species can potentially be spread via plant fragments and soil containing plant material, and by vectors such as machinery and personnel.

11.4.2 Do Nothing Scenario

The new EIAR provisions require consideration of the 'do-nothing' scenario (as set out in EIAR Guidance published by the EU in 2017 (EU, 2017; EPA, 2022). This should consider how the conditions on the site might evolve in the absence of the proposed development being progressed. In the short-term it is assumed that the development site (Phase 2) would continue to be maintained as agricultural grassland / arable land. Woodland areas and hedgerows / treelines on site are likely to continue to be managed in line with ongoing farming practices on the land. As grazing intensity is low at present, some level of scrub expansion is likely around the boundaries of the site.

Due to the site's proximity to the towns of Blarney and Tower, as well as the majority of the Phase 2 development site being proposed for zoning as ZO 02 New Residential Neighbourhoods in the City Development Plan 2022-2028, the site of the proposed development lands is likely to be considered for development again in future phases. Other lands within the Phase 2 Ringwood development boundary are zoned ZO 20 City Hinterland, ZO 15 Public Open Space, and Long Term Strategic Development Lands (refer also to Section 6.3.15 of the EIAR).

11.4.3 Construction Phase

A detailed outline *Construction and Environmental Management Plan* (MHL, 2025a) has been prepared and accompanies this application. This and the *Planning Engineering Design Report* (MHL, 2025b) should be read in combination with this assessment.

Designated Sites

Potential negative impacts on European sites are discussed in the accompanying Appropriate Assessment Screening Report for Ringwood LRD (AtkinsRéalis, 2025). As noted, the proposed development is not located within the boundaries of any European site. There will be no direct impacts to European sites, i.e. no land take or the permanent removal of habitat supporting qualifying interest and ecological features of the designated sites.

The Shean Upper Stream flows within the site of the proposed development; located within the catchment of the River Lee (via the Shean Upper – Blarney River – Shournagh River – River Lee). The site at Ringwood is 14.2km from Great Island Channel SAC and 9.7km from Cork Harbour SPA (straight line distances; distance along watercourses is significantly longer; c. 21km downstream to Cork Harbour SPA and c. 26km downstream to the Great Island Channel SAC). Most surface waters discharged from the site will be to the Shean Upper Stream, within the east of the site, with a portion of the site discharging to the River Martin to the west of the site of proposed development. The approach to surface water drainage and attenuation as well as the proposed sustainable urban drainage systems to be used in this project are set out in full the accompanying *Drainage Impact Assessment. SUDS Statement* (MHL, 2025c), as well as in the *Green and Blue Infrastructure. Landscape Design Rationale* (CSR, 2025a). Refer also to Chapter 15 – Water of the EIAR.

As noted above, the site of the proposed development is hydrologically connected to Cork Harbour, within which these designated sites are located. As discharges to the drainage network will ultimately reach Cork Harbour, the Screening for Appropriate Assessment of Ringwood LRD considers the potential for impacts to surface water and groundwater water; this in turn informed by the design of the surface water management systems on site (see e.g. MHL, 2025a, b & c).

The farmland on the site of the proposed development is dominated by improved agricultural grassland and some arable (most recently maize). While the grassland areas might be used for ex-situ foraging of a number of species for which Cork Harbour SPA has been designated (e.g. Curlew, Oystercatcher, Black-tailed Godwit, Lapwing, and Golden Plover), no notable field feeding by qualifying interests of the SPA was noted were recorded during winter bird surveys (November, December 2023 and January, February 2024). The site experiences frequent disturbance by walkers with dogs. Evidence of off-road motorbikes was also noted during winter 2024 site visits. Predatory buzzard was also recorded close to the site of the proposed development. Disturbance and subsequent displacement of ex-situ field feeding birds is therefore not anticipated. Annex I habitats for which the Great Island Channel is designated as an SAC are coastal in nature and do not occur within or in proximity to the site of the proposed development. Closest example of these habitats (mudflats and Atlantic salt meadows) occurs within Cork Harbour downstream of the proposed development (>21km downstream).

In summary, for the reasons set out in detail in the Screening Report, having regard to the location, nature, extent and duration of the proposed development, the site of the proposed development will not have adverse effects on any European site, including Great Island Channel SAC or Cork Harbour SPA.

Habitats

The site of the proposed development is within an area dominated by improved agricultural grassland (GA1) with some arable land (BC1) and woodland (including a complex of WN6, WN4 & WD1) on the northern and eastern side of the Ring Wood. GA1 and BC1 habitat are described as being of negligible ecological value and their loss will not represent a significant ecological impact. Located within the proposed Phase 2 development boundary, the area of mixed WN6-WN4-WD1, including a core of WN6 wet woodland along the stream, is identified as being of local importance (higher value) and is of significant ecological value within the site. Potential impacts on this woodland are expanded upon below.

A total length of 313 linear m of hedgerow will be removed to facilitate the construction works for the proposed development: predominantly from the eastern boundary between the wet woodland and agricultural grassland as well as from hedgerow representing boundary lines within the existing agricultural fields within the site. This loss will be replaced with 665 linear m of hedgerow planting. 53 no. existing trees are also to be felled as well as removal of 2,185m^2 of woodland; these will be replaced with 303 no. street trees, 126 no. open space trees, 141 no. garden trees, 342 no. trees within SuDS Amenity / Biodiversity Area, 122 no. screening trees and 86 no. trees planted as compensation for loss of wet woodland (refer to Landscape Masterplan and *Landscape Design Rationale* (CSR, 2025a) which accompanies this application; as well as the *Tree Survey* report (CSR, 2025b)).

NE Woodland

As noted above, the proposed development will have a direct impact upon woodland habitats within the site, the northeastern woodland is a complex of WN6, WN4 & WD1, with older trees along the boundaries. The impact, however, is restricted to the western boundary away from the core areas of WN6. This habitat is noted to be of local importance (higher ecological value) given how it provides important woodland habitat as well as connectivity for birds, bats and mammals to the wider landscape and loss within the site would be a significantly negative impact at the local level, most notably as a potential for reduction in landscape connectivity should the access track eventually be extended further to the northeast.

Several mature trees along the western edge of the woodland will be affected by the road alignment and associated roadside embankments. These are detailed in a specialist arborist's report which accompanies this submission[27], the key details of which are summarised below.

The total no. of trees to be removed = 15 no., four of which are already in poor condition and recommended for removal. These are summarised as follows:

- A1 Category Trees = 4 no.
- A2 Category Trees = 4 no.

[27] Cunanne Stratton Reynolds (2024). *Tree Survey Report. Phase 2 Ringwood, Station Road, Blarney, Cork.*

- B1 Category Trees = 3 no.
- U Category Trees = 4 no.
- 7 no. Oak trees are affected; 3 A1, 3 A2 & 1 B1 category
- 1 no. Beech tree is affected; A1 category tree

The remainder of the trees are Ash, Spruce and Sycamore Re-alignment of the road has resulted in less encroachment and a significant reduction in the number of mature trees affected (15no. in comparison with 46 no. originally impacted).

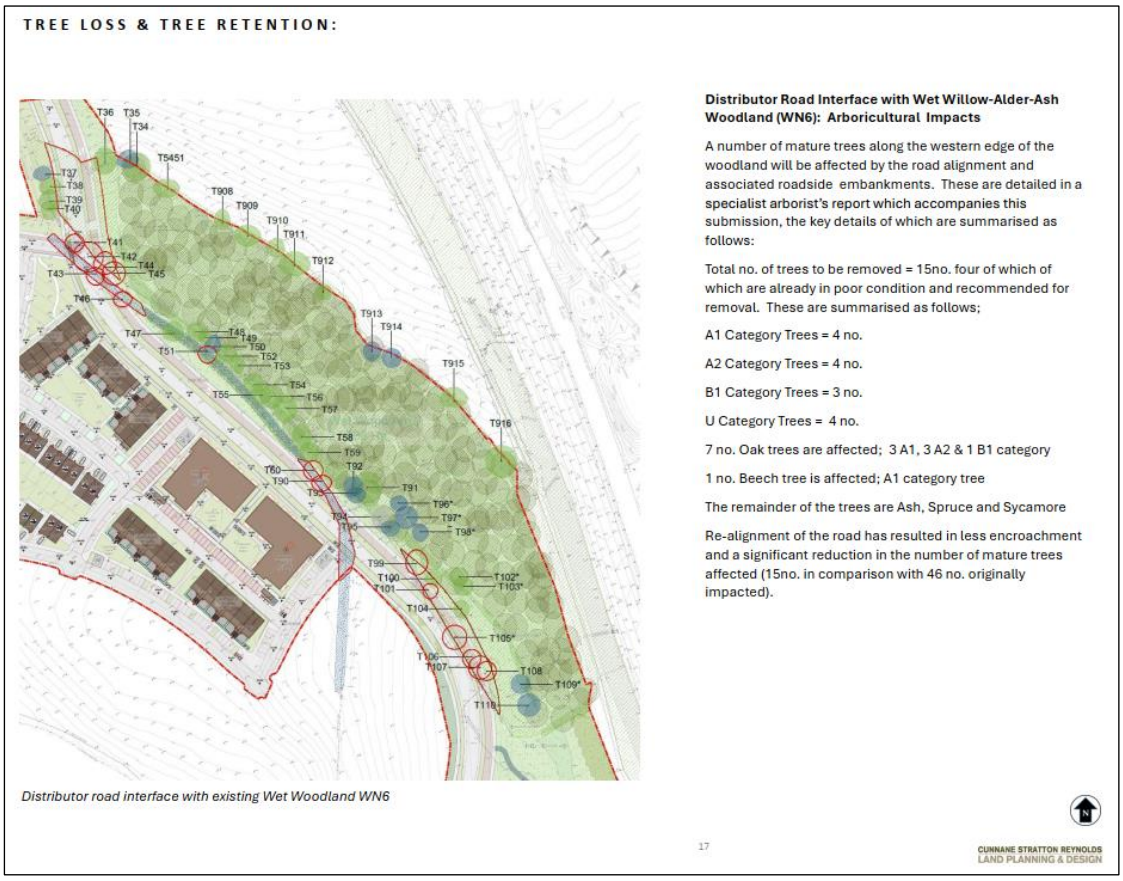


Figure 11.19: From Landscape Planning & Design Report, CSR, 2025a.

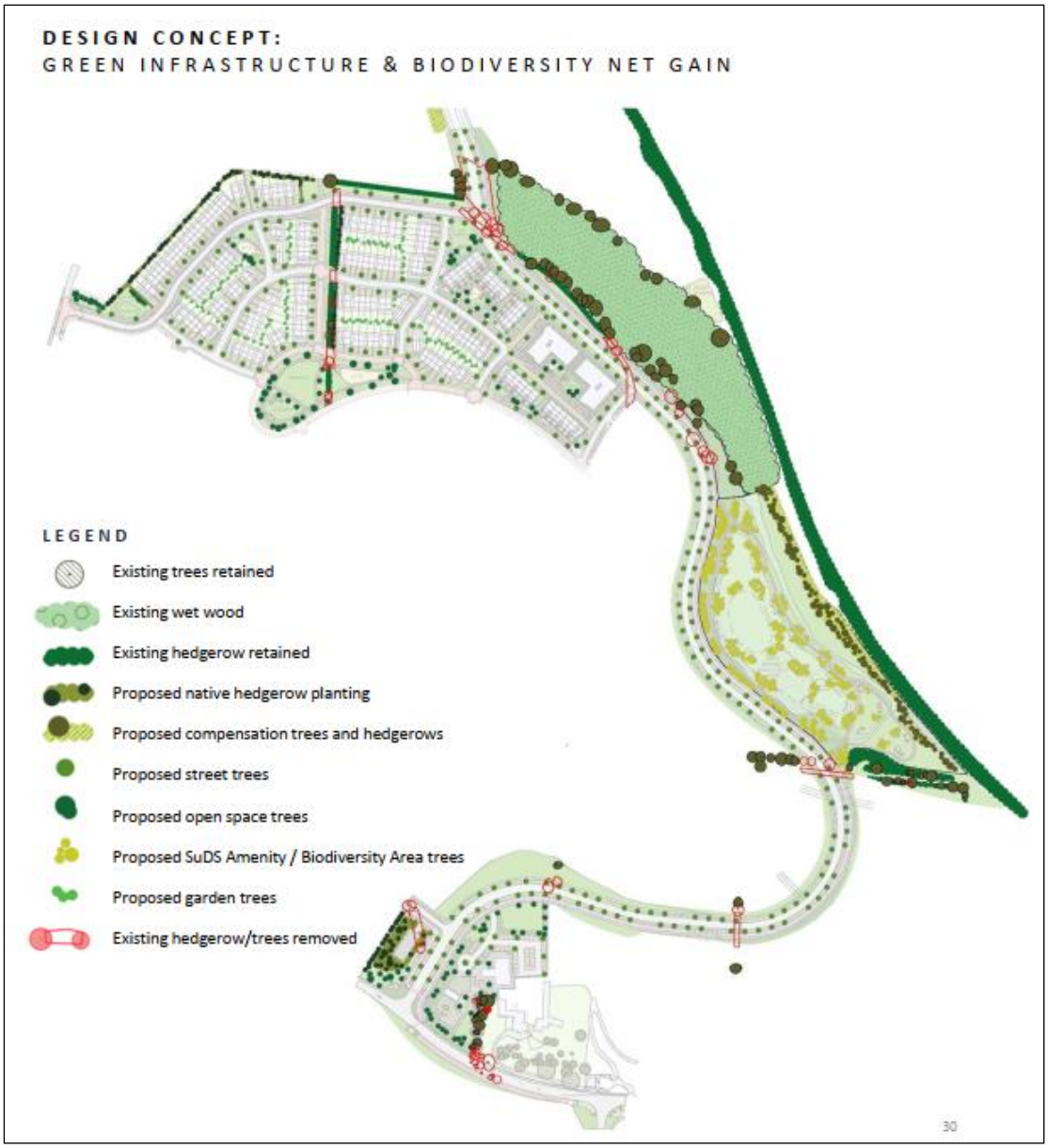


Figure 11.20: From Landscape Planning & Design Report, CSR, 2025a

Hedges and treelines provide an important linear habitat within the local area and provide connectivity to areas of woodland in the landscape around Blarney for a variety of species (notably bats). While hedges occur frequently in rural Cork settings, they are becoming less common in suburban areas and urban fringes. Therefore, given the continued development in the Blarney area, this habitat is considered as being of local importance (higher ecological value). Its loss within the site would be significant negative impact at the local level most notably as a loss of landscape connectivity.

As noted above, the proposed development will have a direct impact upon woodland habitats within the site, the northeastern woodland is a complex of WN6, WN4 & WD1, with older trees along the boundaries. This habitat is of local importance (higher ecological value) given how it provides important woodland habitat as well as connectivity for birds, bats and mammals to the wider landscape and loss within the site would be a significantly negative impact at the local level, most notably as a potential for reduction in landscape connectivity should the access track eventually be extended further to the northeast.

A surface water pipe is to be constructed running eastwards to the Shean Upper Stream. This will stop short of the stream. This will allow the drainage system to tie it in with the proposed "outer-zone" attenuation basin (per IFI guidance) for the Phase 2 of the proposed scheme (MHL, 2025c). Thus, other than works in areas of GA1 on the approach to the stream there will be no instream works or works on the riverbank; thus, no direct impacts to the Shean Upper stream (FW4).

There are no habitats on site of greater than local value. No ecological features of regional, national or European importance will be directly impacted by the proposed development. The habitats are therefore assessed overall as important at a Site level and the effect of the habitat loss during the construction phase of the development will be significant at Site level only.

Flora

No rare or protected plant species were recorded within the site of the proposed development. No negative ecological impact to rare or protected plant species are therefore predicted.

Fauna

There are no significant terrestrial mammal species or features such badger setts or otter holts located within the site of the proposed development. An active out-lying badger sett is located to the south within the wider Ringwood site however this lies outside Phase 2 boundary c. 250m straight-line distance. The entrance to the sett is located outside our site boundary adjoining an area of coniferous woodland (WD4). The approach taken to green infrastructure / landscaping is to provide a wooded corridor along the southern and eastern side of the Ringwood site to provide a continuous ecological corridor north to woodland bordering the eastern side of the site. There is, however, potential for disturbance of badger using the wider site during construction and impacts on badgers will be considered in more detail as part of any further development proposals. One notable observation was of mink, an invasive mammal species, this was recorded on a single occasion on the trail cameras.

There will also be no direct impacts arising from the proposed development to the Shean Upper Stream (FW4) or to wet drains on the south-eastern corner of the Ringwood land parcel which might support aquatic species such as Common frog. Otter was not recorded using the river corridor.

Overall, the community of animals using the site of the proposed development is local importance (low ecological value). Significant negative ecological impacts within the site of the proposed development are not anticipated. Negative impacts to fauna will be restricted to within the development site and to species common in the wider landscape. The effect on fauna during the construction phase of the development will therefore be significant at Site level only.

Bats

This section provides an assessment of potential impacts of the Proposed Residential Development during the construction phase, in the absence of mitigation.

Loss of Roosting Habitat

The proposed development will require the removal of 1 no. tree with moderate potential roosting features (no bats are currently roosting at this location). It is also proposed to renovate and modify a stone outbuilding at the south of the site that is suitable to support small numbers/ individual roosting bats. There is potential for the proposed development to result in the loss of roosting habitat. If the works are timed inappropriately, there is potential for direct impacts on bats, this would be a significant adverse effect at the local level.

Loss of Foraging and Commuting Habitat

The results of the bat activity survey undertaken for the proposed development indicate that the footprint of the Phase 2 site supports four species of foraging and commuting bat, namely soprano pipistrelle, common pipistrelle, Leisler's, and brown long-eared bat; three further species were recorded in Ring Wood adjacent to the southern site boundary: Natterer's, whiskered, and Daubenton's and lesser horseshoe bat.

Hedgerows and woodland edge habitat at the proposed site provide foraging and commuting habitat for bats. The landscaping proposals include the retention of most of the hedgerows at the site and Ringwood adjacent to the southern site boundary. However, the loss of trees and hedgerows to facilitate the construction of access roads will result in a minor reduction in available foraging and commuting habitat.

With the successful implementation of the landscaping plan to retain hedgerow habitat, plant compensatory woodland at the north and east of the site and further planting of native tree species in a wetland amenity area at the east of the site, the proposed development would result in minor adverse effects on local populations of bats.

Lighting

Woodland edge and hedgerow habitats provides important flyways and feeding sites for a diversity of bats. Artificial lighting at night may have an adverse effect on foraging bats as light-averse bats may be repelled from lit areas and restrict their use of commuting or feeding space. In the absence of mitigation, disturbance of bats due to lighting used during the construction phase, should it be required, would have an indirect, significant negative effect at the local level. The effect would be temporary and would persist for the duration of construction.

Aquatic Ecology / Water Quality

As noted, surface waters from the bulk of the site will drain west to existing drainage infrastructure and discharge to the River Martin with some drainage to the east to the Shean Upper Stream. Refer to the accompanying *Drainage Impact Assessments. SuDS Statement* (MHL, 2025c) which sets out the sustainable urban drainage system to be implemented as part of this scheme. The potential for impacts to water quality are further assessed in Chapter 15 – Water of the EIAR.

As part of Phase 1, a surface water pipe is to be constructed running eastwards to the Shean Upper Stream. This will stop short of the stream. This will allow the drainage system to tie it in with the proposed "*outer-*

zone" attenuation basin (per IFI guidance) for the Phase 2 of the proposed scheme (MHL, 2025c). Surface waters will therefore discharge diffusely to the Shean Upper Stream which connects to Blarney Bog pNHA / Blarney River, which joins the Shournagh River, a tributary of the River Lee. Other than works in areas of GA1 on the approach to the stream there will be no instream works or works on the riverbank; thus, no direct impacts to the Shean Upper stream (FW4).

There will be no direct impacts to other wetland habitats such as Clogheenmilcon Fen (Blarney Bog) which is located to the south of the R617 / N20. While surface waters are to be discharged to the River Martin west of the site no physical works on or close to the River Martin are required.

Construction works can generate significant volumes of silt-laden waters which can negatively impact up receiving waters and aquatic ecology. The Shean Upper Stream lies within the Phase 2 proposed development site boundary. Only the eastern part of the site of the proposed development would drain towards the Shean Upper (see Figure 7.1. Contributing Areas in MHL, 2025c). Apart from the opening in the hedge which is to be made to construct the surface water pipeline, the eastern boundary of site of the proposed development is separated by a hedge and 150m of agricultural grassland from the stream. Significant negative impacts on the stream through the escape of silt-laden waters are not therefore anticipated.

11.4.4 Operational Phase

Designated Sites

Potential negative impacts on European sites are discussed in the accompanying Screening for Appropriate Assessment of Ringwood LRD (AtkinsRéalis, 2025). As noted, the proposed development is not located within the boundaries of any European site. There will be no direct operational impacts to European sites. Potential indirect impacts on water quality are discussed further below.

Habitats

The key risk of operational damage to habitats is linked to a potential increase in recreational / amenity pressures on Ringwood, dumping of garden wastes on semi-natural habitats or damage through antisocial behaviour. If left uncontrolled this could result in deterioration of woodland habitat quality and diversity within both the Ring Wood and wet woodland to the northeast, habitats of local importance (higher value) (see 11.3.3.); including the risk of introduction of invasive plant species. A Woodland Management Plan has been prepared by NewGen Forestry for Ringwood and accompanied the Phase 1 planning application (NewGen Forestry, 2024).

Fauna

The key feature to be considered with respect to operational impacts is a badger sett which is present just outside the southern boundary of the Ringwood land parcel (c. 250m from the site of the proposed development; location has been kept confidential to prevent it being vandalised). As noted, 2 no. badger were recorded using the sett (see Plates 11.9 to 11.11 inclusive). Snuffle holes were noted in adjoining grassland in 2021 however these observations lay outside the boundary of the proposed development site. Observed mammal paths and signs of movement appeared to be predominantly southwards into neighbouring woodland however paths orientating west, east and northeast also occurred. The neighbouring southern woodland was recently felled but has been replanted. Clogheenmilcon Fen (Blarney Bog), a large area of semi-natural habitat, is located to the south of the R617 / N20 south of the site. Movement of animals along the southern and eastern boundaries of the wider Ringwood site, including along the stream corridor will not be prevented (Shean Upper Stream lies to the east within the Phase 2 proposed development boundary). Furthermore, access from the south by badger to Ringwood (south of the proposed development) and woodland on the eastern boundary of the wider Ringwood lands will not be prevented.

As noted above there may be an increase in levels of human disturbance due to an increase in recreational / amenity pressures on Ringwood and northeastern wet woodland, dumping of garden wastes on semi-natural habitats or damage through antisocial behaviour. However, based on the character of the site and its fauna, the disturbance effect arising from the proposed development on fauna during the operational phase of the development is predicted to be negative only at Site level only. This would also apply to the bird community using the site.

In absence of any negative impacts to wetland habitats, negative impacts to amphibians such as Common frog are not predicted.

Bats

This section provides an assessment of potential impacts of the proposed development during the operational phase, in the absence of mitigation.

Lighting

There will be an increase in light levels within the proposed development area during the operational phase. Increased lighting may reduce the availability of feeding sites for bats and would be a long-term significant adverse impact at the local geographic scale.

Aquatic Ecology / Water Quality

The proposed surface water drainage system is set out in Chapter 7.0 of the accompanying Planning Engineering Design Report (MHL, 2025b). This sets out the Storm Water Management Plan for the proposed development at Ringwood and includes both sustainable urban drainage systems and attenuation tanks. The permissible outflow was calculated using the estimation method contained in the *Institute of Hydrology Report No.124: Flood estimation for small catchments*. Details of petrol interceptors

to be used are included in the *Planning Engineering Design Report* (MHL, 2025b); these represent a crucial trap designed to filter out hydrocarbon pollutants from rainwater runoff, preventing fuel contamination of streams that carry away the runoff. The proposed development has been divided into 3 no. catchment areas / attenuation tanks that eventually discharge to the public stormwater network/existing watercourses from the development (see Figure 7.1. Contributing Areas of MHL, 2025c). The proposed bypass interceptors from Conder Environmental also include a slit storage capacity in addition to the oil storage capacity that allow silt to be collected in the interceptor prior to discharge to the proposed attenuation tanks. SuDS measures are described in detail on Sections 7.4 to 7.9 of the accompanying *Planning Engineering Design Report* (MHL, 2025b).

There is no existing formal surface water network within the proposed development site. There is an existing 225mm diameter Cork City Council storm sewer running for a portion of the nearby Station Road to the south-west of the site. An existing wayleave / storm sewer runs parallel with Station Road, in close proximity with the site's western boundary. This storm run outfalls just south of the proposed new development entrance, out falling into the nearby River Martin.

As noted, the River Martin west of the site is a 4th order river and is known as the Manin on EPA Maps (EPA code: 19M01). Biological water quality at Putland's Br. (Waterloo) upstream of Ringwood was noted by Cork County Council to be Q4 Good in 2023 (on the MARTIN_030). Downstream of the site in Blarney (just d/s Blarney Br (Lower)) also recorded good water quality (Q4) though the data is old – from 1990. The River Martin immediately west of the site (MARTIN_040) is classified as being At Risk of not achieving WFD good status.

Chapter 15.0 Water concluded that "*Given the drainage design, use of SuDS measures and on-site treatment methods, and expected discharge rates from the site, the potential effect on surface water during operation is considered to be a long term, imperceptible effect, with a neutral effect on quality i.e., an impact capable of measurement but without noticeable consequences*."

With respect to foul water, Blarney Wastewater Treatment Plant (WWTP) is located approximately 2.5km southwest of the proposed site, at the confluence of the River Blarney and River Shournagh. Based on Uisce Éireann's (UE) 2024 Annual Environmental Report, the WWTP has a capacity of Population Equivalent (PE) of 13,000, while the current PE of its area is 10,150. A dedicated foul system has been provided as part of the proposed development. The design of this system is in accordance with the relevant guidelines and is shown on the drawings prepared by MHL. The foul system and surface water system are separate. A Statement of Design Acceptance from Uisce Éireann will be submitted as part of the application.

There are no EPA-licensed waste activities in the vicinity of the proposed development (e.g., waste facilities, Industrial Emissions Licensing (IEL), or Integrated Pollution Control (IPC) sites). No negative impacts to receiving water are predicted.

Air Quality & Ecology

The Air Quality assessment (Chapter 8.0) includes consideration of Ecological receptors. Sensitive ecological receptors considered included those which are sensitive to potential impacts from Nox, nitrogen deposition and ammonia specifically Ardamadane Wood. A risk assessment of dust emissions

arising from construction activities in relation to the Proposed Development was completed in accordance with the IAQM – *Guidance on the Assessment of Dust Emissions from Demolition and Construction* (IAQM 2024). The sensitivity of the area to ecological impacts was considered to be high.

In defining ecological receptors consideration was given to the potential occurrence of sensitive habitats, as set out in Institute of Air Quality Management guidance (Holman *et al*., 2020), and as described in the Air Pollution Information System (APIS[28]). No European site is located within 2km of the site of the proposed development. Ardamahane Wood pNHA, a woodland site to the west of the site of the proposed development, was identified as a potentially sensitive ecological receptor; ES01 (as defined in Table 8.13; see also Figure 8.1). Further receptors considered included i. woodland area to the south and ii. Woodland area to the east / northeast.

The sensitivity of the Area to Ecological Impacts (IAQM, 2024) is summarised in Table 8-16. Risks associated with dust emissions causing exposure to ecological impacts with no mitigation measures implemented is also summarised in Table 8.18.

- The risk of an ecological impact due to trackout is medium risk.
- The risk of an ecological impact due to construction is medium risk
- the risk of an ecological impact due to earthworks is high risk.

To mitigate these risks best practice dust mitigation measures, appropriate for the proposed development will be implemented to ensure there are no significant impacts at nearby sensitive receptors. Measures are outlined where avoidance and mitigation actions will be put in place to reduce the impact levels such as wind breaks, barriers and frequent cleaning and watering of the construction site roads, further mitigation measures are detailed in Section 8.7. Provided the dust minimisation measures outlined in the dust management plan are adhered to, the air quality impacts during the construction phase will likely not be significant. The DMRB screening air dispersion model from the U.K Highway Agency Design Manual for Roads and Bridges Air Quality Assessment was used to assess the impact of increased traffic movements associated with the development. Projected transport figures from Systra Group were used to predict the concentrations of traffic-derived pollutants in future years. Sensitive residential receptors are shown in Figure 8.2. The results of the impact assessment arising from increased transport for these receptors are presented in Table 8.20, 8.21 and 8.22.

The operational phase of the proposed development has the potential to result in an impact on local air quality as a result of the increased traffic movements associated with the proposed development – this is discussed in Section 8.6.2 of the Air Quality chapter.

Receptors were considered along a transect line at 10m intervals commencing from the nearest point of the sensitive habitat to a distance of 200m (in line with TII guidance; as set out in TII, 2022). Parameters considered included NOx, nitrogen deposition and ammonia, as these parameters have been demonstrated to have negative impacts on certain types of sensitive habitats (as per APIS; Holman et al., 2020; CIEEM, 2021; EPA, 2023). The findings of this assessment are set out in Section 8.6.2 of the chapter and should be referred to. The findings were summarised as follows: "Due to the dominance of

[28] https://www.apis.ac.uk/

background concentrations in the modelled results, almost entirely attributable to agriculture, and the low concentration of the Do-Something Scenario PC to the critical load / level defined by the EPA IN1 (EPA, 2023), the effects of traffic to related to the proposed development on ecological receptors are considered not likely and not significant".

Additional ecological receptors, in the form of Blarney Bog pNHA (site code 001857) were also included when considering potential cumulative effects (see Section 8.8.2 - Potential Cumulative Operational Effects on Ecological Receptors). Blarney Bog pNHA, which is within 200m of the R617 / N20 was considered due to the potential for traffic changes at the N20 Interchange adjoining the site, due to proposed developments at Ringwood. As was the case for Ardamahane Wood pNHA, findings are summarised for NOx, nitrogen deposition and ammonia. The effects of cumulative emissions on the ecological receptors were predicted to be not likely and not significant.

11.5 Mitigation Measures

11.5.1 Construction Phase

Habitats / Flora

The extent of vegetation clearance will be limited to the area required to facilitate construction. All vegetation, including hedgerows/treelines, woodland and other semi-natural habitats, not required to be cleared should be fenced off as part of site preparations and protected/managed as per the landscape specification during construction.

In particular, mature trees shall be retained and protected wherever possible, with felling being a last resort only to be used where absolutely necessary to facilitate construction. Landscaping proposals are discussed under Section 11.5.2., below.

NE Woodland

The design of the proposed access road has gone through several iterations to minimise negative impacts on the north-eastern woodland. This included i) moving the crossing point to the northerly extent of the woodland to prevent woodland severance and ii) re-design of the access road to minimise the interface between the woodland and the proposed access road. However, as potential impacts cannot be entirely avoided, a series of appropriate mitigation measures are being designed.

A planting scheme aimed at mitigating loss of woodland / trees has been developed by the landscape architect in consultation with project ecologists for lands immediately south of the north-eastern woodland. This area has been chosen as it would extend the north-eastern woodland further to the south further reinforcing a woodland corridor along the eastern side of the site (which includes landscaping along the N20) and providing greater ecological connectivity with woodland outside the southern site boundary and to Blarney Bog pNHA beyond.

This area is also to be used for the creation of Sustainable Urban Drainage wetlands (SuDS). The approach to planting will therefore include:

- Wet woodland option in / around the proposed SuDS wetlands focusing on trees such as Alder (Alnus glutinous).
- Planting of trees along the fringes of the access road / SuDS wetlands in clusters (following the Miyawaki tree planting methods[29]).
- Planting of oak trees between the wetlands and the boundary woodland in order to replace any felled oak trees in time and create an oak based native woodland.
- Trees such as alder will mature in the short-medium term, while oaks will take longer (long term) to replace those lost to facilitate construction of the proposed access road.

No further mitigation measures are proposed for habitats and flora.

Invasive Species

While no species listed on the 3rd Schedule of the Natural Habitats Regulations or EU IAS Regulations, were recorded, if planning is granted it is possible that a number of years would elapse before any site works would be undertaken. Therefore, a pre-construction invasive alien plant species (IAPS) survey should be undertaken to determine if any such species are present on site; to identify their precise locations and extents of all IAPS on site, the Contractor's ecologist will map the distribution and extents of all IAPS within and adjoining the red-line boundary and prepare an IAPS Management Plan, taking into account:

- The specific IAPS present and the scale and extent of infestation,
- The sensitivity of the local environment,
- The growth stage/season of the plants, and
- The construction sequence/programme.

The IAPS Management Plan will be prepared in agreement with the Employer or the Employer's Representative and in accordance with the following:

- TII (2020a) *The Management of Invasive Alien Plant Species on National Roads – Standard. GE-ENV-01104. December 2020*. Transport Infrastructure Ireland, Dublin.
- TII (2020b). *The Management of Invasive Alien Plant Species on National Roads – Technical Guidance. GE-ENV-01105. December 2020*. Transport Infrastructure Ireland, Dublin.

The following shall be implemented during the construction stage (including advance works):

- The IAPS Management Plan will be implemented by the Contractor with the advice and assistance of their ecologist.
- The 'toolbox talk' for all persons entering the site will include an overview of the IAPS present on site, their identification, the importance of controlling them/preventing their spread, and the responsibilities of site staff in avoiding any spread of IAPS.

[29] See e.g. https://treecouncil.org.uk/wp-content/uploads/2023/08/SOF-TOW_Miyawaki-Method-Handbook-KCC-Aug-23.pdf

- The Contractor will ensure that all vehicles, plant, equipment and PPE intended for use on site are dry, clean and free from debris and plant material prior to being brought to site.
- A dedicated and clearly marked cleaning facility/wash-down area will be strategically placed in a contained area on site for use by staff, vehicles and machinery.
    a. All vehicles and equipment that have been used in a contaminated zone will be thoroughly pressure-washed in the wash-down area each time they leave site and once work in that zone is complete. This includes footwear, personal protective equipment (PPE), tools, and other light equipment.
    b. This facility will be located at least 20m from any watercourse and be appropriately bunded to prevent run-off.
    c. Material gathered in this facility will be appropriately stockpiled and treated along with other contaminated material.
- Soil management during the works will be in accordance with Section 5.5 of NRA (2006b).
- All imported materials (e.g. fill and topsoil) will be sourced from licensed suppliers who shall certify that in advance of delivery that any such materials are free from IAPS material, especially propagules such as seeds or rhizome fragments.
- The Contractor will implement appropriate controls on the movement of machinery and materials in IAPS-contaminated zones.
    a. Where it is necessary to work in contaminated zones, every effort will be made not to use vehicles with caterpillar tracks.
    b. Vehicles leaving contaminated zones will be confined to marked haulage routes protected by root barrier membranes or be pressure-washed before leaving the zone.
    c. Any Ash trees or fallen Ash branches or leaf litter to be removed will be assumed to be infected with *Hymenoscyphus fraxineus*, the causal agent of 'Ash dieback disease'. Any Ash material arising will be stockpiled appropriately and disposed to a licenced landfill, along with all other IAPS-contaminated material.
- In relation to stockpiling of IAPS-contaminated material:
    a. Any such material will be stockpiled separately from other material and clearly marked as contaminated.
    b. The length of time for which such material is stored on site will be kept to a minimum.
    c. Measures will be implemented to prevent any run-off from stockpiles of contaminated material which could convey IAPS propagules to watercourses.
- Only vehicles that are deemed to be bio-secure (i.e. sealed so that no soil can escape) will be used to transport IAPS-contaminated material and will be thoroughly pressure-washed in the wash-down area before leaving site.
- The Contractor's ecologist will oversee and keep a record of the implementation of the IAPS Management Plan and all works relating to IAPS, as per TII (2020a, b). In particular, they will:
    a. Inspect the demarcation and signage of contaminated zones, the cleaning/wash-down facility and IAPS material stockpiling area prior to their use,
    b. Directly supervise and document all IAPS removal works,
    c. Carry out weekly inspections of the site for compliance with the biosecurity measures detailed in the IAPS Management Plan, and
    d. Provide monthly updates to the Employer or the Employer's Representative on the implementation of the IAPS Management Plan.

In addition, the proposed development and adjoining areas will be monitored for regrowth of IAPS for a minimum of 2 years. Any regrowth of treated IAPS will be accurately mapped and reported to Cork City Council. The removal of IAPS may be considered successful after two consecutive growing seasons with no sign of regrowth from the removed stands.

Aquatic Ecology / Water Quality

A Construction Environmental Management Plan (CEMP) has been written by MHL for the proposed development. The CEMP will assist the contractor in preventing, minimising, or managing environmental effects during the construction phase of the development. The CEMP was designed in accordance with standard best practice guidance outlined in the following:

- 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); and
- Environmental Good Practice on Site (3rd edition) (C692).

Detailed control measures are set out in Section 15.5.2 of the Water chapter.

Terrestrial Mammals

Based on the results of the desk studies and field surveys undertaken to inform this chapter on biodiversity there are no bat roosts or any breeding or resting places of other protected mammals within or immediately adjacent to the proposed development and, therefore, there is no requirement for any licences under either Section 23 of the Wildlife Act or Regulation 54 of the Habitats Regulations.

However, due to the presence of an active badger sett to the south of the Phase 2 proposed development boundary and the mobility of such species and consequent potential for changes in their distribution in the time between the surveys which informed this chapter on biodiversity the granting of any planning permission and commencement of construction, the following pre-construction surveys will be undertaken in advance of any works commencing on site (including preparatory works):

- Identification of any breeding or resting places of protected non-volant mammals, e.g. badgers; and,
- Inspections for roosting bats at trees with potential bat roost features.

These surveys will be undertaken by a suitably qualified and experienced ecologist (appointed by the Contractor) and in the appropriate survey seasons. Inspections of potential bat roost features must be undertaken no more than 1-2 days prior to proposed felling.

Birds

To protect nesting birds and other wildlife, Section 40 of the Wildlife Act makes it an offence to "*cut, grub, burn or otherwise destroy, during the period beginning on the 1st day of March and ending on the 31st day of August in any year, any vegetation growing on any land not then cultivated*". *However, this does not apply to "the clearance of vegetation in the course of road or other construction works or in the development or*

preparation of sites on which any building or other structure is intended to be provided". Notwithstanding this, every effort shall be made to avoid cutting/felling trees or clearing vegetation during this period.

Where tree felling or vegetation clearance is necessary between 1st March and 31st August, a suitably qualified and experienced ecologist will inspect the trees/vegetation and identify any active bird nests present. Any active nests will be protected and surrounding cover not cleared until such time as the nest is no longer active, as advised by the ecologist.

Bats

Loss of Roosting Habitats

All trees scheduled to be felled shall be surveyed for potential or actual tree roosts 1-2 days prior to felling by a suitably qualified ecologist/ bat specialist. If no evidence of bat usage is found during the survey, development can commence. Should bats be found, development will be delayed, and a derogation license will be required from NPWS wildlife licencing section.

The outbuilding located at the south of the site shall be surveyed for the presence/absence of bats during the bat activity period (May to September) prior to the commencement of works. In the event that no evidence of bat usage is found during the survey, development can commence. Should bats be found, development will be delayed, and a derogation license will be required from NPWS wildlife licencing section.

Loss of Foraging and Commuting Habitat

The landscaping proposals include the retention of most of the hedgerows at the site. Ring Wood adjacent to the southern site boundary and the woodland at the north of the site. In order to protect foraging and commuting habitat, existing trees adjacent to the proposed construction area which will not be removed shall be protected from any accidental damage during construction through use of measures such as fencing. Protective fencing barriers will be installed as outlined in Section 6.2, Barriers and Ground Protection, of BS 5837. Measures shall be taken to ensure that trees and hedges being retained are incorporated into the development without being impacted upon. Protective fencing will be provided around trees and woodland vegetation being retained and this will enclose their Root Protection Areas (RPAs). The fencing will be at least 2.3m.

To mitigate for the loss of trees and hedgerow, the proposed landscaping plans incorporates the planting of compensatory woodland at the north and east of the site and planting of native tree species in a wetland amenity area at the east of the site. The planting scheme ensures connectivity to linear/ woodland habitats in the wider landscape.

Lighting

To minimise disturbance to bats and other fauna that are active at night, construction operations during the hours of darkness should be kept to a minimum. In circumstances where, during the bat activity period

(April to September), daylight hours stretch beyond the likely permitted hours of operation on site, there will be no requirement for lighting to be used on the site during this period.

11.5.2 Operational Phase

Habitats / Flora

A detailed landscape specification has been developed by a Landscape Architect to maximise the biodiversity value of the final design (refer to accompanying Landscape Masterplan and *Landscape Design Rationale* (CSR, 2025a) which accompanies this application; as well as the *Tree Survey* report, CSR, 2025b). In particular, the landscape plan/specification will maximise the quantity, quality, diversity and connectivity of habitats within the finished site. To that end, the development of the landscape specification will be overseen by a suitably qualified and experienced ecologist and have regard to the following guidance documents:

- Cork City Council (2021). *Cork City Heritage and Biodiversity Plan, 2021-2026*. Cork City.
- All-Ireland Pollinator Plan 2021-2025. *National Biodiversity Data Centre Series* 25. National Biodiversity Data Centre, Waterford. March 2021.
- *Cork County Council Recommended List of Native Tree and Shrub Species for Residential & Industrial Developments, Version 2.* CCC Ecology Office, Cork County Council, Cork. June 2022.
- Lundy, M.G., Aughney, T., Montgomery ,W.I. and Roche, N. (2011). *Landscape conservation for Irish bats & species specific roosting characteristics.* Bat Conservation Ireland.
- TII (2006). *A Guide to Landscape Treatments for National Road Schemes in Ireland. GE-ENV-01102. February 2006.* Transport Infrastructure Ireland, Dublin.

The design of landscape measures involved close consultation between the landscape architects, ecologists and designer of SuDS drainage measures.

Salvage and Temporary Removal

Topsoil arising on site from areas of different grassland habitats shall be stockpiled separately for re-use on site as part of the landscaping. The locations, heights etc. of stockpiles for topsoil's will be detailed in the landscape specification. The objective of this measure is to minimise the export and import of soil and to preserve as much as possible the local seedbank and soil conditions on site. Soils contaminated with IAPS or hazardous materials shall not be re-used.

Habitat Replacement and Creation

The methodology for establishing all new or replacement landscaping, including topsoil's, grasslands, hedgerows, treeline and swales/SuDS feature, will be established in the landscape specification, following the principles set out below. Proposed planting mixes are set out below in Figure 11.21.

PLANTING SCHEDULE

STREET TREES-NATIVE. All trees to have straight, unsupported leaders with symmetrical crowns.	Height / girth	Qty.no
Betula pendula*	18-20cm gth. RB	101
Sorbus aucuparia*	18-20cm gth. RB	101
Prunus padus	18-20cm gth. RB	101
SPECIMEN ORNAMENTAL POLLINATOR TREES	Height / girth	Qty.no
Amelanchier x grandiflora 'Robin Hill'	16-18cm gth. RB	13
Malus tschonoskii	16-18cm gth. RB	12
Pyrus calleryana 'Chanticleer'	16-18cm gth. RB	12
OPEN SPACE TREES -NATIVE -to be under-planted with bulbs & perennials	Height / girth	Qty.no
Quercus petraea*	16-18cm gth. RB	18
Sorbus aucuparia*	16-18cm gth. RB	18
Prunus avium*	16-18cm gth. RB	18
Alnus glutinosa	16-18cm gth. RB	10
Pinus sylvestris	120-150cm, RB	18
GARDEN TREES. All trees to have straight, unsupported leaders with symmetrical crowns.	Height / girth	Qty.no
Prunus*, Pyrus and Malus* species	6-8cm gth. RB	141
NATIVE HEDGEROW / SCREENING TREES 3m center spacing	Height / girth	Qty.no
Betula pendula*	8-10cm gth. BR	21
Quercus robur*	8-10cm gth. BR	20
Alnus glutinosa	8-10cm gth. BR	20
Pinus sylvestris	8-10cm gth. BR	20
Sorbus aucuparia*	8-10cm gth. BR	20
Prunus avium*	8-10cm gth. BR	21
COMPENSATION TREES 3m center spacing	Height / girth	Qty.no
Betula pendula*	8-10cm gth. BR	22
Quercus robur*	8-10cm gth. BR	20
Alnus glutinosa	8-10cm gth. BR	22
Sorbus aucuparia*	8-10cm gth. BR	22
SUDS AMENITY / BIODIVERSITY AREA TREES	Height / girth	Qty.no
Betula pendula*	8-10cm gth. BR	88
Quercus robur*	8-10cm gth. BR	78
Alnus glutinosa	8-10cm gth. BR	88
Salix spp.*	8-10cm gth. BR	88
COMPENSATION HEDGEROW WHIPS MIX 1.5m center spacing	Height / girth	Qty. %
Crataegus monogyna*	90-120cm high, BR	30
Prunus spinosa*	90-120cm high, BR	20
Viburnum opulus*	90-120cm high, BR	10
Ilex aquifolium*	90-120cm high, BR	10
Corylus avellana*	90-120cm high, BR	10
Euonymus europaeus	90-120cm high, BR	10
Rosa canina*	90-120cm high, BR	10
NATIVE HEDGEROW WHIPS MIX 1.5m center spacing	Height / girth	Qty. %
Crataegus monogyna*	90-120cm high, BR	30
Prunus spinosa*	90-120cm high, BR	20
Viburnum opulus*	90-120cm high, BR	10
Ilex aquifolium*	90-120cm high, BR	10
Corylus avellana*	90-120cm high, BR	10
Euonymus europaeus	90-120cm high, BR	10
Rosa canina*	90-120cm high, BR	10
SHRUB AND GROUNDCOVER POLLINATOR PLANTING- plant in groups of same species	Size	Qty. %
Rosmarinus officinalis	3L, PG	10
Hebe sp.*	3L, PG	10
Prunus tenella	3L, PG	8
Potentilla fruticosa	3L, PG	8
Skimmia japonica	3L, PG	8
Lavandula angustifolia 'Hidcote'*	3L, PG	10
Stachys byzantina	3L, PG	7
Erysimum 'Bowles's Mauve'*	3L, PG	10
Berberis darwinii	3L, PG	7
Bergenia 'Eroica'	3L, PG	7
Sarcococca hookeriana	3L, PG	8
Elaeagnus angustifolia	3L, PG	7
Ajuga reptans*	3L, PG	7
Hedera helix*	3L, PG	8
Origanum vulgare*	3L, PG	7
Verbena bonariensis*	3L, PG	7
BULBS & PERENNIALS MIX- plant in drifts	Size	Qty. %
Typical species wil include:		
Anemone nemorosa, Geranium robertianum, Hyacinthoides non-scripta*, Muscari 'Blue Spike', Oxalis acetosella, Primula vulgaris*, Viola riviniana, Colchicum sp., Crocus sp., Galanthus nivalis, Salvia sp., Anemone × hybrida, Anemone hupehensis, Aster sp., Chrysanthemum sp., Dahlia sp., Helleborus sp., Rudbeckia 'Goldstrum' Calamagrostis 'Karl Foerster', Stipa 'Ponytails'	bulbs, corms, & p9's	100
IRISH WILDFLOWER CONSERVATION	Size	Qty. %
Species to local origin. May include		
Black Meddick, Centaury, Corn Marigold, Corn Poppy, Cornflower. Corncockle, Cowslip, Devil's Bit Scabious, Eyebright, Kidney Vetch, Lady's Bedstraw, Marjoram, Scented Mayweed, Ox-eye Daisy, Red Bartsia, Red Campion, Red Clover, Selfheal, Sorrel, St Johnswort, Yarrow, Yellow Rattle	Seed mix	100

* Plant species identified by ecologist as favourable for bats

Figure 11.21: Planting Proposals for the proposed development (from Landscape Design Rationale, CSR, 2025a

Post-construction

The implementation of the landscape specification will continue into the operational phase with the establishment and ongoing management of landscaping. Ongoing management will focus in particular on preserving and, where possible, enhancing the quality and diversity of habitats present in the cycleway corridor.

Particular attention should be paid to the requirement for annual management of annual wildflower communities, in order to maintain and, where possible, enhance these communities, for their inherent botanical interest and also for their ecological provisioning function for invertebrates and birds and supporting ecosystem services for agriculture.

Fauna

No further mitigation measures are proposed.

Bats

Lighting

The protection of dark refuges is essential for bats, particularly in urban and suburban areas. Careful design of the lighting will be important to ensure that the residential development does not create barriers for bats commuting and foraging at the site, while maintaining health and safety requirements for human use. This is particularly important for bat foraging/commuting habitat within, and at the edge of, retained hedgerow and woodland habitats at the site.

The following general principals will be followed in relation to the overall lighting plan for the proposed development site:

- Lighting design will be flexible and be able to fully take into account the presence of protected species. Therefore, appropriate lighting shall be used within the proposed development and adjacent areas with more sensitive lighting regimes deployed in wildlife sensitive areas, including the foraging areas for bats along hedgerows and woodland edges.
- Dark buffer zones will be used to separate habitats or features from lighting by forming a dark perimeter around them. This shall be used for habitat features noted as foraging and commuting areas for bats. Light spill onto foraging habitat (i.e. hedgerow and woodland edges) shall be avoided.
- Buffer zones will be used to protect dark buffer zones and rely on ensuring light levels (levels of illuminance measured in lux) within a certain distance of a feature do not exceed certain defined limits. The buffer zone can be further subdivided into zones of increasing illuminance limit radiating away from the feature or habitat that requires to be protected. This will apply along foraging habitat.

Luminaire design is extremely important to achieve an appropriate lighting regime. Luminaires come in a myriad of different styles, applications and specifications which a lighting professional can help to select. The following will be considered when choosing luminaires. This is taken from the most recent BCT Lighting Guidelines (BCT, 2023).

- All luminaires used will lack UV elements to reduce impact.
- LED luminaires will be used due to their sharp cut-off, lower intensity, good colour rendition and dimming capability.
- A warm white spectrum (<2700 Kelvins) is recommended to reduce the blue light component.
- Light sources shall feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats.
- Waymarking inground markers (low output with cowls or similar to minimise upward light spill) to delineate path edges.
- Column heights shall be carefully considered to minimise light spill and glare visibility. This should be balanced with the potential for increased numbers of columns and upward light reflectance as with bollards.
- Only luminaires with a negligible or zero Upward Light Ratio, and with good optical control, should be considered - See ILP GN01.
- Luminaires shall always be mounted horizontally, with no light output above 90° and/or no upward tilt.
- Where appropriate, external security lighting shall be set on motion sensors and set to as short a possible a timer as the risk assessment will allow. For most general residential purposes, a 1- or 2-minute timer is likely to be appropriate.
- The use of bollard or low-level downward-directional luminaires is strongly discouraged. This is due to a considerable range of issues, such as unacceptable glare, poor illumination efficiency, unacceptable upward light output, increased upward light scatter from surfaces and poor facial recognition which makes them unsuitable for most sites. Therefore, they should only be considered in specific cases where the lighting professional and project manager are able to resolve these issues.
- Only if all other options have been explored, accessories such as baffles, hoods or louvres can be used to reduce light spill and direct it only to where it is needed. However, due to the lensing and fine cut-off control of the beam inherent in modern LED luminaires, the effect of cowls and baffles is often far less than anticipated and so should not be relied upon solely.

For this development specifically no lighting is proposed within the existing woodland at the north of the site, the proposed areas of compensatory woodland and the proposed wetland amenity area at the east of the site; as such, these areas will remain dark and will valuable foraging habitat for bats during the operational phase.

Enhancement

The following recommendations for enhancement are adapted from Landscape and Urban Design for Bats and Biodiversity (BCT, 2012). To attract nocturnal flying insects, the following planting shall be implemented:

- Mixtures of flowering plants, trees (including fruit trees) and shrubs to encourage a diversity of insects to sustain bats and other wildlife throughout the year. All new planting shall include pollinator friendly tree species including locally appropriate species listed in the Pollinator Friendly Planting Code30. Replacement and new hedgerows shall include a range of different species to provide food

[30] National Biodiversity Data Centre (2021) *Pollinator Friendly Planting Code. All-Ireland Pollinator Plan 2021-2025.* www.biodiversityireland.ie/pollinator-plan.

throughout the year, for example willows and blackthorn for early season nectar; hawthorn, bramble and rose for summer flowers and autumn berries; ivy for autumn nectar and later winter berries.
- Flowers that vary in colour, fragrance, shape, amount of nectar and time of flowering.
- Pale flowers that are more easily seen in poor light, so attracting insects at dusk.
- Single flowers, which tend to produce more nectar than double varieties.
- Flowers with insect-friendly landing platforms and short florets, like those in the daisy or carrot families.

Other enhancement options include:
- SUDs features, such as rain gardens
- Integrated bat boxes, also referred to as bat bricks built into the structure of new buildings at the proposed site. The bat bricks should be located where they will receive full/ partial sunlight (facing south, south-west or south-east. The bat bricks will need to be positioned a minimum of 2m above ground and should not be located above windows or doors; near the eaves or gable apex of the building is ideal.

Planting mixes as detailed within the Landscape Masterplan accompanying this submission (CSR, 2025a) have, through consultation with ecologists and relevant guidance (BCT, 2012), been created to maximise pollinator activity within the site to further create and enhance foraging habitat for bat species.

Aquatic Ecology / Water Quality

The surface water strategy and operational stage drainage has been designed by MHL Consulting Engineers and is described in full in the Engineering Report which accompanies this submission (MHL, 2025b). The surface water design employs a series of nature based Sustainable Urban Drainage (SuDS) tools ensuring that the development will:

- Manage and control runoff volumes and flow rates from impermeable surfaces, reducing the impact of urbanisation on flooding.
- Provide opportunities harvesting rainwater run for use close to where it falls.
- Promote groundwater and aquifer body recharge.
- Protect natural flow regimes in watercourses.
- Encourage evapotranspiration from planted and other storage area.

The nature based Sustainable Urban Drainage tools employed as part of the proposed development are to include:

- A new wetland area at the eastern edge of the site, along the existing Shean Upper stream.
- Water butts will be placed at residential properties, to serve as rainwater harvesters for gardens, and to provide additional storage volume for attenuation.
- Rooftop rainwater harvesting, for use as irrigation and toilet flushing, will be incorporated into the drainage design for the proposed creche.
- Permeable paving will be placed where site conditions and uses allow. Each house will be provided with a permeable paving driveway.

- Swales, soakaways, and bioretention areas will be used to increase attenuation storage and provide passive filtration of pollutants in surface water. These areas are shown on the Drainage Masterplan Drawing accompanying the planning application.
- Hydrocarbon/Petrol interceptors are included in the proposed drainage network. These will prevent contamination of nearby watercourses.
- Green roofs and tree pits to provide further attenuation and filtration.

11.6 Cumulative and In-combination Effects

The following text focuses on future developments and future proposed developments at Ringwood. Phase 1 of the residential development at Ringwood was granted planning permission by An Coimisiún Pleanála (ACP) on the 6th May 2025 for the construction of 246 no. residential units on zoned lands directly south of the Phase 2 proposed development site. An EIAR and associated reports were completed for planning for this development. Further, in time it is proposed to upgrade the N20 to motorway status (M20) to the east of the scheme. Detailed designs are not available for review. The road scheme will however need to undertake a comprehensive programme of ecological survey as well as design and construct an appropriate programme of ecological mitigation, including but not limited to landscape planting, allowing for biodiversity net gain, mammal fencing and underpasses as appropriate, etc. Given the recent observation of a dead badger on the N20 east of the proposed development, the inclusion of mammal mitigation measures would help to reduce the risk of mammal road mortality. As Sika deer have recently been recorded from Blarney Bog pNHA, mammal mitigation for deer may also be required.

The Cork Area Commuter Rail Project includes proposals for 8 no. stations in Cork, including one at Blarney/Stoneview to the northeast of the proposed development site; this development and associated rail developments (being progressed by Iarnród Éireann) will be subject to a future Railway Order to ACP. There are also additional large scale housing developments in the environs of Blarney, including at Monacnapa; this development was ultimately refused permission on the 7th November 2025 however it demonstrates the potential for future development in proximity to the Ringwood site. Such development applications are subject to standalone ecological surveying and assessments and Screening for Appropriate Assessment.

11.6.1 Habitats, Flora and Fauna

Future development at Ringwood would continue northwards, eastwards and southwards from the site of the proposed development further infilling areas of improved grassland (GA1) and arable lands (BC1). Thus, all works would likely be within habitats of limited ecological value, with boundary hedges retained in order to retain and enhance ecological corridors on the periphery of the site. This would facilitate continued movement of species such as bats around the site. Detailed design information would be required to evaluate in full, but impacts are likely to remain negative at the site / local scale if designed and implemented in an ecologically sustainable manner.

The developer is currently in discussion with the Council with respect to constructing a haul road to facilitate the construction of Phase 1 for which planning has been granted. This would be largely within the red line boundary for Phase 2; apart from a short part to the south which is located within would run to the west of the access road proposed as part of Phase 2 -located within an area of BC1 Arable lands.

Bats

Future Development and Proposed Future Development (Phase 1 and Phase 3)

Phase 1

Results from the bat surveys undertaken in October 2021, May 2022 and June 2022 indicate that seven species of bat, namely common pipistrelle, soprano pipistrelle, Leisler's, natterer's, Daubenton's, whiskered and brown long-eared bat commute to the site and its immediate environs to forage. Of these species, common and soprano pipistrelle and Leisler's bat were recorded regularly foraging at the site. Brown long-eared bat and Myotis species were recorded in low numbers at the west of the site. Natterer's, Daubenton's, whiskered, Myotis species and brown long-eared bat were also recorded within Ring Wood adjacent to the southern site boundary.
The level of activity recorded across the Phase 1 lands was relatively low, however, a moderate level of activity and relatively high diversity of species was recorded within Ring Wood adjacent to the southern site boundary.

Phase 3 (Northern Site)

A total of five species were recorded within the study area to the east of the N20: common pipistrelle, Leisler's bat, soprano pipistrelle, brown long-eared and Daubenton's bat. Common pipistrelle and Leisler's bat were both recorded early in the evening at the west of the site.

The level of activity at most of the study area to the east of the N20 was low; a higher level of activity was recorded at the western study area boundary.

There is potential for cumulative impacts on bats as a result of loss of foraging and commuting habitat and an increase in artificial lighting at night across the Phase 1, Phase 2 and Phase 3 lands.

11.7 Interaction with Other Environmental Disciplines

Key interactions to be considered include:

- Air Quality (Chapter 8.0). Air quality can potentially affect sensitive habitats through deposition of dust are nutrients in the form of NOx, nitrogen or ammonia. However, the air quality assessment predicted no negative impacts on sensitive receptors.
- Landscape (Chapter 13.0). Detailed landscaping proposal and sustainable urban drainage measures have been developed as part of this scheme. Extensive consultation was undertaken between the ecologists, landscape architects and drainage engineers to maximise opportunities for biodiversity gain.
- Water (Chapter 15.0). As noted, aquatic ecological diversity is strongly linked to water quality and how this might change in light of the proposed developed. With the effective implementation of the design and mitigation measures outlined negative impacts to water quality were not predicted.

11.8 Residual Effects

This biodiversity chapter has examined the biodiversity and baseline ecological conditions of the receiving environment within the site of the proposed development, and assessed the likely effects of the proposed development, individually and in combination with other plans and projects, on the sites, habitats, species and other ecological features of Local Importance (Higher Value) or above which were identified within the footprint of the proposed development and its Zone of Influence. This report has also proposed suitable measures to avoid or reduce the likely effects on those features and evaluated any residual effects. These measures, as well as further ecological enhancements of the proposed development, were developed in line best practice in relation to Biodiversity Net Gain and in close consultation with the landscape and drainage teams.

The most significant habitat within the site is the woodland complex of WN6, WN4 & WD1 along the northeastern side of the site. While the design of the access road went through several iterations to minimise loss of woodland, there will still be some loss from within an area categorised as being of Local Importance (Higher Value) – i.e. along the western side of this woodland. Furthermore, 7 no. mature oak trees and 1 no. mature beech tree would also be lost. While such mixed woodland is well represented in the wider Blarney area, the loss of woodland and mature trees remains a significant ecological impact in the local environment, which will be partially offset by the proposed planting within the scheme, including in the biodiversity / SuDS are to the south. As noted, planting has already started within the wider site to allow young trees to become established.

On the basis of that assessment, it is concluded that the site of the proposed development, provided that it is implemented in accordance with the measures proposed in this biodiversity chapter, will not give rise to any significant negative effects on the biodiversity or ecology of the receiving environment and will be aligned with the principle of Biodiversity Net Gain.

With respect to bats; the effective implementation of the mitigation measures outlined in Section 11.5, such as landscaping and the avoidance of use of lights during the construction phase during the months of April to September, as well as the minimisation of artificial light spill during the operational phase of the development, there will not be any significant negative effects on the conservation status of bat species from the proposed Residential Development, Ringwood.

In the absence of effective mitigation, there is potential for cumulative impacts on local bat populations arising from the Future Phase 2 development at Ringwood because of loss and severance of foraging and commuting habitat and an increase in artificial lighting at night.

11.9 Monitoring

No monitoring is proposed at this time.

11.10 Difficulties Encountered

There were no difficulties encountered in compilation of this assessment.

11.11 References

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12.0 ARCHAEOLOGY, ARCHITECTURE & CULTURAL HERITAGE

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12.1 Introduction

The following chapter details an archaeological, architectural and cultural heritage assessment undertaken in advance of a proposed largescale residential development (LRD) at Shean Upper and Shean Lower, Blarney, County Cork. The assessment aims to ascertain any potential likely and significant impacts that the proposed development may have on the existing cultural heritage resource.

The assessment has been undertaken by Faith Bailey of IAC Archaeology. Faith has a BA in Archaeology and an MA in Cultural Landscape Management and is a member of the IAI and CIfA. She is also a licence eligible archaeologist and has over 21 years' experience in archaeological, architectural and cultural heritage consultancy. The assessment has also been informed by a geophysical survey and two phases of archaeological test trenching.

This study determines, as far as reasonably possible from existing records, the nature of the cultural heritage resource in and within the vicinity of the development area using appropriate methods of study. The study area is defined as an area measuring 250m from the proposed development area.

Desk-based assessment is a programme of study of the historic environment within a specified area or site on land, in the inter-tidal zone or underwater 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; the character of the study area, including appropriate consideration of the settings of heritage assets (CIfA 2020, 4). In order to compile a complete baseline, a site inspection is carried out to complement the results of the desk-based assessment. This leads to the following:

- Determining the presence of known archaeological heritage sites that may be affected by the proposed development;
- Assessment of the likelihood of finding previously unrecorded archaeological remains during the construction programme;
- Suggested mitigation measures based upon the results of the above research.

12.1.1 Definitions

In order to assess, distil and present the findings of this study, the following definitions apply:

'Cultural Heritage' where used generically, can be an over-arching term applied to describe any combination of archaeological, architectural and cultural heritage features, where the term:

'Archaeological heritage' is applied to objects, monuments, buildings or landscapes of an (assumed) age typically older than AD 1700 (and recorded as archaeological sites within the Record of Monuments and Places).

'Architectural heritage' is applied to structures, buildings, their contents and settings of an (assumed) age typically younger than AD 1700; and

'Cultural heritage', where used specifically, is applied to other (often less tangible) aspects of the landscape such as historical events, folklore memories and cultural associations.

12.2 Methodology

12.2.1 Paper Survey

The following sources were consulted as part of the paper study of the proposed development:

- Record of Monuments and Places for County Cork;
- Sites and Monuments Record for County Cork;
- 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;
- Cork City Development Plan (2022–2028);
- Place name analysis;
- Aerial photographs;
- Excavations Bulletin (1970–2024); and
- National Inventory of Architectural Heritage.

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 Cork 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.

Place Names are an important part in understanding both the archaeology and history of an area. Place names can be used for generations and in some cases have been found to have their root deep in the historical past.

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 and Google Earth.

Excavations Bulletin is a summary publication that has been produced every year since 1970. This 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. This information is also available online (www.excavations.ie) from 1970–2025.

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 has also carried out a nationwide desk-based survey of historic gardens, including demesnes that surround large houses.

12.2.2 Field Inspection

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, architectural, and cultural heritage 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 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.

12.2.3 Archaeological Testing

Archaeological Test Trenching can be defined as 'a limited programme... of intrusive fieldwork which determines the presence or absence of archaeological features, structures, deposits, artefacts or ecofacts within a specified area or site on land or underwater. If such archaeological remains are present test trenching defines their character and extent and relative quality' (CIfA 2020a, 4). Two phases of archaeological have been carried out within the proposed development area, following a geophysical survey in 2022 (Licence No. 22R0006). The first phase was undertaken by Tim Coughlan in 2022 (Coughlan 2022, Licence 22E0294). The second phase was undertaken by Chris Coffey in November 2023 (Licence 22E0294). Detailed results of the archaeological testing are included in this chapter.

12.2.4 Consultation

Following the initial research, a number of statutory and voluntary bodies were consulted to gain further insight into the cultural background of the baseline environment, receiving environment and study area, as follows:

- Department of Housing, Local Government and Heritage – the Heritage Service, National Monuments and Historic Properties Section: Record of Monuments and Places; Sites and Monuments Record; Monuments in State Care Database; Preservation Orders and Register of Historic Monuments;
- National Museum of Ireland, Irish Antiquities Division: topographical files of Ireland;
- Cork City Council: Planning Section, including the City Archaeologist; and
- Historical and Ordnance Survey Maps.

12.2.5 Guidance and Legislation

The following legislation, standards and guidelines were consulted as part of the assessment:

- National Monuments Act, 1930 to 2014;
- The Planning and Development Acts, 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.

12.2.6 Assessment Criteria

The quality and type of an impact 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 Impact: A change which reduces the quality of the environment, for example a change that will detract from or permanently remove an archaeological or cultural heritage site from the landscape;
- Neutral Impact: A change which does not affect the quality of the environment;
- Positive Impact: A change which improves the quality of the environment, for example a change that improves or enhances the setting of archaeological or cultural heritage site.

The below terms are used in relation to the archaeological, architectural, and cultural heritage and relate to whether a site will be physically impacted upon or not:

- Direct Impact: 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 Impact: 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.

12.2.7 Significance of Effects

Definitions (as defined by the EPA 2022 Guidelines):

- Imperceptible: An effect capable of measurement but without noticeable consequences.
- Not significant: An effect which causes noticeable changes in the character of the environment but without noticeable 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 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 the majority of a sensitive aspect of the environment.
- Profound Effects: An effect which obliterates sensitive characteristics.

12.3 The Existing Receiving Environment

12.3.1 Introduction

The proposed development area is located within the townlands of Shean Upper and Shean Lower, Parish of Garrycloyne and Barony of East Muskerry, County Cork. There is one recorded monument located within the proposed development area with one further site located in the 250m study area. A *fulacht fia* (CO062-249) is located within the proposed development, which was excavated as part of a programme of archaeological testing in 2006 (Cummins 2006, Licence No. 06E0332, Figure 12.1). The nearest recorded monument beyond the development boundary comprises a redundant record (CO062-179) and was previously listed as a 'landscape feature'. The site lies c. 70m south of the proposed development and is known locally as 'Ringwood' (Figure 12.1).

There are no structures included on the RPS and the NIAH survey within 250m of the proposed development area (Figure 12.1). The Woollen Mills (RPS PS1219, NIAH 20845006-013, RMP CO062-065) is the closest at c. 460m to the west and it is both a protected structure and listed in both the NIAH and RMP.

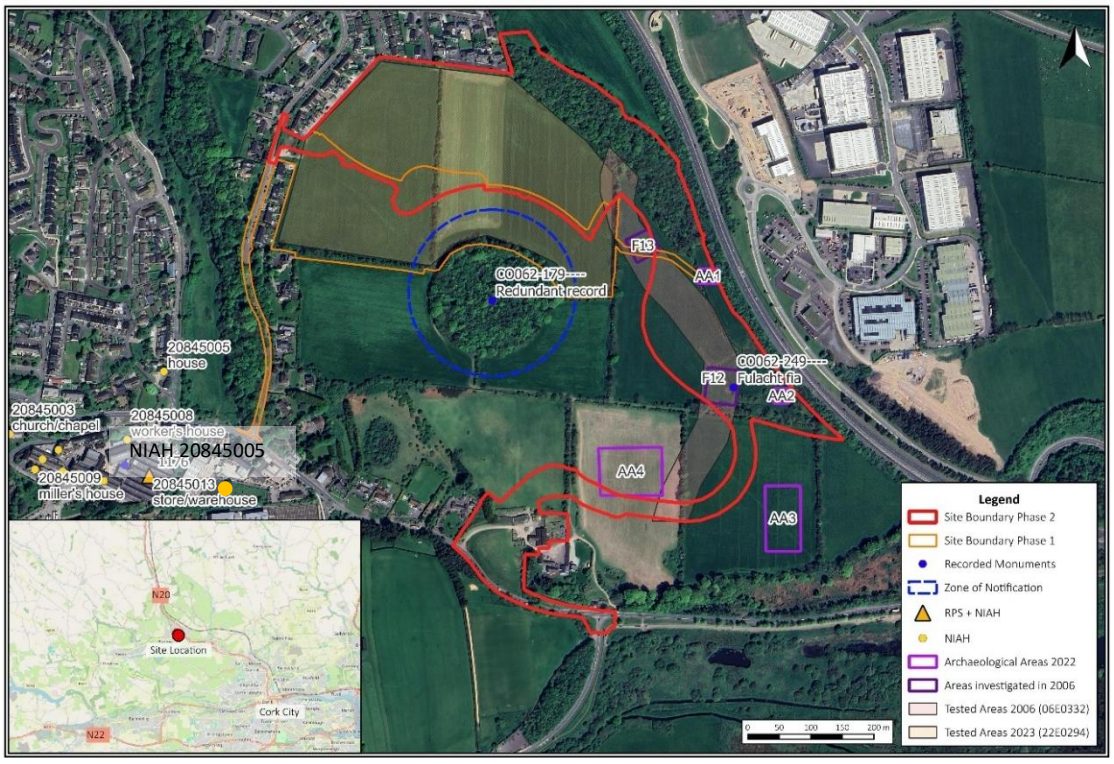


Figure 12.1: Google Earth (January 2025) showing proposed development area with nearby archaeology, architectural heritage sites and previous investigations

Mesolithic Period (7000–4000 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 used the River Martin and Blarney River, within the wider landscape, as a routeway and as a food and materials resource.

Neolithic Period (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 tomb in Ireland, namely the Court Cairn, Portal, Passage and Wedge; of which the latter style straddles the Neolithic to Bronze Age transition.

Lewis, in 1837, states 'in various areas around Cork are caverns which penetrate for a considerable distance into the limestone rocks, and in some of them are very large and beautiful stalactites'. Caves have often been used as shelters or refuge from prehistoric times as evidenced by numerous sites across the country. Badger Cave, which is located immediately beneath and external to the bawn wall of Blarney Castle (CO062-177001) c. 1.04km to the west-southwest of the development area and contained a number of flint flakes dating to 3900 BC – 2400 BC (Bennett 2007:220, Licence No: 07E0672). Flint flakes such as this were multi-purpose tools and may have been used as knives. As the flakes were an isolated find in what was clearly a disturbed layer, it does not necessarily indicate prehistoric activities within Badger Cave. It does suggest the presence of Neolithic people in the immediate environs, which is not surprising considering the resources offered by the Martin and Blarney Rivers.

Bronze Age (c. 2500–800 BC)

The Bronze Age was marked by the widespread use of metal for the first time in Ireland. As with the transition from Mesolithic to Neolithic, the transition into the early Bronze Age was accompanied by changes in society. The construction of megalithic tombs went into decline and the burial of the individual became typical. Cremated or inhumed bodies were often placed in a cist, which is a stone-lined grave, usually built of slabs set upright to form a box-like construction and capped by a large slab or several smaller lintels (Buckley & Sweetman, 1991). Barrows are earthen burial monuments, which consist of a

circular area surrounded by a fosse, often with an external bank. The term ring ditch is sometimes applied to barrows with a flat centre. These sites often contain a cist burial.

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 practised 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, although 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.

A *fulacht fia* (CO062-249) is recorded within the development boundary and was found during excavations in 2006 (Cummins 2006, Licence No. 06E0332) and subsequently excavated. The excavation revealed troughs, a roasting/fire pit, and a possible shelter. A small area of burnt bone, which post-dated the *fulacht fia* was also recorded. The site has been added to the SMR as CO062-249 as 'record only'.

Iron Age (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. There was likely significant continuity in the Iron Age, with earlier monuments re-used in many cases. There are no known monuments of Iron Age date within the study area of the proposed development.

Early Medieval Period (c. 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. 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. The nearest recorded ringfort (CO062-195) is situated c. 1.3km to the northeast in Curraghnalaght townland. A further enclosure, which may represent the remains of a ringfort was identified during geophysical survey and archaeological testing, to the immediate north of the proposed access route into the development area (Coughlan 2022, Licence 22E0294).

Medieval Period (AD 1100-1600)

The piecemeal conquest by the Anglo-Normans of Ireland had a fundamental impact on the Irish landscape. Anglo-Norman involvement in Ireland began in May 1169 when Richard de Clare and his followers landed in Wexford to support Diarmáit MacMurchadha, the deposed king of Leinster, and assist him in his challenge for the kingship. By the end of the 12th century, the Anglo-Normans had succeeded in conquering much of the country. Between 1170 and 1350, the Norman influence was stamped on the Irish landscape.

The Kingdom of Munster had been divided into two parts, north and south, under an agreement reached at Castletown Kinney by O'Connor of the *Ard-Ri*, or High King of Ireland. The Kings of Thomond (the O'Briens), ruled north Munster, whilst the Kings of Desmond, (the McCarthys) ruled south Munster. Battles and raiding of neighbouring clans to obtain more territories and wealth was common practice in Ireland at this time. Diarmuid MacCarthy (King of Desmond) sought to ally himself with Henry II to strengthen his forces against the O'Briens. Surrendered Desmond lands were, however, subsequently distributed by Henry between two of his knights Robert Fitzstephen and Milo de Cogan. Once the Normans obtained lands by force the continued lack of organised resistance by the Irish chieftains enabled the Norman lords to consolidate in their newly built strongholds and populate their estates with their followers, firmly establishing themselves.

The main success of the Anglo-Norman settlement 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, 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, particularly across Munster.

Blarney Castle and the famous Blarney Stone are located c. 1.04km to the west-southwest of the development area. The Castle is the third to have been erected on this site. The lower walls are fifteen feet in depth, built with an angle tower by the McCarthys of Muskerry. It was subsequently occupied at one time by Cormac McCarthy, King of Munster, who is said to have supplied four thousand men from Munster to supplement the forces of Robert the Bruce at the Battle of Bannockburn in 1314. Legend has it that the latter king gave half of the Stone of Scone to McCarthy in gratitude. This, now known as the Blarney Stone,

was incorporated in the battlements where it can now be kissed. The first building dated to the 10th century and was a wooden structure. This was replaced in the early 13th century by a stone structure.

Post-Medieval Period (AD 1600–1800)

Although English landowners may have been losing their grip on Irish land during the medieval period, during the Elizabethan period, lands were regained and secured with English government control re-established in Cork during the late 16th century. The Elizabethan implementation of the 'Surrender and Regrant' policy allowed the monarch to continue colonising Ireland at a time when the treasury funds were too low to afford a war.

The 18th century saw a dramatic rise in the establishment of large residential houses around the country. This was largely due to the fact that after the turbulence of the preceding centuries, the success of the Protestant cause and the effective removal of any political opposition, the country was at peace. The large country house was only a small part of the overall estate of a large landowner and provided a base to manage large areas of land that could be dispersed nationally. During the latter part of the 18th century, the establishment of a parkland context (or demesnes) for large houses was the fashion. The closest of these to the development area is the demesne that was established around Blarney Castle (RMP CO062-239; Garden Survey 2984). The closest edge of the demesne is located c. 410m to the southwest and contained a number of features, including an ice house (CO073-073002), bridge (CO062-240), tower (CO062-177), pseudo-Dolmen (CO062-176), along with ornamental gardens and three limekilns (CO073-096, CO073-098, CO073-099).

Blarney Castle was captured by Broghill in 1646, a general of Oliver Cromwell, but the estate was later restored to McCarthy who held it until 1691 (Healy ibid.). The castle was sold and changed hands a number of times before being purchased in the early 1700s by Sir James St. John Jefferyes, then Governor of Cork City. Members of the Jefferyes family would later build a mansion near the keep (CO062-238). This house was destroyed by fire, and in 1874 a replacement baronial mansion – known as Blarney House – was built overlooking the nearby lake.

The Blarney Woollen Mills (RPS PS1219, NIAH 20845006-013, RMP CO062-065) is both a protected structure and listed in both the NIAH and RMP and is located c. 460m west of the proposed development area. Established by the Mahoney family in the 1820s they converted the old cotton and flax mill to woollen production. It provided an important source of employment for local people and expanded and developed throughout the subsequent 150 years, until its closure in the 1970s. It is considered an important part of Blarney's industrial heritage.

Local knowledge from Blarney suggests the possibility of the burial of an RIC Officer, shot by the IRA in November 1920, in or within the vicinity of the proposed development area (Ó Ruairc submission to Cork County Council). The execution of the man, a Thomas Joseph Walsh, is recorded in the Brigade Activity Report compiled by A Company, 1st Battalion, Cork No. 1 Brigade as follows: 'A Black and Tan [sic] was drunk and disorderly at Cork station. He was followed on the night mail train to Blarney by Pat Ivers, Dan Duggan and Sean Healy. He was located with the help of the local IRA Company and was executed by the above three men'.

Further detail of the event describes how Constable Walsh escaped his captors in Blaney, which resulted in a man hunt during the night by the IRA, with the constable tracked down at 4am. He was subject to a court martial and executed as a traitor to his country. Walsh was initially classed by the RIC as a deserter but in 1926 his family contacted the Commissioner of An Garda Síochána and the Gardaí reported that Walsh had been abducted by the IRA from Blarney railway station and had initially escaped his capture, but was recaptured whilst sleeping in an outhouse before being executed and secretly buried at Ringwood (NAI, Department of Justice Missing Person - Whereabouts of Thomas Walsh, 2021/113/31).

12.3.2 Summary of Previous Archaeological Fieldwork

A review of the Excavations Bulletin (1970–2025) has revealed that a geophysical survey was undertaken within the proposed development area in 2022 and subsequent testing was carried out and these works are summarised in section 12.3.11. One investigation has been carried out within the study area, which is summarised below.

Test trenching (Cummins 2006, Licence No. 06E0332) was carried out along the line of a proposed access road within eastern portions of the proposed development site. It revealed two areas of potential archaeological remains. Subsequent archaeological excavation at revealed a large spread of heat-shattered stone overlying seven cut features, which included troughs, a roasting pit and a possible shelter. Post-holes along two sides of a shallow sub-rectangular feature cut into the slope of the hill suggested use as a shelter. Stake-holes within an oval cut with an oxidised base may have been for a spit. A circular pit with an oxidised base may have been for roasting. All were filled with a deposit of charcoal-enriched heat-shattered stone. These sites are typically interpreted as the remains of cooking sites dating to the Bronze Age. This archaeological site was subsequently subject to full archaeological excavation was added to the SMR as CO062-249.

12.3.3 Cartographic Analysis

William Petty, Down Survey Map of County Cork, c. 1655

The Down Survey depicts the Barony of Muskerry, which contains the proposed development area, within the Parish of Garrycloyne on this map. The Castle of Blarney (CO062-177) is located to the west-southwest labelled ‘Blarney Park’. No other detail is depicted (Figure 12.2).

Taylor and Skinner’s Road Maps of Ireland, 1777

This map shows the relative position of the proposed development area, which is within open land. To the southwest Blarney is located within a number of roads including Mallow Road. The River Martin is evident, which passes through Blarney surrounding the proposed development area and being owned by Jefferys Esq. Blarney Castle is depicted west-southwest surrounded by its demesne landscape (Figure 12.3).

Grand Jury Map of County Cork, 1811

This map shows the proposed development area as being still within open land northeast of Blarney. Clogheenmilcon and Curraghnalaght townlands are also depicted north of a small, wooded area labelled 'Chap'.

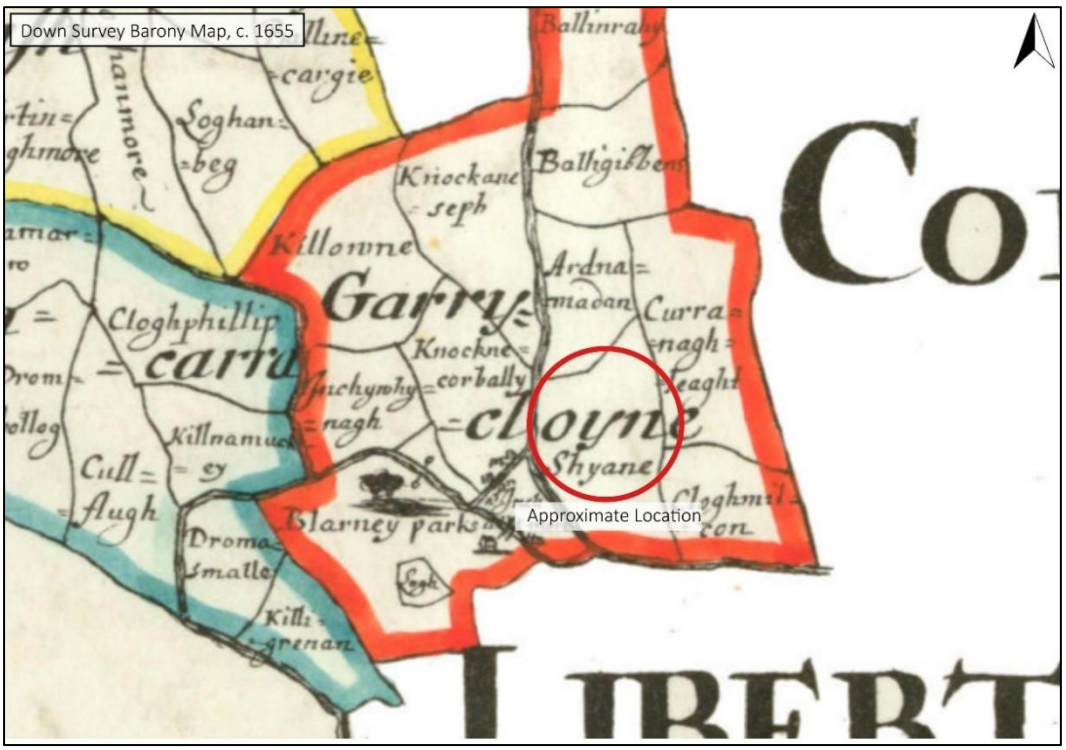


Figure 12.2: Extract from Down Survey Map c. 1655 showing approximate location of proposed development

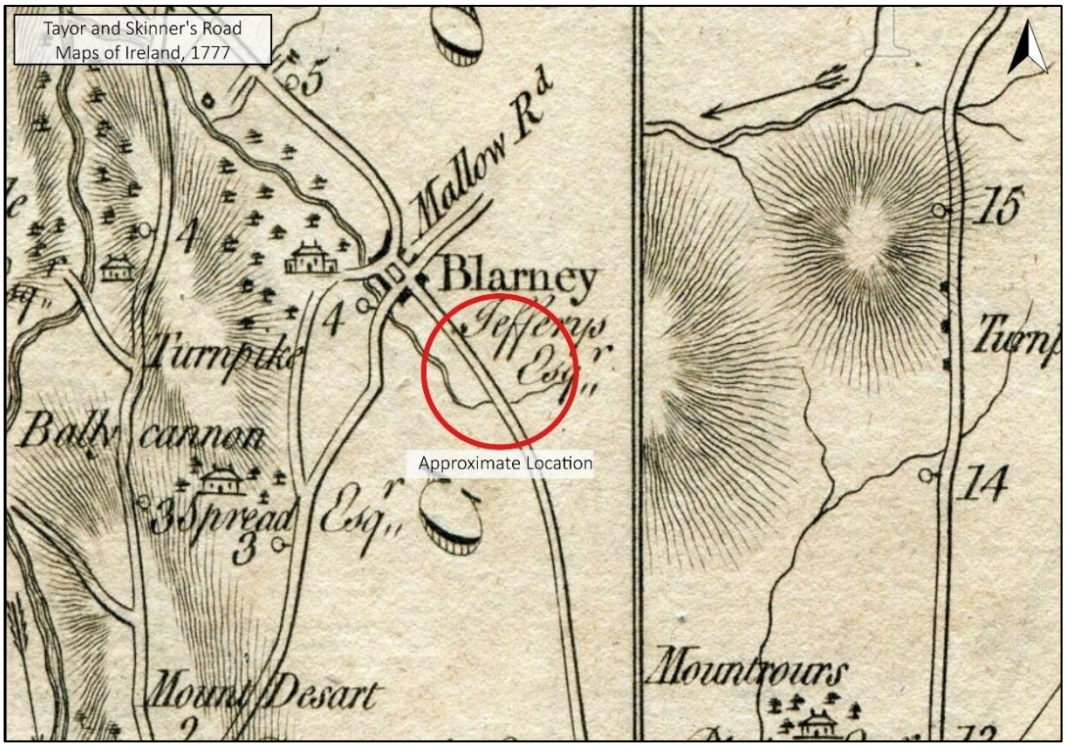


Figure 12.3: Extract from Taylor and Skinner's Map 1777 showing approximate location of proposed development

First Edition Ordnance Survey Map, 1845, scale 1:10,560

This is the first accurate historic mapping coverage of the area containing the proposed development, which is located within the townlands of Shean Upper and Shean Lower across several fields (Figure 12.4). Structures are depicted to the south within the proposed development. The landscape feature known as 'Ring Wood' (CO062-179; Redundant Record) is marked as a circular area of woodland. Two structures with a connecting road and footpath are located to the east of this feature and within the southeast of the proposed development site. A small quarry pit is also marked within the proposed development area to the northwest. A road (now the R617) is depicted and also comprises the townland boundary between Shean Upper and Shean Lower.

Ordnance Survey Map, 1902, scale 1:2,500

This map shows a number of changes from the previous map. The proposed development area is now concentrated into larger fields of pasture surrounding 'Ring Wood', which is labelled as such (Figure 12.5). The structure and road, described above, are no longer extant within the development area. A house named Mount Pleasant appears to the southwest of the proposed development boundary along Station Road. The southern section of the proposed development area contains a number of outbuildings, located to the north of a house, marked as 'Castle View' (Figure 12.5). The House is located c. 35m south of the development area, within a small demesne with a main entrance and gate lodge marked to the south.

Third Edition Ordnance Survey Map, 1937, scale 1:10,560

There are no changes within the cartography of this map that relate to the proposed development area.

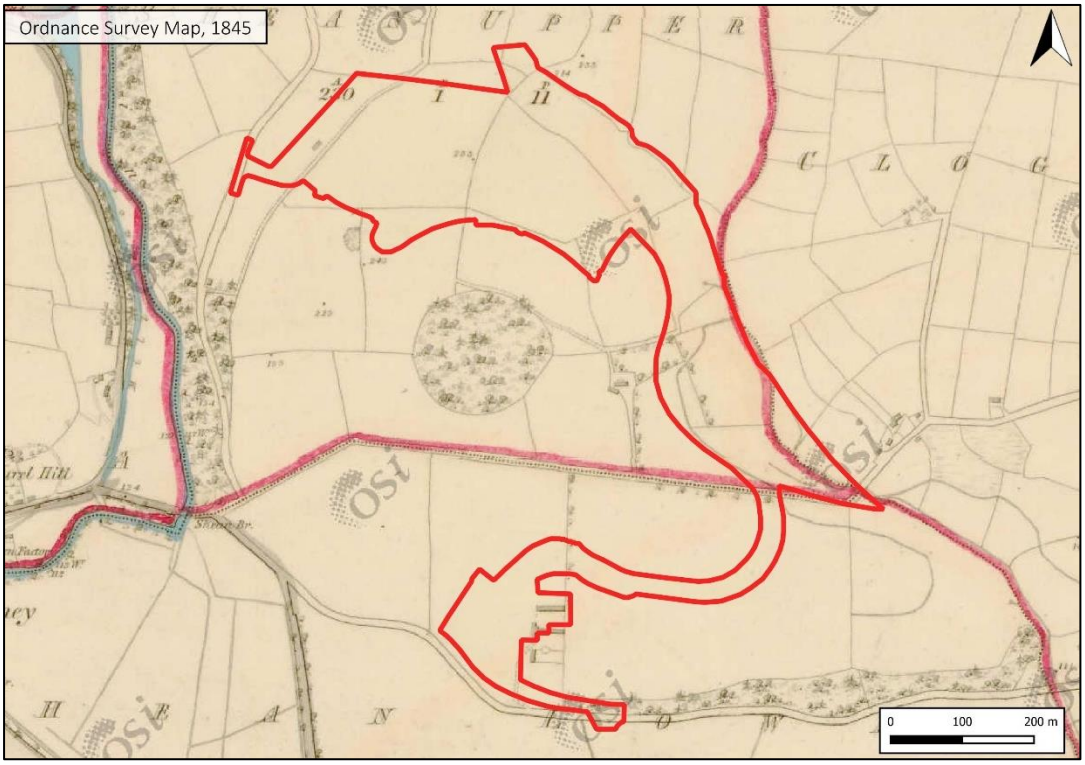


Figure 12.4: Extract from the first edition OS map (1845), showing the proposed development area

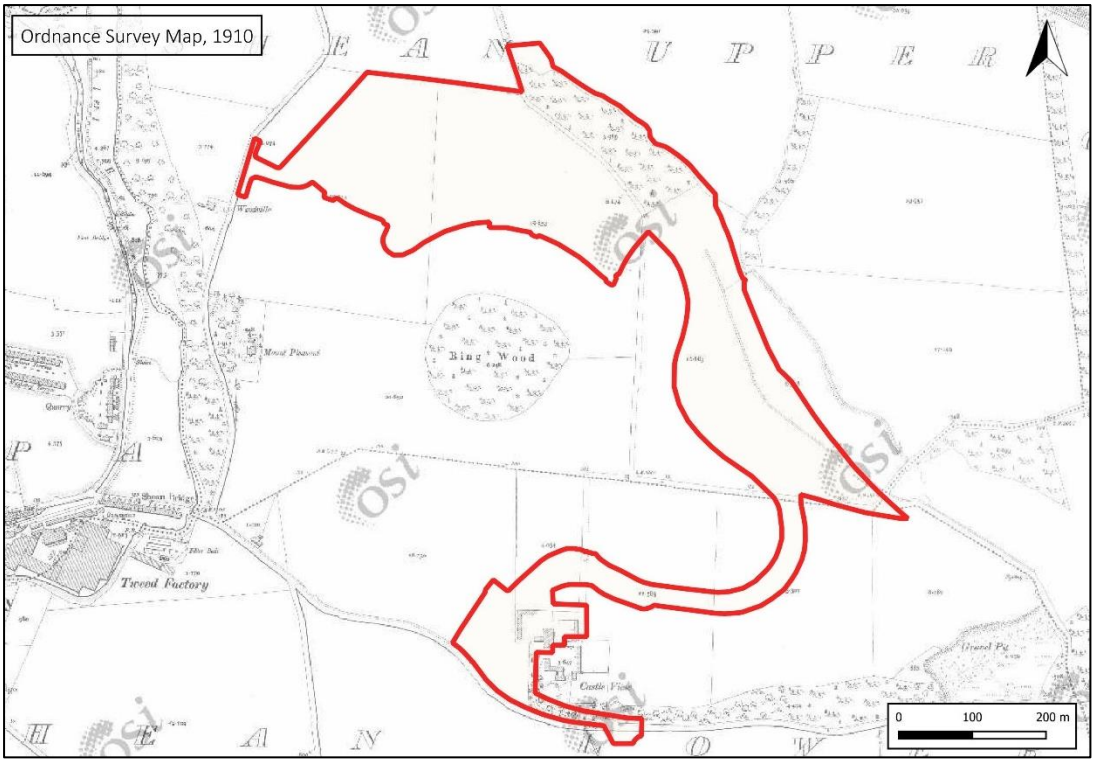


Figure 12.5: Extract from the 1902 OS map, showing the proposed development area

12.3.4 Cork City Development Plan 2022-2028

Record of Monuments and Places

The Cork 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 development plan lists a number of aims and objectives in relation to archaeological heritage.

There are two archaeological sites recorded in and within 250m of the proposed development (Table 12.1; Figure 12.1; Appendix 12.1). One recorded monument is located within the proposed development area, consisting of the *fulacht fia* site (RMP CO062-249). This site has already been subject to archaeological excavation and exists as a record only.

There are no National Monuments nor site with Preservation Orders listed within the vicinity of the proposed development.

RMP No.	Classification	Location	Distance from development
CO062-249	*Fulacht fia (excavated)*	Shean Upper	0m
CO062-179	Redundant record	Shean Upper	c. 75m south

Table 12.1: Recorded archaeological sites within the study area

Record of Protected Structures

The Cork City Development Plan (2022–2028) recognises the value of the built heritage and is committed to the protection and enhancement of this heritage by providing measures for the protection of architectural heritage. These include the establishment of a Record of Protected Structures (RPS) and the designation of Architectural Conservation Areas (ACAs).

There are no structures included on the RPS within 250m of the proposed development (Figure 12.1). The nearest RPS is Woollen Mills (RPS PS1219, NIAH 20845006-013, RMP CO062-065), which is located c. 460m west of the proposed development area.

Architectural Conservation Areas

The proposed development area is not located within an ACA. The boundary surrounding the Blarney ACA is located c. 414m to the northwest. This surrounds Woolen Mills complex and original estate village, as well as the demesne associated with Blarney Castle (located to the southwest of the village).

12.3.5 National Inventory of Architectural Heritage

Building Survey

A review of the architectural survey was undertaken as part of this assessment and included buildings within the 250m study area. There are no structures listed on the NIAH building survey within the proposed development area or study area (Figure 12.1). The nearest structure is the Woollen Mills (RPS PS1219, NIAH 20845006-013, RMP CO062-065), which is both a protected structure and listed on both the NIAH and RMP, located c. 460m west of the proposed development area. The Woollen Mills complex consists of a cluster of seven NIAH structures ranging from NIAH 20845006-20845013. Five of these were in use as water mills.

Garden Survey

The first edition ordnance survey map of County Cork (1845) shows the extent of demesne landscapes as shaded portions of land within the study area. These were established as a naturalised landscaped setting for the large houses of the landed gentry. No demesne landscapes have been recorded within the proposed development area or study area. The closest landscape consists of the edge associated with the demesne of Blarney Castle (Garden Survey 2984), c. 410m to the southwest of the development area.

12.3.6 Topographical Files of the National Museum of Ireland

Information on artefact finds from the study area in County Cork 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.

No stray finds are recorded from within the proposed development area or its immediate environs.

12.3.7 Aerial Photographic and LIDAR Analysis

Inspection of the aerial photographic coverage of the proposed development area held by the Ordnance Survey (1995–2013), Google Earth (2003–2023), Bing Maps and Apple Maps revealed that the proposed development area has remained as undeveloped agricultural land since 1995. No previously unrecorded features of archaeological significance were identified from the available aerial photography and satellite imagery.

12.3.8 Townlands and Place Name Analysis

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 bogs 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.

The proposed development area is located within the townlands of Shean Upper and Shean Lower. The townland boundary that divides the townlands was formerly formed by a road that ran from Blarney to the east. Today part of this road survives as an agricultural track, but a significant section has been removed.

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 place name 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 1830s and 1840s 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 www.logainm.ie.

A description and possible explanation of each townland name in the environs of the proposed development area is provided in Table 12.2.

Name	Derivation	Possible Meaning
Shean Upper	*An Sián Uachtarach*	A fairy mount upper
Shean Lower	*An Sián Íochtarach*	A fairy mount lower
Clogheenmilcon	*Cloichín Míolchon*	Little stone of the greyhounds
Monacnapa	*Móin an Chnaipe*	Bog of the button
Killard	*Cill Aird*	Church on the hill

Table 12.2: Placename Analysis

12.3.9 Cultural Heritage Sites

The term 'cultural heritage' can be used to refer 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 possible secret burial of the RIC Constable within the Ringwood area is noted as being of potential cultural significance, although it remains unclear as to whether the individual, who was executed by the IRA in 1920 and buried, was buried in Ringwood itself or its environs. It is noted that no evidence of a burial was identified during the geophysical survey or during the programme of archaeological testing.

Within the southern portion of the proposed development area are a number of masonry outbuildings, which were originally associated with 'Castle View', a modest late 19th century farm house, located c. 35m south of the development area. The house and main outbuildings are located to the south of the proposed access road. Three larger outbuildings are located within the site and these will be retained and renovated as part of the development. These structures remain in good condition and comprise one masonry barn with two-storeys and two single storey masonry barns. A square yard, bounded by a stone wall is located to the east of the outbuildings. The buildings are marked on the 25 inch OS map (1910) and likely represent a redevelopment of structures marked in this area on the earlier first edition OS map (1845).

12.3.10 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 immediate surrounding environs were inspected.

The northern section of the proposed development area is formed by good quality pasture fields that occupy a moderate north facing slope, to the north of 'Ring Wood' (Plate 12.1). The fields are surrounded by mature field boundaries, with further woodland located to the immediate northeast. The eastern section of the proposed development area is formed by lands that slope to the east and southeast. At the time of the inspection, these lands were also under pasture (Plates 12.2 and 12.3). No above ground remains of the probable burnt mounds (identified during testing) were noted in this area during the course of the field inspection.

From the eastern section of the proposed development area, a proposed access road will cross three fields in a south and then westerly direction. This includes the site of the townland boundary that separates Shean Upper and Lower. At this location the townland boundary is formed by an agricultural track, which was formerly a road on the first edition OS map. The lands slope to the southeast and south and were under pasture at the time of the inspection. No surface expression was noted at the location of the possible ringfort (AA4), which was identified to the immediate north of the access road.

The southern part of the proposed development area is charactered by outbuildings associated with 'Castle View', located c. 35m south of the development area (Plates 12.4-12.6). The house and main outbuildings are located to the south of the proposed access road. Three larger outbuildings are located within the site and these will be retained and renovated as part of the development (Plate 12.5). These structures remain in good condition and comprise one masonry barn with two-storeys and two single storey masonry barns. A square yard, bounded by a stone wall is located to the east of the outbuildings and it is proposed to development this area for parking (Plate 12.6).

As part of the proposed development, a realignment of the R617 will be required. The section of the road to be affected is currently bounded to the north by a random rubble masonry wall, with vertically placed coping stones. The date of the wall is not clear, but it may have been constructed at the same time as Castle View House. Several sections of the wall adjacent to the entrance to Castle View, have been recently rebuilt.

No previously unrecorded sites of archaeological potential were noted during the course of the field inspection. 'Castle View' House and its associated outbuildings remains within the landscape and represent a good example of a late 19th century farm associated with a reasonably well to do farming class.



Plate 12.1: Northern section of the proposed development area, facing south-southeast



Plate 12.2: Eastern section of the proposed development area, facing south-southeast



Plate 12.3: Eastern section of the proposed development area, facing northwest



Plate 12.4: Southerly view of 'Castle View' and associated outbuildings



Plate 12.5: Outbuildings associated with 'Castle View', within the proposed development area, facing south-southwest



Plate 12.6: Rear of 'Castle View' and associated outbuildings and yards, facing south

12.3.11 Geophysical Survey and Archaeological Test Trenching

A geophysical survey was undertaken within the proposed development area in 2022 by Target Archaeological Geophysics Ltd. (Licence No. 22R0006). The survey covered c. 56ha of agricultural land, which included the proposed development area. The results of the geophysical survey highlighted the agricultural nature of the landscape; with responses including abundant small-scale ferrous responses, remnants of former/suspected former boundaries, past cultivation and modern landscaping. The geophysical survey identified a possible ringfort, located to the immediate north of the proposed access route.

Two programmes of test trenching were undertaken in 2022 and 2023 within the lands containing the proposed development (Coughlan 2022, Licence No 22E0294, Coffey 2023, Licence No 22E0294). The position of the test trenches is marked on Figures 12.6 and 12.7. Testing in the northern section of the proposed development area, which was carried out in 2023, did not reveal any features or finds of archaeological significance. Testing in 2022 targeted probable archaeological features identified during the initial geophysical survey (Licence No. 22R0006). Four areas of archaeological potential were identified across the lands (Archaeological Areas 1-4). Two burnt mounds (AA1 and AA2), which were indicated within the geophysical survey, were confirmed within the eastern portion of the development area. Shallow pits (AA3) and a circular enclosure (AA4) were also confirmed. AA3 is located to the south-southeast of the development area and enclosure (AA4), is located to the north of the proposed associated access route (Figure 12.7).

Eastern portions of the proposed development site were tested in 2006 (Cummins 2006, Licence No. 06E0332) as part of an earlier proposed access road. A burnt mound was identified to the west of AA2,

and this was subject to excavation. The excavation revealed troughs, a roasting/fire pit, and a possible shelter. The site has been added to the SMR as CO062-249 (Figure 12. 1).

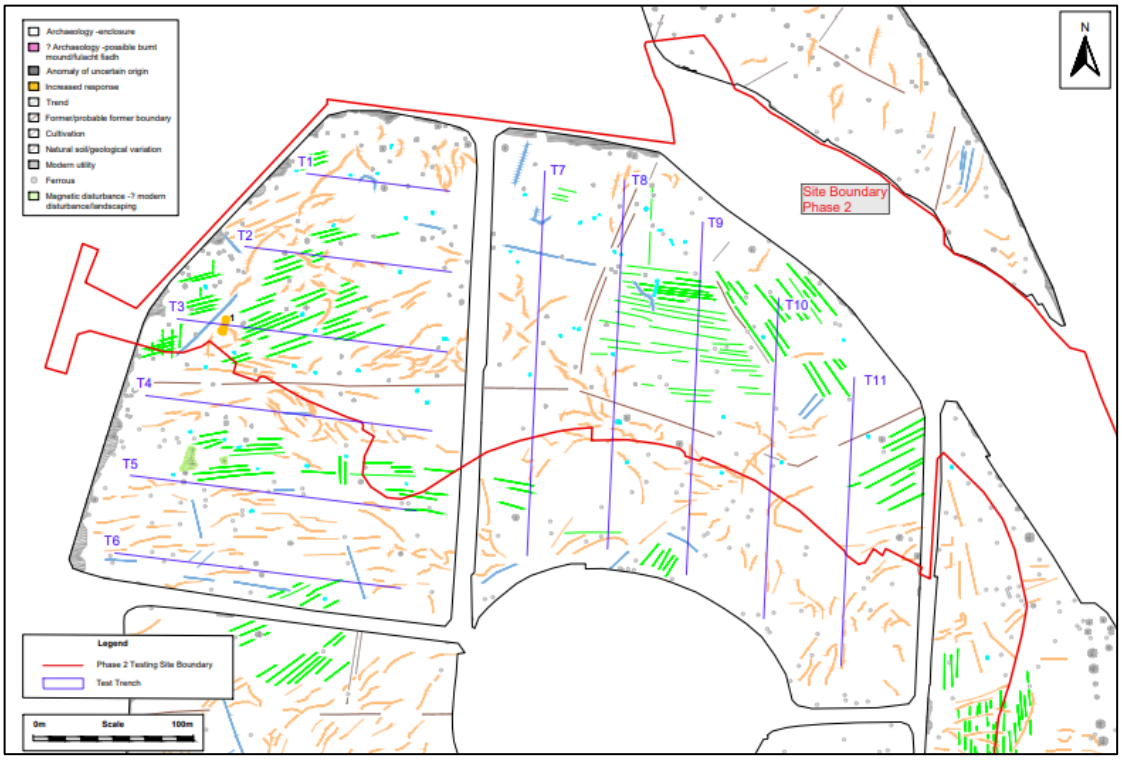


Figure 12.6 Northern section of proposed development area showing results of previous geophysical survey and archaeological testing

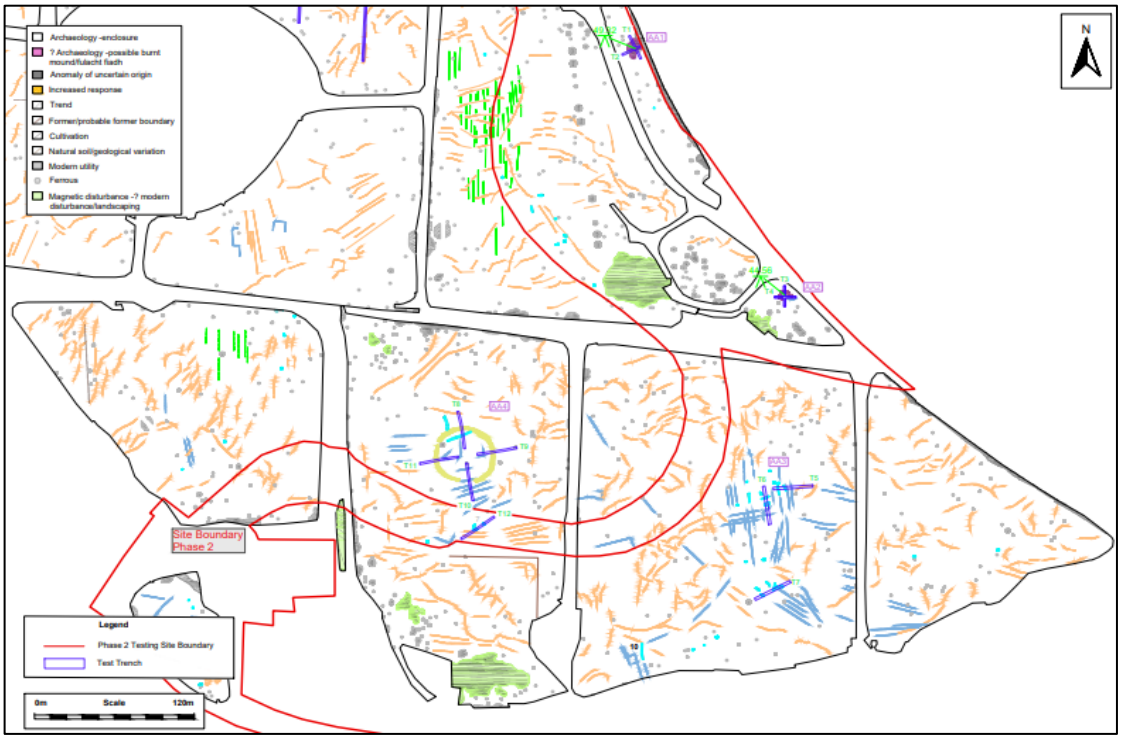


Figure 12.7 Southern section of proposed development area showing results of previous geophysical survey and archaeological testing

12.4 Characteristics of the Proposed Development

The proposed development will consist of a large-scale residential development (LRD), representing Phase 2 of development in the Blarney East / Ringwood Expansion Area, and comprising the construction of (i) 323 no. residential dwellings comprising of 157 no. terraced, end-of-terrace, and semi-detached houses (including 129 no. 3-bed and 28 no. 4-bed units); 52 no. duplexes provided in 5 no. 3-storey buildings (including 26 no. 2-bed and 26 no. 3-bed units) and 114 no. apartments provided in 2 no. 5-storey buildings (including 54 no. 1-bed and 60 no. 2-bed units); (ii) a primary care centre, over 2 stories and 1,724sqm in area, incorporating GP services (iii) the refurbishment and redevelopment of existing farm outbuildings for conversion to a retail/pharmacy use, 80sqm in area, and café/restaurant use, 380sqm in area; (iv) a new access roadway into the site from the R617 with associated pedestrian and cyclist infrastructure, which will form the 1st phase of the proposed Stoneview Access Link Road, (v) a new signalised junction on the R617 road which will provide a single lane approach to the west and a two lane approach to the east, comprising one lane for through traffic on the R617 and a right turn lane for traffic turning into the site, and associated footpath improvements and cycle lane provision (vi) a new signalised junction at the R617 and Killard Road junction which will provide a two lane approach from the west, one lane for through traffic heading eastbound on the R617 and a right turn lane onto the Killard Road, with associated footpath improvements and pedestrian and cyclist infrastructure; (vii) a new signalised junction on Station Road that reflects the junction permitted under the Phase 1 LRD scheme (Reg. Ref. 2443031); (viii) private, communal, and public open spaces and hard and soft landscaping, boundary treatments and amenity areas, including a new wetland public amenity area, (ix) drainage works and nature-based SuDS measures (x) foul sewer infrastructure, including 1no. pump station, the diversion of existing foul and water sewers and other new network works, (xi) car parking, including EV charging points, bicycle parking, and motorcycle parking bays (xii) 2no. substations, all associated ancillary site, drainage and development works.

12.5 Potential Impacts of the Proposed Development

12.5.1 Construction Phase

The proposed development area has been subject to assessment and geophysical survey and archaeological test trenching identified two small burnt mounds in the eastern portion of the development area. It is proposed to develop this space as a green recreation area and the site of two burnt mounds will be preserved in-situ. No other archaeological sites were identified within the development area, although it is possible that small or scattered remains may survive beneath the current ground level outside of the footprint of the test trenches. Ground disturbances across the proposed development area may result in direct, negative (permanent) impacts on any such features. Impacts (prior to mitigation) have the potential to range from moderate to significant, dependant on the nature, extent and significance of any remains that may be present.

The construction of the proposed development will result in a direct, negative (permanent) impact on a 50m section of the townland boundary that separates Shean Upper and Lower. Impacts (prior to mitigation) will be of slight significance of effect.

Three post medieval structures located in the southern section of the development area will be converted to commercial use. The buildings are not listed in the RPS or the NIAH. The conversion of the structures will result in a direct negative impact on the original 19th century fabric, but this is considered of slight significance effect, as much of the original structures will be retained.

12.5.2 Operational Phase

No operational impacts are predicted on the archaeological, architectural or cultural heritage resource.

12.6 Mitigation measures

12.6.1 Construction Phase

All topsoil stripping across the proposed development area will be subject to archaeological monitoring, which will be carried out by a suitably qualified archaeologist. Should any features of archaeological significance be identified, including the potential burial site of the RIC constable, further mitigation will be required, such as preservation by record or in situ. An Osteo-archaeologist will also be made available if any human remains are identified. Any further mitigation will require agreement from the National Monuments Service of the DoHLGH and Cork City Archaeologist.

During the course of archaeological monitoring described above, a record will be made of the section of townland boundary to be removed by the proposed access road.

The three post medieval structures to be retained and converted as part of the proposed development will be subject to a full written and photographic record, prior to the commencement of the development. This will be carried out by a suitably qualified heritage specialist.

12.6.2 Operational Phase

No mitigation is required with regards to the archaeological, architectural and cultural heritage resource.

12.7 Monitoring of Reinstatement Measures

The mitigation measures detailed above would also function as a monitoring system during construction to allow the further assessment of the scale of the predicted impacts and the effectiveness of the mitigation measures.

12.8 Residual Effects

Following the completion of mitigation measures, there will be no significant negative residual impacts upon the archaeological, architectural and cultural heritage resource.

12.9 Cumulative Effects

All permitted and proposed developments within the study area (as detailed in Chapter 1) have been assessed in conjunction with the proposed development. This includes the permitted Phase 1 LRD development located to the immediate south.

As it is proposed to monitor all topsoil stripping and then preserve any archaeological remains that are identified, no cumulative impacts have been identified upon the archaeological resource. No cumulative impacts have been identified in relation to the architectural and cultural heritage resource.

12.10 Interactions and Interrelationships

No interactions have been identified during the course of this assessment.

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13.0 LANDSCAPE & VISUAL ASSESSMENT

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13.1 Introduction

The chapter is a landscape and visual impact assessment (LVIA) prepared by CSR which was informed by a desktop study and a survey of the site and receiving environment during August 2025. The assessment is in accordance with the methodology prescribed in the Guidelines for Landscape and Visual Impact Assessment, 3rd edition, 2013 (GLVIA) published by the UK Landscape Institute and the Institute for Environmental Management and Assessment.

The chapter identifies and discusses the landscape and visual constraints, and likely effects in relation to the proposed Large Scale Residential Development (LRD) at Ringwood, Blarney, Cork.

This chapter was prepared by Jim Kelly, director at Cunnane Stratton Reynolds. Jim is a chartered landscape architect and a member of the Irish Landscape Institute and the Landscape Institute (U.K.) and has 35 years of experience in the fields of landscape design, planning and management. He has prepared landscape and visual impact assessments over a period of twenty years.

13.2 Methodology

Ireland is a signatory to the European Landscape Convention (ELC). The ELC defines landscape as 'an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors'. This definition is important in that it expands beyond the idea that landscape is only a matter of aesthetics and visual amenity. It encourages a focus on landscape as a resource in its own right - a shared resource providing a complex range of cultural, environmental, and economic benefits to individuals and society.

The GLVIA (2013) notes that as a cultural resource, the landscape functions as the setting for our day-to-day lives, also providing opportunities for recreation and aesthetic enjoyment and inspiration. It contributes to the sense of place experienced by individuals and communities and provides a link to the past as a record of historic socio-economic and environmental conditions. As an environmental resource, the landscape provides habitat for fauna and flora. It receives, stores, conveys, and cleans water, and vegetation in the landscape stores carbon and produces oxygen. As an economic resource, the landscape provides the raw materials and space for the production of food, materials (e.g., timber, aggregates) and energy (e.g. carbon-based fuels, wind, solar), living space and for recreation and tourism activities.

Forces for Landscape Change

The GLVIA (2013) also notes that landscape is not unchanging. Many different pressures have progressively altered familiar landscapes over time and will continue to do so in the future, creating new landscapes. For example, within the receiving environment, the environs of the proposed development have altered over the last thousand years, from wilderness to agriculture and settlement.

Many of the drivers for change arise from the requirement for development to meet the needs of a growing population and economy. The concept of sustainable development recognises that change must and will occur to meet the needs of the present, but that it should not compromise the ability of future

generations to meet their needs. This involves finding an appropriate balance between economic, social, and environmental forces and values.

The reversibility of change is an important consideration. If change must occur to meet a current need, can it be reversed to return the resource (in this case, the landscape) to its previous state to allow for development or management for future needs.

Climate change is one of the major factors likely to bring about future change in the landscape, and it is accepted to be the most serious long-term threat to the natural environment, as well as economic activity (particularly primary production) and society. The need for climate change mitigation and adaptation, which includes the management of water and more extreme weather and rainfall patterns, is part of this.

13.2.1 Guidance

LVIA is a tool used to identify and assess the significance of and the effects of change resulting from development on both the landscape as an environmental resource in its own right and on people's views and visual amenity.

The methodology for assessment of the landscape and visual effects is informed by the following key guidance documents, namely:

- Guidelines for Landscape and Visual Impact Assessment, 3rd Edition 2013, published by the UK Landscape Institute and the Institute of Environmental Management and Assessment (hereafter referred to as the GLVIA).
- Guidelines on the information to be contained in Environmental Impact Assessment Reports (May 2022, EPA).
- Cork City Development Plan 2022-2028

References are also made to the 'Landscape and Landscape Assessment – Consultation Draft of Guidelines for Planning Authorities' document, published in 2000 by the Department of Environment, Heritage and Local Government.

Use of the Term 'Effect' vs 'Impact'

The GLVIA advises that the terms 'impact' and effect' should be clearly distinguished and consistently used in the preparation of an LVIA.

'Impact' is defined as the action being taken. In the case of the proposed works, the impact would include the site works and the construction of the proposed development.

'Effect' is defined as the change or changes resulting from those actions, e.g., a change in landscape character, or changes to the composition, character and quality of views in the receiving environment. This report focuses on these effects.

Assessment of Both 'Landscape' and 'Visual' Effects

Another key distinction to make in a LVIA is that between landscape effects and the visual effects of development.

'Landscape' results from the interplay between the physical, natural, and cultural components of our surroundings. Different combinations of these elements and their spatial distribution create distinctive character of landscape in different places. 'Landscape character assessment' is the method used in LVIA to describe landscape, and by which to understand the potential effects of a development on the landscape as 'a resource'. Character is not just about the physical elements and features that make up a landscape, but also embraces the aesthetic, perceptual and experiential aspects of landscape that make a place distinctive.

Views and 'visual amenity' refer to the interrelationship between people and the landscape. The GLVIA prescribes that effects on views and visual amenity should be assessed separately from landscape, although the two topics are inherently linked. Visual 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.

The assessment of landscape and visual effects included a desktop study, review of the proposed development drawings and visualisations, and the site visits.

13.2.2 Methodology for Landscape Assessment

In Section 13.6 the landscape effects of the development are assessed. Landscape impact assessment considers the likely nature and scale of changes to the main landscape elements and characteristics, and the consequential effect on landscape character and value. Existing trends of change in the landscape are taken into account. The potential effect is assessed based on measurement of the landscape sensitivity against the magnitude of change which would result from the development.

Sensitivity of the Landscape Resource

Landscape sensitivity is a function of its land use, landscape patterns and scale, visual enclosure and distribution of visual receptors, scope for mitigation, and the value placed on the landscape. It also relates to the nature and scale of development proposed. It includes consideration of landscape values as well as the susceptibility of the landscape to change.

Landscape values can be identified by the presence of landscape designations or policies which indicate values, either on a national or local level. In addition, a number of criteria are used to assess the value of a landscape. These are described further in Section 13.3.4 below.

Landscape susceptibility is defined in the GLVIA as the ability of the landscape receptor to accommodate the proposed development without undue consequences for the maintenance of the baseline scenario and/or the achievement of landscape planning policies and strategies. Susceptibility also relates to the

type of development – a landscape may be highly susceptible to certain types of development but have a low susceptibility to other types of development.

For the purpose of assessment, five categories are used to classify the landscape sensitivity of the receiving environment.

Sensitivity is therefore a combination of landscape value and susceptibility.

Sensitivity	Description
Very High	Areas where the landscape exhibits a very strong, positive character with valued elements, features and characteristics that combine to give an experience of unity, richness and harmony. The character of the landscape is such that its capacity for accommodating change in the form of development is very low. These attributes are recognised in landscape 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 landscape exhibits strong, positive character with valued elements, features and characteristics. The character of the landscape is such that it has limited/low capacity for accommodating change in the form of development. These attributes are recognised in landscape policy or designations as being of national, regional or county value and the principle management objective for the area is conservation of the existing character.
Medium	Areas where the landscape has certain valued elements, features or characteristics but where the character is mixed or not particularly strong. The character of the landscape is such that there is some capacity for change in the form of development. These areas may be recognised in landscape policy at local or county level and the principle management objective may be to consolidate landscape character or facilitate appropriate, necessary change.
Low	Areas where the landscape has few valued elements, features or characteristics and the character is weak. The character of the landscape is such that it has capacity for change; where development would make no significant change or would make a positive change. Such landscapes are generally unrecognised in policy and where the principle management objective is to facilitate change through development, repair, restoration or enhancement.
Negligible	Areas where the landscape exhibits negative character, with no valued elements, features or characteristics. The character of the landscape is such that its capacity for accommodating change is high; where development would make no significant change or would make a positive change. Such landscapes include derelict industrial lands or extraction sites, 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 landscape through development, repair or restoration.

Table 13.1: Categories of Landscape Sensitivity

Magnitude of Landscape Change is a factor of the scale, extent and degree of change imposed on the landscape with reference to its key elements, features and characteristics (also known as 'landscape receptors'). Five categories are used to classify magnitude of landscape change.

Magnitude of Change	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 landscape (i.e., landscape receptors), and/or introduction of large elements considered totally uncharacteristic in the context. Such development results in fundamental change in the character of the landscape with loss of landscape quality and perceived value.
High	Change that is moderate to large in extent, resulting in major alteration or compromise of important landscape receptors, and/or introduction of large elements considered uncharacteristic in the context. Such development results in change to the character of the landscape with loss of landscape quality and perceived value.
Medium	Change that is moderate in extent, resulting in partial loss or alteration of landscape receptors, 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 but not necessarily reduction in landscape quality and perceived value.
Low	Change that is moderate or limited in scale, resulting in minor alteration of landscape receptors, and/or introduction of elements that are not uncharacteristic in the context. Such development results in minor change to the character of the landscape and no reduction in landscape quality and perceived value.
Negligible	Change that is limited in scale, resulting in no alteration to landscape receptors, and/or introduction of elements that are characteristic of the context. Such development results in no change to the landscape character, quality, or perceived value.

Table 13.2: Categories of Landscape Change

Significance of Effects

The terminology is used to describe the significance or importance of effects which is set out in the EPA's EIAR Guidelines 2022which include seven categories.

In order to classify the significance of effects (both landscape and visual), the predicted magnitude of change is measured against the sensitivity of the landscape/viewpoint, using the following guide. There are seven classifications of significance, namely: (1) imperceptible, (2) not significant, (3) slight, (4) moderate, (5) significant, (6) very significant, (7) profound.

		Sensitivity of the Resource				
		Very High	**High**	**Medium**	**Low**	**Negligible**
Magnitude of Change	**Very High**	Profound	Profound-Very Significant	Very Significant-Significant	Moderate	Slight
	High	Profound-Very Significant	Very Significant	Significant	Moderate-Slight	Slight-Not Significant
	Medium	Very Significant-Significant	Significant	Moderate	Slight	Not Significant
	Low	Moderate	Moderate-Slight	Slight	Not significant	Imperceptible
	Negligible	Slight	Slight-Not Significant	Not significant	Imperceptible	Imperceptible

Table 13.3: Significance of Effect

Table 13.3 indicates how sensitivity of the resource/receptor, and the magnitude of the change, are combined to assess the significance of the effect. It should however be noted that this is a guide only and a degree of professional judgement is also applied.

Landscape effects are also classified as positive, neutral, or negative/adverse. Development has the potential to improve the environment as well as damage it. In certain situations, there might be policy encouraging a type of change in the landscape, and if a development achieves the objective of the policy the resulting effect might be positive, even if the landscape character is profoundly changed.

Methodology for Visual Assessment

In Section 13.6 the visual effects of the development are assessed. Visual assessment considers the changes to the composition of views, the character of the views, and the visual amenity experienced by visual receptors. Visual receptor 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 or interest is focussed 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 or other attractions and places of community congregation where the setting contributes to the experience.

Visual receptors less susceptible to change include travellers on road, rail, and other transport routes (unless on recognised scenic routes which would be more susceptible), people engaged in outdoor recreation or sports where the surrounding landscape does not influence the experience, and people in their place of work or shopping where the setting does not influence their experience.

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. by appearing in arts).

The significance of the visual effects experienced at these locations is assessed by measuring the visual receptor sensitivity against the magnitude of change to the view resulting from the development. Five categories are used to classify a viewpoint's sensitivity:

Sensitivity	Description
Very High	Iconic viewpoints - 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 accommodating change in the form of development is very low. The principal 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 (such as views from houses or

Sensitivity	Description
	outdoor recreation features focussed on the landscape). The composition, character and quality of the view may be such that its capacity for accommodating compositional change in the form of development may or may not be low. The principal management objective for the view is its protection from change that reduces visual amenity.
Medium	Viewpoints representing people travelling through or past the affected landscape in cars or on public transport, i.e., viewing but not focused on the landscape which is regarded as moderately scenic. The views are generally not designated, but which include panoramic views or views judged to be of some scenic quality, which demonstrate some sense of naturalness, tranquillity, or some rare element in the view
Low	Viewpoints reflecting people involved in activities not focused on the landscape e.g., people at their place of work or engaged in similar activities such as shopping, or on heavily trafficked routes etc. The view may present an attractive backdrop to these activities but is not regarded as particularly scenic or an important element of these activities.
Negligible	Viewpoints reflecting people involved in activities not focused on the landscape e.g., people at their place of work or engaged in similar activities such as shopping where the view has no relevance or is of poor quality.

Table 13.4 Categories of Visual Receptor Sensitivity

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, or glimpses). It also considers the geographical extent of the change, the duration, and the reversibility of the visual effects.

Five categories are used to classify magnitude of change to a view.

Magnitude of Change	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 the dominant 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.

Table 13.5: Magnitude of Visual Change

Significance of Visual Effects

As for landscape effects, in order to classify the importance of visual effects, the magnitude of change to the view is measured against the sensitivity of the viewpoint. This is set out in Table 13.5, though as noted this table is a guide only.

Quality and Timescale

The predicted effects are also classified as beneficial, neutral, or adverse. This is not an absolute exercise; in particular, visual receptors' attitudes to development, and thus their response to the impact of a development, will vary. However, the methodology applied is designed to provide robust justification for the conclusions drawn. These qualitative impacts/effects are defined as:

- Adverse – Scheme at variance with landform, scale, pattern. Would degrade, diminish or destroy the integrity of valued features, elements or their setting or cause the quality of the landscape(townscape)/view to be diminished;
- Neutral - Scheme complements the scale, landform and pattern of the landscape (townscape)/view and maintains landscape quality;
- Beneficial – improves landscape(townscape)/view quality and character, fits with the scale, landform and pattern, and enables the restoration of valued characteristic features or repairs / removes damage caused by existing land uses.

Effects are also categorised according to their longevity or timescale:

- Temporary – Lasting for one year or less;
- Short Term – Lasting one to seven years;
- Medium Term – Lasting seven to fifteen years;
- Long Term – Lasting fifteen years to sixty years;
- Permanent – Lasting over sixty years.

A statement is made as to the appropriateness of the proposed development based on the combined assessment of the predicted landscape and visual effects. This methodology, in accordance with the various guidelines for LVIA, results in a conclusion as to the appropriateness of the proposed development based on objective assessment of its likely landscape and visual impacts.

13.2.3 Tools used in the assessment

Photomontages (refer to Appendix 13.1) were used to assist in the assessment of visual effects.

13.3 Baseline Environment

13.3.1 Cork City Development Plan 2022-2028

The following section includes policies and objectives from the Cork City Council Development Plan 2022, hereafter referred to as the Plan. These include policies relating to development, landscape character, and viewpoints.

A number of objectives relating to the landscape and developments in general are as follows:

Strategic Objective 5

To strengthen the green and blue infrastructure of Cork City. To protect and promote biodiversity and habitat connectivity and protect natural areas. To protect and enhance Cork City's unique landscape character and maritime heritage. To ensure all of Cork City's residents have access to open spaces, recreation and amenity facilities and natural areas.

A strong green and blue infrastructure network is essential to the quality of life of Cork City's residents and contributes towards the creation of places where people want to live and work. It is an objective of Cork City Council to achieve a healthy, green and connected City with high-quality and interconnected open spaces, parks, diverse natural areas and green and blue corridors.

Proposals for new development in Cork City will respect and reflect the topography, landscape and ecology of the City, and will protect and enhance the City's green and blue infrastructure by ensuring that development does not fragment existing networks of green and blue infrastructure. Proposals for new development will demonstrate how green and blue infrastructure, open space, sport and recreation, landscape and biodiversity are considered commensurate to the scale and context of the development in the development process.

Chapter 6: Green and Blue Infrastructure, Open Space and Biodiversity

Cork's Landscape:

6.10: With the intensification of the City, its landscape and natural heritage assets are of huge importance to those living, working and visiting Cork. They are vital to quality of life, are non-renewable assets and help enhance the attractiveness and image of the city as a place to live and work.

6.11: Cork City has an attractive physical setting formed by the Lee Valley and Estuary and the ridges rising to the north and south of the city. These features are supplemented by a range of public open spaces, parks, walkways, public and private spaces, trees and tree groups, and together form the green infrastructure of the city, which play a significant role in supporting biodiversity, such as mammals, birds, invertebrates, trees and plants.

6.12: The distribution of landscape, natural heritage and recreational assets is vitally important to creating an accessible city. Cork City Council will strive to create a network of natural heritage areas and recreational open spaces / amenity areas by promoting linkages and accessibility between these areas and by using walkways / cycleways to connect them where appropriate, and to encourage active transportation modes.

Landscape Protection:

6.17: Cork City Council seeks to protect and enhance the landscape character of the City by protecting the significant landscape elements that contribute to the general amenity of Cork City. This is achieved through a number of land use mechanisms in this Plan, including the designation of Land Preservation Zones (LPZ) and Areas of High Landscape Value (AHLV).

6.18: Planning applications within areas or on sites benefiting from such landscape protection must demonstrate that there is no resulting adverse impact on the landscape assets and character of the area, by means of a design statement that includes a landscape assessment and visual impact assessment the impact. The City Council may seek discretionary Environmental Impact Assessments on development proposals that it considers would be likely to have a negative impact on the landscape.

View Management Framework

6.25: Cork City offers a visually striking landscape that combines urban settlements with rivers, ridges, spaces, streets, rural hinterland, as well as fantastic buildings that we are all proud of. The views of Cork that we experience help define our understanding of the City – its character and identity.

6.26: In general, the City is appreciated by most people from viewing locations along the River Lee and its tributaries and from elevated locations.

6.27: Cork City Council seeks to manage development through its View Management Framework in order to protect the views and prospects of special amenity value and the amenities of places and features of natural beauty or interest, where these are not protected by other objectives of this Plan. These views are seen from places that are publicly accessible and well used and include significant buildings or urban landscapes that help to define Cork City at a strategic level.

6.28: These views represent at least one of the following:

1. *Panoramas that offer expansive views of the City.*
2. *Linear views to landmark buildings.*
3. *River corridor views.*
4. *Scenic hinterland routes.*

Active Recreation and Open Space:

6.39: The quality and quantity of public realm in towns and cities is a key determinant of the quality of life that any place can offer its residents, workers and visitors. Open spaces are a key component of public realm.

6.44: The quality of public open spaces is paramount, in terms of design, accessibility, shared use, biodiversity, sustainable urban drainage systems and provision for allotments and community gardens.

Non-Designated Areas of Natural Heritage Importance

6.66: Natural heritage and biodiversity of Cork City is not just contained within designated areas alone but is found throughout the City. Many areas which do not have formal protection under legislation have a local natural heritage value in terms of the urban environment in which they are located, the plant and animal life that they support and the biodiversity that lies within them e.g. woodlands, hedgerows, rivers, private gardens, parks, sports grounds graveyards, institutional lands including religious grounds, hospitals, schools and universities.

Trees and Woodlands

6.69: Trees and woodlands make a valuable contribution to the biodiversity, landscape value of and health and well-being of its citizens as well as playing a role in climate adaptation and enhancing the aesthetics of the built environment and public realm thus benefiting the environmental, social and economic wellbeing of Cork City's residents.

6.70: It is important to protect and maintain existing trees or groups of trees in the City, particularly those in private ownership and promoting new planting on public land. As set out in the Green and Blue Infrastructure Study, woodland habitat in Cork City is predominantly located in the north-western fringe of the wider city, within the hinterland, Tower and Blarney and along the boundary fringe at Glanmire and Rochestown. Tree canopy coverage is estimated to be 14% in Cork City.

6.71: The Planning and Development Acts sets out the legal framework and procedures to make a Tree Preservation Order (TPO). During the lifetime of the Development Plan, Cork City Council will continue to evaluate trees in the City and, where appropriate, make new Tree Protection Orders.

Green and blue Infrastructure, Open Space and Biodiversity Development Objectives:

Objective 6.5: Trees & Urban Woodland

a. To protect and enhance the City's tree and urban woodlands in public and private ownership. Cork City Council will seek to survey, map and maintain existing important individual and groups of trees, using Tree Preservation Orders as appropriate.

d. To support retaining existing trees and the planting of new trees as part of new developments subject to care on the species of tree and the siting and management of the trees to avoid conflict with transport safety and residential amenity in particular.

e. To promote the planting of pollinator friendly native deciduous trees and shrubs.

Objective 6.9: Landscape

a. To preserve and enhance Cork's landscape character, key landscape assets and views and prospects of special amenity value.

b. Landscape will be an important factor in all development proposals, ensuring that a proactive view of development is undertaken while maintaining respect for the environment and heritage generally in line with the principle of sustainability.

c. To ensure that new development meets the highest standards of placemaking, siting and design.

d. To protect those prominent open hilltops, valley sides and ridges that define the character of the Cork City Hinterland and those areas which form strategic, largely undeveloped gaps between the main Hinterland settlements from development.

e. To discourage proposals necessitating the removal of extensive amounts of trees, hedgerows and historic walls or other distinctive boundary treatments.

f. To support, as appropriate, any relevant recommendations contained in the National Landscape Strategy for Ireland 2015-2025.

Objective 6.11: Landscape and Development

To ensure that the management of development throughout Cork City will have regard for the value of the landscape, its character, distinctiveness and sensitivity in order to minimize the visual and environmental impact of development, particularly in designated areas of high landscape value where higher development standards (layout, design, landscaping, materials) are required.

Objective 6.22: Natural Heritage and Biodiversity

a. To protect, promote and enhance Cork City's natural heritage and biodiversity.

b. To support the implementation of the National Biodiversity Plan and the All-Ireland Pollinator Plan and successor publications in Cork City.

c. To support and implement the biodiversity actions from the Cork City Heritage and Biodiversity Plan (2021-2026) in partnership with all relevant stakeholders

d. Cork City Council will seek the enhancement of existing, and the delivery of new, biodiversity-rich areas throughout the City including individual buildings, streets, public and private spaces by supporting the provision of green roofs and walls, rain gardens, biodiversity-rich parklets, rainwater harvesting, natural banks and naturalised SUDS.

e. Cork City Council will seek, where appropriate, to enhance the linear habitat connectivity, including the interconnection and enhancement of:

- *Woodlands, gardens, open spaces, fields and hedgerows.*
- *Coastal habitats, river catchments, lakes, streams, ponds.*
- *Aquatic, marginal and bank side habitats.*
- *Parks, playing fields and recreational areas.*
- *Upstream of mapped flood*

Objective 6.25: Non-designated Areas of Biodiversity Importance

Cork City Council will seek to map the City's ecological networks and corridors of local biodiversity value outside of designated areas, and to work with local stakeholders in supporting the effective management of features which are important for wild flora and fauna and habitats.

Strategic Objective 9: Environmental Infrastructure

To develop a compact, sustainable City by ensuring the creation of attractive, liveable, diverse, safe, secure and welcoming and well-designed urban places, communities and neighbourhoods that enjoy a high quality of life and well-being.

Proposals for new development will follow a design-led approach with sustainable, high-quality, climate resilient placemaking at its core. Development should have a positive contribution to its receiving environment delivered by innovative architectural, landscape and urban design, that

respects the character of the neighbourhood, create a sense of place, and provide green spaces and community and cultural amenities commensurate with the nature and scale of the development.

Chapter 11: Placemaking and Managing Development

Development and Landscape, Natural Environment and Biodiversity

11.220: New development shall be sensitively designed to fit the existing landscape setting, using high quality design and where necessary, landscape mitigation measures that maintain or enhance the landscape.

11.222: All development proposals are expected to:

1. *Avoid, or as a last resort satisfactorily mitigate, adverse impacts on existing designated and non-designated habitats. This is in addition to the Appropriate Assessment requirement relating to designated sites.*
2. *Integrate provision for biodiversity enhancement which may include compliance through public open space, gardens, areas of planting (pollinator friendly planting and native tree species should be prioritised), sustainable urban drainage systems, incorporating green roofs, bee hotels, bird and bat boxes.*
3. *Avoid adverse impacts, incapable of satisfactory avoidance or mitigation, on mature trees, protected flora, animal or bird species.*

13.3.2 Landscape Character – Site and Local Area

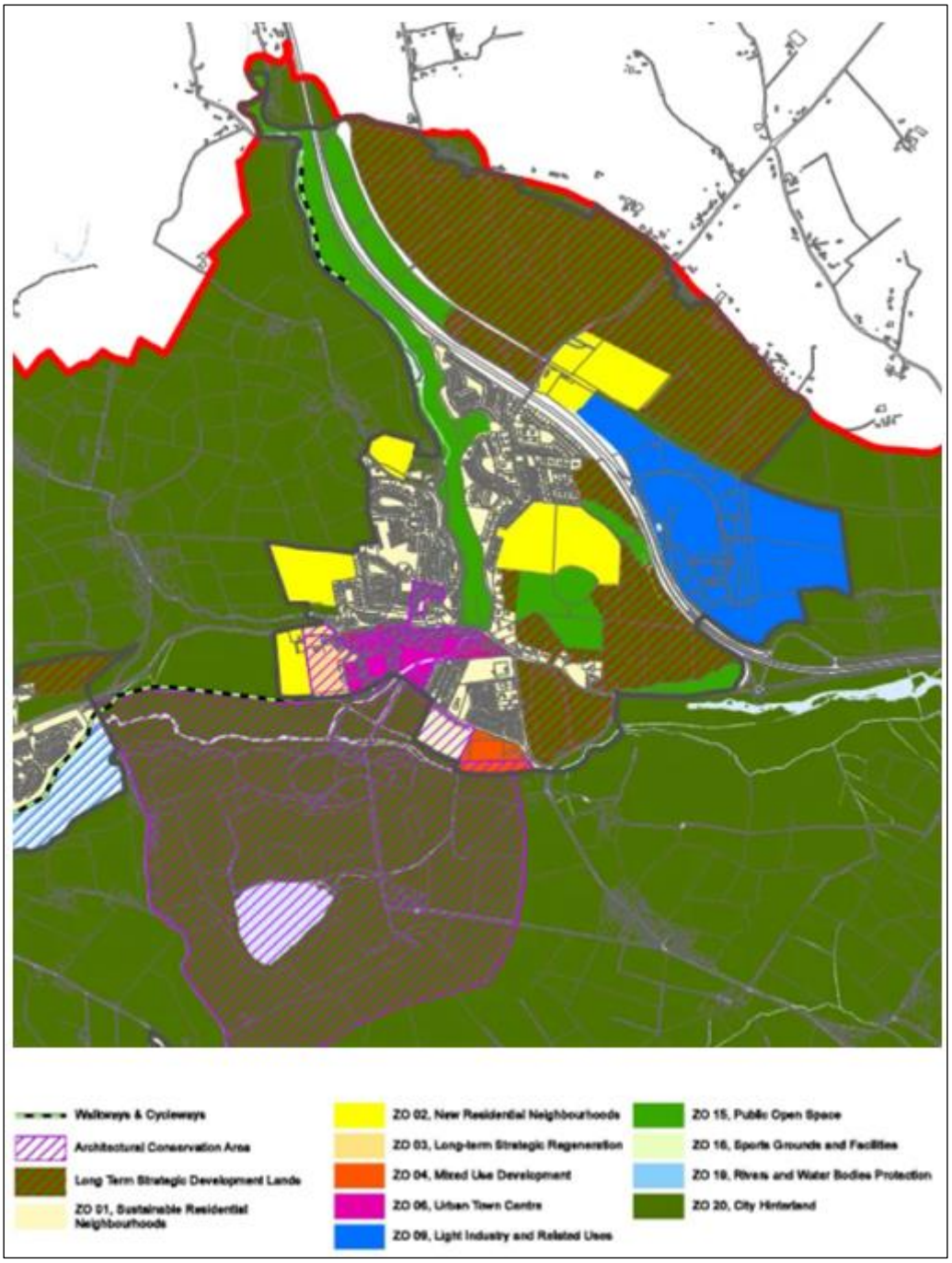


Figure 13.1: Extract of Cork City Development Plan 2022-2028 Land Use Zoning Map

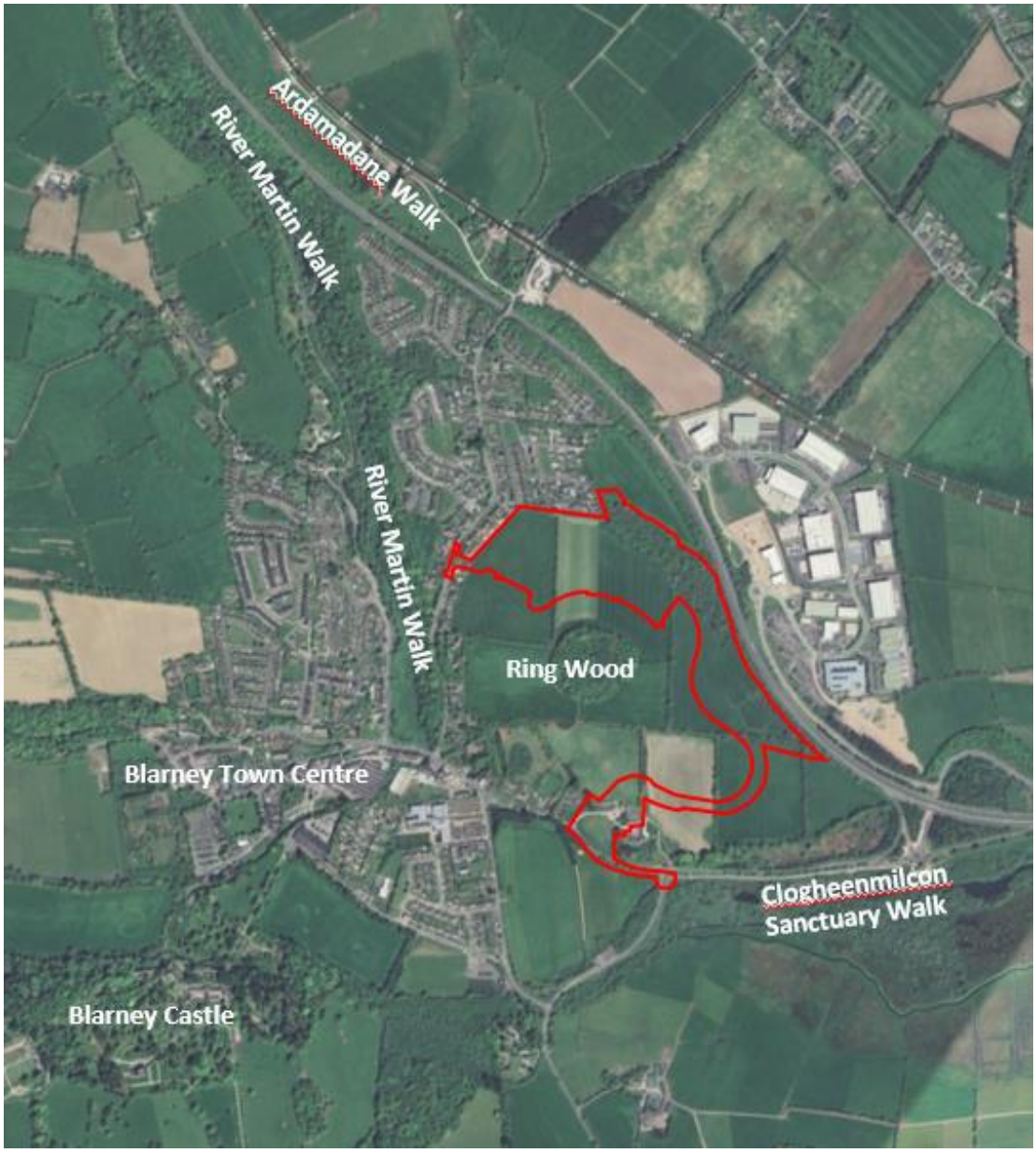


Figure 13.2: Location of Site shown in indicative red outline (Source: Google Maps)

The subject site is located at the north-eastern edge of Blarney Village and is accessed via Station Road and the R617. The site is currently in agricultural use. The northern portion of the site abuts the planning approved Ringwood Phase 1 LRD scheme (planning ref. 2443031) to the south and Ard na Greine and Aisling Geal housing estates to the north. To the west, the site abuts Assumption Terrace. To the east the site adjoins the N20.

The southern portion of the site adjoins the R617 adjacent to Castleview House.

The site forms part of a larger land holding at Ringwood which include lands to the south and east of Ringwood woodland. There is also a parcel of land at Stoneview located to the north of the N20 National Primary Road which is within the applicant's ownership.



Plate 13.1: View southward from northern boundary of phase 2 site



Plate 13.2: View northward across proposed SuDS / Amenity area



Plate 13.3: View eastward along northern boundary with Aisling Gael housing estate



Plate 13.4: View north across Phase 1 and Phase 2 lands to Ard na Greine



Plate 13.5: View north-east Phase 1 and Phase 2 lands to Blarney Business Park.

13.3.3 Land Use and Local Area Character

The subject site is located in close proximity to the centre of Blarney. The centre of the town has an attractive village green which is overlooked by local businesses, shops and residential properties. Blarney Castle and Gardens, a renowned tourist destination of national and international repute, is located in close proximity to the south-west of the square.

There are residential developments, schools and sports grounds in the vicinity of the core area with additional housing areas located to the north of the town. The hinterland includes a number of amenities and recreational routes including Clogheenmilcon Fen, the River Martin Amenity Walk, and Ardamadane Amenity Walk.

Blarney Business Park is located to the east of the N20 National Primary Road approx. 1.3km from Blarney town centre. Topographical variations across the local area give rise to an attractive undulating landscape with localised vantage points which facilitate panoramic views across the landscape.

The area to the north and west of the subject site has a strong residential character. To the south along the R617 there are a number of single dwelling residential properties aligned along the road including Castleview House which is located on the applicant's wider landholding. Infrastructure projects for the area include the upgrading of the N20 National Primary Road and the delivery of new train station at Stoneview.

13.3.4 Topography and Views

Topography varies considerably across the local area by virtue of the landform associated with local river valleys and ridges. The topography gives rise to variation and interest in the landscape as well as various vantage points which accommodate distant or panoramic across the landscape. Examples include the views from the perimeter of Ringwood woodland and the elevated parts of the Stoneview lands. There are panoramic views from Blarney Castle tower across the local landscape in all directions and the castle is described as a Strategic Landmark Building in the View Management Framework section of Cork City Council's Development Plan 2022 to 2028 (Volume 2).

13.3.5 Vegetation

Vegetation on the subject site is made up predominantly of native hedgerows and trees along field and site boundaries. A well-developed hedgerow with a number of specimen trees runs north to south through the centre of the subject site and extends southward through Phase 1 as far as Ringwood woodland.

Ringwood is a prominent hilltop woodland and feature of the local landscape. It abuts the Ringwood Phase 1 development and is the subject of a management plan which was submitted with the Phase 1 planning application.

Wet woodland WN6 is located along the eastern boundary of the subject site adjacent to the N20 road corridor. It consists of abundant alder in the centre with some downy birch and ash. The understorey consists of grey willow bushes along with immature ash and sycamore trees. There are a number of mature trees along the edge of the woodland notably along its western flank which are the subject of a specialist arborists report which accompanies the planning application

The woodland and site hedgerows are described in detail in the Chapter 11 – Biodiversity.



Plate 13.6: View eastward from Station Road entrance area



Plate 13.7: View southward from Ard na Greine



Plate 13.8: View northward along Station Road from site entrance



Plate 13.9: View southward along Station Road from site entrance



Plate 13.10: View to site from Blarney Castle tower



Plate 13.11: View from housing estate on western side of River Martin valley



Plate 13.12: Clogheenmilcon Fen local amenity site



Plate 13.13: River Martin local amenity walking route

13.3.6 Summary – Landscape Character

The character of the local landscape varies considerably given the location of the subject site at the interface between Blarney town and its rural hinterland. The site is a greenfield site comprised of the large fields with boundary hedgerows which adjoins the planning approved Phase 1 site, and the R617 to the south.

The site is bound to the west and north by established housing areas. The subject site is located at the eastern edge of the town in an undulating landscape. It has access to local services, amenities and public transport links. Blarney Business Park and the N20 Cork-Limerick National Primary Road are located in close proximity to the east of the site.

13.3.7 Landscape Values

The landscape values of a site and surrounds can be identified through formal designations which infer landscape value, as well as values which are not enshrined in policy but are evident on the site. Landscape values vary across the locality. Overall, local landscape value is considered to be medium.

In addition to formal designations at international, national and local level, the GLVIA 3rd edition (2013) recommend the use of a number of criteria which can help to describe landscape values. These are listed below.

- Landscape Quality/Condition: A measure of the physical state of the landscape:
- Heritage/Conservation interests
- Scenic Quality
- Rarity
- Perceptual aspects
- Recreation Value
- Enhancement values

Landscape Quality/Condition

The site has strong greenfield characteristics defined by its undulating topography and agricultural fields with boundary hedgerows. Ring Wood woodland, a prominent landscape feature in the local landscape, provides a distinctive backdrop to the site and is prominent in views from Blarney Castle.

Heritage/Conservation interests

There are no protected structures or archaeological sites within the subject site.

Scenic Quality

There are no designated scenic routes in the vicinity of the site and there are no views which form part of Cork City Councils View Management Framework.

Rarity

The site has no rare built or natural features but does have valued green infrastructure which contributes to the character of the local area and views from Blarney Castle.

Perceptual aspects

Ringwood woodland is a prominent landscape feature in local views, including from Blarney castle tower.

Recreation Value

The site is private and does not have any formal recreational function.

Conservation values

The conservation values indicate those aspects of the receiving environment which are sensitive and could be negatively impacted on by the proposed development. These values form the potential landscape and visual constraints to the proposed development. These include:

- Views which could be affected by the proposed development such as from Blarney Castle.
- Views from existing sensitive receptors in local residential neighbourhoods.

Enhancement Values

The enhancement values reflect change that is occurring in the landscape and its inherent robustness and they identify elements which could be enhanced.

The opportunity to demonstrate successful intervention in the landscape in fulfilment of the zoning objectives set out in Cork City Development Plan 2022-2028.

13.3.7 Zone of Visual Influence and Potential Visual Receptors

A thorough assessment of potential views of the proposed development was carried out during the site visit. The surrounding vicinity was walked and driven, and the areas with likely views were identified.

Locations for viewpoints identified include:

Views from the south

- View from the R617
- View from Castle Close Crescent

Views from the north

- Views from Stoneview
- View from Ard na Greine
- View from Aisling Geal

Views from the east

- View from Blarney Business Park

Views from the West

- View from Blarney Castle tower
- View from Monacnappa housing estate
- View from rear access lane to properties of Station Road
- View from Station Road

A list of the 14 viewpoints taken to represent a variety of visual receptors in the vicinity is included in Table 13.5 below and an accompanying map showing the viewpoint locations is included in Figure 13.7, below and also in the Photomontage Booklet prepared by specialist provider Gnet 3D.

13.4 Characteristics of the Proposed Development

The proposed development will consist of a large-scale residential development (LRD), representing Phase 2 of development in the Blarney East / Ringwood Expansion Area, and comprising the construction of (i) 323 no. residential dwellings comprising of 157 no. terraced, end-of-terrace, and semi-detached houses (including 129 no. 3-bed and 28 no. 4-bed units); 52 no. duplexes provided in 5 no. 3-storey buildings (including 26 no. 2-bed and 26 no. 3-bed units) and 114 no. apartments provided in 2 no. 5-storey buildings (including 54 no. 1-bed and 60 no. 2-bed units); (ii) a primary care centre, over 2 stories and 1,724sqm in area, incorporating GP services (iii) the refurbishment and redevelopment of existing farm outbuildings for conversion to a retail/pharmacy use, 80sqm in area, and café/restaurant use, 380sqm in area; (iv) a new access roadway into the site from the R617 with associated pedestrian and cyclist infrastructure, which will form the 1st phase of the proposed Stoneview Access Link Road, (v) a new signalised junction on the R617 road which will provide a single lane approach to the west and a two lane approach to the east, comprising one lane for through traffic on the R617 and a right turn lane for traffic turning into the site, and associated footpath improvements and cycle lane provision (vi) a new signalised junction at the R617 and Killard Road junction which will provide a two lane approach from the west, one lane for through traffic heading eastbound on the R617 and a right turn lane onto the Killard Road, with associated footpath improvements and pedestrian and cyclist infrastructure; (vii) a new signalised junction on Station Road that reflects the junction permitted under the Phase 1 LRD scheme (Reg. Ref. 2443031); (viii) private, communal, and public open spaces and hard and soft landscaping, boundary treatments and amenity areas, including a new wetland public amenity area, (ix) drainage works and nature-based SuDS measures (x) foul sewer infrastructure, including 1no. pump station, the diversion of existing foul and water sewers and other new network works, (xi) car parking, including EV charging points, bicycle parking, and motorcycle parking bays (xii) 2no. substations, all associated ancillary site, drainage and development works.

13.5 Potential Impacts of the Proposed Development

13.5.1 Construction Phase

The development would generate traffic to and from the site associated with the delivery of materials to the site required throughout much of the construction phase.

13.5.2 Operational Phase

The proposed development could potentially have a significant visual impact on views from Blarney Castle, local residential areas and from the local road network in the vicinity of the site. This would be created by the new housing units that would be presented.

13.6 Landscape and Visual effects

13.6.1 Landscape Sensitivity

Landscape sensitivity, as outlined in Table 13.1, is a combination of the landscape value of the site, and the susceptibility of the landscape to change.

The landscape value of the site, as noted above in Section 13.2.2, is considered to be Medium. The susceptibility of the site to a development of this type is considered Medium given the mixed-use character of the locality and the designated land use zoning for the site.

Therefore, landscape sensitivity is considered to be Medium.

Medium:

Areas where the landscape has certain valued elements, features or characteristics but where the character is mixed or not particularly strong. The character of the landscape is such that there is some capacity for change in the form of development. These areas may be recognised in landscape policy at local or county level and the principal management objective may be to consolidate landscape character or facilitate appropriate, necessary change.

13.6.2 Construction Phase Landscape effects

Magnitude of Change

The construction phase will involve earthworks and the movement of machinery on site. This will introduce noise and dust into the landscape.

The magnitude of change as a result of the proposed development is considered Significant, however, it should be noted that these effects are short to medium-term and expected to apply to a number of phases of construction.

Significance of Effect

The construction phase is likely to give rise to temporary to short term, moderate landscape effects which will be adverse in quality. These will be relatively localised to the site and the immediate vicinity.

13.6.3 Operational Phase Landscape effects

Magnitude of Change

The magnitude of change as a result of the proposed development is considered to be Medium:

Change that is moderate in extent, resulting in partial loss or alteration of landscape receptors, 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 but not necessarily reduction in landscape quality and perceived value.

Internally, the proposed development will constitute a significant intervention which will change the character of the site transforming it from agricultural greenfield use to a residential neighbourhood. Wet woodland WN6 will be impacted along it's western flank where topographical constraints dictate the alignment of the new link access road which encroaches slightly along the edge of the woodland. This requires the removal of a strip of the wetwood and a number of mature fringe trees. Details of trees affected and proposed mitigation measures are provided in Section 3 of the Landscape Design Rationale Report Ref. BLR-2-02-XX-XX-RP-CSR-LA-01.

In essence the landscape impact associated with the alignment of the road is minimised by avoidance of fragmenting it. The woodland, therefore, remains intact from a habitat and landscape buffer point of view. Mitigation measures include the planting of trees and areas of woodland in the vicinity of the proposed SuDS /Amenity Recreational Area to the south of the wetwood.

Externally, the alteration of the site will be apparent from a number of locations in the immediate vicinity of the site such as from the entrance point on Station Road, and from vantage points to the north and west of the site. These changes will appear as an extension to the adjacent approved phase 1 development.

In more distant more views of the site, such as from Blarney Castle, a Strategic Landmark Building as per Cork City Council's View Management Framework, landscape impacts are mitigated by existing trees and hedgerows and variations in the local topography which combine to limit views of the proposed development. Tree planting through the development site including along site boundaries will also provide additional screening. Mitigation planting along the southern edge of phase 1 is already in place to supplement an existing hedgerow along that boundary. Dark coloured roofing materials and the careful positioning of apartment buildings also assist the successful integration of the development in the landscape setting.

Significance of Effect

The landscape effect is considered to be significant, and the effect neutral, on the site and it's locality. The perception of the site as a greenfield site will change, particularly in the immediate vicinity of the site. The change will generally complement the planning approved phase 1 development.

The proposed development will provide for a new high-quality residential neighbourhood which will be well-integrated in the landscape setting. Ringwood woodland, a prominent feature in the local landscape, will not be impacted by the proposed development. Impacts on wetwood WN6 are minimised and comprehensively mitigated as described above. Landscape effects will be minimal in views from Blarney Castle.

These attributes amount to neutral aspects of effect on the urban edge landscape.

13.6.4 Visual Receptors – Viewpoints

A series of viewpoints was chosen to represent a variety of viewers from a range of locations. These include residential viewers as well as viewers from the local road network and visitor attractions in the city. The viewpoints represent viewers of High to Low sensitivity, and are as follows:

Viewpoint	Description	Distance From Site
1	View from Monacnappa Housing Estate	0.4km
2	View from Blarney Castle	1.0km
3	View from Ard Na Greine Housing Estate	0.16km
4	View from Aisling Gael Housing Estate	0.16km
5	View from Station Road Site Entrance	Adjacent
6	View from Rear Access Lane to Assumption Terrace	Adjacent
7	View from Blarney Business Park	0.15km
8	View from Castle Close Cresent Housing Estate	0.33km
9	View from Stoneview	0.5km
10	View from Stoneview	0.5km
11	View from R617	Adjacent
12	View from R617	Adjacent
13	View from Knocknagorty	2.0km
14	View from Clogheen to Blarney Road	2.0km

Table 13.6.: Selected Viewpoints

These viewpoints are described below and should be read in conjunction with the booklet of photomontages which is appended to the EIAR (Appendix 13.1). A viewpoint location map is shown in Figure 13.3 and Figure 13.3a below.

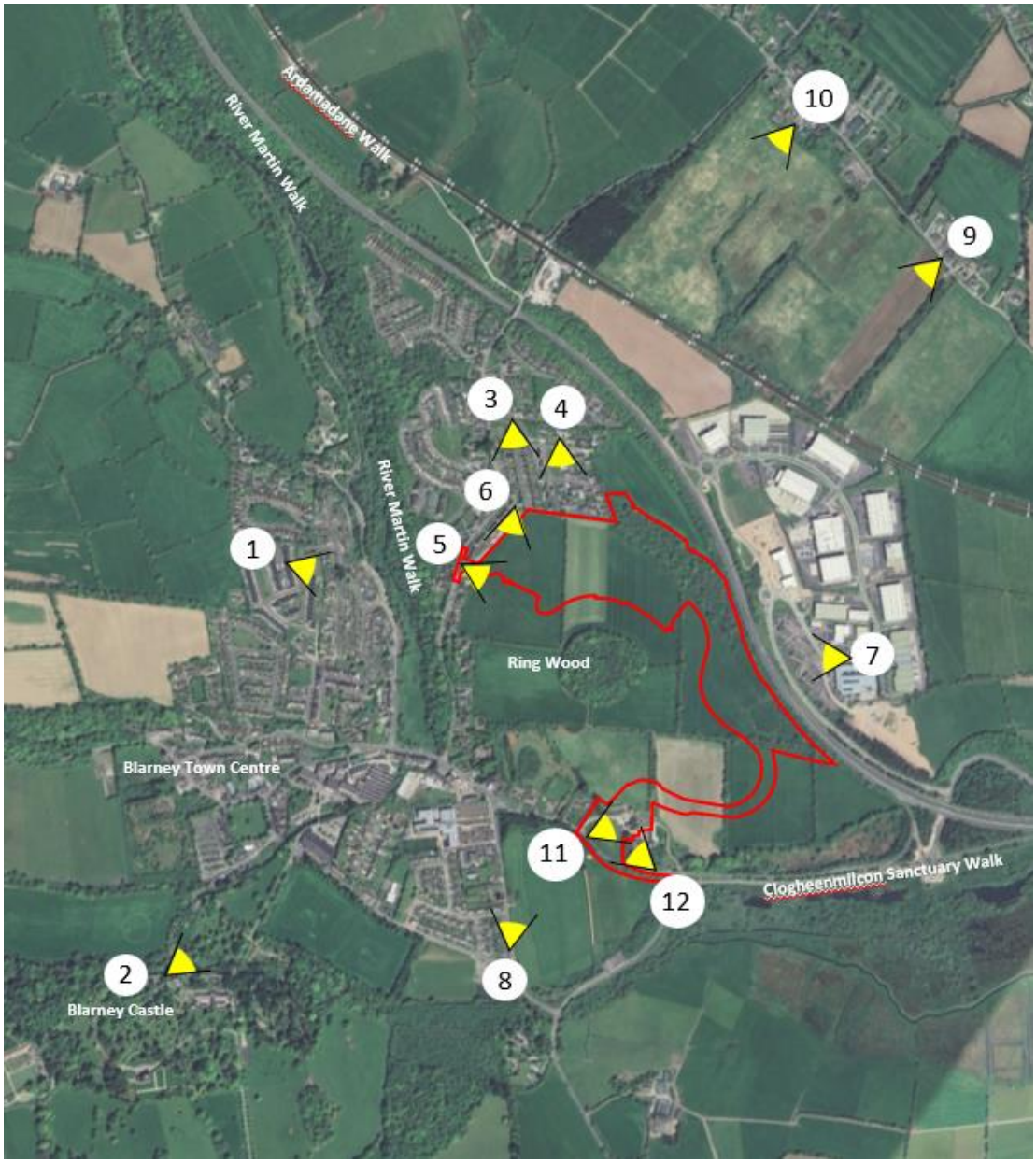


Figure 13.3: Viewpoint Locations | not to scale



Figure 13.3a: Viewpoint Locations | not to scale

13.6.5 Construction Phase Visual Effects

Magnitude of Change

The construction phase will involve excavation, some local stockpiling of material and the movement of machinery on site. Construction compounds will be located within the site along with material stockpiles. The magnitude of change on areas external to the site is considered to be Medium. These effects are short-term during the construction phase.

Significance of Effect

The construction phase is likely to give rise to temporary to short term, Slight to Moderate visual effects which will be adverse in quality. Visual effects are likely to be most pronounced in views from areas to the north and west of the site with visual effects likely to be Moderate, adverse effects.

13.6.6 Operational Phase Visual Effects

The photomontages from Viewpoints 1-14 below assist in the assessment of operational phase visual effects.

The viewpoints are described below:

Viewpoint 1 - View from Monacnappa Housing Estate

Existing View

This view from Monacnappa shows the subject site in the middle distance on the opposite side of the River Martin valley. Ard na Greine and Aisling Gael housing estates are located adjacent to the site to the left and Ringwood woodland on the right-hand-side is a prominent landscape feature in the undulating landscape setting.

Visual Receptor Sensitivity

The viewpoint is located at the entrance to the local housing estate. Viewers will be local residents primarily, who are considered to be of High sensitivity.

Proposed View

The photomontage view shows that the proposed development will be visible from this location as an intervention in the site which will extend the footprint of residential development in the locality.

Magnitude of Change

The magnitude of change is considered Medium. Medium is defined as:

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.

Significance of Effect

The effect is considered Significant, and the quality of the effect is Neutral in the short-term and in the medium to long term. The proposed development is visible signalling the transition of the site from greenfield to residential use. The development is well-integrated in the site and is compatible with existing adjacent housing in respect of height and materiality. The use of dark roofing materials assists integration in the local context.

View along with approved Phase 1 Housing – (Cumulative)

An additional photomontage view is provided which also shows the approved Phase 1 housing scheme. Phase 2 appears as an extension to Phase1 in terms of scale and materiality and nestles well in the setting. The cumulative visual effect is considered to be Moderate, and Neutral in quality.

Viewpoint 2 - View from Blarney Castle

Existing View

This panoramic view across Blarney is characterised by significant green infrastructure in the foreground associated with the grounds of Blarney Castle . Beyond the castle grounds, the built environment of the town is evident. The subject site is located adjacent to Ringwood woodland which is a prominent landscape feature in the locality.

Visual Receptor Sensitivity

The viewpoint is located on the ramparts of Blarney Castle tower. Viewers will be visitors to Blarney Castle including tourists from around the country and abroad who are considered to be of High sensitivity.

Proposed View

The photomontage view shows that small elements of the proposed development will be visible from this location. Visual effects are limited due to the screening effects of existing vegetation in the vicinity of the main housing area to the left of the image and the Primary Care Centre at the proposed R619 site entrance to the right of the image.

Magnitude of Change

The magnitude of change is considered Low. Low is defined as:

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.

Significance of Effect

The effect is considered Moderate-Slight, and the quality of the effect is Neutral in the short-term and in the medium to long term . The proposed development is significantly screened from view by existing vegetation, the nature of local topography, and the choice of dark roofing materials on the housing units. The photomontage demonstrates the natural capacity of the site to successfully accommodate the development. Additional screen planting along the hedgerow which defines the southern boundary of phase 1 was completed in December 2024 and this will have increasing screening effect as it matures in the medium to long term. The Primary Care Centre and the link access road corridor will be substantially screened from view by existing tree cover to the right of the photomontage image.

Proposed View along with approved Phase 1 Housing – (Cumulative)

An additional photomontage view is provided which also shows the approved Phase 1 housing scheme. Small elements of Phase1 are just discernible but are not intrusive. The cumulative visual effect is considered to be Slight, and Neutral in quality.

Viewpoint 3 - View from Ard Na Greine Housing Estate

Existing View

The view from Ard na Greine shows the local residential street and the backdrop of the subject site defined by green field hedgerows and the prominent Ringwood woodland on the brow of the hill.
Visual Receptor Sensitivity

Viewers will be local residents who are considered to be of High sensitivity.

Proposed View

The photomontage view shows that the proposed development will be visible from this location revealing a section of a local street and adjoining houses. The proposed development generally complements the existing street in terms of scale, heights and materiality and the future provision of a pedestrian link is allowed for in terms of access provision to existing boundary wall between the two sites.

Magnitude of Change

The magnitude of change is considered Medium. Medium is defined as:

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.

Significance of Effect

The effect is considered Significant, and the quality of the effect is Neutral in the short-term and in the medium to long term . The proposed development constitutes a significant intervention in the view but one that is not unusual for lands zoned for housing. The design qualities of the housing is demonstrated in the form and materiality of the units and the dark roofing materials assist in mitigating visual effects. Proposed tree planting along the streets will also enhance the new neighbourhood.

Proposed View along with approved Phase 1 Housing – (Cumulative)

An additional photomontage view is provided which also shows the approved Phase 1 housing scheme. The cumulative visual effect is considered to be Moderate, and Neutral in quality.

Viewpoint 4 - View from Aisling Gael Housing Estate

Existing View

The view from Ard na Greine shows the local residential street and the backdrop of the subject site defined by green field hedgerows and the prominent Ringwood woodland on the brow of the hill.

Visual Receptor Sensitivity

Viewers will be local residents who are considered to be of High sensitivity.

Proposed View

The photomontage view shows that the proposed development will be partially visible from this location revealing the elevations of houses facing toward Ard Na Greine.

Magnitude of Change

The magnitude of change is considered Medium. Medium is defined as:

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.

Significance of Effect

The effect is considered Significant, and the quality of the effect is Neutral in the short-term and in the medium to long term. The proposed development constitutes a significant intervention in the view but one that is not unusual for lands zoned for housing. The design qualities of the housing is demonstrated in the form and materiality of the units and the dark roofing materials which assist in mitigating visual effects.

Proposed View along with approved Phase 1 Housing – (Cumulative)

An additional photomontage view is provided which also shows the approved Phase 1 housing scheme. The cumulative visual effect is considered to be Moderate, and Neutral in quality.

Viewpoint 5 – View from Station Road Site Entrance

Existing View

This view from Station Road shows an existing entrance to subject site including the existing informal storage/turning area at the proposed site entrance on Station Road. Houses to either side of the gap site are visible.

Visual Receptor Sensitivity

The viewpoint is located on Station Road. Residents who live directly opposite the entrance are considered to be of High sensitivity while road users who use Station Road to get to and from Blarney are considered to be of Medium sensitivity.

Proposed View

The proposed view shows the proposed site entrance road junction and housing units which face onto the site access road. Site signage is visible to the left along with site boundary planting and cycle lane provision.

Magnitude of Change

The magnitude of change is considered Medium. Medium is defined as:

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.

Significance of Effect

The effect is considered Significant, and the quality of the effect is Beneficial in the short-term and in the medium to long term. The proposed development will have a positive effect, transforming the unkempt gap-site and delivering a distinctive housing scheme with access road with entrance signage and cycle lane.

Proposed View along with approved Phase 1 Housing – (Cumulative)

An additional photomontage view is provided which also shows the approved Phase 1 housing scheme. The Phase 1 development will enhance the entrance, providing additional passive supervision along the street. Phase 2 development will be substantially screened by Phase 1. The cumulative visual effect is considered to be Negligible, and Neutral in quality.

Viewpoint 6 - View from Rear Access Lane to Assumption Terrace

Existing View

This view southward along the access laneway shows the greenfield character of the subject site, with hedgerow boundaries and the backdrop of Ringwood woodland.

Visual Receptor Sensitivity

The laneway is used by local residents to access the back gardens of their properties which front onto Station Road who are considered to be of Medium sensitivity.

Proposed View

The photomontage view shows that the proposed development will be prominent from this location. The new boundary wall along the lane is 3m in height comprised of a retaining section at the base and a 2m high free-standing wall above the garden level of the proposed properties.

Magnitude of Change

The magnitude of change is considered High. High is defined as:

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.

Significance of Effect

The effect is considered Moderate, and the quality of the effect is Neutral in the short-term and in the medium to long term. While the proposed development will radically alter the view across a landscape of open fields, trees and hedgerows, the context of the laneway access to the rear of houses along Assumption Terrace must be considered.

In this context the proposed treatment along the laneway is in line with expectations for a back of house access route for the existing local residents where the emphasis is on safety, security and functionality.
Proposed View along with approved Phase 1 Housing – (Cumulative)

An additional photomontage view is provided which also shows the outline of the approved Phase 1 scheme. As Phase 1 will not be visible from this location there will be no cumulative visual effects arising.

Viewpoint 7 - View from Blarney Business Park

Existing View

This view north-westward from Blarney Business Park shows the business park buildings and circulation road. Ringwood woodland forms a prominent and distinctive backdrop to the view.

Visual Receptor Sensitivity

The business park is used by those travelling to and from places of work who are considered to be of Medium sensitivity.

Proposed View

The photomontage view shows that the proposed development will be partially visible from this location. A number of house roof structures will be evident as well as the upper floors of the apartment buildings.

Magnitude of Change

The magnitude of change is considered Medium. Medium is defined as:

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.

Significance of Effect

The effect is considered Moderate, and the quality of the effect is Neutral in the short-term and in the medium to long term. The development signals the nature of change on the site from greenfield to residential use. The development, however, is not intrusive benefitting from existing screen vegetation in the view.

Proposed View along with approved Phase 1 Housing – (Cumulative)

An additional photomontage view is provided which also shows the approved Phase 1 housing scheme. The cumulative visual effect is considered to be Moderate, and Neutral in quality.

Viewpoint 8 – View from Castle Close Cresent Housing Estate

Existing View

This view northward from Castle Close Crescent shows the residential street which faces on to a football field the boundary of which is comprised of sections of hedging and block walling. Ringwood is visible in the background while the subject site is screened by existing coniferous vegetation in the middle distance.

Visual Receptor Sensitivity

The local estate roads are used by local residents who are considered to be of High sensitivity.

Proposed View

The proposed view shows that the proposed development will not be visible from this location.

Magnitude of Change

There will be no change experienced from this location.

Significance of Effect

There is no significance of effect to be considered for this viewpoint.

Viewpoint 9 - View from Stoneview (East)

Existing View

This elevated location facilitates a panoramic view southward over Blarney and its rural hinterland. Ringwood woodland and the subject site are visible in the middle distance. Blarney Castle and other parts of the built environment of the town are visible in the distance while buildings at Blarney Business occupy the are visible in the foreground.

Visual Receptor Sensitivity

Viewers will be local residents primarily, going to and from places of work, school and shopping who are considered to be of High sensitivity.

Proposed View

The photomontage view shows that the proposed development will be visible from this location where the upper floors of apartment buildings and the roof tops of houses will be visible. The proposed development will generally appear as an extension to the footprint of the existing housing development to the right of the view.

Magnitude of Change

The magnitude of change is considered Medium. Medium is defined as:

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.

Significance of Effect

The effect is considered Significant, and the quality of the effect is Neutral in the short-term and in the medium to long term. The proposed development is visible signalling the nature of change on the site from greenfield to residential use. The development sits comfortably in the panoramic view, nestling between areas of existing tree cover and benefitting from dark coloured finishes in house roof structures which mitigates visual effects. The apartment buildings also sit comfortably in the context of the existing buildings at Blarney Business Park in the foreground.

Proposed View along with approved Phase 1 Housing – (Cumulative)

An additional photomontage view is provided which also shows the approved Phase 1 housing scheme. The cumulative visual effect is considered to be Moderate, and Neutral in quality. Both phases sit comfortably in the landscape setting between existing expansive areas of tree cover.

View 10 - View from Stoneview (West)

Existing View

This view southward shows Ringwood woodland and the subject site in the middle distance while buildings at Blarney Business Park are visible in the foreground.

Visual Receptor Sensitivity

Viewers will be local residents primarily, going to and from places of work, school and shopping who are considered to be of High sensitivity.

Proposed View

The photomontage view shows that the proposed development will be visible from this location where the upper floors of apartment buildings and the roof tops of houses will be visible.

Magnitude of Change
The magnitude of change is considered Medium. Medium is defined as:

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.

Significance of Effect

The effect is considered Significant, and the quality of the effect is Neutral in the short-term and in the medium to long term. The proposed development is visible signalling the nature of change on the site from greenfield to residential use. The development sits comfortably in the panoramic view, nestling between areas of existing tree cover and benefitting from dark coloured finishes in house roof structures which mitigates visual effects. The apartment buildings also sit comfortably in the context of the existing buildings at Blarney Business Park in the foreground.

Proposed View along with approved Phase 1 Housing – (Cumulative)

An additional photomontage view is provided which also shows the approved Phase 1 housing scheme. The cumulative visual effect is considered to be Moderate, and Neutral in quality. Both phases sit comfortably in the landscape setting between existing expansive areas of tree cover.

Viewpoint 11 - View from R617

Existing View

This view north-eastward from the R617 shows Castleview House and the entrance to the former golf driving range. Variation in the local topography is evident in the view.

Visual Receptor Sensitivity

The R617 is used by those travelling to and from places of work on a main approach to Blarney who are considered to be of High sensitivity.

Proposed View

The proposed view shows the proposed signalised junction and access road to Phase 2 lands. The proposed Primary Care Centre will define the new entrance and provide a distinctive landmark and sense of place along the R617. The proposed pump station located to the left-hand side of the view will be heavily screened by tree planting. The entrance will be further enhanced by the additional tree, shrub and groundcover planting shown along with signage and sculpture.

Magnitude of Change

The magnitude of change is considered Medium. Medium is defined as:

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.

Significance of Effect

The effect is considered Significant, and the quality of the effect is Beneficial in the short-term and in the medium to long term. The proposed development will have a positive effect, providing definition and sense of place at the entrance junction to the Phase 2 development. The Primary Care Centre will provide a distinctive landmark, and this gateway location which will be further enhanced by hard and soft landscape treatments, a seating area, signage and sculpture.

Approved Phase 1 Housing – (Cumulative)

There will no elements of the approved Phase 1 scheme visible form this location.

Viewpoint 12 – View from R617

Existing View

This view westward along the R617 shows the variation in the local photography and the entrance to the old golf driving range. Views to the subject site are restricted by topography.

Visual Receptor Sensitivity

The R617 is used by those travelling to and from places of work on a main approach to Blarney who are considered to be of High sensitivity.

Proposed View

The proposed view shows the proposed signalised junction and access road to Phase 2 lands. The proposed Primary Care Centre will define the new entrance and provide a distinctive landmark and sense of place along the R617 approach to the site. The proposed pump station located to the left-hand side of the view will be heavily screened by tree planting. The entrance will be further enhanced by the additional tree, shrub and groundcover planting shown along with signage and a piece of sculpture.

Magnitude of Change

The magnitude of change is considered Medium. Medium is defined as:

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.

Significance of Effect

The effect is considered Significant, and the quality of the effect is Beneficial in the short-term and in the medium to long term. The proposed development will have a positive effect, providing definition and sense of place at the entrance junction to the Phase 2 development. The Primary Care Centre will provide a distinctive landmark, and this gateway location which will be further enhanced by hard and soft landscape treatments, a seating area, signage and sculpture.

Approved Phase 1 Housing – (Cumulative)

There will no elements of the approved Phase 1 scheme visible form this location.

Viewpoint 13 - View from Knocknagorty

Existing View

This view north-eastward from the Blarney to Kerry Pike road just north of Knocknagorty, shows Ringwood woodland in the distance with Blarney Business Park to the right and existing residential development in the Blarney settlement area to the left. The rural hinterland context is evident in the view.

Visual Receptor Sensitivity

Viewers will be primarily local residents and those who use the local road network regularly going to and from places of work and visitors who are considered to be of Medium sensitivity.

Proposed View

The photomontage view shows that the proposed development will be indiscernible from this location given the screening effect of existing tree cover and the topography of the site. The use of dark roof colours on the proposed houses and the diminishing effect of distance also mitigate visual effects from this location.

Magnitude of Change

The magnitude of change is considered Negligible. Negligible is defined as:

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.

Significance of Effect

The effect is considered Not Significant, and the quality of the effect is Neutral in the short-term and in the medium to long term. The proposed development is indiscernible from this location.

Proposed View along with approved Phase 1 Housing – (Cumulative)

An additional photomontage view is provided which also shows the approved Phase 1 housing scheme which is indiscernible from this location. The cumulative visual effect is considered to be Not Significant, and Neutral in quality.

Viewpoint 14 - View from Clogheen to Blarney Road

Existing View

This view northward toward Blarney shows Ringwood woodland in the distance with Blarney Business Park to the right along with existing residential development in the Blarney settlement area. The view across Blarney Lake shows the sylvan character of Blarney Castle estate in which the tree cover screens Blarney Castle.

Visual Receptor Sensitivity

The viewpoint is located on a local road between Blarney and Kerry Pike. Viewers will be primarily local residents and those who use the local road network regularly going to and from places of work and visitors who are considered to be of Medium sensitivity.

Proposed View

The photomontage view shows that the proposed development will be indiscernible from this location given the screening effect of existing tree cover and the topography of the site. The dark roof colours on the proposed houses and the diminishing effect of distance also mitigate visual effects from this location.

Magnitude of Change

The magnitude of change is considered Negligible. Negligible is defined as:

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.

Significance of Effect

The effect is considered Not Significant, and the quality of the effect is Neutral in the short-term and in the medium to long term. The proposed development is indiscernible from this location.

Proposed View along with approved Phase 1 Housing – (Cumulative)

An additional photomontage view is provided which also shows the approved Phase 1 housing scheme which is indiscernible from this location. The cumulative visual effect is considered to be Not Significant, and Neutral in quality.

	Description	Short-Term Visual Effect	Medium to Long-Term	Cumulative Visual Effect
1	View from Monacnappa Housing Estate	Significant/Neutral	Significant/Neutral	Moderate/Neutral
2	View from Blarney Castle	Moderate-Slight/ Neutral	Moderate-Slight/ Neutral	Slight/Neural
3	View from Ard Na Greine Housing Estate	Significant/Neutral	Significant/Neutral	Significant/ Neutral
4	View from Aisling Gael Housing Estate	Significant / Neutral	Significant / Neutral	Significant/ Neutral
5	View from Station Road Site Entrance	Significant / Beneficial	Significant / Beneficial	Significant/ Neutral
6	View from Rear Access Lane to Assumption Terrace	Significant / Neutral	Significant / Neutral	N/A
7	View from Blarney Business Park	Moderate/Neutral	Moderate/Neutral	Low/Neutral
8	View from Castle Close Crescent Housing Estate	No change	No change	N/A
9	View from Stoneview	Significant/Neutral	Significant/Neutral	Moderate/Neutral
10	View from Stoneview	Significant/Neutral	Significant/Neutral	Moderate/Neutral
11	View from R617	Significant/Beneficial	Significant/Beneficial	N/A
12	View from R617	Significant/Beneficial	Significant/Beneficial	N/A
13	View from Knocknagorty	Not Significant/Neutral	Not Significant/Neutral	Not Significant/Neutral
14	View from Clogheen to Blarney Road	Not Significant/Neutral	Not Significant/Neutral	Not Significant/Neutral

Table 13.7: Summary of Viewpoints and Visual Effects

Summary

Viewpoints 1-14 represent a range of views at varying locations, elevations, distances, and directions. They represent both sensitive visual receptors such as residents, and other visual receptors in the vicinity of the proposed development site.

There are eight viewpoints for which visual effects are found to be significant (views 1, 3, 4, 5, 9, 10, 11 & 12), two of which are moderate (views 6 & 7), one of which is moderate-slight (view 2), two which are not significant (views13 & 14) and the remaining one view which will experience no-change (view 8).
Of these, 10 are considered to be neutral in quality in the short term and neutral in the medium to long term (views 1, 2, 3, 4, 6, 7, 9, 10, 13 & 14), while three are considered to be beneficial in quality in the short term and in the medium to long term (views 5, 11 & 12), and there will be no effects experienced from the remaining one view (view 8).

Neutral - Scheme complements the scale, landform and pattern of the landscape (townscape)/view and maintains landscape quality.

Beneficial – improves landscape(townscape)/view quality and character, fits with the scale, landform and pattern, and enables the restoration of valued characteristic features or repairs / removes damage caused by existing land uses.

Visual effects arise by virtue of the nature of the local topography which provides views onto the site. Visual effects are most pronounced in close proximity to the site such as for views 5, 6, 11 & 12. However, there are no adverse effects recorded for these or the remainder of the views.

Neutral results reflect those views where the development may be visible or partially visible but generally well-integrated in the landscape setting or appropriate for the context of the viewpoint.

Beneficial results reflect those instances where the design qualities of the development distinctly enhances the view.

There are no overlooking or overshadowing issues arising relative to existing residential areas and the view from Blarney Castle will not be adversely affected by the development.

13.7 Mitigation Measures

13.7.1 Construction Phase

The proposed remedial measures relate to implementation of appropriate site management procedures as outlined in the Outline Construction Management Plan (CEMP) prepared by MHL which accompanies the planning application – such as the control of site lighting, delivery of materials and site boundary hoarding to minimise impacts on receptors in the vicinity of the site.

13.7.2 Operational Phase

Mitigation by design was applied during the design development process. The proposed development has been designed to deliver an accessible high-quality residential neighbourhood in response to the zoning of the site, and the aspirations of Cork City Development Plan in respect of Green and Blue Infrastructure. Conservation of existing site trees and habitats has been a key consideration through design development, aimed at minimising the loss of existing site habitat, and ensuring that the new residential development benefits from the natural assets of the site in terms of place-making and local distinctiveness.

Remedial mitigation includes a comprehensive landscape strategy for the delivery of public open spaces, break out spaces, play provision, pedestrian and cycle connectivity and green infrastructure measures. Open spaces and connectivity corridors will accommodate tree and hedgerow planting to mitigate the loss of some existing site vegetation. The emphasis will be on the use of native species in line with Green and Blue Infrastructure objectives set out in Cork City Council's Development Plan 2022-2028 and the All-Ireland Pollinator Plan. Planting proposals are shown on Landscape Masterplan drg. no. BLR-2-02-XX-00-DR-CSR-LA-100.

13.8 Residual Effects

Residual effects associated with the proposed development relate to the buildings and site access infrastructure which will remain visible in localised views into the future. Such visibility is in line with expectations for residential developments of this scale where new residential is delivered in close proximity to existing neighbourhoods and roads. The extent of residual effect will reduce, however, as tree, shrub and hedgerow planting on the site matures.

13.9 Interactions

Key interactions for consideration in this chapter include architecture, landscape, ecology, engineering and archaeology. Interactions from these disciplines determine how the proposed development will be perceived and experienced in the wider and local landscape settings. The architectural and engineering design strategy delivers the housing and spatial framework for the site along with the access infrastructure and materiality of the buildings. The engineering strategy also proposes a site drainage and SuDS strategy which includes

Landscape design takes account of site sensitivities associated with ecological, archaeological and engineering analyses, and influences place-making where hard and soft landscape treatments determine the quality and experience of the public realm, open spaces, streets between buildings. It also delivers new green infrastructure for the site to enhance the biodiversity potential of the site and to supplement existing site boundary vegetation. Nature-based SuDS measures are also delivered in the landscape based on the overall drainage strategy for the site prepared by MHL. These including the delivery of a large SuDS attenuation area to the south of the WN6 wetwood which has been adapted to provide spaces for informal recreation along with seating and picnic facilities.

13.10 Cumulative Effects

Cumulative effects relate to the potential combined impact of the proposed development in association with other recent developments or proposed developments in the vicinity of the site which include the following:-

- Ringwood Phase 1 LRD for 246 no. residential units on zoned lands adjacent to the subject site.
- Residential scheme at Monacnappa for 113 no. units, refused permission by An Coimisiún Pleanala on 7th November 2025. Development potential for resubmission of a similar scheme in the future.
- N/M20 road upgrade with a planning application to An Coimisiún Pleanala due in 2026.
- Blarney/Stoneview – Cork Area Commuter Rail Project which is being progressed by Iarnrod Eireann subject to a future Rail Order to An Coimisiún Pleanála. One of the proposed new stations is to be located at Blarney/Stoneview to the north-east of the subject site. This will include Park and Ride facilities in the range of 400 – 600 spaces located close to the station.

Cumulative effects in respect of the Ringwood Phase 1 housing scheme are deemed to be a mixture of Significant/Neutral, Moderate /Neutral and Not Significant/Neutral as shown in Table 13.6. While the details of the other projects listed above are largely unknown or limited, it is not anticipated that they will give rise to significant cumulative impacts.

13.11 'Do Nothing' Effects

Do nothing would involve the retention of the site in its current state. The development potential of the site and would, therefore, remain unfulfilled.

13.12 References

- Guidelines for Landscape and Visual Impact Assessment, 3rd Edition 2013, published by the UK Landscape Institute and the Institute of Environmental Management and Assessment (hereafter referred to as the GLVIA).
- Guidelines on the information to be contained in Environmental Impact Assessment Reports (Draft August 2017, EPA).
- Cork City Development Plan 2022-2028
- Consultation Draft of Guidelines for Planning Authorities' document, published in 2000 by the Department of Environment, Heritage and Local Government.

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14.0 LAND, SOILS, GEOLOGY & HYDROGEOLOGY

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14.1 Introduction

This chapter of the EIAR comprises an assessment of the likely significant effects of the proposed development with respect to land, soils, geology, and hydrogeology. The proposed development is located at Ringwood, Blarney, to the northwest of Cork City.

The proposed development will consist of a largescale residential development (LRD), representing Phase 2 of development in the Blarney East / Ringwood Expansion Area, and comprising the construction of the following: 323 no. residential dwellings comprising of 157 no. terraced, end-of-terrace, and semi-detached houses (129no. 3-bed and 28no. 4-bed units); 52 no. duplexes provided in 5 no. 3-storey buildings and 114 no. apartments provided in 2 no. 5-storey buildings (a mix of 1 and 2 bed units).

The proposed development also includes a primary care centre incorporating GP services, the refurbishment and redevelopment of existing farm outbuildings for conversion to a retail/pharmacy use, and café/restaurant use, and all associated access roads, internal roads and footpaths, soft and hard landscaping and services.

Please refer to Chapter 4 of the Environmental Impact Assessment Report for the full Development Description.

This chapter of the Environmental Impact Assessment Report (EIAR) was prepared by Thom Owen, BSc MSc, and Conor O'Neill, BA (Mod) MSc, and reviewed by David Casey BSc MSc MCIWEM, of JBA Consulting Engineers and Scientists Ltd. David has over 12 years' experience as an environmental consultant with particular expertise in writing and reviewing EIAR Water and Hydrology and Land and Soils chapters. Conor has over 5 years' experience as an environmental consultant and has worked on several projects involving preparation of Water and Hydrology chapters for Environmental Impact Assessments. Thom is an assistant environmental engineer and has worked on several Environmental Impact Assessment Reports.

14.2 Legislation, Policy and Guidance

14.2.1 Detailed Methodology

The methodology used in this assessment follows current Irish guidance as outlined in:

- Environmental Protection Agency (EPA) (2022) Guidelines on the Information to be Contained in Environmental Impact Assessment Reports.
- Department of Housing, Planning and Local Government (DHPLG) (2018) Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment.
- National Roads Authority (NRA) (2008) Guidelines on Procedures for Assessment and Treatment of Geology, Hydrology and Hydrogeology for National Road Schemes.
- Institute of Geologists of Ireland (2013) Guidelines for the Preparation of Soils, Geology and Hydrogeology Chapters of Environmental Impact Statements.

The significance or sensitivity of Receptors and assessment of effects have been described following criteria outlined in the EPA's 2022 EIAR Guidelines.

In addition to the EPA (2022) Guidelines, the NRA (2009) criteria for assessing the importance of geological attributes are useful (Table). These criteria have been used to assist in rating the importance of features, which are then combined with the description of effects as shown below in the matrix of significance (Figure 14.1).

Importance	Criteria	Typical Examples
Very High	Attribute has a high quality, significance or value on a regional or national scale Degree or extent of soil contamination is significant on a national or regional scale Volume of peat and/or soft organic soil underlying route is significant on a national or regional scale	Geological feature rare on a regional or national scale (NHA) Large existing quarry or pit Proven economically extractable mineral resource
High	Attribute has a high quality, significance or value on a local scale Degree or extent of soil contamination is significant on a local scale Volume of peat and/or soft organic soil underlying route is significant on a local scale	Contaminated soil on site with previous heavy industrial usage Large recent landfill site for mixed wastes Geological feature of high value on a local scale (County Geological Site) Well drained and/or high fertility soils Moderately sized existing quarry or pit Marginally economic extractable mineral resource
Medium	Attribute has a medium quality, significance or value on a local scale Degree or extent of soil contamination is moderate on a local scale Volume of peat and/or soft organic soil underlying route is moderate on a local scale	Contaminated soil on site with previous light industrial usage Small recent landfill site for mixed wastes Moderately drained and/or moderate fertility soils Small existing quarry or put Sub-economic extractable mineral resource
Low	Attribute has a low quality, significance or value on a local scale Degree or extent of soil contamination is minor on a local scale Volume of peat and/or soft organic soil underlying route is small on a local scale	Large historical and/or recent site for construction and demolition wastes Small historical and/or recent landfill site for construction and demolition wastes Poorly drained and/or low fertility soils Uneconomically extractable mineral resource

Table 14.1: Criteria for rating importance of geological attributes (NRA, 2009)

Note: "Very high", and "high" in Table all correspond to "high" significance or sensitivity of a feature in the effects significance matrix (EPA, 2022).

To determine the significance of an effect, the description of the effect is compared to the previously mentioned sensitivity of the receiving environment following the matrix shown in Figure 14.1. The significance or sensitivity of each Receptor will be ranked, as will the character of the predicted effect.

In accordance with Figure 14.1, for example, a high sensitivity value combined with a high character effect, would result in a "profound" effect; if both were low, the final result would be "slight" or "not significant".

There are seven generalised degrees of effect significance that are commonly used in the Environmental Protection Agency guidelines, as it is depicted on the figure: Imperceptible, Not Significant, Slight, Moderate, Significant, Very Significant and Profound.

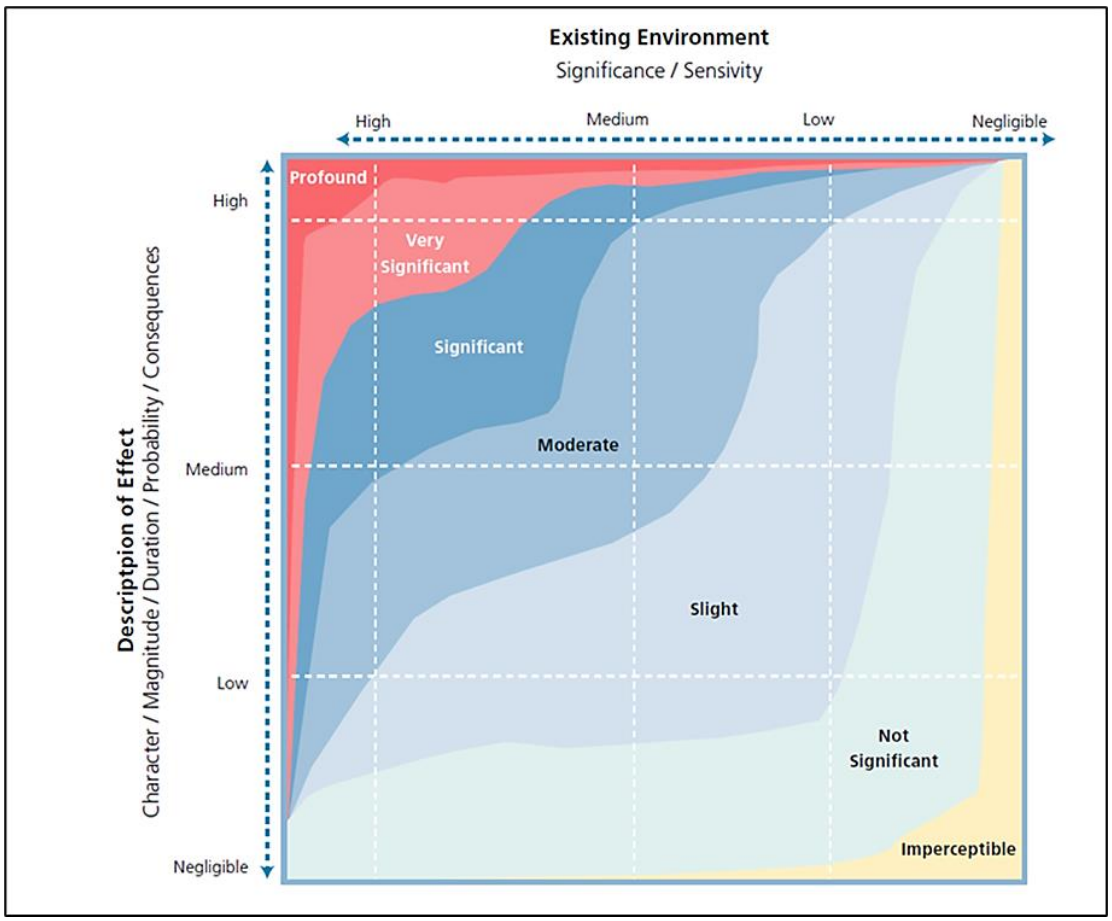


Figure 14.1: Assessment of significance of effects (Environmental Protection Agency, 2022)

The duration of each effect is either momentary, brief, temporary, short-term, medium term, long-term, or permanent. Momentary effects are those that last from seconds to minutes. Brief effects are those that last less than a day. Temporary effects are those which are construction related and last less than one year. Short term effects are effects lasting one to seven years; medium-term effects lasting seven to fifteen years; long-term effects lasting fifteen to sixty years; and permanent effects lasting over sixty years.

In accordance with the IGI guidance (2013), the study area has been set as a 2km radius from the site boundary. This is the recommended minimum distance in the Institute of Geologists of Ireland (IGI) guidelines, and takes into account the lack of karstic or other sensitive subsurface features at the site, and the scale and nature of the development.

Site Investigations

A series of Site Investigations (SI) were carried out at the site and immediate surrounding area by Priority Geotechnical in September 2023. The site investigation works included:

- 7 no. trial pit excavations;
- In situ testing: 4 no. BRE365 soakaway; tests: TP01, TP02, TP05 and TP07;

- All associated sampling;
- Laboratory testing;
- Environmental testing, Suite E: TP02, TP03, TP04 and TP06; and
- Preparation of Factual Report.

Trial pits were excavated to depths between 2.65mbgl (TP06, in the eastern end of the site), to 4.6mbgl (TP07, approx. 65m east of the site boundary). Groundwater was encountered only in TP07A at 1.10mbgl. A breakdown and discussion of the SI results is provided in Section 14.3.11, and the factual report is included in Appendix 16.1 of this EIAR.

Additional site investigations were carried out in 2025 by Ground Investigations Ireland (GII). This round of SI was focused on the southern end of the site close to the R617 road. The site investigation works included 5 no. trial pits, with sampling at 0.7 and 1.7m, with subsequent laboratory testing on samples taken.

The findings from the SI works are discussed further in Section 14.3.11.

Sources of Information

This assessment was considered in the context of the available baseline information, potential effects, consultations with statutory bodies and other parties, and other available relevant information. In collating this information, the following sources of information and references were consulted:

- Guidelines on the Information to be Contained in Environmental Impact Assessment Reports (EPA, 2022)
- EPAMaps.ie
- GSI Map Viewer
- OSI.ie – 6" & 25" maps
- Aerial Mapping
- Cork City Development Plan 2022-2028
- Site Investigations carried out by Priority Geotechnical (2023) and Ground Investigations Ireland (2025)

Governing Legislation

The EU has set out requirements for Environmental Impact Assessments under the EIA Directive 2011/92/EU (as amended by Directive 2014/52/EU). The principal piece of legislation under which an EIA may be undertaken for developments in Ireland is The Planning and Development Act, 2000 (as amended). Further regulations are explained in the Planning and Development Regulations 2001 (as amended) and European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018 (as amended).

The legislation relevant to this chapter is listed below. This legislation was consulted during the preparation of this assessment, and the limits contained within them will be used for the purposes of monitoring during construction of the proposed development.

- Water Framework Directive (2000/60/EC);
- Groundwater Directive (2006/118/EC);
- European Communities Environmental Objectives (Groundwater) Regulations, 2010 (S.I. No. 9 of 2010);
- European Union Environmental Objectives (Groundwater) (Amendment) Regulations, 2016 (S.I. No. 366 of 2016);
- Waste Management Act 1996, as amended;
- Habitats Directive (92/43/EEC).

14.3 Receiving Environment

14.3.1 Site Location and Setting

The subject site is located c. 500m northeast of the centre of Blarney, Co. Cork and c. 7.5km northwest of Cork City. The site is bound by residential developments at Aisling Gael and Ard na Gréine to the north, agricultural lands to the south and east, with residential areas to the west. The Ringwood is adjacent to the southern side of the site boundary. The N20 National Road runs along the eastern border of the site.

The site is served by 2 no. vehicular entrances, currently in use for agricultural purposes. These are from Station Road (entering the site at its western boundary), and from the R617 (entering the site from the south).

Other uses in the vicinity of the site include Blarney Business Park (to the east, directly opposite to the site across the N20), the Cork to Dublin railway line (c. 400m northeast, across the N20), and other land uses associated with Blarney.

14.3.2 Bedrock Geology

The 1:100,000 GSI bedrock geology map, available on the GSI map viewer (GSI, 2021) was consulted to understand the underlying bedrock geology in the area. The site area is primarily underlain by sandstone with mudstone and siltstone (Gyleen Formation), flaser-bedded sandstone and mudstone (Cuskinny Member), Massive unbedded lime-mudstone (Waulsortian Limestones) and small sections of Dark muddy limestone, shale (Ballysteen Formation) in the southern part of the site.

14.3.3 Soils – Irish Soil Information System (SIS) and Quaternary Sediments

The national Irish SIS maps show that the site is underlain primarily by well drained fine loamy drift with siliceous stones, with made ground nearby to the west.

The quaternary sediments underlying the site are predominantly sandstone till. There is also a section of bedrock at surface which underlays the southeastern edge of the site (located at the proposed road), near to the Ringwood. Made ground is present along the northwestern and southwestern edges, associated with the built-up areas of Blarney. Beyond the site to the west and south, there is alluvium associated with the rivers in the area.

14.3.4 Karst

The GSI map viewer (GSI, 2021) provides valuable information on the location of Karst features in the study area. Review of the web-portal revealed one karst feature within the 2km study area. This is a cave (IE_GSI_Karst_40K_1854) close to Blarney Castle, approx. 1km southwest of the proposed site. The GSI entry notes that the feature may be a gravel mine and not a natural cave. No other karst features are in the study area or the surrounding areas.

14.3.5 Geo-Hazards

According to the GSI map viewer (GSI, 2021), there are no geo-hazards (Landslides) at the site or surrounding area.

14.3.6 EPA Licensed Facilities and Waste Facilities

Blarney Wastewater Treatment Plant (WWTP) is located approx. 2.5km southwest of the proposed site, at the confluence of the River Blarney and River Shournagh. Based on Uisce Éireann's (UE) 2024 Annual Environmental Report, the WWTP has a capacity of Population Equivalent (PE) of 13,000, while the current PE of its area is 10,150.

There are no waste EPA licenced activities in the vicinity of the proposed development (e.g., waste facilities, Industrial Emissions Licensing (IEL), or Integrated Pollution Control (IPC) sites).

14.3.7 Quarries and Mines

The Extractive Industry Register (www.epa.ie) and the GSI mineral database (www.gsi.ie) were consulted to identify any historic/existing mineral sites within the study area. Review of the stated databases confirmed that no mines are/or have been located at the site or surrounding area. The nearest mineral locality is a copper bed noted on a historic OSI 6" map approx. 4km east.

14.3.8 Geological Heritage

No Geological Heritage Sites are in the vicinity of the proposed development.

14.3.9 Designated Ecological Sites

Several sites designated under the EU Habitats and Birds Directives, known collectively as Natura 2000 sites, as well as those under the Wildlife Act, are close to the proposed development. These sites have been assessed in the Biodiversity Chapter of this EIAR.

Cork Harbour Special Protection Area (SPA) is approx. 21km downstream of the proposed development. The SPA is designated for numerous protected bird species and contains habitats such as intertidal flats and marginal wet grassland.

Great Island Channel Special Area of Conservation (SAC) is about 26km downstream, and is designated for tidal mudflats and sandflats, and Atlantic salt meadows.

The Ardamadane Wood proposed Natural Heritage Area (pNHA) is approx. 50m west of the site at its closest point, along the River Martin. Blarney Bog pNHA, Blarney Lake pNHA, and Blarney Castle Woods pNHA area all also in close proximity to the site.

14.3.10 Regional Hydrogeology

Groundwater

The proposed site is located within the Ballinhassig East (IE_SW_G_004) groundwater body. The waterbody was classified as Good status for the most recent Water Framework Directive reporting period (2019-2024) and is Not at Risk.

There are no groundwater monitoring sites in the vicinity for Group Water Schemes, Public Water Supplies, Regional Water Supply Schemes, or Source Protection Zones, nor are there any Group Water Scheme abstraction sites.

Groundwater vulnerability at the site varies, with most of the area to be developed at high vulnerability. This grades to extreme and then rock at or near surface or karst at the south of the site. Groundwater vulnerability at the site is shown in Figure 14.1.

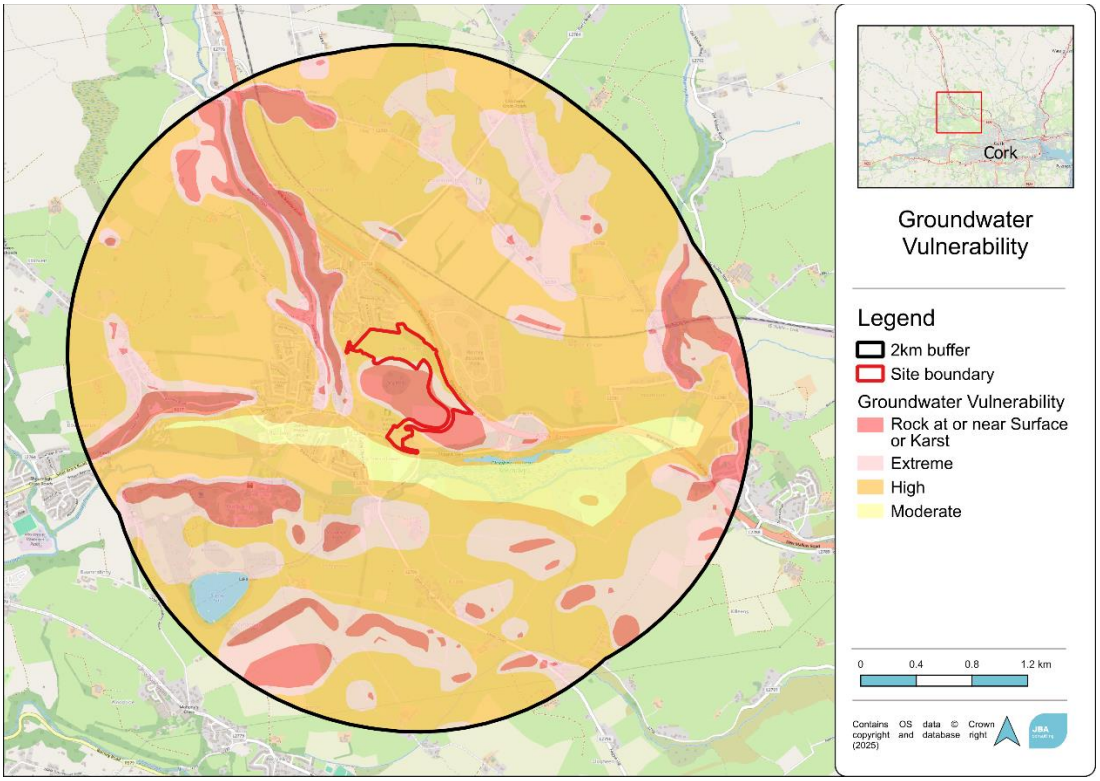


Figure 14.2: Groundwater vulnerability within 2km of the site

Aquifer

According to the GSI map viewer, the bedrock aquifer underlying the site is of local importance, being moderately productive only in local zones. A southern section of the site is a small locally important karstified aquifer, centred around Blarney Castle and the land immediately east of that.

Groundwater Extractions

There are no known groundwater extractions in the site area or immediately adjacent.

The EPA groundwater abstractions register was consulted. This shows all registered groundwater abstractions which are above 25m^3 per day, with grid locations rounded to the nearest kilometre (for privacy reasons). There are two registered groundwater abstractions within the 2km study area (plus 1km to account for grid location rounding). These are shown in Table 14.2. None of these abstractions are for the purpose of drinking water or residential use.

Registration No.	Abstraction Purpose	Maximum Daily Volume	Abstraction Type
R01514-01	Agriculture	35m^3	Groundwater well/borehole
R2461-01	Wastewater Treatment	25m^3	Groundwater well/borehole

Table 14.2: Groundwater abstractions in the area of the proposed development

14.3.11 Site Environment

Site Investigations were carried out by Priority Geotechnical in September 2023, and by Ground Investigations Ireland in 2025.

The 2023 site investigation identified that generally, topsoil is 300-400mm thick and overlays mixed glacial deposits: (very) clayey very sandy GRAVEL and slightly sandy gravelly CLAY to a depth between 2.3m below existing ground level (bgl) to 4.6m bgl (TP07). The glacial deposits were underlain by weathered SILTSTONE 2.0m bgl to 2.5m bgl, at TP01, TP04 and TP046 to depths 2.65m below existing ground level (bgl) to 3.7m bgl. Groundwater was encountered in TP07 at 3.25mbgl, and was not encountered in any other trial pits. No visible contaminants were noted during the site investigations.

Landfill Waste Acceptance Criteria (WAC) analysis was carried out by Eurofins (UK) on soil samples taken by Priority Geotechnical. No elevated levels of contaminants were found in the test samples, and all samples were classified for inert waste landfill. A summary of the single stage WAC results is shown in Table 14.2 below and the full factual report is shown in Appendix 16.1 of this EIAR.

An additional round of site investigations was carried out by GII in 2025, with testing on samples undertaken by Element Materials Technology. No elevated levels of contaminants were found in the test samples, and all samples were classified for inert waste landfill. No asbestos was detected in any soil samples. The full factual report is shown in Appendix 14.1 of this EIAR.

Determinant	TP02	TP03	TP04	TP06	Landfill Waste Acceptance Criteria Limits – Inert Waste Landfill
Total Organic Carbon	1.4	1.4	0.48	0.48	3 %
Loss on ignition	1	1	0.95	1	
Total BTEX	<0.010	<0.010	<0.010	<0.010	6 mg/kg
Total PCBs	<0.10	<0.10	<0.10	<0.10	1 mg/kg
TPH Total WAC	<10	<10	<10	<10	500 mg/kg
Total (of 17) PAHs	<2.0	<2.0	<2.0	<2.0	100 mg/kg
pH at 20C	7.7	7.8	7.7	7.7	
Acid Neutralisation Capacity	0.005	0.006	0.005	0.009	
Arsenic	0.0027	0.0032	0.0052	0.0028	0.5 mg/kg
Barium	<0.050	<0.050	<0.050	<0.050	20 mg/kg
Cadmium	<0.0011	<0.0011	<0.0011	<0.0011	0.04 mg/kg
Chromium	<0.0050	<0.0050	0.0061	<0.0050	0.5 mg/kg
Copper	0.0075	0.01	0.01	0.01	2 mg/kg
Mercury	<0.00050	<0.00050	<0.00050	<0.00050	0.01 mg/kg
Molybdenum	0.0037	0.002	<0.0020	<0.0020	0.5 mg/kg
Nickel	<0.0050	<0.0050	<0.0050	<0.0050	0.4 mg/kg
Lead	<0.0050	<0.0050	<0.0050	<0.0050	0.5 mg/kg
Antimony	<0.0050	<0.0050	<0.0050	<0.0050	0.06 mg/kg
Selenium	<0.0050	<0.0050	<0.0050	<0.0050	0.1 mg/kg
Zinc	0.11	0.057	0.11	0.081	4 mg/kg
Chloride	<10	<10	<10	<10	800 mg/kg
Fluoride	1.9	3.1	1.3	3.9	10 mg/kg
Sulphate	<10	<10	<10	<10	1000 mg/kg
Total Dissolved Solids	160	130	120	160	4000
Phenol Index	<0.30	<0.30	<0.30	<0.30	1 mg/kg
Dissolved Organic Carbon	<50	<50	57	<50	500 mg/kg

Table 14.3: Summary of the single stage WAC results.

14.4 Characteristics of the Proposed Development

The proposed development will consist of a largescale residential development (LRD), representing Phase 2 of development in the Blarney East / Ringwood Expansion Area, and comprising:

- The construction of 323 no. residential dwellings comprising of 157 no. terraced, end-of-terrace, and semi-detached houses (129no. 3-bed and 28no. 4-bed units); 52 no. duplexes provided in 5 no. 3-storey buildings (including a mix of 2-bed and 3-bed units) and 114 no. apartments provided in 2 no. 5-storey buildings (including a mix of 1-bed and 2-bed units).
- A primary care centre, over 2 stories, incorporating GP services, the refurbishment and redevelopment of existing farm outbuildings for conversion to a retail/pharmacy use and café/restaurant use

- A new access roadway into the site from the R617 with associated pedestrian and cyclist infrastructure, which will form the 1st phase of the proposed Stoneview Access Link Road, a new signalised junction on the R617 road which will provide a single lane approach to the west and a two lane approach to the east, comprising one lane for through traffic on the R617 and a right turn lane for traffic turning into the site, and associated footpath improvements and cycle lane provision, a new signalised junction on the R617 road which will provide a single lane approach to the west and a two lane approach to the east, comprising one lane for through traffic on the R617 and a right turn lane for traffic turning into the site, and associated footpath improvements and cycle lane provision,
- A new signalised junction on Station Road that reflects the junction permitted under the Phase 1 LRD scheme (Reg. Ref. 2443031).
- Private, communal, and public open spaces and hard and soft landscaping, boundary treatments and amenity areas, including a new wetland public amenity area, drainage works and nature-based SuDS measures, foul sewer infrastructure, including 1no. pump station, the diversion of existing foul and water sewers and other new network works, car parking, including EV charging points, bicycle parking, and motorcycle parking bays, 2no. substations and all associated ancillary site, drainage and development works.

14.4.1 Surface Water

The proposed surface water management system for the proposed development has been designed in accordance with the principles of Sustainable Drainage Systems (SuDS). Surface water will attenuate to a new wetland and attenuation tanks, which provide greater capacity than the equivalent 100-year return period storm event. The attenuation outflows will be fitted with flow control devices which will limit discharge to the pre-development greenfield runoff rate.

The SuDS strategy includes a combination of measures such as the new wetland, tree pits, basins, permeable paving to the front of houses, and soakaways to the rear. In addition to the natural filtering which will be provided by these measures, each surface water catchment on site will be fitted with a hydrocarbon interceptor to remove contaminants and silt from the surface water before discharging from the site.

Interception storage in the form of tree pits and green roofs is also included in the proposed drainage design.

14.4.2 Foul Water

A dedicated foul system has been provided as part of the proposed development. The design of this system is in accordance with the relevant guidelines and is shown on the drawings prepared by MHL. The foul system and surface water system are separate. A Statement of Design Acceptance from Uisce Éireann will inform the development.

14.5 Predicted Effects of the Proposed Development

14.5.1 Construction Phase

Construction activities pose a significant risk to land and soils, particularly to hydrogeological receptors such as groundwater bodies and aquifers. The sections below outline the potential effects during construction on land and soils without any mitigation. Mitigation measures are discussed in Section 14.6.

Excavation

Changes to the soil and geological environment as a result of the proposed development will arise predominantly through excavation and subsequent infilling. During construction, the project engineers (MHL) have estimated 67,000m^3 of soil will be excavated (CEMP Section 12.5). Most of this material will be reused as fill on-site. The contractor can apply to the EPA for an Article 27 of the EC (Waste Directive) Regulations (2011) derogation for the material to allow it to be used elsewhere on another site as a byproduct, further reducing the effects of its removal. As a worst-case scenario, and if low levels of contamination were detected in the soil, the contactor could send the material to an EPA-licensed soil recovery facility provided the levels of contaminants are below the soil trigger values for the recovery facility.

The topsoil will be used for growing grass and landscaping vegetation, which once established will limit its erosion potential.

The effects of the proposed development on the topsoil are **slight, adverse, temporary**, hence the overall significance is slight. No mitigation measures are proposed other than those proposed as part of the construction methodology, i.e., rapid vegetation or covering of topsoil stockpiles to reduce erosion potential.

Accidental Spills and Leaks

During construction of the development, there is a risk of localised accidental pollution incidences from the following sources:

- Spillages or leakage of temporary oils and fuels stored on site;
- Spillages or leakage of oils and fuels from construction machinery or site vehicles;
- Spillage of oil or fuel from refuelling machinery on site; and
- Run-off from concrete and cement during the construction of flood walls.

Accidental spillages would result in localised contamination of surface and groundwater underlying the site as there are pathways for contaminants to migrate through the subsoils and impact underlying groundwater.

Any soil stripping and foundation construction will further reduce the thickness of subsoils and the natural protection they provide to the underlying aquifer. Concrete is highly alkaline and any spillages which migrate through subsoil can be detrimental to groundwater quality.

The potential impacts could derive from accidental spillage of fuels, oils, paints and solvents, which could impact groundwater quality or soil quality if allowed to infiltrate to ground. The potential impact from accidental spills and leaks during construction, with no mitigation in place, would be **moderate, adverse, temporary**.

Import of Soil

The importation of landscaping material may introduce contamination to the site if sourced from inadequate facilities. Responsible sourcing will ensure this impact does not arise. Clean soil will be imported to the site, and the contractor will be required to source the soil from areas that are free of invasive species, i.e., containing no Japanese Knotweed seed or legumes. If soil is imported from an unsafe source, contamination could lead to **moderate, adverse, long-term** impacts.

Potential Impacts on Human Health and Population

The baseline assessment identified no source-pathway-receptor linkage to the underlying aquifer or any public water supply. The site is not located within any source protection zones (SPZs), public groundwater supplies or group schemes, with the area supplied by public water mains.

The likely impact during the construction phase on human health and population is **neutral**.

14.5.2 Operational Phase

Removal of soils and construction of the buildings extended areas could reduce the groundwater recharge slightly. However, the proposed development retains a significant amount of green space through which water can percolate to ground. As such the reduction of the groundwater recharge will not be significant.

Limited land take will occur as a result of the proposed development. The land to be built on is currently in use for agriculture but is zoned for residential use in the City Development Plan. While there will be land take for the proposed development, there is sufficient agricultural land in the surrounding areas, and the site is zoned appropriately. There will therefore be a long-term, not significant negative effect on land take.

The potential effect on land and soils during operation is **long term, imperceptible effect,** with a **neutral** effect on quality i.e., an effect capable of measurement but without noticeable consequences.

14.5.3 'Do Nothing' Scenario

In the event of the proposed development not being constructed, there would be no resulting impacts on land and soils at the site, and the site would continue in use for agriculture. The existing land use and subsoil environment at the site would remain in place. The Do-Nothing effect would be **long-term, not significant, neutral** with regard to land and soils.

14.6 Mitigation Measures

Construction Phase

A Construction Environmental Management Plan (CEMP) has been written by MHL for the proposed development. The CEMP will assist the contractor in preventing, minimising, or managing environmental effects during the construction phase of the development. The CEMP was designed in accordance with standard best practice guidance outlined in the following:

- 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); and
- Environmental Good Practice on Site (3rd edition) (C692).

The CEMP also includes site-specific measures to mitigate potential effects on land and soils, including groundwater. These are outlined below.

Chemical Pollution

Mitigation measures for the protection of groundwater and soils from chemical pollution involve environmental operating plans, chemical storage, and Emergency Response Procedures.

At construction stage, the following mitigation measures are proposed:

- The contractor will construct a site compound at a location remote from any water bodies or open excavations, at least 10m from any drains. The exact location of the compound will be confirmed in advance of works and agreed with the local authority. The compound may be moved or altered dependent on construction needs over the course of the project;
- Any lubricants or hydraulic oils will be bunded in bunds that can contain 110% volume of the largest container. Absorbent pig bags will be kept in the site offices. These will be disposed of correctly if used and replaced with new ones immediately. Disposal records for used adsorbent will be retained by the Site Manager;
- All materials taken on-site will be clearly labelled and stored in sealable containers;
- The diesel fuel tank will be adequately bunded (110%) and the filling nozzle will be stored within the bunded area. The Site Manager will as part of their daily site walkaround check the integrity of the fuel tank(s). The condition of the tanks will be recorded by the Site Manager;
- Re-fuelling of construction vehicles and the addition of hydraulic oils or lubricants to vehicles, will take place in a designated area which will be away from any existing surface water drains which could also provide pathways to the underlying geology;
- The contractor will ensure that no hazardous or noxious materials enter a watercourse or drain or open excavation. Should this situation arise emergency procedures will be activated;
- During all works the weather forecast will be monitored and a contingency plan developed to prevent damage or pollution during extreme weather. Machinery and equipment will not be left on-site during such events and will be removed beforehand;

- Trucks delivering concrete to the site will not be allowed to washout their vehicles on site. Only washing of the chute will be allowed. The washing facilities will be remote from watercourses and will be bunded by a low earthen berm.
- The Contractor is to clean equipment prior to delivery to the site. The Contractor is to avoid using any equipment which leaks fuel, hydraulic oil or lubricant. The Contractor is to maintain equipment to ensure efficiency and to minimise emissions;
- Should mobilisation of soil particles/pollution be noted in the course of weekly monitoring by the Site Manager, works will stop temporarily, and the Site Manager will initiate the interception and treatment of pollution/silt run-off;
- Precast elements should be maximised to avoid wet concreting in close proximity to water.

Silt and suspended solids

Mitigation measures for the protection of groundwater quality from silt and suspended solids on site involve silt control, particularly at any drains or open excavations.

At construction stage, the following mitigation measures will be implemented:

- The contractor will construct a site compound at a location remote from any drains.
- All soil stockpiles will be covered (vegetated or with tarpaulins/similar material) to minimise the risk of rain runoff/wind erosion. Vegetation will be established as soon as possible on all exposed soils.
- Detailed silt control methods, e.g., silt fencing and silt bags, dewatering, silt sumps, shall be put in place downstream of exposed soils or soil stockpiles to contain surface water runoff from the site, in accordance with Section 8.8 of the CEMP.

Import and Export of Soil

Fill material will be tested and imported from a licensed facility to ensure no external contamination is introduced to the soil and geological environment.

The contractor will be required to carry out a waste characterisation of the material that will be taken off site for disposal. A waste acceptance criteria (WAC) analysis and asbestos levels should be determined on any material that will be taken off site for disposal. WAC analysis and asbestos testing was carried out during Site Investigations by Priority Geotechnical in 2023 and Ground Investigations Ireland in 2025; no asbestos was detected, and the samples were classified as being suitable for inert landfill disposal. The acceptance of material at a licenced soil recovery facility will be subject to the approval of the facility operator.

14.6.2 Operational Phase

No significant effects are anticipated during the operational phase. Therefore, no mitigation measures have been proposed.

14.7 Predicted Effect of the Proposed Development Post-Mitigation

14.7.1 Construction Phase

Following implementation of the proposed mitigation measures, the residual effects of the proposed development on land, soils, and hydrogeology will be minimised.

Following the implementation of the mitigation measures, the effects during the construction phase will be **short-term, slight, adverse**, reducing to **imperceptible** over time, and **not significant.**

14.7.2 Operational Phase

The design of the scheme has been such that there are no predicted effects on the geological and hydrogeological environment during the operational phase of the development.

Overall, the long-term effects of the proposed development will be **neutral and imperceptible**, and **not significant.**

14.8 Monitoring

14.8.1 Construction Phase

During construction, visual and chemical monitoring of treated surface water will take place to ensure that water draining from the site is not affected by the proposed development. This will take place during the regular site audits during the construction process.

Surface water collected in sumps will be monitored prior to discharge. Samples will be taken, and the pH, conductivity, chemical oxygen demand, total petroleum hydrocarbons, and suspended solids levels will be recorded. The monitoring results will be compared to the allowable limits given in the Surface Water Regulations. If the results show an exceedance in the allowable levels, then the appointed contractor will review the mitigation measures and remedy them to lower the levels of the pollutant. A record of these upgrades/changes to the mitigation measures will be recorded.

The contractor is required to monitor the weather forecasts to inform the programming of earthworks and stockpiling of materials.

If the mitigation measures in place during construction are observed to be insufficient or inefficient (i.e., elevated suspended solids, pH, conductivity, chemical oxygen demand, or total petroleum hydrocarbons are detected during monitoring prior to discharge), the discharge will be halted, and the mitigation measures will be revised and reimplemented. Further sampling will verify the success of the revised/updated surface water management. The affected water will be conveyed to the revised/updated treatment train and put through a hydrocarbon interceptor and settlement tanks to ensure compliance with the required levels in the treated water.

14.8.2 Operational Phase

No operational phase monitoring is required for land and soils.

14.9 Interactions and Cumulative Effects

14.9.1 Interactions

The EIAR must also consider in-combination effects, or the interactions between the different factors discussed.

Surface water effects are directly linked with hydrogeology or groundwater effects, with surface water pathways leading to groundwater and vice versa. 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. These effects are further discussed in the Hydrology Chapter 15 of this EIAR. Without mitigation measures, the interaction of these two elements could lead to a short-term significant negative effect. With the proposed mitigation measures outlined in this chapter and in Chapter 15 of the EIAR, the potential interaction between these is reduced to a **short-term, imperceptible, neutral effect**.

The removal of material from the site will require vehicles using the road network in the area. Chapter 7 of the EIAR concludes that no significant effects are anticipated from traffic and transport during the construction phase. The CEMP also contains mitigation measures for the movement of vehicles, which when implemented will ensure that effects are further reduced. The interaction of these with land and soils will be **temporary, imperceptible, neutral**.

Interactions with biodiversity can occur through the spread of hazardous materials or contaminated land during construction. The spread of materials found in the soils (trace amounts of asbestos, lead, or hydrocarbons) could lead to habitat degradation, either on site or downstream through groundwater pathways. With the implementation of mitigation measures outlined in this chapter and Chapter 11 of the EIAR, and in the CEMP, interactions between biodiversity and land and soils will be **short-term, imperceptible, neutral**.

The material assets on site (surface and stormwater drainage) are assessed in Chapter 18. These have been designed in accordance with SuDS and the Greater Dublin Strategic Drainage Study. The potential for effects on groundwater from these assets has been assessed in this chapter. Any interaction between material assets and land and soils will be **long-term, imperceptible, neutral**.

14.9.2 Potential Cumulative Effects

Cumulative effects are the result of several minor effects combining to create a more significant effect. The assessment of cumulative effects considers existing stresses on land, soils, and groundwater as well as developments close to this development that are in planning or are underway (which are outlined in Chapter 20).

Phase 1 Ringwood Development

Phase 1 was designed in accordance with the Development Plan objectives and standards regarding site drainage and SuDS measures. Phase 1 was also subject to a full separate planning application. The drainage design of Phase 1 has been designed with future phase requirements in mind, ensuring that drainage design of the proposed development would be able to incorporate future phases. The cumulative effect of the proposed development with Phase 1 on land and soils is therefore **not significant**.

Monacnapa: Application Ref. ABP-312893-22

Permission was granted for 113 no. residential units at Monacnapa, Blarney, approx. 700m west of the proposed site. This permission was quashed by the courts and remitted back to An Coimisiún Pleanála (Case Reference TA28.319963) where it was refused permission on the 7th of November 2025. There is potential for resubmission of a similar scheme at the site in the future. The EIA Screening Report and Engineering Services Report for the Monacnapa development were consulted. The EIA Screening found that no significant impacts are expected on land and soils as a result of the proposed development. The Engineering Services Report outlines that the proposed drainage design of the development will be limited to the existing greenfield runoff rate, and will incorporate SuDS measures. Any future development is likely to include SuDS measures and other similar measures. The cumulative effect of the proposed development with the Monacnapa development on land and soils is **not significant**.

Preliminary M20 scheme

The proposed M20/N20 project will deliver 80 km of new and improved dual carriageway road between Cork City and Patrickswell, Limerick, passing close by the proposed development site. The preferred route past Blarney is along the existing N20 road, east of the proposed development site, where improvements and alterations to the existing carriageway and junction will take place. The M20/N20 project will be subject to full environmental assessment. Cumulative impacts on land and soils will be **not significant**.

Blarney/Stoneview

Cork Area Commuter Rail Project which is being progressed by Iarnród Éireann through a number of separate but interrelated projects which will be delivered in specific work packages which will be subject to a future Railway Order to An Coimisiún Pleanála.

Phase 2 of the Project focuses on proposals for eight new stations for Cork, three station upgrades, a new depot, and full electrification of the Cork rail network. One of the 8 new stations is to be located at Blarney/Stoneview to the northeast of the subject site.

Further Phase 2 works include the provision of a Strategic Park and Ride at Blarney/Stoneview.
The capacity of the Strategic Park and Ride facility will be in the range of 400 – 600 spaces which will include Mobility Impaired Parking located close to the station entrance, standard car parking, motorcycle parking and bicycle parking including secure bicycle lockers. Cumulative impacts on land and soils will be **not significant**.

14.10 References

Cork City Development Plan 2022-2028

DoEHLG & OPW, Planning System and Flood Risk Management Guidelines for Planning Authorities (2009)

EPA, 'Advice Notes on Current Practice in the Preparation of Environmental Impact Statements' (2015)

EPA, 'EPA River Quality Surveys: Biological' available at: https://epawebapp.epa.ie/qvalue/webusers/

EPA, 'Guidelines on the Information to be Contained in Environmental Assessment Reports' (2022)

GSI, 'Geological Survey Ireland Spatial Resources' map viewer, available at: https://dcenr.maps.arcgis.com/apps/MapSeries/index.html?appid=a30af518e87a4c0ab2fbde2aaac3c228 (2023)

IGI, 'Guidelines for the Preparation of Soils, Geology and Hydrogeology Chapters of Environmental Impact Statements', (2013)

MHL Consulting Engineers, 'Planning Engineering Design Report, Phase 1 Proposed Residential Development, Ringwood, Blarney' (2024a)

MHL Consulting Engineers, 'Outline Construction and Environmental Management Plan, Phase 1 Proposed Residential Development, Ringwood, Blarney' (2024b)

Uisce Éireann, Annual Environmental Report 2022, Blarney D0043-01 (2022)

15.0 WATER

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15.1 Introduction

This chapter of the EIAR comprises an assessment of the likely significant effects of the proposed development with respect to the surface water environment. The proposed development is located at Ringwood, Blarney, to the northwest of Cork City.

The proposed development will consist of a Largescale Residential Development (LRD), representing Phase 2 of development in the Blarney East / Ringwood Expansion Area, and comprising the construction of the following: 323 no. residential dwellings comprising of 157 no. terraced, end-of-terrace, and detached houses (129no. 3-bed and 28no. 4-bed units); 52 no. duplexes provided in 5 no. 3-storey buildings and 114 no. apartments provided in 2 no. 5-storey buildings (a mix of 1 and 2 bed units).

The proposed development also includes a primary care centre incorporating GP services, the refurbishment and redevelopment of existing farm outbuildings for conversion to a retail/pharmacy use, and café/restaurant use, and all associated access roads, internal roads and footpaths, soft and hard landscaping and services.

Please refer to Chapter 4 of the Environmental Impact Assessment Report for the full Development Description.

This chapter of the Environmental Impact Assessment Report (EIAR) was prepared by Thom Owen, BSc MSc, and Conor O'Neill, BA (Mod) MSc, and reviewed by David Casey BSc MSc MCIWEM, of JBA Consulting Engineers and Scientists Ltd. David has over 12 years' experience as an environmental consultant with particular expertise in writing and reviewing EIAR Water and Hydrology and Land and Soils chapters. Conor has over 5 years' experience as an environmental consultant and has worked on several projects involving preparation of Water and Hydrology chapters for Environmental Impact Assessments. Thom is an assistant environmental engineer and has worked on several Environmental Impact Assessment Reports.

15.2 Legislation, Policy and Guidance

15.2.1 Detailed Methodology

The methodology used in this assessment follows current Irish guidance as outlined in:

- OPW / DoECLG planning guidance, "The Planning System and Flood Risk Management (2011).
- Environmental Protection Agency (EPA) (2022) Guidelines on the Information to be Contained in Environmental Impact Assessment Reports.
- Department of Housing, Planning and Local Government (DHPLG) (2018) Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment.
- National Roads Authority (NRA) (2008). Guidelines on Procedures for Assessment and Treatment of Geology, Hydrology and Hydrogeology for National Road Schemes.
- Institute of Geologists of Ireland (2013) Guidelines for the Preparation of Soils, Geology and Hydrogeology Chapters of Environmental Impact Statements.
- Environmental Impact Assessment of Projects – Guidance on the preparation of the Environmental Impact Assessment Report (Directive 2011/92/EU) as amended by 2014/52/EU). European Union 2017.

The significance or sensitivity of Receptors and assessment of effects have been described following criteria outlined in the EPA's 2022 EIAR Guidelines.

In addition to the EPA (2022) Guidelines, the NRA (2009) criteria for assessing the importance of geological attributes are useful (Table 15.1). These criteria have been used to assist in rating the importance of features, which are then combined with the description of effects as shown below in the matrix of significance (Figure 15.1).

Importance	Criteria	Typical Examples
Extremely High	Attribute has a high quality or value on an international scale	River, wetland or surface water body ecosystem protected by EU legislation e.g., 'European sites' designated under the Habitats Regulations or 'Salmonid waters' designated pursuant to the European Communities (Quality of Salmonid Waters) Regulations, 1988.
Very High	Attribute has a high quality or value on a regional or national scale	River, wetland or surface water body ecosystem protected by national legislation – NHA status. Regionally important potable water source supplying >2500 homes Quality Class A (Biotic Index Q4, Q5) Flood plain protecting more than 50 residential or commercial properties from flooding. Nationally important amenity site for wide range of leisure activities
High	Attribute has a high quality or value on a local scale	Salmon fishery Locally important potable water source supplying >1000 homes Quality Class B (Biotic Index Q3-4) Flood plain protecting between 5 and 50 residential or commercial properties from flooding. Locally important amenity site for wide range of leisure activities
Medium	Attribute has a medium quality or value on a local scale	Coarse fishery Local potable water source supplying >50 homes Quality Class C (Biotic Index Q3, Q2- 3) Flood plain protecting between 1 and 5 residential or commercial properties from flooding
Low	Attribute has a low quality or value on a local scale	Locally important amenity site for small range of leisure activities Local potable water source supplying <50 homes Quality Class D (Biotic Index Q2, Q1) Flood plain protecting 1 residential or commercial property from flooding. Amenity site used by small numbers of local people

Table 15.1: Criteria for rating importance of hydrological attributes (NRA, 2009)

Note: "Very high", and "high" in Table 15.1 all correspond to "high" significance or sensitivity of a feature in the effects significance matrix (EPA, 2022).

To determine the significance of an effect, the description of the effect is compared to the previously mentioned sensitivity of the receiving environment following the matrix shown in Figure 15.1. The significance or sensitivity of each Receptor will be ranked, as will the character of the predicted effect.

In accordance with Figure 15.1, for example, a high sensitivity value combined with a high character effect, would result in a "profound" effect; if both were low, the final result would be "slight" or "not significant".

There are seven generalised degrees of effect significance that are commonly used in the Environmental Protection Agency guidelines, as it is depicted on the figure: Imperceptible, Not Significant, Slight, Moderate, Significant, Very Significant and Profound.

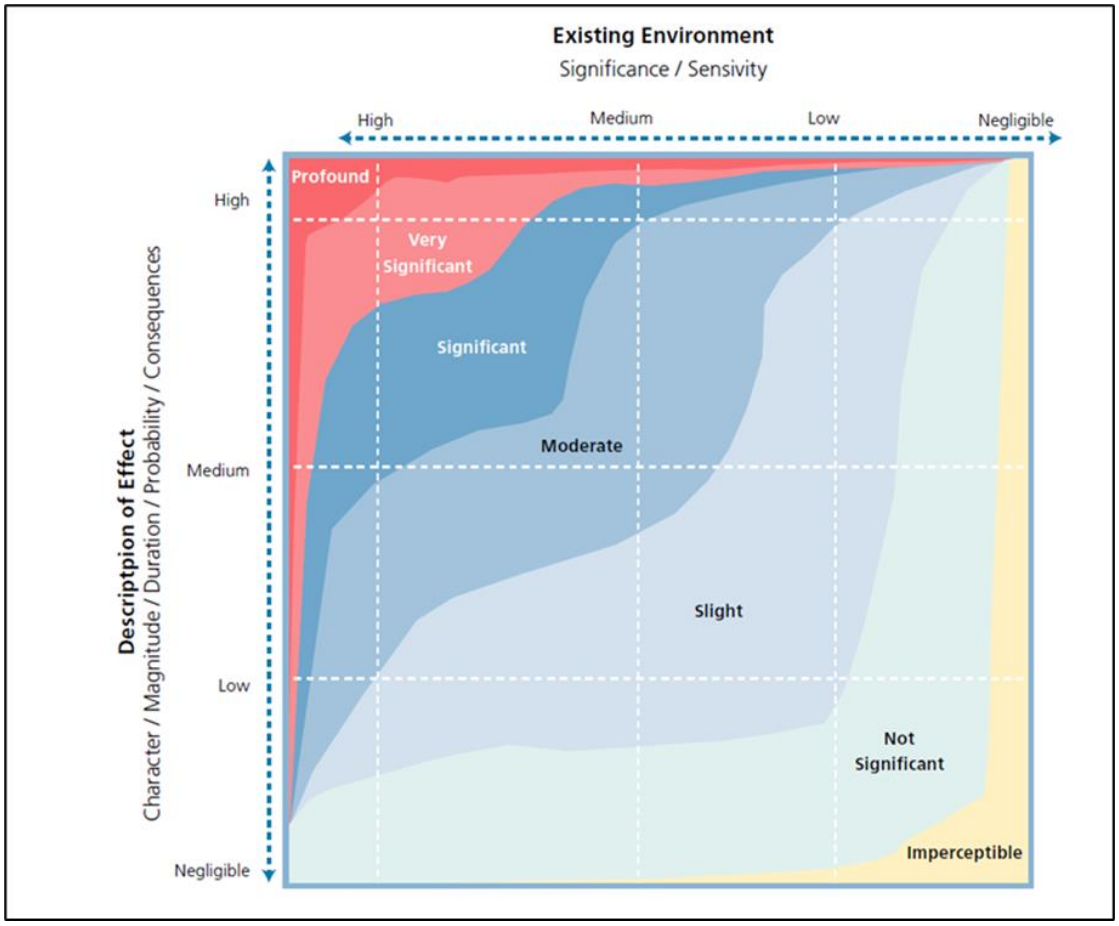


Figure 15.1: Assessment of significance of effects (Environmental Protection Agency, 2022)

The duration of each effect is either momentary, brief, temporary, short-term, medium term, long-term, or permanent. Momentary effects are those that last from seconds to minutes. Brief effects are those that last less than a day. Temporary effects are those which are construction related and last less than one year. Short term effects are effects lasting one to seven years; medium-term effects lasting seven to fifteen years; long-term effects lasting fifteen to sixty years; and permanent effects lasting over sixty years.

Site Investigations

A series of Site Investigations (SI) were carried out at the site and immediate surrounding area by Priority Geotechnical in September 2023. The site investigation works included:

- 7 no. trial pit excavations;
- In situ testing: 4 no. BRE365 soakaway; tests: TP01, TP02, TP05 and TP07;
- All associated sampling;
- Laboratory testing;
- Environmental testing, Suite E: TP02, TP03, TP04 and TP06; and

- Preparation of Factual Report.

Trial pits were excavated to depths between 2.65mbgl (TP06, in the eastern end of the site), to 4.6mbgl (TP07, approx. 65m east of the site boundary). Groundwater was encountered only in TP07A at a depth of 1.10mbgl.

Water Quality Surveys and a Water Quality Monitoring Report were also prepared for the proposed development, by Triturus Environmental, in December 2023. Biological and physicochemical monitoring were undertaken.

Additional site investigations were carried out in 2025 by Ground Investigations Ireland (GII). This round of SI was focused on the southern end of the site close to the R617 road. The site investigation works included 8 no. trial pits, with sampling at 0.7mBGL and 1.7mBGL, with subsequent laboratory testing on samples taken.

Sources of Information

This assessment was considered in the context of the available baseline information, potential effects, consultations with statutory bodies and other parties, and other available relevant information. In collating this information, the following sources of information and references were consulted:

- Guidelines on the Information to be Contained in Environmental Impact Assessment Reports (EPA, 2022)
- EPAMaps.ie
- OSI.ie – 6" & 25" maps
- Aerial Mapping
- Cork City Development Plan 2022-2028
- Site Investigations carried out by Priority Geotechnical (2023) and Ground Investigations Ireland (2025)

Governing Legislation

The EU has set out requirements for Environmental Impact Assessments under the EIA Directive 2011/92/EU (as amended by Directive 2014/52/EU). The principal piece of legislation under which an EIA may be undertaken for developments in Ireland is The Planning and Development Act, 2000 (as amended). Further regulations are explained in the Planning and Development Regulations 2001 (as amended) and European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018 (as amended).

The legislation relevant to surface water is listed below. This legislation was consulted during the preparation of this assessment, and the limits contained within them will be used for the purposes of monitoring during construction of the proposed development.

- Water Framework Directive (2000/60/EC);
- European Communities Environmental Objectives (Surface Waters) Regulations, 2009 (S.I. No. 272 of 2009);

- European Communities Environmental Objectives (Surface Waters) (Amendment) Regulations 2019 (S.I. No. 77 of 2019);
- European Communities (Quality of Salmonid Waters) Regulations (S.I. No. 293 of 1988);
- Habitats Directive (92/43/EEC);
- European Communities Environmental Objectives (Groundwater) Regulations 2010 (S.I. No. 9 of 2010)
- European Union Environmental Objectives (Groundwater) (Amendment) Regulations 2016 (S.I. No. 366 of 2016);
- Local Government (Water Pollution) Act 1977
- Local Government (Water Pollution) (Amendment) Act 1990.

15.3 Receiving Environment

15.3.1 Site Location and Setting

The subject site is located c. 500m northeast of the centre of Blarney, Co. Cork and c. 7.5km northwest of Cork City. The site is bound by a residential development at Aisling Gael and Ard na Gréine to the north, agricultural lands to the south and east, with residential areas to the west. The site wraps around the eastern side of the Ringwood at a distance of c. 75m. The N20 National Road runs along the eastern border of the site.

The site is served by 2 no. vehicular entrances, currently in use for agricultural purposes. These are from Station Road (entering the site at its western boundary), and from the R617 (entering the site from the south).

Other uses in the vicinity of the site include Blarney Business Park (to the east, directly opposite to the site across the N20), the Cork to Dublin railway line (c. 400m northeast, across the N20), and other land uses associated with Blarney.

15.3.2 Hydrological Environment

The site is situated within the Lee, Cork Harbour and Youghal Bay WFD catchment. The catchment is 2,153km^2 in area, with the main sub-catchment being the River Lee and all streams entering tidal water in Cork Harbour and Youghal Bay. The River Martin and its tributaries, including the Blarney River, are contained entirely within the Manin_SC_010 sub-catchment. These rivers flow generally from north to south, past Blarney, before joining with the River Lee as part of the Lee[Cork]_SC_060 sub-catchment.

The sub-catchments are further divided into river sub-basins. River sub-basins act as the management and reporting units for the Water Framework Directive. The proposed development is located within the MARTIN_040 sub-basin. A significant pressure acting on the MARTIN_040 sub-basin is urban runoff.

15.3.3 Watercourses

There are two rivers in the direct vicinity of the proposed development (**Figure 15.2**).

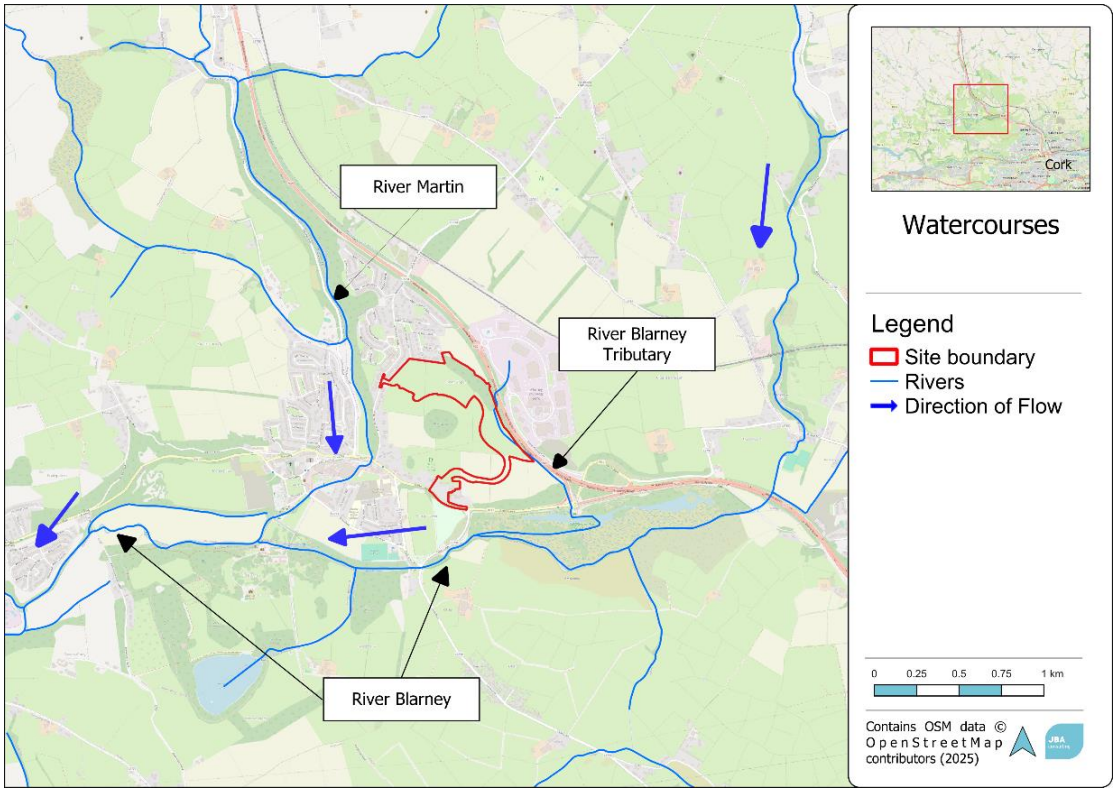


Figure 15.2: Watercourses in the vicinity of the proposed development

The River Blarney is approx. 150m south of the proposed development site, flowing from east to west. The River Blarney rises approx. 9km upstream of the site, just over 5km north of the site in a straight-line distance. The river flows primarily through farmland, and also flows through the Clogheenmilcon Sanctuary, which is a proposed Natural Heritage Area (pNHA).

A small tributary of the River Blarney runs along the eastern border of the proposed development, cutting into a small section of the site before exiting again. This stream flows through agricultural fields and adjacent to the N20 before flowing underneath the R617 and the N20 slip road and then enters the River Blarney approx. 600m downstream of where it crosses into the boundary of the site. This stream is also known as the Shean Upper Stream.

The Martin River is located west of the site, flowing south towards the Blarney River. The Martin rises approx. 12km north of the site, or approx. 13.8km upstream of its closest point to the site. For much of its course upstream of the site, the Martin River primarily flows through a narrow green corridor of scrub which is adjacent to the N20 road, and which is bound either by the road or by agricultural land. At its closest point, the river is approx. 130m west of the proposed development, separated by a row of housing and Station Road. Downstream of the site, the Martin River continues to flow south, and enters into the Blarney River.

All three of these watercourses are part of the same WFD waterbody (MARTIN_040), and are all at 'Moderate Status' and 'At Risk'.

15.3.4 EPA Q Rating

The EPA's biological river water quality classification is based on macroinvertebrate biological sampling at water monitoring stations. The values and their interpretation are shown in Table 15.2.

Q rating	WFD Status	Pollution
Q5 or Q4-5	High	Unpolluted
Q4	Good	Unpolluted
Q3-4	Moderate	Slightly polluted
Q3 or Q2-3	Poor	Moderately polluted
Q2, Q1-2 or Q1	Bad	Seriously polluted

Table 15.2: EPA's biological river water quality classification.

There are five EPA water monitoring stations in the vicinity of the proposed development which have Q ratings for 2023 and 2024. Three are downstream of the site and two are upstream. These are all detailed in Table 15.3 below.

Station code	Location	Year measured	Q rating	Status
RS19M010400	Putland's Br (Waterloo)	2024	4	Good
RS19B020500	Br NW of Killeens Cross	2023	4	Good
RS19M010600	Bawnafinny Br	2023	4	Good
RS19S010300	Tower Br (d/s Martin R confl)	2024	4	Good
RS19M010500	Martin (d/s Blarney Br Lower)	2024	4	Good

Table 15.3: EPA water monitoring stations in the vicinity of the proposed development which have Q ratings for 2017-2020.

Q values have been assigned to the Shean Upper Stream in two locations, and the River Blarney directly south of the site, in the Water Quality Monitoring Report for the proposed development (Triturus, 2023). These are shown in Table 15.4 below.

Site no.	Watercourse	Q-rating November 2023	Water Quality Status	Q-rating September 2023	Water Quality Status
1	Shean Upper Stream	Q3 (EQR 0.6)	Poor	Q3 (EQR 0.6)	Poor
2	Shean Upper Stream	Q3-4 (EQR 0.7)	Moderate	Q3-4 (EQR 0.7)	Moderate
3	River Blarney	Q3 (EQR 0.5)	Poor	Q3 (EQR 0.5)	Poor

Table 15.4: Q values for the Shean Upper Stream and the River Blarney.

The report attributes the poor water quality in the upper catchment of the Shean Upper Stream to storm drain pollution from Blarney Business Park, with storm drain inputs visible in the field. There is a slight improvement downstream at the confluence of the Shean Upper Stream with the Clogheenmilcon Lake. Physicochemical quality along these watercourses largely aligned with the Q sampling results. Elevated nitrates and phosphates levels, along with spikes in total ammonia and total phosphorus, were observed. These pressures are associated with intensively managed pastures and free draining soils leading to nutrient loss.

15.3.5 Meteorological Data

Rainfall data, extracted from the Met Éireann 1981-2010 Annual Average Rainfall Grid, has been consulted. The 30-year annual average rainfall is a 1 x 1km grid, collated from 14 stations around the country. The nearest station to the site is at Cork Airport.

The annual average over that period in the vicinity of the scheme is between 1098-1151mm.

15.3.6 Flood Risk

A standalone Flood Risk Assessment has been provided by JBA Consulting Ltd in the overall application documents. However, a brief overview is provided in this section.

Historic and predicted flood risk mapping published by the OPW on the Flood Hazard Mapping Website has been reviewed for this assessment. Historic flood data indicates that there are no previous flood events within the proposed site area. There have been four previous flood events in the vicinity, and one recurring flood event. These have been associated with the Martin River and at Blarney Castle, with the recurring event being road flooding on the N20 at the Dairygold factory, north of the site. None of these events is known to have impacted the site.

The FRA for the proposed development shows that flooding in the channel in the east of the site occurs during blockage events only and may temporarily extend inundation within the proposed wetland area at this location. There is minimal risk to the development. Mitigation measures regarding Finished Floor Levels (FFL) were included in the FRA and incorporated into the design of the scheme. In addition to this, the stormwater design was subject to a separate audit, also prepared by JBA.

15.3.7 Discharges, IPPC/IE licenced companies and WWTP

Blarney Wastewater Treatment Plant (WWTP) is located approx. 2.5km southwest of the proposed site, at the confluence of the River Blarney and River Shournagh. Based on Uisce Éireann's (UE) 2024 Annual Environmental Report, the WWTP has a capacity of Population Equivalent (PE) of 13,000, while the current PE of its area is 10,150.

There are no waste EPA licenced activities in the vicinity of the proposed development (e.g., waste facilities, Industrial Emissions Licensing (IEL), or Integrated Pollution Control (IPC) sites).

15.3.8 Designated Ecological Sites

Several sites designated under the EU Habitats and Birds Directives, known collectively as Natura 2000 sites, as well as those under the Wildlife Act, are close to the proposed development. These sites have been assessed in the Biodiversity Chapter 11 of this EIAR, and the AA Screening for the proposed development.

Cork Harbour Special Protection Area (SPA) is approx. 21km downstream of the proposed development. The SPA is designated for numerous protected bird species and contains habitats such as intertidal flats and marginal wet grassland.

Great Island Channel Special Area of Conservation (SAC) is about 26km downstream, and is designated for tidal mudflats and sandflats, and Atlantic salt meadows.

The Ardamadane Wood proposed Natural Heritage Area (pNHA) is approx. 50m west of the site at its closest point, along the Martin River. Blarney Bog pNHA, Blarney Lake pNHA, and Blarney Castle Woods pNHA area all also in close proximity to the site.

15.4 Characteristics of the Proposed Development

The proposed development will consist of a largescale residential development (LRD), representing Phase 2 of development in the Blarney East / Ringwood Expansion Area, and comprising:

- The construction of 323 no. residential dwellings comprising of 157 no. terraced, end-of-terrace, and detached houses (129no. 3-bed and 28no. 4-bed units); 52 no. duplexes provided in 5 no. 3-storey buildings and 114 no. apartments provided in 2 no. 5-storey buildings (including a mix of 1, 2 and 3 bed units).
- A primary care centre, over 2 stories, incorporating GP services, the refurbishment and redevelopment of existing farm outbuildings for conversion to a retail/pharmacy use and café/restaurant use
- A new access roadway into the site from the R617 with associated pedestrian and cyclist infrastructure, which will form the 1st phase of the proposed Stoneview Access Link Road, a new signalised junction on the R617 road which will provide a single lane approach to the west and a two lane approach to the east, comprising one lane for through traffic on the R617 and a right turn lane for traffic turning into the site, and associated footpath improvements and cycle lane provision, a new signalised junction on the R617 road which will provide a single lane approach to the west and a two lane approach to the east, comprising one lane for through traffic on the R617 and a right turn lane for traffic turning into the site, and associated footpath improvements and cycle lane provision.
- A new signalised junction on Station Road that reflects the junction permitted under the Phase 1 LRD scheme (Reg. Ref. 2443031)
- Private, communal, and public open spaces and hard and soft landscaping, boundary treatments and amenity areas, including a new wetland public amenity area, drainage works and nature-based SuDS measures, foul sewer infrastructure, including 1no. pump station, the diversion of existing foul and water sewers and other new network works, car parking, including EV charging points, bicycle parking, and motorcycle parking bays, 2no. substations and all associated ancillary site, drainage and development works.

15.4.1 Surface Water

The proposed surface water management system for the proposed development has been designed in accordance with the principles of Sustainable Drainage Systems (SuDS). Surface water will attenuate to a

new wetland and attenuation tanks, which provide greater capacity than the equivalent 100-year return period storm event. The attenuation outflows will be fitted with flow control devices which will limit discharge to the pre-development greenfield runoff rate.

The SuDS strategy includes a combination of measures such as the new wetland, tree pits, basins, permeable paving to the front of houses, and soakaways to the rear. In addition to the natural filtering which will be provided by these measures, each surface water catchment on site will be fitted with a hydrocarbon interceptor to remove contaminants and silt from the surface water before discharging from the site.

Interception storage in the form of tree pits and green roofs is also included in the proposed drainage design.

15.4.2 Foul Water

A dedicated foul system has been provided as part of the proposed development. The design of this system is in accordance with the relevant guidelines and is shown on the drawings prepared by MHL. The foul system and surface water system are separate.

A Statement of Design Acceptance is to be agreed with Uisce Éireann as part of the proposal.

15.5 Predicted Effects of the Proposed Development

15.5.1 Do Nothing Scenario

In the event of the proposed development not being constructed, there would be no resulting impacts on hydrology at the site, and the site would continue in use for agriculture. The existing drainage regime at the site would remain in place. The Do-Nothing effect would be long-term, not significant, neutral with regard to water and hydrology.

15.5.2 Construction Phase

Construction activities pose a significant risk to watercourses and hydrology, particularly from contaminated surface water runoff entering nearby watercourses, or changes to watercourse morphology and flow patterns. The sections below outline the potential effects during construction on water and hydrology without any mitigation. Mitigation measures are discussed in Section 15.6.

Fine Sediment Pollution

During construction, the water environment is at risk from fine sediment pollution from the following sources:

- Activities requiring excavation and stockpiling of soils and other ground material,
- Construction of access roads or hard standing areas which require the use of aggregate,
- Construction plant movement across disturbed soils,
- Temporary surface water pooling in excavations,

- Construction of culverts and stream realignments,
- Dispersion of dust either for hardstanding areas or from stockpiles,
- Washing out of concrete trucks and chutes.

There are several potential pathways for fine sediment to be mobilised from these sources to receptors. Surface water runoff during a precipitation event could wash fine sediment from stores or exposed ground into the river network, either directly via surface runoff pathways or indirectly via the stormwater drainage network. During construction, machinery may knock exposed sediment directly into the river channel or move material to a position where, should a precipitation event occur, it would be more vulnerable to mobilisation by surface water runoff (either as sheet flow or slumping of sediment piles into the channel). Instream works offer a direct pathway from source to receptor by mobilising fine sediment within the water column or within the riverbed and bank environment.

Fine sediment pollution refers to both the fine sediment itself and urban pollutants that can be adsorbed onto the fine particles and transported along with them. Once fine sediment enters the water, it can disperse through the water column as suspended sediment. Suspended sediment affects physico-chemical water quality parameters by increasing turbidity and reducing dissolved oxygen. Changes in these conditions, along with toxicity effects associated with adsorbed urban pollutants, can pose a risk to the life of aquatic species. Settlement of fine sediment over instream geomorphic features such as coarse sediment deposits (e.g., riffles and bars) can smother these important physical habitat environments, rendering them unsuitable for aquatic species.

A fine sediment pollution event would be expected to immediately impact the local environment, and to subsequently affect downstream environments as the fine sediment is flushed through the system during flushing flow conditions (e.g., winter high flow events). It may take several years for a single fine sediment event to be flushed through the system, but given flushing is expected the effect on water quality and instream features is expected to be reversible. The effects of urban pollutants on aquatic life are unclear. While these pollutants are expected to already be entering the river network to some degree, a fine sediment pollution event would represent an intensification of that pollution pressure. Taken together, the magnitude of potential impacts on water without mitigation measures in place is high, leading to a **significant, short term, adverse** impact on the surface water environment due to fine sediment pollution.

Accidental Spills and Leaks

During construction, there is a risk of localised accidental pollution incidences from the following sources:

- Spillages or leakage of temporary oils and fuels stored on site;
- Spillages or leakage of oils and fuels from construction machinery or site vehicles;
- Spillage of oil or fuel from refuelling machinery on site; and

There are several potential pathways for these pollutants from their sources to receptors. A direct hydrological link to surface water exists should an accidental spill or leak occur directly into the watercourse during construction, or on land and be allowed to flow overland to the watercourse. A spill or leak could also discharge to the existing surface water drainage network and subsequently discharge to the river network. During construction, compaction of the soil or subsoil could occur due to the use of

heavy machinery in green areas. This could reduce infiltration rates and increase surface water runoff, further acting as a pathway for potential pollutants.

There is also potential for contaminants to migrate through the subsoils to the underlying groundwater. Soil stripping and foundation construction have the potential to further reduce the thickness of subsoils and the natural protection they provide to the underlying aquifer.

The potential pollutants described above could negatively impact surface water or groundwater quality if allowed to reach them. Concrete (specifically, the cement component) is highly alkaline, and any potential spillages can be detrimental to surface and groundwater quality. Changes in pH of the waterbody resulting from spills of concrete material would have a consequent effect on aquatic species. Spillage of oil or other similar contaminants which are likely to be in use during construction would similarly negatively impact the water environment.

An accidental spill or leak is likely to be an isolated event if it occurs, in a specific geographical area. The entire water environment as described above is therefore not likely to be affected, with effects likely on one reach and the immediate area downstream, or likely to be contained to the local groundwater environment. Based on the likely length of construction at any one works site being not greater than one year, an unmitigated spill or leak would be temporary. The effect on water quality of such an unmitigated leak would be reversible. According to the significance of effects matrix (EPA, 2022) the magnitude of potential impacts on water will be medium, leading to a **moderate, temporary, adverse** impact on surface and groundwater due to accidental spills and leaks.

Hydrological Impacts

Construction activities can affect the hydrological regime of the site and nearby connected waterbodies.

The potential effect on the hydrological regime on-site during the construction phase includes changes to runoff and flow pathways. Excavation of ground to formation level, excavation of services and foundations will impact on the hydrological regime at the site. As discussed, surface water runoff with entrained suspended solid material and hydrocarbons will affect surface water quality.

The proposed construction activities have the potential to temporarily alter water quality and the hydrological regime in the study area. This would be a **moderate short-term negative** effect.

15.5.2 Operational Phase

The proposed operational stage drainage has been designed by MHL Consulting Engineers and is described in full in the Engineering Services Report. A Stormwater Management Plan will be implemented for surface water discharge into sewers and nearby watercourses. Surface water runoff from the site to the nearby watercourses is not expected to increase during the operational stage, as the discharge rate from the site will be limited to the existing greenfield rate by flow control devices.

The design includes Sustainable Drainage Systems (SuDS) and tank systems. The use of these methods will ensure that runoff from the proposed development replicates the characteristics of the pre-

development greenfield site, and the levels of hydrocarbons, suspended solids and metals discharging from the site are negligible.

Proposed SuDS measures include the following:

- A new wetland area at the eastern edge of the site, along the existing stream.
- Water butts will be placed at residential properties, to serve as rainwater harvesters for gardens, and to provide additional storage volume for attenuation.
- Rooftop rainwater harvesting, for use as irrigation and toilet flushing, will be incorporated into the drainage design for the proposed creche.
- Permeable paving will be placed where site conditions and uses allow. Each house will be provided with a permeable paving driveway.
- Swales, soakaways, and bioretention areas will be used to increase attenuation storage and provide passive filtration of pollutants in surface water. These areas are shown on the Drainage Masterplan Drawing accompanying the planning application.
- Hydrocarbon/Petrol interceptors are included in the proposed drainage network. These will prevent contamination of nearby watercourses.
- Green roofs and tree pits to provide further attenuation and filtration.

The proposed discharge from site is limited to the greenfield run-off rate, i.e., it replicates the existing conditions with regard to flow rates. In the operational stage, it is proposed that following interception and attenuation, stormwater will discharge to the River Martin.

Given the drainage design, use of SuDS measures and on-site treatment methods, and expected discharge rates from the site, the potential effect on surface water during operation is considered to be a **long term, imperceptible effect, with a neutral effect on quality** i.e., an impact capable of measurement but without noticeable consequences.

15.6 Mitigation Measures

In the impact assessment discussed above, a range of potential effects on water were identified. Mitigation measures in the construction and operational phase of the proposed scheme will be implemented to reduce these adverse effects. Most measures are required during the construction phase as it will pose the greatest level of risks due to the construction activity on site, plant construction and use of construction materials and the soil on site. In the sections below the mitigation measures for the do-nothing scenario, construction phase and operation phase are discussed.

Do Nothing Scenario

In the do-nothing scenario, no mitigation measures will be required.

15.6.1 Construction Phase

Mitigation measures during the construction phase are discussed below. These mitigation measures have been developed with the source-pathway-receptor links above in mind and are designed to break this link either by removing the source or disrupting the pathway for pollution.

Best Practice Construction Methods

A preliminary Construction Environmental Management Plan (CEMP) has been prepared for the proposed scheme and will be put in place by the appointed contractor. The preliminary CEMP was prepared in accordance with the following:

- National and International Legislation;
- Environment Liability Regulations; and
- Best Management Guidelines.

The CEMP will be used by the contractor to prevent and minimise environmental effects during construction. It includes the below to mitigate impacts on water:

Fine Sediment Pollution

Mitigation measures for the protection of water quality from fine sediment pollution involve silt control, particularly at any drains or open excavations.

At construction stage, the following mitigation measures will be implemented:

- The contractor will construct a site compound at a location remote from any drains.
- All soil stockpiles will be covered (vegetated or with tarpaulins/similar material) to minimise the risk of rain runoff/wind erosion. Vegetation will be established as soon as possible on all exposed soils.
- During extended dry periods, soil stockpiles will be dampened periodically to minimise the risk of airborne particles entering watercourses.
- Any temporary storage of spoil, hardcore, crushed concrete or similar material will be stored as far as possible from any surface water drains and stored in receptacles where possible. To minimise the risk of contamination, the stockpiled material will be removed off-site as soon as possible.
- Surface water drain gratings in areas near or close to where stockpiles are located will be covered by appropriate durable polyurethane covers or similar.
- Should mobilisation of soil particles/pollution be noted in the course of weekly monitoring by the Site Manager, works will stop temporarily, and the Site Manager will initiate the interception and treatment of pollution/silt run-off.
- A variety of silt control methods, e.g., silt fencing and silt bags, dewatering, silt sumps, shall be put in place downstream of exposed soils or soil stockpiles to contain surface water runoff from the site, in accordance with Section 8.8 of the CEMP.
- Monitoring the cleanliness of the adjacent road network, implementation of dust suppression, and vehicle wheel wash facilities.

- Concrete batching for in situ concrete pours will occur off-site, and concrete truck wash down will be conducted off-site at an authorized concrete batching plant, ensuring full compliance with relevant planning and environmental consents.

Accidental Spills and Leaks

Mitigation measures for the protection of water quality from accidental spills and leaks involve environmental operating plans, chemical storage, and Emergency Response Procedures.

At construction stage, the following mitigation measures will be implemented:

- The contractor will construct a site compound at a location at least 10m remote from any water bodies or drains. The exact location of the compound will be confirmed in advance of works and agreed with the local authority. The compound may be moved or altered dependent on construction needs over the course of the project;
- Any lubricants or hydraulic oils will be stored in bunded containers in designated bunded areas. Deliveries of fuel and chemicals will be supervised;
- Spill protection equipment such as absorbent mats, socks and sand will be available to be used in the event of an accidental release. These will be disposed of correctly if used and replaced with new ones immediately. Disposal records for used adsorbent will be retained by the Site Manager;
- All materials taken on-site will be clearly labelled and stored in sealable containers
- The diesel fuel tank will be adequately bunded (110%) and the filling nozzle will be stored within the bunded area. The Site Manager will as part of their daily site walkaround check the integrity of the fuel tank(s). The condition of the tanks will be recorded by the Site Manager;
- Re-fuelling of construction vehicles and the addition of hydraulic oils or lubricants to vehicles, will take place in a designated area which will be away from any existing surface water drains which could also provide pathways to the underlying geology;
- The contractor will ensure that no hazardous or noxious materials enter a watercourse or drain. Should this situation arise emergency procedures will be activated;
- During all works the weather forecast will be monitored and a contingency plan developed to prevent damage or pollution during extreme weather. Machinery and equipment will not be left on-site during such events and will be removed beforehand;
- Concrete washout will not be allowed within 10 metres of an existing surface water drainage point. Washouts are only allowed to take place into containment in designated areas with an impervious surface;
- The Contractor is to clean equipment prior to delivery to the site. The Contractor is to avoid using any equipment which leaks fuel, hydraulic oil or lubricant. The Contractor is to inspect and maintain equipment to ensure efficiency and to minimise emission.;
- Precast elements will be maximised to avoid wet concreting in close proximity to water.
- All storm water discharge during construction will be discharged through a mobile oil filter separator system, until construction programme has reached the stage when surface water discharges can be passed through the two specified newly installed hydrocarbon interceptors;
- A licenced waste management company will be retained to maintain the oil interceptors and the attenuation tank initial chamber: as necessary (at least annually).

Changes to runoff and flow pathways

The proposed development will require the removal of the existing site drainage system and provision of a new system. Before the operation of the new drainage system, mitigation measures to minimise effects on runoff and flow pathways involve the following:

- The contractor will construct a site compound at a location remote from any drains or open excavations
- Vegetation will be established as soon as possible on all exposed soils.

15.6.2 Operational Phase

The inclusion of the proposed SuDS features, as per the Engineering Design Report prepared by MHL Consulting Engineers, will help to mitigate against additional surface water runoff and pollution.

During the operational phase, regular visual inspection of the silt traps and hydrocarbon interceptors should be carried out to ensure they are operating correctly. No additional mitigation measures are required.

15.7 Predicted Effect of the Proposed Development Post-Mitigation

15.7.1 Construction Phase

With the implementation of the mitigation measures outlined above, the proposed development will have no negative effects on WFD surface waterbodies during construction. The status of surface waterbodies in the area will not be deteriorated, nor will the proposed development jeopardise the attainment of good surface water status.

Following the implementation of the mitigation measures, the effects during the construction phase will be **short-term, neutral, and imperceptible.**

15.7.2 Operational Phase

The design of the scheme has been such that there are no predicted effects on the water and hydrogeological environment during the operational phase of the development. The proposed discharge rate does not exceed the existing greenfield runoff rate, while the proposed drainage design includes measures for the attenuation of surface water. Once operational, the proposed development will not lead to a deterioration of water status of either the surface waterbodies, nor will it jeopardise the attainment of good water status for either of these waterbodies.

Overall, the operational effects of the proposed development will be **long-term, neutral and imperceptible.**

15.8 Monitoring

15.8.1 Construction Phase

During construction, visual and chemical monitoring of treated surface water will take place to ensure that water draining from the site is not affected by the proposed development. This will take place during the regular site audits during the construction process.

Surface water collected in sumps will be monitored prior to discharge. Samples will be taken, and the pH, conductivity, chemical oxygen demand, total petroleum hydrocarbons, and suspended solids levels will be recorded. The monitoring results will be compared to the allowable limits given in the Surface Water Regulations. If the results show an exceedance in the allowable levels, then the appointed contractor will review the mitigation measures and remedy them to lower the levels of the pollutant. A record of these upgrades/changes to the mitigation measures will be recorded.

The contractor is required to monitor the weather forecasts to inform the programming of earthworks and stockpiling of materials.

If the mitigation measures in place during construction are observed to be insufficient or inefficient (i.e., elevated suspended solids, pH, conductivity, chemical oxygen demand, or total petroleum hydrocarbons are detected during monitoring prior to discharge), the discharge will be halted, and the mitigation measures will be revised and reimplemented. Further sampling will verify the success of the revised/updated surface water management. The affected water will be conveyed to the revised/updated treatment train and put through a hydrocarbon interceptor and settlement tanks to ensure compliance with the required levels in the treated water.

15.8.2 Operational Phase

Once operational, silt traps and hydrocarbon interceptors will be visually inspected on a regular or annual basis. Any spillages onsite will be acted upon immediately. No other monitoring measures are required during the operational phase.

15.9 Interactions and Cumulative Effects

15.9.1 Interactions

The EIAR must also consider in-combination effects, or the interactions between the different factors discussed.

Effects on water quality or hydrology can have further effects on biodiversity and ecology, through the mobilisation of silts, dusts, suspended solids, oils, or chemicals. On entering watercourses, these can negatively affect fish and aquatic ecology, as well as have an effect on Natura 2000 sites further downstream. These effects are further discussed in the Biodiversity Chapter 11 of this EIAR, and the AA Screening. Following implementation of mitigation measures outlined in this chapter, including the use

of silt fences and settlement trains during construction, in Chapter 11, and in the NIS, effects on habitats, flora, and fauna from water and hydrology will be short-term, imperceptible, neutral.

Surface water effects are directly linked with hydrogeology or groundwater effects, with surface water pathways leading to groundwater and vice versa. Surface water runoff can also have an effect on soil quality in the area, with chemicals or suspended solids influencing soil fertility, aeration and contamination. These effects are further discussed in the Land and Soils chapter of this EIAR. Without mitigation measures, the interaction of these two elements could lead to a short-term significant negative effect. With the proposed mitigation measures outlined in this chapter and in the Land and Soils chapter of the EIAR, the potential interaction between these is reduced to a short-term, imperceptible, neutral effect.

The material assets on site (surface and stormwater drainage) are assessed in Chapter 18. These have been designed in accordance with SuDS and the objectives of the Cork City Development Plan. The potential for effects on water and hydrology from these assets has been assessed in this chapter. Due to the design of surface and stormwater drainage being in accordance with SuDS and the Cork City Development Plan, any interaction between material assets and water will be long-term, imperceptible, neutral.

Construction vehicles moving on site during the construction phase could result in hydrocarbons entering the surface water drainage system, leading to effects downstream. This is mitigated against by measures included in the CEMP, which outline the site compound location (away from any drains) and require all vehicles to be maintained frequently and to carry spill kits at all times. Without mitigation in place, this could lead to a temporary significant negative effect. However, with the measures outlined in this chapter and the CEMP, the interaction between these will be temporary, imperceptible, neutral.

As discussed in Chapter 9 of the EIAR, there is potential for an increase in frequency of rainfall in the future as a result of climate change. This will result in greater pluvial flooding risk at the site. The drainage and layout design include adequate attenuation and drainage to account for climate change effects. Therefore, the effects will be long-term, localised, neutral and imperceptible.

15.9.2 Potential Cumulative Effects

Cumulative effects are the result of several minor effects combining to create a more significant effect. The assessment of cumulative effects considers existing stresses on the water environment (i.e., surface water runoff, urban wastewater drainage, from existing developments in the surrounding area) as well as developments close to this development that are in planning or are underway (which are outlined in Chapter 20).

Phase 1 Ringwood Development

Phase 1 has been designed in accordance with the Development Plan objectives and standards regarding site drainage and SuDS measures. Phase 1 was also subject to a full separate planning application. The drainage design of Phase 1 has been designed with future phase requirements in mind, ensuring that drainage design of the proposed development is able to incorporate future phases. The cumulative effect of the proposed development with Phase 1 on water is therefore not significant.

Monacnapa: Application Ref. ABP-312893-22

Permission was granted for 113 no. residential units at Monacnapa, Blarney, approx. 700m west of the proposed site. This permission was quashed by the courts and remitted back to An Coimisiún Pleanála (Case Reference TA28.319963) where it was refused permission on the 7th of November 2025. There is potential for resubmission of a similar scheme at the site in the future. The EIA Screening Report and Engineering Services Report for the Monacnapa development were consulted. The EIA Screening found that no significant impacts are expected on the water environment as a result of the proposed development. The Engineering Services Report outlines that the proposed drainage design of the development will be limited to the existing greenfield runoff rate, and will incorporate SuDS measures. Any future development is likely to include SuDS measures and other similar measures. The cumulative effect of the proposed development with the Monacnapa development on water is not significant.

Preliminary M20 scheme

The proposed M20/N20 project will deliver 80 km of new and improved dual carriageway road between Cork City and Patrickswell, Limerick, passing close by the proposed development site. The preferred route past Blarney is along the existing N20 road, east of the proposed development site, where improvements and alterations to the existing carriageway and junction will take place. The M20/N20 project will be subject to full environmental assessment. Cumulative impacts on the water environment are not expected to be significant.

Blarney/Stoneview

Cork Area Commuter Rail Project which is being progressed by Iarnród Éireann through a number of separate but interrelated projects which will be delivered in specific work packages which will be subject to a future Railway Order to An Coimisiún Pleanála.

Phase 2 of the Project focuses on proposals for eight new stations for Cork, three station upgrades, a new depot, and full electrification of the Cork rail network. One of the 8 new stations is to be located at Blarney/Stoneview to the northeast of the subject site.

Further Phase 2 works include the provision of a Strategic Park and Ride at Blarney/Stoneview.
The capacity of the Strategic Park and Ride facility will be in the range of 400 – 600 spaces which will include Mobility Impaired Parking located close to the station entrance, standard car parking, motorcycle parking and bicycle parking including secure bicycle lockers. Cumulative impacts on the water environment are not expected to be significant.

15.10 References

Cork City Development Plan 2022-2028

DoEHLG & OPW, Planning System and Flood Risk Management Guidelines for Planning Authorities (2009)

EPA, '3rd Cycle Draft Lee, Cork Harbour and Youghal Bay Catchment Report (HA 19)' (2023)

EPA, 'Advice Notes on Current Practice in the Preparation of Environmental Impact Statements' (2015)

EPA, 'EPA River Quality Surveys: Biological' available at: https://epawebapp.epa.ie/qvalue/webusers/

EPA, 'Guidelines on the Information to be Contained in Environmental Assessment Reports' (2022)

MHL Consulting Engineers, 'Planning Engineering Design Report, Phase 1 Proposed Residential Development, Ringwood, Blarney' (2024a)

MHL Consulting Engineers, 'Outline Construction and Environmental Management Plan, Phase 1 Proposed Residential Development, Ringwood, Blarney' (2024b)

Uisce Éireann, Annual Environmental Report 2024, Blarney D0043-01 (2024)

16.0 RESOURCES & WASTE MANAGEMENT

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16.1 Introduction

MHL & Associates Ltd., Civil Engineering Consultants, undertook the preparation of this section of the Environmental Impact Assessment Report (EIAR), in association and consultation with Coakley O'Neill Town Planners, Conroy Crowe Kelly Architects, Systra Ltd, JBA Consulting and Cunnane Stratton Reynolds Land planning and Design. This chapter of the EIAR was prepared by Mr. David Murphy, B.Eng. (Hons), M.A, MIEI, of MHL & Associates, and reviewed by Mr. Brian Murphy, BE, CEng MIEI of MHL & Associates.

16.2 Chapter Context

This section of the EIAR comprises an assessment of the likely impact of the proposed development and the waste generated from the development as well as identifying proposed mitigation measures to minimise any associated impacts. This includes the potential waste generated from excavation, temporary and permanent construction works and operation of the proposed development. A detailed description of the proposed development is outlined and presented in Chapter 4: Project Description.

The Resource and Waste Management chapter within an Environmental Impact Assessment Report (EIAR) examines the potential implications of a proposed development on resource utilisation and waste generation. It delves into the details of how both the construction and operational phases of the development might influence natural resources, such as water, soil, and minerals, as well as human-made resources like utilities and infrastructure. The following aspects of the scheme are particularly relevant to the resource and waste assessment:

- In the design phase of the proposed scheme, a key focus has been on minimising resource usage and waste generation. This involves strategies such as retaining material on-site and emphasising efficient material use and reuse.
- Moving to the construction phase, efforts will be made to minimise material usage, with a priority on reusing materials whenever feasible. Waste generation is anticipated during site clearance and excavation processes, as well as general construction activities associated with the proposed scheme.
- In the operational phase, maintenance works related to the proposed scheme are expected to generate maintenance waste. This waste, arising from routine upkeep activities, will be part of the ongoing considerations for sustainable and responsible waste management throughout the project's lifecycle.

The use of resources and the potential for waste and surplus materials to be generated during the site clearance, excavation, construction, and operation phases of the proposed scheme, are assessed. The potential environmental effects of the use of resources and the generation and management of solid waste arising, are examined in the context of the existing local and national resource and waste management environment. Mitigation measures are identified where necessary to reduce the impact of the use of resources and generation of waste by the proposed scheme in the construction and operational phases.

This Chapter describes by-products and wastes of relevance to the proposed scheme. Where excavated natural resources are being reused on site and are not wastes or by-products, these are considered in

further detail in Chapter 14, Land and Soil. Construction materials imported to site are discussed in Chapter 5, Construction Strategy and also considered in Chapter 9, Climate.

In order to comply with legislative requirements and adhere to best practice standards for waste management at the development site, several documents have been prepared.

The assessment of the proposed development's impacts concerning resource consumption and waste generation followed a methodology outlined in relevant guidance documents. This evaluation involved both desktop studies and site visits at the proposed development site, incorporating a comprehensive review of current and future waste management requirements. This review considered national and regional waste policies, strategies, management plans, legislative obligations, and relevant reports.

Estimates of waste generation during the construction and operational phases were calculated, relying on published data from the EPA in the National Waste Statistics.

To address and minimise the environmental impact of the proposed development, mitigation measures have been proposed for both the construction and operational phases. These measures aim to facilitate efficient waste segregation, reduce the quantity of waste requiring disposal, and promote sustainable waste management practices. In cases where residual waste is identified, management will adhere to the waste hierarchy outlined in the European Commission (Waste Directive) Regulations 2011 (as amended).

16.3 Legislation and Guidance

The applicable legislation for waste management is the Waste Framework Directive 2008/98/EC of the European Parliament, amended by Directive 2018/851. This directive is transposed into national law through the European Communities (Waste Directive) Regulations 2011 (as amended).

The Waste Framework Directive establishes a five-step hierarchy (refer to Figure 16.1) for waste management options, including waste prevention, preparing for re-use, recycling, recovery, and safe disposal.



Figure 16.1: Waste Hierarchy (c: London School of Economics)

The Irish government releases policy documents to enhance waste management practices and meet EU recycling and waste disposal targets. The latest policy, the Waste Action Plan for a Circular Economy, published in 2020-2025, emphasises a shift from waste disposal toward upstream solutions in the production chain. This change responds to evolving national and international waste contexts, differing from the focus of the previous plan, A Resource Opportunity, launched in 2012. Aligning with the European Green Deal, the plan integrates climate action across public policy strands.

At the core of Irish waste legislation is the Waste Management Act 1996 (as amended). This legislation ensures the proper handling, transportation, recovery, and disposal of waste, preventing environmental pollution in an Irish context. All materials for disposal must adhere to local regulations, and only approved contractors are permitted to remove consented wastes to licensed or permitted facilities, following the relevant legislations mentioned below.

The Resource & Waste Management section of the EIAR is prepared in accordance with the following guidelines and policy documents:

- The Waste Management (Permit) Regulations, 1988 (S.I. No 165 of 1998)
- Waste Minimisation in Construction (SPU SP 133), Construction Industry Research and Information Association (CIRIA) 1997
- Waste Management (Movement of Hazardous Waste) Regulations, 1998 (S.I. No 147 of 1998)
- Waste Management (Trans frontier Shipment of Waste) Regulations, 1998 (S.I. No. 149 of 1998)
- The Waste Management (Facility Permit and Registration) Regulations 2007(as amended)
- The Waste Management (Collection Permit) Regulations, 2007 (S.I. No. 820 OF 2007) as amended.
- European Communities (Waste Directive) Regulations, 2011 (as amended)
- A Resource Opportunity – Waste Management Policy in Ireland (Department of the Environmental, Climate and Communications, 2012)
- Guidance on the Management of Contaminated Land and Groundwater at EPA Licensed Sites (EPA 2013)
- Circular Economy Action Plan (European Commission 2015a; amended)
- Waste Classification – List of Waste and Determining if Waste is Hazardous or non-Hazardous EPA (2015a; amended)
- Southern region – Waste Management Plan 2015 – 2021
- EU Construction and Demolition Waste Protocol and Guidelines (European Commission 2018)7
- Cork City Council (Segregation, Storage, and Presentation of Household and Commercial Waste) Byelaws, 2019
- Circular Economy Action Plan for a Cleaner and More Competitive Europe (European Commission 2020)
- By-product Guidance Note, A Guide to by-products and submitting a by-product notification under Article 27 of the European Communities (Waste Directive) Regulations 2011 (S.I. No. 126 of 2011) (EPA, 2020)
- Waste Action Plan for a Circular Economy, Ireland's National Waste Policy 2020-2025 (Department of Communications, Climate Action, and Environment (DCCAE) 2020)
- National Hazardous Waste Management Plan 2021 – 2027 (EPA 2021)
- Circular Economy Programme 2021-2027 (EPA 2021b)
- Best Practice Guidelines for the Preparation of Resource & Waste Management Plans for Construction and Demolition Projects (EPA 2021a)

- National Waste Statistics Web Resource (EPA 2021b)
- Ireland's First Whole-of-Government Circular Economy Strategy – Public Consultation on the Proposed Publication of the Strategy (Department for Environment, Climate & Communications (DECC) 2021)
- Guidelines on the information to be contained in Environmental Impact Assessment Reports (EPA 2022)

The approach to managing waste during the construction phase aligns with the Best Practice Guidelines for the Preparation of Resource & Waste Management Plans for Construction and Demolition Projects (EPA 2021a), ensuring compliance with established standards.

While there are currently no specific Irish guidelines addressing operational waste generation assessment, guidance is derived from various industry sources. These include the Southern Region (EMR) Waste Management Plan 2015 – 2021, the Cork City Council Waste Management (Segregation, Storage, and Presentation of Household and Commercial Waste) Byelaws 2019, and insights from the EPA National Waste Statistics Web Resource.

The disposal of waste at waste management facilities adheres to the Landfill Directive Council Directive 1999/31/EC (as amended). This directive classifies landfills based on waste types, distinguishing between Inert, Non-Hazardous, and Hazardous Waste categories, providing a framework for responsible waste disposal.

In Ireland, waste classification is based on various regulations and guidelines, primarily influenced by the Waste Framework Directive 2008/98/EC of the European Parliament, as amended by Directive 2018/851. This European legislation is transposed into Irish law through the European Communities (Waste Directive) Regulations 2011 (as amended).

The Waste Framework Directive establishes a five-step hierarchy for waste management options, including waste prevention, preparing for re-use, recycling, recovery, and safe disposal. This hierarchy guides the classification and management of waste in Ireland, emphasising a sustainable and environmentally responsible approach.

Additionally, national policies and strategies, such as the Waste Action Plan for a Circular Economy - Waste Management Policy in Ireland (2020-2025), contribute to shaping waste classification practices. The Irish government's focus on a circular economy and sustainable waste management aligns with European goals and influences how waste is classified and managed in the country.

Local by-laws, such as the Cork City Council (Segregation, Storage, and Presentation of Household and Commercial Waste) Byelaws, 2019, also play a role in waste classification and management at the regional level. Overall, a comprehensive framework, integrating European directives, national policies, and local regulations, governs the classification of waste in Ireland.

16.4 Baseline Conditions

The proposed scheme is expected to generate surplus construction materials and wastes, encompassing site clearance, excavation material, and general surplus construction material. To assess the capacity and establish a baseline for construction waste, a review of published data and statistics was conducted. The EPA's provides an indicative breakdown of the composition of construction and demolition (C&D) waste in Ireland:

In 2023, the quantity of Construction and Demolition (C&D) waste generated and collected in Ireland increased to 9 million tonnes, marking a 10% rise from the 8.3 million tonnes in 2022. The overall composition of C&D waste was as follows: soil and stone waste remaining dominant at 81%, followed by waste concrete, brick, tile, mixed C&D waste (8%), and gypsum (7%).The proportion of segregated C&D waste (wood, paper, glass, plastic, and metal) remained small, increasing from 3%.

The EPA states "Most final treatment of C&D waste in 2023 took place in Ireland (95%) and only 5% was exported abroad for final treatment. Most of the exports are metal waste sent for recycling. There are also significant tonnages of exported waste used for recycled aggregates. Backfilling is the most significant treatment of C&D waste. The prominence of backfilling as a final treatment operation reflects the high tonnages of waste soil and stones in the C&D waste stream. Metal C&D wastes are nearly 100% recycled and segregated wood, paper, glass and plastic have a recycling rate of 57%."

Material from construction and demolition sources	Quantity (tonnes)	% of material stream in reference to total
Soil, stones & dredging spoil	7,346,781	81 %
Mixed C&D waste	679,762	8 %
Concrete, brick, tile & gypsum	613,054	7 %
Metal	212,700	2 %
Bituminous mixtures	121,412	1 %
Segregated wood, glass & plastic	68,694	1 %
Total	**9,042,402**	**100 %**

Table 16.1: C&D Waste Material Categories collected, 2022 (c: EPA)

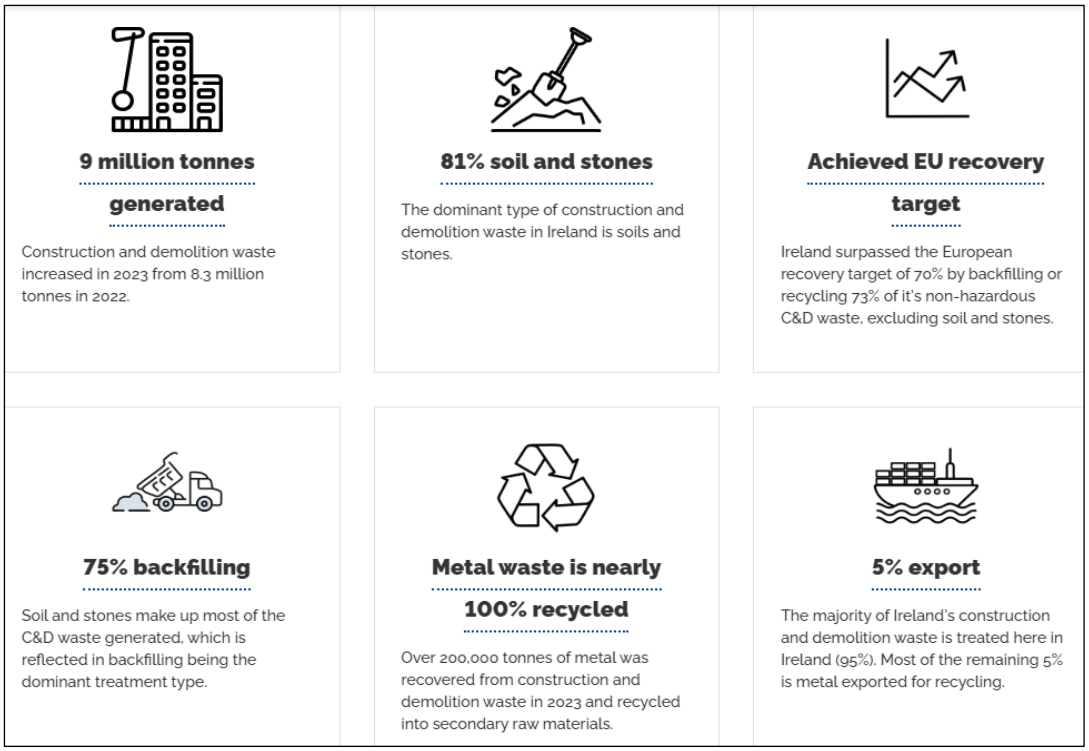


Figure 16.2: C&D Statistics 2023 (c: EPA)

16.5 Assessment Criteria

The criteria used to assess the potential impacts of the waste generation and management arising from the proposed development has been adopted from the EIAR Guideline Document by EPA 2022 and is outlined in Table 16.2 below

Quality of Effects It is important to inform the non- specialist reader whether an affect is positive, negative, or neutral.	**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).
Describing the Significance of Effects 'Significance' is a concept	**Imperceptible** An effect capable of measurement but without significant consequences.

that can have different meanings for different topics – in the absence of specific definitions for different topics the following definitions may be useful (also see *Determining Significance*).	**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.

Table 16.2: Description of Effects

The seven generalised degrees of effect significance are as provided in Table 3.4 of the EIAR Guideline Document by EPA 2022.

16.6 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:

1. Waste – any substance or object which the holder discards or intends or is required to discard.

2. 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
    c) The content of harmful substances in materials and products.

3. Reuse – Any operation by which products or components that are not waste are used again for the same purpose for which they were conceived.

4. 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.

5. Treatment - Recovery or disposal operations, including preparation prior to recovery or disposal.

6. 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.

7. 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.

8. Disposal - Any operation which is not recovery even where the operation has as a secondary consequence the reclamation of substances or energy. Annex I set out a non-exhaustive list of disposal operations.

16.7 Description of Baseline Environment

Cork City Council (CCC) is the local authority responsible for setting and administering waste management activities in the area of the Proposed Development. CCC's waste management activities are governed by the requirements set out in the Southern Region Waste Management Plan (SRWMP) 2015-2021, (EPA)'s Circular Economy Programme (2021–2027) and National Waste Management Plan for a Circular Economy 2024-2030. The Proposed Development Site is currently a greenfield site and has no waste management requirements.

The regulations governing the segregation, storage, and presentation of household and commercial waste in this area are in accordance with the Cork City Council Bye Laws effective from May 1, 2019. Numerous waste contractors in the Cork area hold permits to collect waste and currently cater to residences and businesses in the Blarney area. Figure notes locations of licensed waste facilities in the vicinity of the site.

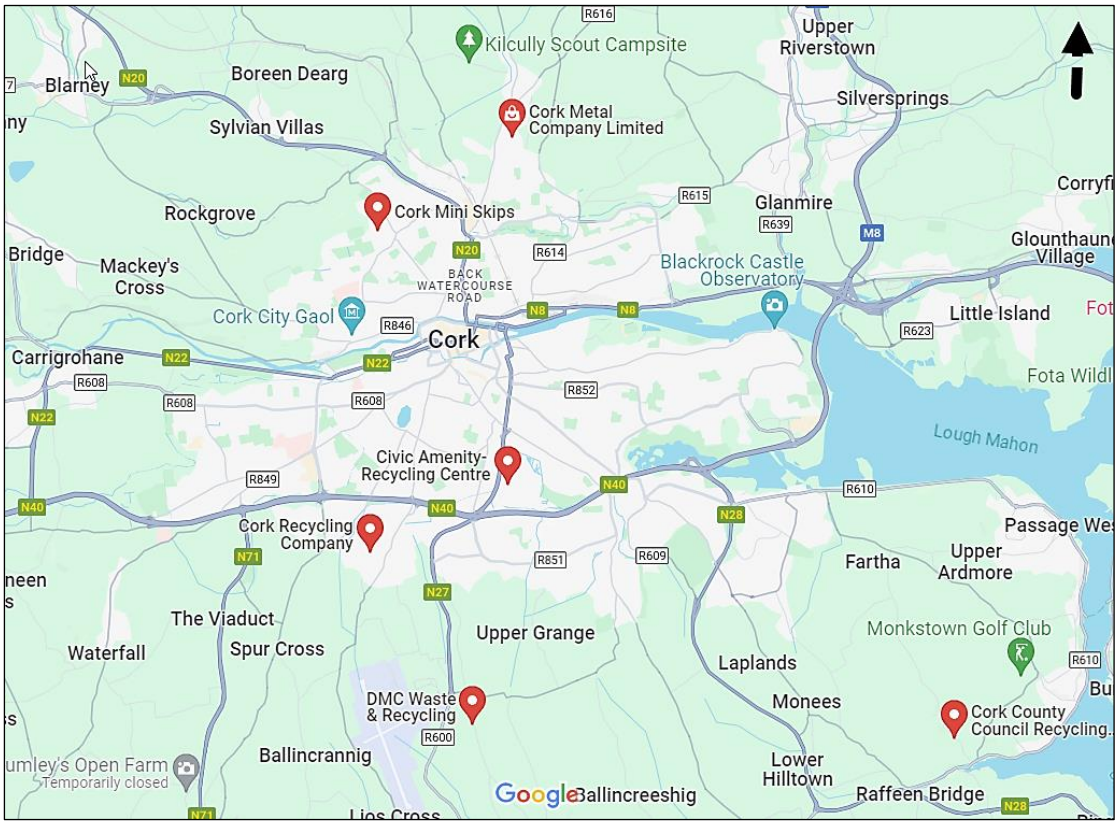


Figure 16.3: Waste Facility Permit Holders

16.8 Characteristics of the Proposed Development

The proposed development will consist of a large-scale residential development (LRD), representing Phase 2 of development in the Blarney East / Ringwood Expansion Area, and comprising the construction of (i) 323 no. residential dwellings comprising of 157 no. terraced, end-of-terrace, and semi-detached houses (including 129 no. 3-bed and 28 no. 4-bed units); 52 no. duplexes provided in 5 no. 3-storey buildings (including 26 no. 2-bed and 26 no. 3-bed units) and 114 no. apartments provided in 2 no. 5-storey buildings (including 54 no. 1-bed and 60 no. 2-bed units); (ii) a primary care centre, over 2 stories and 1,724sqm in area, incorporating GP services (iii) the refurbishment and redevelopment of existing farm outbuildings for conversion to a retail/pharmacy use, 80sqm in area, and café/restaurant use, 380sqm in area; (iv) a new access roadway into the site from the R617 with associated pedestrian and cyclist infrastructure, which will form the 1st phase of the proposed Stoneview Access Link Road, (v) a new signalised junction on the R617 road which will provide a single lane approach to the west and a two lane approach to the east, comprising one lane for through traffic on the R617 and a right turn lane for traffic turning into the site, and associated footpath improvements and cycle lane provision (vi) a new signalised junction at the R617 and Killard Road junction which will provide a two lane approach from the west, one lane for through traffic heading eastbound on the R617 and a right turn lane onto the Killard Road, with associated footpath improvements and pedestrian and cyclist infrastructure; (vii) a new signalised junction on Station Road that reflects the junction permitted under the Phase 1 LRD scheme (Reg. Ref. 2443031); (viii) private, communal, and public open spaces and hard and soft landscaping, boundary treatments and amenity areas, including a new wetland public amenity area, (ix) drainage works and nature-based SuDS measures (x) foul sewer infrastructure, including 1no. pump station, the diversion of existing foul and water sewers and other new network works, (xi) car parking, including EV charging points, bicycle parking, and motorcycle parking bays (xii) 2no. substations, all associated ancillary site, drainage and development works.

The planning application is accompanied by an Environmental Impact Assessment Report (EIAR).

The application may be inspected online at the following website: www.ringwoodphase2lrd.ie

A detailed description of the proposed development is outlined and presented in Chapter 4: Proposed Development.

The examination of the proposed development's characteristics enables an estimation of the potential impact on various aspects of the environment. This chapter specifically delves into the waste generated by the proposed development and evaluates its potential impact on the receiving environment.

16.8.1 Construction Phase

All materials generated during the construction process will undergo assessment for potential reuse either in the proposed development itself or in other construction projects, adhering to the guidelines outlined in Article 27 of the Waste Directive Regulations. The designated construction contractor will be responsible for evaluating the feasibility of material reuse and conducting required testing to validate compliance with Article 27, as deemed necessary.

Materials will undergo on-site segregation based on waste classification. If not deemed suitable for reuse, they will be transported to an authorised recycling, recovery, or disposal facility. Disposal to an authorised facility is the least preferable option and will only be considered by the contractor when reasonable opportunities for reuse, recycling, and recovery are unavailable. The estimated quantity and type of waste generated by construction activities related to the proposed development are detailed in Table 16.4 below.

Waste Type	Approx. Waste and Material Quantity (Tonnes)
Soil & Stone	2291
Concrete	382
Masonry	152
Wood	152
Packaging	16
Hazardous Material (Asphalt and lead flashing)	0
Other Waste (windows/doors/fittings/pipes/wiring)	76
Total	**3,070**

Table 16.3: Estimated Waste Types & Quantities (for Phase 2)

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 required to ensure that oversupply of materials is kept to a minimum and opportunities for reuse of suitable materials is maximised.

16.8.2 Soil Excavation and Disposal

In addition, topsoil, subsoil, clay, and rock will require excavation to facilitate site levelling, construction of foundations, along with the installation of underground services. For Phase 2, the expectation is for a volume of material to be excavated to achieve designed site levels. Whilst every effort will be made to reuse excavated material onsite, in the creation of proposed roads, platforms for proposed buildings and open space areas, it is expected that excavated material will have to be deposited to intended fill zones on the wider site area as there will be a surplus of this material. Further surplus material will be removed from site for appropriate offsite reuse, recovery, recycling and / or disposal. If the material that requires removal from site is deemed to be a waste, removal and reuse / recycling / recovery / disposal of the material 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 Article 27 classification (European Communities (Waste Directive) Regulations 2011, S.I. No. 126 of 2011). For more information in relation to the envisaged management of waste, refer to the CEMP.

16.8.3 Waste Classification

In order to establish the appropriate reuse, recovery and / or disposal route for the soils and stones to be removed off-site, it will first need to be classified. Waste material will initially need to be classified as hazardous or non-hazardous in accordance with the EPA publication Waste Classification – List of Waste & Determining if Waste is Hazardous or Non-Hazardous, 2015 (as amended).

A specialist assessment of the existing made ground area and its waste classification was undertaken by Priority Geotechnical Ltd. Their factual and interpretative reports are available on request and these details are also noted in the Engineering Design Report for Phase 02 (LRD). The outcome from this exercise is to confirm material characterised by the sampling undertaken, if it is non-hazardous and can be appropriately described under List of Waste Code, 17 05 04 (non-hazardous soil and stone). Trial pit logs and associated photographic evidence indicate a generally clean, uncontaminated fill material that would be suitable for on- site reuse.

Notwithstanding this, environmental soil analysis will be carried out prior to removal of the material on a number of the soil samples in accordance with the requirements for acceptance of waste at landfills (Council Decision 2003/33/EC Waste Acceptance Criteria). This legislation sets limit values on landfills for acceptance of waste material based on properties of the waste, including potential 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 or, in the unlikely event of hazardous material being encountered, be transported for treatment / recovery, or exported abroad for disposal in suitable facilities.

16.8.4 General Waste

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.

In order to establish a baseline and review capacity in relation to construction waste, a review of published data and statistics was undertaken.

In 2021, Ireland experienced a 10% increase in Construction and Demolition (C&D) waste, reaching 9 million tonnes from 8.2 million tonnes in 2020. Soil and stone waste constituted the majority at 85%, followed by concrete, brick, tile, and gypsum (7%), and mixed C&D waste (4%). Segregated waste (wood, paper, glass, plastic, and metal) made up just under 4%, up from 3.1% in 2020. A significant portion (96%) of C&D waste underwent final treatment within Ireland, with only 4% exported abroad. Backfilling was the dominant treatment (85%), while 8% was recycled, and 7% was sent for disposal. Recycling was the primary treatment for metals (100%) and segregated wood, paper, glass, and plastic (77%). Ireland achieved an impressive 85% material recovery for non-hazardous C&D waste, surpassing the European target of 70%.

The latest EPA data (2023) shows:

- 9 million tonnes of C&D waste generated in 2023.
- Soil and stones account for ~81% of C&D waste in 2023.
- Backfilling remains the dominant treatment method.
- Metals from C&D waste are "nearly 100%" recycled in 2023.

However, the composition percentages and treatment shares for other categories (concrete, brick, mixed waste, wood/glass/plastic, etc.) have shifted somewhat compared with 2021

Further detail on the waste materials likely to be generated during the excavation and construction works are presented in the project specific Construction and Environmental Management Plan. An estimate of the main waste types likely to be generated during the Construction phase of the proposed development will be provided with a breakdown of the composition of construction wastes (excluding soil excavation above).

16.8.5 Construction Phase

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 C&D 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.

16.8.6 Operational phase

During the operational phase of the proposed development waste will be generated within the residential buildings and creche including dry mixed recyclables, organic waste, mixed non-recyclables waste. The dry mixed recyclables will include waste glass, batteries, WEEE, textiles and furniture.

The residents will be encouraged to provide and maintain appropriate waste receptacles within their units to facilitate segregation at source of these waste types. The location of the bins within the units will be at the discretion of the residents. As required, the residents will need to bring these segregated wastes from their units to their waste receptacles for collection by approved waste collection contractors.

16.9 Potential Impacts of the Proposed Development

16.9.1 Do Nothing Scenario

If the proposed development were not to go ahead there would be no excavation, construction, or operational waste generated at this site. There would be a neutral effect on the environment.

16.9.2 Construction Phase

The proposed development will generate a range of waste materials during site excavation and construction. Working staff and contractors will also generate waste materials, including food waste. Waste materials will be required to be temporarily stored 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

development site and in adjacent areas. 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 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 long-term, significant, and negative.

Wastes arising will need to be taken to suitably registered / permitted / licenced waste facilities for processing and segregation, reuse, recycling, recovery, and / or disposal, as appropriate. There are numerous licensed waste facilities in the Southern Region which can accept hazardous and non-hazardous waste materials, and acceptance of waste from the development 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 short-term, significant, and negative.

The site investigation and soil sampling results from the site investigations are to be reviewed. Priority Geotechnical Ltd. has completed a classification exercise and are to confirm material characterised by the sampling undertaken is non-hazardous and can be appropriated described under List of Waste Code, 17 05 04 (non-hazardous soil and stone).

There is a quantity of excavated material which will need to be excavated to facilitate the proposed development. It is anticipated that soil, gravel, clay, and rock will be excavated to facilitate the proposed development and it is envisaged that a quantum of this excavated material will be reused onsite as structural/non-structural fill and fill for landscaping.(Please refer to wider application details for further details.)As detailed above, the removal of surplus soil offsite will be undertaken in accordance with applicable statutory requirements. This may include, wherever suitable, removal as by-products that meet the legislative requirements of Article 27 of the European Communities (Waste Directive) Regulations, 2011 (S.I. No 126 of 2011). Material will only be moved under an Article 27 By-product notification when it can be robustly demonstrated that all tests for Article 27 By-product are met.

Earthworks	Cut	Fill	Diff
	(m3)	(m3)	(m3)
Phase 1	45000	11000	34000
Phase 2	72000	18000	54000
Phase: Spine Road	28000	52000	-24000
	145000	81000	64000

Figure 16.4: Preliminary Planning Cut & Fill Calculation (Phase 1, Phase 2 and Spine Road)

*** Note: These values are provisional only and are subject to further determination during construction works.

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. The Construction Phase of the Proposed Development will result in an increase in demand for waste collections and waste treatment in the area. Due to the nature of this phase, the impact will be temporary, negative, and moderate in the absence of mitigation.

16.9.3 Operational Phase

Improper or inadequate waste management during the operational phase of the development could deviate from the waste hierarchy priorities, leading to unnecessary landfill disposal of small waste volumes. Without mitigation, this could result in long-term, significant, and negative impacts on the local and regional environment. Although waste generation is inevitable during the operational phase, the region has established networks for efficient waste collection, treatment, recovery, and disposal to manage such waste. Non-recyclable waste is usually sent for energy recovery, and there are facilities for segregating municipal recyclables, which are exported for conversion into recycled products.

If waste materials are not managed and stored appropriately, it may lead to litter and pollution issues at the development site and adjacent areas. This, in turn, could result in the presence of vermin in affected areas. However, the negative impact on the local and regional environment is likely to be short-term, significant, and negative in the absence of mitigation.

Regular waste servicing by approved contractors is crucial to prevent negative environmental impacts or pollution. Utilising non-permitted waste contractors or unauthorised facilities could lead to inappropriate waste management. Therefore, adherence to regional and national legislation is essential, requiring dedicated time and resources to ensure efficient waste management practices. Without mitigation, the effect on the local and regional environment is likely to be long-term, moderate, and negative.

16.10 Mitigation Measures

This section outlines the measures that will be employed in order to reduce the amount of waste produced, manage the wastes generated responsibly and handle the waste in such a manner as to minimise the effects on the environment.

16.10.1 Construction Phase

The following mitigation measures will be implemented during the construction phase of the Proposed Development:

A Construction Environmental Management Plane (CEMP) will be prepared, and this will be implemented by the appointed contractor in line with the Best Practice Guidelines and will also include for the Preparation of Resource & Waste Management Plans for Construction and Demolition Projects (CWDP) (EPA 2021a).

The CEMP and CWDP outlines how waste arising during the construction phases of the proposed development will be managed in a way that ensures compliance with the provisions of the Waste

Management Acts, 1996, as amended. The appointed contractor will update the CEMP / CWDP in advance of construction commencement.

Adherence to the high-level strategy presented in this CEMP / CWDP 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.

The CWDP addresses the following:

- Description of the project (refer to Chapter 4, Description of the Proposed Scheme and Chapter 5, Construction Strategy).
- Wastes arising including procedures for minimisation/segregated storage/reuse/recycling.
- Estimated cost of waste management.
- Roles and responsibilities for implementing the construction waste management plan.
- Procedures for training of workforce and plan dissemination programme.
- Record keeping procedures.
- Waste collectors, and recycling and disposal sites including copies of relevant permits or licences; and
- Waste auditing protocols.

Using the information identified in this section, the contractor(s) will be required to update the WMP, with its/their detailed procedures and the names of staff with assigned roles in the plan prior to commencement of construction, and as required during the construction of the proposed scheme.

In addition, the following mitigation measures will be implemented:

To minimise waste generation and promote responsible waste management practices, the construction project will incorporate various measures. Building materials will be selected with the goal of minimising waste during the design phase. On-site segregation of waste materials will be implemented to enhance opportunities for off-site reuse, recycling, and recovery. This includes segregating concrete rubble, plasterboard, metals, glass, timber, and leftover materials. Any suitable construction materials and leftovers will be reused on-site whenever possible.

All waste materials will be appropriately stored in designated areas using skips or other suitable receptacles. Hazardous wastes, such as chemicals, solvents, glues, fuels, and oils, will be segregated and stored in appropriate receptacles, often in bunded areas. A Waste Manager will be appointed by the main Contractor(s) to oversee effective waste management throughout the excavation, and construction phases. Comprehensive training on waste management procedures will be provided to all construction staff. All waste leaving the site will prioritise reuse, recycling, or recovery to minimise materials designated for disposal. Transporting waste off-site will be entrusted to suitably permitted contractors, ensuring compliance with relevant regulations.

Detailed records, including relevant documentation, will be maintained for all waste leaving the site. 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 Article 27 of the EC (Waste Directive) Regulations (2011). 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, and the Southern Region Waste Management Plan 2015 – 2021. It will also ensure optimum levels of waste reduction, reuse, recycling, and recovery are achieved and will promote more sustainable consumption of resources.

16.10.2 Operational Phase

Maintenance operations will be undertaken under the jurisdiction of the local authority and in accordance with their waste management plans. 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 Southern Region Waste Management Plan 2015 – 2020 and Cork City Council (Segregation, Storage, and Presentation of Household and Commercial Waste) Byelaws, 2019.

In addition, the following mitigation measures will be implemented:

- The residents will be encouraged to ensure on-site segregation of all waste materials into appropriate categories, including (but not limited to):
- Organic waste
- Dry mix Recyclables
- Mixed non-recyclable waste
- Glass
- Waste electrical and electronic equipment (WEEE)
- Batteries (non-hazardous and hazardous)
- Cooking oil
- Light bulbs
- Cleaning chemicals (pesticides, paints, adhesive, resins, detergents, etc.)
- Furniture (and from time-to-time other bulky waste) and
- Abandoned bicycles.

The Local Authority or a Management Company, or a combination of both, will take charge of the development, providing residents with color-coded bins or appropriate receptacles for waste segregation. Both entities will ensure that all waste collected from the proposed development site undergoes reuse, recycling, or recovery, whenever feasible. The waste transportation off-site will be handled by approved contractors, directing it to registered, permitted, or licensed facilities. With the implementation of mitigation measures and a substantial rate of reuse, recycling, and recovery, the anticipated impact of the operational phase on the environment is expected to be long term, imperceptible, and neutral.

16.11 Monitoring Measures

The management of waste during the construction phase will be monitored by the Contactor's appointed Waste Manager to ensure compliance with the above-listed mitigation measures, and relevant waste

management legislation and local authority requirements, including maintenance of waste documentation.

16.11.1 Construction Phase

The objective of setting targets for waste management is only achieved if the actual waste generation volumes are calculated and compared. This is particularly important during the excavation and construction works, where there is a potential for waste management objectives to become secondary to other objectives, i.e., progress and meeting construction schedule targets. The CEMP specifies the need for a Waste Manager to be appointed, who will have responsibility for monitoring the actual waste volumes being generated and ensuring that contractors and sub-contractors are segregating waste as required. Where targets are not being met, the Waste Manager will identify the reasons for this and work to resolve any issues. Recording of waste generation during the construction phase of the proposed development will enable better management of waste contractor requirements and identify trends. The data should be maintained to advise on future developments.

16.11.2 Operational Phase

The waste generated during the operational phase will undergo monitoring to assess its suitability for re-use, recovery, or offsite disposal. This monitoring responsibility will be shared between the Management Company, fulfilling its legal obligations, and the Local Authority, which oversees waste legislation.

16.12 Residual Effects

The application of the previously outlined mitigation measures will guarantee high levels of reuse, recovery, and recycling at the proposed development site throughout both the construction and operational phases. This approach will contribute to effective pest control across different stages of the development. Furthermore, it will ensure compliance with European, National, and Regional legislative waste standards, along with meeting associated targets for waste management.

16.12.1 Construction Phase

The management of waste during the construction phase in accordance with the CEMP will meet the requirements of regional and national waste legislation. The residual effect of excavation and general construction waste on the environment during the construction phase will be short term, imperceptible and neutral.

16.12.2 Operational phase

During the operational phase, a structured approach to waste management as set out in this chapter will promote resource efficiency and waste minimisation. Provided the mitigation measures are implemented and a high rate of reuse, recycling and recovery is achieved, the predicted effect of the operational phase on the environment will be long term, imperceptible and neutral.

Nearby planning permissions remain in place for both residential and commercial developments within the vicinity of the development and it is likely more will occur in the Blarney area. In a worst-case scenario,

multiple developments in the area could be developed concurrently or overlap in the construction phase. Due to the high number of waste contractors in the Cork City region there would be sufficient contractors available to handle waste generated from a large number of these sites simultaneously, if required. Similar waste materials would be generated by all the developments.

Other developments in the area will be required to manage waste in compliance with national and local legislation, policies and plans which will minimise/mitigate any potential cumulative effects associated with waste generation and waste management. As such the effect will be short-term, not significant, and negative.

All of the current and potential developments will generate similar waste types during their operational phases. Authorised waste contractors will be required to collect waste materials segregated, at a minimum, into recyclables, organic waste, and non-recyclables. An increased density of development in the area is likely improving the efficiencies of waste collections in the area.

Other developments in the area will be required to manage waste in compliance with national and local legislation, policies and plans which will minimise/mitigate any potential cumulative impacts associated with waste generation and waste management. As such the effect will be a long-term, imperceptible, and neutral.

16.13 Interactions

The management of waste during the construction and operational phase in accordance with Outline CEMP (Planning) and the appointed Contractor's Construction CEMP will meet the requirements of regional and national waste legislation.

16.13.1 Land and Soils

During the construction phase excavated soil and stone will be generated from the excavations.

It is envisaged that surplus cut/fill m3 as noted in Figure of the excavated soils and stones will be reused on site. It will be taken for reuse or recovery, where practical, with disposal as last resort. Adherence to the mitigation measures in Chapter 14 of this EIAR and the requirements of the C&D WMP, will ensure the effect is long-term, imperceptible, and neutral.

16.13.2 Traffic

Waste collection activities at the Proposed Development have the potential to impact upon traffic movements in the surrounding area.

16.13.3 Biodiversity

The improper handling and storage of waste during the Construction and Operational Phases could negatively impact on biodiversity.

16.13.4 Water (Hydrology & Hydrogeology)

The improper handling and storage of waste during the Construction and Operational Phases could negatively impact on Hydrology and Hydrogeology.

16.14 Difficulties Encountered

There were no difficulties encountered during the production of this chapter of the EIAR.

16.15 Cumulative Effects

The resource and waste management planning for the applicant's development acknowledges the wider development area, encompassing future phases such the granted Phase 1 application. Recognising the cumulative impacts of these future phases on the immediate vicinity of the applicant planning site, the strategy prioritises efficient resource management and waste reduction measures.

To address these concerns, the construction strategy emphasises sustainable practices throughout the construction process. This includes careful planning to optimise the use of resources such as materials, energy, and water across all phases of development. By adopting a proactive approach to resource management, the strategy aims to minimise waste generation and maximise resource efficiency.

Waste management is a key focus area within the strategy. Measures will be implemented to reduce, reuse, and recycle construction waste wherever possible. This includes segregating waste streams on-site, promoting the use of recycled materials, and collaborating with suppliers and contractors to minimise packaging waste.

Additionally, the strategy emphasises the importance of implementing responsible disposal practices for any unavoidable waste generated during construction activities. This involves compliance with relevant regulations and standards, as well as the use of licensed waste disposal facilities to ensure proper handling and disposal of waste materials.

By integrating sustainable resource management and waste reduction practices into the construction strategy, the project aims to minimise its environmental footprint and contribute to the overall sustainability goals of the development area. Regular monitoring and review processes will be implemented to assess the effectiveness of these measures and identify opportunities for continuous improvement throughout the construction process.

In the vicinity of the development site, several key developments are at varying stages as of November 2025.

Ringwood Phase 1, involves a permitted residential development of 246 units south of the site, granted by An Coimisiún Pleanála on May 6, 2025, with 25 conditions, and initial site works ongoing.

Monacnapa, saw an initial 2022 permission for 113 units (reduced from 143) quashed by courts and refused again by the Commission on November 7, 2025, leaving the potential for a future resubmission.

The N/M20 National Road scheme, aims to link Cork and Limerick with a high-quality corridor; Phase 3 design and environmental evaluation is advancing, narrowing the mainline to 200m, with a 2026 planning application planned but no construction started.

The Blarney/Stoneview element of the Cork Area Commuter Rail Project, proposes a new station northeast of the site, three station upgrades, full electrification, and a 400–600-space strategic park-and-ride with accessible parking options, all pending a future Railway Order to An Coimisiún Pleanála, with no works commenced.

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17.0 POPULATION & HUMAN HEALTH

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17.1 Introduction

According to the European Commission's "Environmental Impact Assessment of Projects: Guidance on the Preparation of the Environmental Impact Assessment Report" (2017), 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 the 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."*

The Environmental Protection Agency (EPA) Guidelines on the information to be contained in Environmental Impact Assessment Reports (2022) advise that:

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

This chapter addresses potential effects of both the construction and the operation of the proposed residential development scheme at Ringwood, Blarney on population and human health. This chapter considers demographics, economic activity, tourism and recreation, community and amenities. Potential effects on population and human health arising from: traffic and transportation; air quality and climate; noise and vibration; landscape and visual; material assets, and; the risk of major accidents and/or disasters, are dealt with in the specific chapters in this EIAR dedicated to those topics. The chapter was prepared by Dave Coakley of Coakley O'Neill Town Planning.

17.2 Assessment Methodology

The application area and surrounds were visited on a number of occasions for the purposes of this assessment. The purpose of the site walkovers was to identify and characterise neighbouring land uses. Ordnance Survey maps and aerial photography were also examined to assist in this survey.

In addition, a desk-based study of information on employment, education, health, tourism, amenity, and community facilities was completed. Publications and other data sources consulted included;

- *Project Ireland 2040 – National Planning Framework First Revision* (2025)
- *Delivering Homes, Building Communities 2025-2030 (2025)*
- *Regional Spatial and Economic Strategy for the Southern Region* (2020)
- *Cork City Development Plan 2022-2028*
- Central Statistics Office (CSO) website: www.cso.ie
- Department of Education (DE) website: www.education.ie.

Information was gathered in respect of the demographic and employment characteristics of the resident population within the relevant catchment area, sourced from the 2022 Census. The data collected included information on population, structure, age profile and household size, number of persons at work and the unemployment profile.

This chapter has been prepared having regard to the following guidelines;

- Environmental Protection Agency (2022). *Guidelines on the information to be contained in Environmental Impact Assessment Reports*.
- Department of Housing, Planning and Local Government (2018). *Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment*.
- European Commission (2017). *Environmental Impact Assessment of Projects: Guidance on the preparation of the Environmental Impact Assessment Report*.
- Housing Commission (2024). *Report of the Housing Commission.*

The effects section of this chapter follows the terminology (where applicable) used in the 2022 EPA Guidelines as set out in Chapter 1 of this EIAR.

This Population and Human Health Assessment has been undertaken in accordance with relevant Environmental Protection Agency's (EPA) Guidance, as follows:

- Assessment of baseline, including identification and assessment of receiving environment of receiving environment and relevant receptors;
- Identification of environmental design and mitigation measures included in the construction methodology;
- Identification of the potential impacts, and assessment of the magnitude of potential effects, and their significance;
- Consideration of mitigation measures; and,
- Assessment of residual effects.

Where relevant, assessment findings have been incorporated from the following chapters:

- Traffic and Transport (Chapter 7);
- Air Quality (Chapter 8);
- Climate (Chapter 9);
- Noise and Vibration (Chapter 10);
- Land, Soils, Geology and Hydrogeology (Chapter 14); and
- Water (Chapter 15).

17.3 Baseline Conditions

The following provides a description of the receiving environment, with a focus on demography, land use and local amenity.

The subject site lies within the Cork City Council administrative area. The Government's 2025 First Revision of the National Planning Framework (NPF) identifies Cork as being located within the Southern Region and sets out a target population growth for the city. The NPF specifies an objective to regenerate and rejuvenate Cork City with increased residential population and enhanced amenity and design quality.

17.3.1 Housing

The latest Government housing plan, *Delivering Homes, Building Communities 2025-2030*, was published in November 2025 and addresses the time period to 2030. The Plan sets out a strategy to achieve a steady supply of housing in the right locations. The Plan aims to see the delivery of 300,000 additional homes by 2030.

According to the latest CSO New Dwelling Completions data (Q3 2025), there were 9,235 new dwelling completions in July, August, and September 2025, a rise of 4% on the same three months of 2024. There were 30,168 new dwelling completions in the whole of 2024, a decrease of 7.1% from 2024 and below the Government's annual target of 33,450.

The recently published Housing Commission Report estimates a deficit of between 212,500 and 256,000 homes in Ireland as of the 2022 Census and implies that a median of 55,000 to 60,000 homes per year will be required to be built.

According to the Department of Housing, Local Government and Heritage's latest Monthly Homelessness Report (October 2025), there were a total of 16,766 individuals homeless in the State. There are 778 homeless adults recorded in the South-West Region during the week of 20-26 October 2025. This is a 28.6% increase in the number of homeless adults in the region at the same time in 2024. The same latest homelessness report notes that 97no. children were recorded as being part of the 60no. families accessing emergency accommodation in the South-West Region at the end of October 2025.

The Revised NPF requires delivery of a baseline of 55,000 – 82,500 homes annually. Within this output, the National Housing Action Plan, *Delivering Homes, Building Communities 2025-2030* identifies a target of 12,000 social homes per year. To achieve the objective of compact growth, the NPF directs that 40% of future housing delivery is to be delivered within and close to the existing footprint of built-up areas.

17.3.2 Land Use

The subject site is located within Blarney and is zoned for mainly new residential development. A justification for ancillary and associated development within other zoned areas is presented in the application. Therefore, the principle of residential development on the zoned ZO 02 lands is acceptable, subject to the consideration and acceptability of the site-specific matters.

The area relating to the proposed Access Link Road and SuDS measures is zoned ZO 20 - City Hinterland and designated for 'Long Term Strategic Development'.

The wetwood area on the eastern boundary of the site is zoned ZO 15 open space but this is to be generally maintained as is. Station Road and R617 are also included within the boundary to facilitate road improvements. The area adjacent the R617 is zoned ZO 01 and is to accommodate the proposed primary care centre.

Lands in the vicinity of the site to the west and north are part of the existing built environment of Blarney and comprise residential uses in the form of single, semi-detached, and terraced houses as well as apartment buildings at Woodfield Hall.

West of the site on the other side of Station Road is the natural eco-system of Ardamadane Wood proposed Natural Heritage Area (pNHA) Site Code: 001799. Ardamadane Wood pNHA comprises a dense riparian woodland strip along the River Martin. To the south of the subject site the land is in agricultural use in the form of arable fields. In addition, the Ringwood is to the south. The Ringwood is a local, prominent round-shaped woodland approximately 3 hectares in area.

Site boundaries to the south and east include mature hedgerow, with a mature hedgerow also being located within the centre of the site.

Further to the southwest of the site is the town centre of Blarney, which contains a mix of land uses including convenience retail, retail services, commercial properties including hospitality, uses, manufacturing in the form of woollen mills, and educational uses, as well as tourism uses further to the southeast at the estate of Blarney Castle. Figure 17.1 provides an overview of the available bus infrastructure within a 1km walking catchment of the site.

Further to the north of the site is the N20, the Cork-Dublin rail line, and residentially zoned lands at Stoneview, where a new rail station and park and ride facility is being designed by Irish Rail as part of upcoming investment in the Cork commuter rail network. Blarney Business Park lies east of the site on the other side of the N20.

Further to the southeast lies Blarney Bog pNHA (Site Code: 001857) (also known as Clogheenmilcon Bog). Blarney Bog is a wetland/ fen with wet scrub, wet woodland and areas of open water.

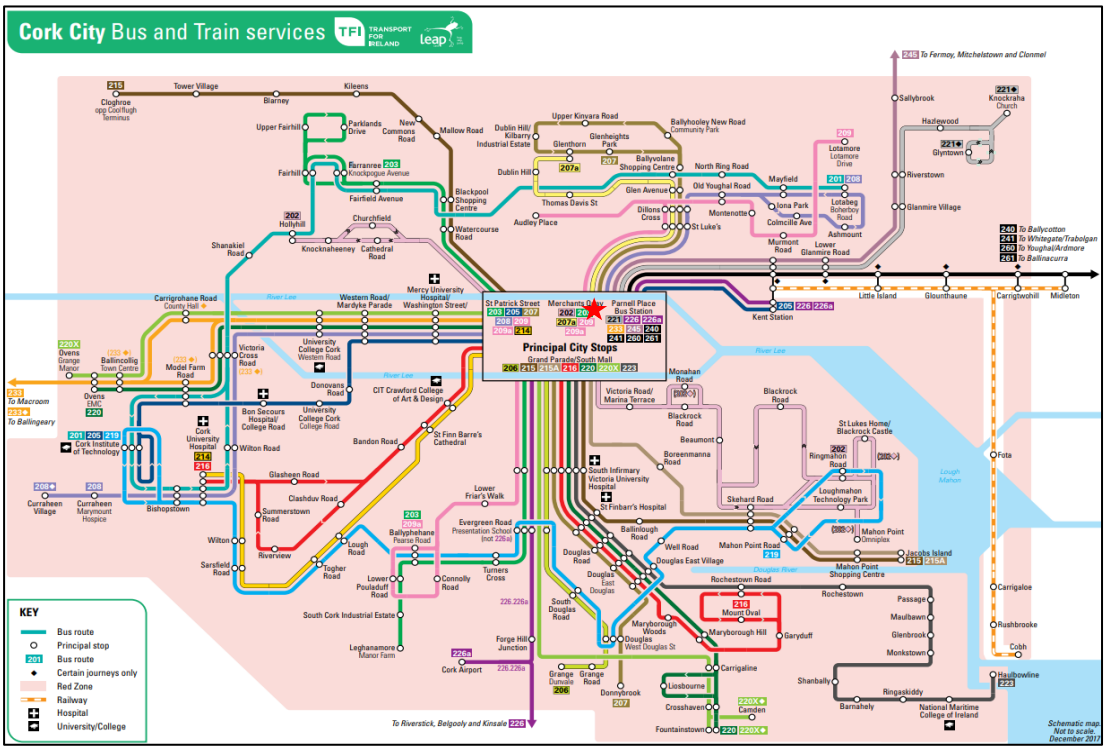


Figure 17.1: Cork City Bus and Train Transport Accessibility (Source: TFI)

17.3.3 Demographic Profile

The profile of the area has been reviewed against the following matters:

- Demographics;
- Census Mapping Statistics (previously known as SAP map/ Small Area Population map).; and
- Existing Facilities:
  - Education
  - Childcare
  - Health and Wellbeing
  - Public Open Space and Recreation
  - Community Service Facilities
  - Cultural Facilities
  - Faith and Worship

17.3.4 Demographics

The site is located to the east of Blarney town centre and to the northwest of Cork City. It forms part of the Cork Metropolitan Area.

Presented in Figure 17.2 below is the catchment area of the development site assessed for the purposes of this chapter. The defined catchment area encompasses locations within a 2km radius of the site. A distance of 2km is typically accepted as the realistic distance from home that people will travel to access day-to-day community facilities and services, especially when travelling by sustainable modes such and public transport. A 2km radius therefore represents the strongest zone of influence for the development in terms of social and community infrastructure.

However, it must be noted that the site and Blarney's close proximity to both Cork City Centre and Blackpool is significant with regard to social and community infrastructure. The subject site is currently a 30-minute journey time from Cork City Centre via the 215 bus route. The District Centre of Blackpool is a 20-minute journey from the subject site via the same bus route. These journey times include the time to walk from the site to the relevant bus stop on the R617.

It is very likely that people currently living in Blarney travel to Cork City Centre and Blackpool to access a range of services and facilities including, for example, largescale convenience retail stores, the cinema and arts theatres, to attend hospital and avail of other primary health care services, and to attend third level education. In terms of accessing employment opportunities, it is also very likely that members of the current population of Blarney travel each day for this purpose.

CSO interactive mapping for the Census 2022 also provides a town boundary for Blarney. This is shown below in Figure 17.3. The majority of the subject site lies outside the Census 2022 town boundary for Blarney.

The population of Blarney town, according to Census 2022 figures, was 2,779 people in 2022.

Outside of the town boundary but within 2km of the site, it is estimated that there are approximately 193 one-off houses.



Figure 17.2. Catchment area, outlined in yellow, as defined by a 2km radius from the site. Location of the site of the proposed development outlined in red. (Base map source: Google Maps; Annotated by Coakley O'Neill Town Planning Ltd., 2025).

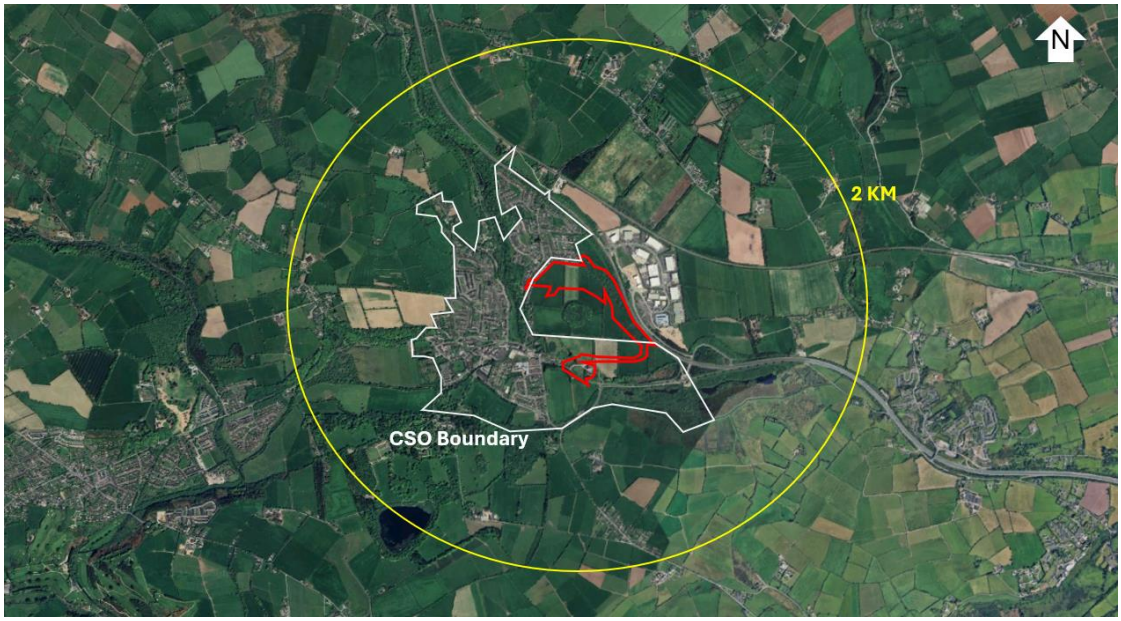


Figure 17.3. Site location outlined in red, catchment area outlined in yellow, Census 2022 Blarney Town Boundary outlined in white. (Base map source: Google Maps and CSO Interactive Mapping; Annotated by Coakley O'Neill Town Planning Ltd., 2025).

Section 2.41 of the *Cork City Development Plan 2022-2028* acknowledges that average household size will continue to decrease over the lifetime of the Plan, and states that the Joint Cork Housing Strategy and Housing Need Demand Assessment strategy (HNDA), "*sets out a city-wide average household size target of 2.49 for the Plan period based on a changing average household size from 2022-2028*." However, notwithstanding this, Census 2022 figures indicate that the average household size in Blarney has actually increased since Census 2016, from 2.72 to 2.75.

Given the local average household size is 2.75, the c. 193 houses in the catchment area which lie outside the boundary of Blarney town can be reasonably assumed to support a population of c. 531 people[1]. Therefore, the total population of the catchment area for this chapter can be assumed to be c. 3,310.

Table 17.1 below presents the age profile of the population of Blarney town according to the 2022 Census.

Age Bracket	Population 2022	% of Population
0-4	**176**	6.3%
5-9	**199**	7.2%
10-14	**193**	6.9%
15-19	**141**	5.1%
20-24	**158**	5.7%
25-34	**315**	11.3%
35-44	**447**	16.1%
45-54	**388**	14%
55-64	**277**	9.9%
65+	**485**	17.5%

Table 17.1: Age profile of Blarney town, as per the 2022 Census.

A review of the age profile of Blarney reveals that the town has a relatively balanced, slightly ageing profile, with 27.4% of the population of the town being aged 55 years or older, and with 25.5% of the population of Blarney between the ages of 0-19. It is assumed that the surrounding 193 households in the catchment area have a similar age profile.

17.3.6 Existing Facilities

This chapter assesses the community and social infrastructure within the catchment area of the site of the development (as outlined and discussed in Section 17.3.3.1 above) under the following headings:

1. Education/Training	5. Social/Community Services
2. Childcare	6. Arts and Culture
3. Health	7. Faith
4. Sports/Recreation and Open Space	8. Other Features

Education/Training

There are 2no. existing primary schools and 1no. existing secondary school within the catchment area (see Tables 17.2 and 17.3 below). In addition, there are several other primary and post-primary schools immediately adjacent and/or in the vicinity of the catchment area, in particular in Cloghroe, as well as in Ballincollig and the north-west of Cork City.

Existing Primary Schools			
Name and Location	**Boys**	**Girls**	**Total**
1. Scoil Chroi Iosa, St. Anne's Road, Blarney	143	153	296
2. Gaelscoil Mhuscraí, Shean Lower, Blarney	87	88	175

Table 17.2: Existing primary schools located within the defined catchment area of the proposed development.

[1] 193 households x 2.75 = 530.75. Rounded up to 531.

Existing Post-Primary Schools		
Name and Location	**Boys**	**Girls**
1. Scoil Mhuire Gan Smal, Blarney	532	471

Table 17.3: Existing post-primary schools located within the defined catchment area of the proposed development.

It is also of note that construction was recently completed on an expansion of the Scoil Mhuire Gan Smal (Application Ref. PL04.247742 (16/6473)), to provide for an additional 1,200no. pupils.

The provision of primary and post-primary school facilities in Ireland is determined on an area specific basis by the Department of Education, having regard to available school capacity, demographic projections, analysis of child benefit records, and local GIS travel pattern modelling.

According to the *Cork City Development Plan 2022-2028*, the Department of Education has prepared preliminary projections of requirements for school places in Cork City up to 2031. The projections suggest a potential need of up to 11no. new or expanded primary schools and up to 3no. new or expanded post-primary schools in the vicinity of the catchment area of the proposed development over the next decade, as per Table 17.4 below.

Department of Education Preliminary Assessment of Additional Education Capacity		
School Planning Area	**Number of new or expanded Primary Schools (baseline figure)**	**Number of new or expanded Secondary Schools (baseline figure)**
Ballincollig	2	1
Blarney	1-2	1
Gurranabraher	5-7	1

Table 17.4: Department of Education Preliminary Assessment of Additional Education Capacity. (Source: Cork City Development Plan 2022-2028).

There are no third level education facilities in located within the catchment area. However, immediately adjacent the catchment area and throughout the city there are a number of third level education facilities and institutions. These are listed in Table 17.5 below. There is good access to these facilities from the site and catchment area due to the availability of public transport serving the area.

Existing Third-Level Educational Facilities
Name and Location
1. Cork Academy of Music, Technical Building, North Monastery Campus, North Monastery Road, Cork
2. Northside Community Enterprises (NCE)Education & Training Campus, Redemption Rd, Farranferris
3. Griffith College Cork Wellington Rd, Cork
4. CEC - Cork English College Saint Patricks Bridge, Cork
5. City North College of Further Education Harbour View Rd, Gurranabraher, Hollyhill, Co. Cork
6. Cork College of Commerce, Morrison's Quay.
7. The Cork College of Beauty Therapy, 85 South Main Street.
8. Joan Cashman Colour & Image Academy, 19 Academy Street.
9. IPICS Education, Unit 1dNorth Valley Business Park, Old Mallow Road, Cork
10. Irish College of Osteopathic Medicine, Unit 42A/B North Point Business Park, New Mallow Road, Cork
11. University College Cork

12. Munster Technological University
13. St Johns Central College, Sawmill Street
14. Cork Centre for Architectural Education, Douglas Street
15. Cork English Academy, Drinan Street

Table 17.5: Existing third-level education facilities located adjacent the catchment area (Sources: Websites of the various institutions).

Childcare

Based upon the Census 2022 data for Blarney town, it is assumed that there are c. 209no. children aged 0-4 living within the catchment area of the proposed development.

A Childcare Needs Assessment has been prepared to accompany the planning application under a separate cover as well as to assess the potential childcare needs arising from the development.

This childcare needs assessment identifies the following the Childcare Facilities and their capacities. This is illustrated in Table 6., below.

Childcare Facility	Capacity of Facility	Available Spaces
McShortall Childcare Ltd	65	Not Known
Shournagh Childcare	77	0
Shournagh Childcare (Ballyneety)	55	0
Árd na Laoí Montessori School	11	Not Known
Blarney Community Playschool CLG	48	<2
Ar Aghaidh Linn	22	Not Known
Blarney Montessori School	33	0

Table 17.6: Existing TUSLA Registered Early Years Childcare Facilities as of May 2024. (Source: Cork City Childcare Committee, 2024).

It is noted that information was not available in relation to 3no. local childcare facilities. Given that this information was not available, a worst-case scenario has been adopted, and it is assumed that these facilities are at full capacity.

While there are several other early years childcare services within the wider catchment area outside of the settlements of Blarney and Tower themselves, we note the report from Cork City Childcare to the S32B submission in respect of the proposed development which was received on the 30th May 2025. In their submission, Cork City Childcare sets out that there is currently a shortage of childcare spaces in the area.

It is evident, therefore, that there is a deficit in childcare spaces in the catchment area. A creche facility is incorporated into Phase 1 of the Ringwood Development which is designed to cater for 137no. children. As detailed in the Childcare Needs Assessment prepared under a separate cover, this granted facility provides for sufficient capacity to cater for the childcare needs arising from the proposed development.

Health

Desktop research and site visits were employed to ascertain the number of health facilities and services located within the catchment area of the proposed development. The results of this research are presented in Table 17.7 below.

There are no national, regional or local standards for health provision in Ireland relating to the provision of primary care centres or the number of doctors in an area.

Health Facility	Name and Location
1no. Health Centre	1. Blarney Community Health Centre
2no. GP Surgeries	1. The Medical Centre, Monacnapa, Blarney
	2. The Medical Centre, Dr. Úna O'Halloran, Ashdale House, Shean Lower, Blarney, Co. Cork.
2no. Dental Surgeries	1. Blarney Dental, The Square, Monacnapa, Blarney, Co. Cork
	2. Niall Coonan Dental, Unit 2A, Blarney Shopping Centre, Co. Cork
2no. Pharmacies	1. McElligott's Pharmacy Blarney, Ashdale House, Shean Lower, Blarney
	2. Walsh's All Car Pharmacy, Unit 4, Monacnapa, Blarney Shopping Centre
1no. Physiotherapist	1. Next Level Physiotherapy, Ashdale Shopping Centre
1no. Optician	1. Anne O'Donovan Opticians, Unit 7 Blarney Shopping Centre, Blarney

Table 17.7: List of health services and facilities in the defined catchment area of the proposed development.

The catchment area appears to currently be somewhat underserved in relation to primary health care facilities.

With regard to primary health care provision, the HSE has confirmed that a typical primary care centre can serve a population of between 10,000-20,000 people, subject to appropriate resourcing. It is noted, from a review of the planning history of the area, that a planning application was made in 2020, under Application Register Reference 20/39502, for the construction of a 3-storey primary care centre with 5no. ground floor retail units and café at St. Ann's Road, Monacnapa, Blarney. Cork City Council decided to refuse permission for this development and their decision was subsequently appealed by the applicant under Case Reference: ABP-308670-20.

An Bord Pleanála (now An Coimisiún), granted permission for the proposal on 23rd December 2021, stating that the proposed quantum, mix and scale of development was acceptable given the accessible and central urban village location of the site, that the proposal would not seriously injure the character of the nearby Architectural Conservation Area, and that the scale and design were such that they would not seriously injure the residential amenity of the area. However, a judicial review of the decision was made to the High Court. On 5th December 2022, however, the High Court issued an order quashing the Board's decision. The Coimisiún have recently refused permission for the proposal.

The HSE are now actively progressing the development of a primary care centre in Blarney with initial tender submissions sought. A pre-requisite of the tender was that new GP services be provided for.

The subject planning application proposes a new primary care centre on a fully serviced zoned site at Ringwood. This facility is 1,724sqm in size and includes for a retail pharmacy and GP services.

Sports/Recreation and Open Space

Sports and recreation infrastructure refers to parks and playgrounds, dedicated public open space and amenity areas, sports centres and formal club facilities. Desktop research and multiple site visits were employed to ascertain the number and nature of sports/recreation facilities and open spaces located

within the catchment area of the proposed development. The results of this research are presented in Table 17.8.

Description	Name and Details
3no. Playing Pitches	1. Blarney GAA Club – 3no. playing pitches on 2no. sites and 1no. astroturf pitch
1no. Sports Club	1. Blarney GAA Club, Shean Lower, Blarney
4no. Amenity Walks/ Parks/ Playgrounds	1. Children's Woodland Park, MUGA, and Outdoor Exercise Zone, Blarney 2. Clogheenmilcon Sanctuary Walk 3. Blarney Castle and Gardens 4. Waterloo Walk, Waterloo Rd, Shean Upper, Blarney

Table 17.8: Existing recreational and sports facilities and clubs in the defined catchment area of the proposed development.

In addition to the parks outlined in Table 17.8, there are multiple other existing sports and recreational open spaces in the vicinity of the catchment area, including Blarney United football club in Bawnafinny, which has 2no. soccer pitches, as well as Blarney Golf Club, Muskerry Golf Club, Rocklodge Pitch & Putt Club. In addition, Ballincollig Regional Park is located just over 5km southwest of the subject site.

There are a number of sports, recreation and open space facilities within the defined catchment which cater to all cohorts.

The Sustainable and Compact Settlements Guidelines for Planning Authorities (2024) state that a benchmark of 2.5ha of open space per 1,000 head of population (taking protected zones, landscape character and statutory obligations to protect certain habitats and biodiversity into account) has been used internationally as a benchmark for open space provision in settlements.

The Guidelines further recommend that all residents within a settlement should have access to a Class 2 multifunctional public open space within walking distance of their home. The Guidelines define Class 2 open space as local parks, squares or plazas generally provided as part of individual development proposals and offered for taking in charge by the local authority following the completion of the development.

It is considered that the catchment area is well catered for in terms of open and recreational outdoor spaces. In addition, it is noted that c. 10ha of land located immediately south of the subject site, including the Ringwood, are zoned for Open Space uses under the *Cork City Development Plan 2022-2028*.

Social/Community Facilities

Social and community facilities are broad categories and can include general civic services as well as services targeted to specific sectors of the community.

Desktop research was employed to ascertain the number and nature of social/community services located within the catchment area. The result of this research is presented in Table 17.9 below.

Description	Name and Location
1no. Civic Facilities and Services	1. Blarney Library, The Square, Monacnapa, Blarney
4no. Social/Community Organisations	1. Bikecraft Motorcycle Training 2. Blarney Scouts Hall 3. Blarney Community Council, Old Convent Hall, Convent Road 4. Blarney community centre, The Mills, Blarney

Table 17.9: Existing social/community facilities and services located within the defined catchment area of the proposed development.

There are no national, regional, or local standards regarding the provision of social and community facilities and services. A simplistic standardisation which has been employed elsewhere in neighbourhood planning is: 0.3 community facilities per 1,000 head of population[2]. However, this approach is somewhat crude, being based on the number of buildings/ facilities provided and does not account for the size or quality of individual facilities. Consequently, the use of this standard is applied with caution and as a benchmark only.

It can be assumed, based on the information presented in Table 17.9 above, that the area is reasonably well served in terms of social and community facilities.

In addition, it must be noted that there is a Citizens Information Centre in nearby Blackpool, as well as other services and facilities within Cork City.

Arts and Culture

Desktop research was employed to ascertain the number and nature of arts and culture facilities located within the catchment area of the proposed development. The result of this research is presented in Table 17.10 below.

Description	Name and Location
2no. General/ Culture/ Music Facilities	1. YAA Art, 1A Millstream Row, Shean Lower, Blarney 2. Blarney Castle and Gardens

Table 17.10: Existing arts and culture facilities located within the defined catchment area of the proposed development.

While the overall number of Arts/Cultural and Music facilities within the catchment area is low, this is considered to be generally in keeping with the provision of such services in a settlement of the subject scale. The subject site is however in close proximity to Cork City which has a long-established reputation as being a thriving centre for the arts and culture, with multiple festivals and initiatives at every scale in the city.

Faith

There are 3no. centres of religious worship located within the catchment area. They are listed below in Table 17.11.

[2] See: Barton, H., Grant, M., and Guise, R. (2021). *Shaping Neighbourhoods: For Local Health & Global Sustainability*, *3rd edition*. London:

Details of Centres of Worship
1. Church of the Immaculate Conception, Monacnapa, Blarney
2. Church of the Resurrection, The Square, Monacnapa, Blarney
3. Convent Of The Missionaries Of Charity, Blarney, Shean Lower

Table 17.11: Existing centres of religious worship located within the defined catchment area of the proposed development.

There are no known national or other benchmarking standards for the provision of religious faith and worship social infrastructure. According to Census 2022, 76.7% of the population of Blarney town identify as Catholic, 4.4% as having another religion, 14.5% as having no religious faith, and 4.4% of the town's population did not state any answer regarding their religion or otherwise.

The subject area appears to be well-served by centres of worship, predominantly in respect of the Roman Catholic faith, which aligns with the majority of Blarney town's population identifying as being Roman Catholic. As noted previously, Blarney is well connected to Cork City which has a wider base of Centres of worship ensuring access to wider facilities if required.

Other Social and Community Infrastructure

Blarney town centre contains a solicitor, a filling station with Centra, several retail services, restaurants, 3no. 3-star hotels, a post office, and a credit union.

Blackpool Shopping Centre and the surrounding retail parks, the City Centre Retail Area and City Centre Commercial Core are all located in the vicinity of the defined catchment area of the proposed development, and all major and minor retail, financial, legal, hospitality and other services, supports and organisations are available.

In addition to serving the population of Cork City, people travel from across the county of Cork as well as from other parts of Munster to avail of the high quality service provision in Cork City Centre.

In this regard, as stated above in Section 17.3.3.1 of this chapter, there should be an expectation that people within the defined catchment would be willing to travel to Blackpool and the wider city including the city centre and also Ballincollig to meet their needs in relation to retail, legal, financial and hospitality services.

17.4 Significant Likely Effects

This section of the assessment describes those effects that are likely to arise in the absence of mitigation. Section 17.5 of this chapter sets out the mitigation measures required to alleviate such effects and the assessment of impacts post mitigation is presented in the Residual Impact Section.

Potential effects are considered under the following headings:

- Land use
- Human Health Impacts
- Population & Economic Activity Impacts
- Local Amenity Impacts

In each case construction and operational effects are considered. It should be noted that the construction phase effects include the proposed demolition works.

17.4.1 Do Nothing Scenario

If the proposed development is not realised, it is anticipated that the subject site would remain in agricultural use. However, while ancillary areas are zoned for other uses, the main the site is zoned for new residential development. In terms of this subject matter, Population and Human Health, the chronic housing crisis is a critical factor. There is a serious under supply of housing in Cork City and, in particular, in Blarney. Aside from the Ringwood Phase 1 LRD comprising of 246no. units granted permission by An Coimisiún Pleanála on the 6th May 2025, there are currently no other planning applications or permissions in place in within the catchment area to deliver a residential development at a medium or large scale. Without the proposed development, the undersupply of housing in Blarney is likely to continue.

17.4.2 Construction Phase

Land Use

The proposed development complies with the statutory land use zoning. There will be no severance of land, loss of rights of way or amenities as a result of the proposed development. Development of the subject site is aligned with the objective to achieve compact growth contained within the Revised NPF and will realise the efficient use of a zoned greenfield site within a development boundary with higher housing density, in a location served by public transport.

The effect is likely and will have a permanent significant positive effect that will achieve local and wider county, regional and national planning objectives.

Human Health

Construction sites pose potential risks to the health and safety of the public. However, access by the public would be considered trespassing on private property.

With mitigation in place, the effect is unlikely and neutral and not significant.

It should be noted that the potential for effects on human health during the construction phase are dealt with in this EIAR under the more specific topics of the environmental media by which they might be caused including air, traffic, and noise.

Population and Economic Activity

A key characteristic of the proposed development in terms of its potential economic impact relates to its capital value, of which a significant portion will be for the purchase of Irish sourced goods and services. The construction phase will provide a boost for the local construction sector in terms of employment generation and capital spend on materials and construction labour costs.

It is expected that during peak activities, approximately 40 people will be working directly on the construction site. The staff will comprise of managerial, technical, skilled and unskilled workers. As far as

practicable local labour will be employed. It is unlikely that the proposed development will increase the population of the area as a result of the construction phase.

In addition to direct employment, there will be substantial off-site employment and economic activity associated with the supply of construction materials and provision of services such as professional firms supplying financial, architectural, engineering, legal and a range of other professional services to the project.

Revenue generated during the construction phase will have an associated benefit for the local area with respect to expenditure on local goods and services.

The impact of the construction phase will at least extend to the county in terms of the requirement for labour, goods, and services. The effect will be significant, positive, and short-term.

Local Amenities

Construction works and emergence of the new structures will be seen in the context of existing views of the existing built-up area of Blarney town, surrounding green infrastructure, such as the Ringwood and boundary hedgerow, the local undulating landscape and adjacent existing residential properties. The undulating landscape and existing green infrastructure of boundary hedgerow and the Ringwood will disguise the development to a large degree when viewed from the south and southwest. Please refer to **Chapter 13 – Landscape and Visual Impact** for the detailed descriptions and assessments of viewpoints in the vicinity of the site. In addition, the existing adjacent residential development will have the effect of backgrounding and contextualising the proposed works.

Works to the public road will require a road opening licence and temporary closures may be required. The impact of these works is neutral, not significant, and temporary.

Any effects will be slight, localised, and short-term in duration. Please refer to Chapters 7, 8, 10 and 13 of this EIAR for information on the effects on landscape and visual, traffic, noise, and air quality.

17.4.3 Operational Phase

Land Use

The proposed development complies with the main statutory land use zoning. Ancillary development elsewhere has been justified. The proposal will deliver 323no. residential units.

Given the existing housing crisis, it is anticipated that a high-density development at this location would result in a likely significant positive impact with a permanent duration as it would realise the objectives of urban consolidation through the efficient use of a zoned and serviced landbank to provide *inter alia* much needed housing, together with high-quality amenities for future occupants.

Human Health

The proposed design provides for the segregation of pedestrians and traffic and incorporates the principles of universal access and the requirements of Part M of the Building Regulations so that the development will be readily accessible to all, regardless of age, ability or disability.

The integration of energy efficient measures into the design will provide for healthier living standards for future occupants and less dependence on fossil fuels for energy generation with a resultant improved air quality. Therefore, the impact is likely to be locally significant, positive and of permanent duration.

Adequate and appropriate exposure to light is critical for health and well-being. Light impacts human health and performance by enabling performance of visual tasks, controlling the body's sleeping and waking system and affecting mood and perception.

Having regard to the Architectural Design Statement prepared by Conroy Crowe Kelly, and included with the planning application, it can be determined that there is no impact on residential uses in the vicinity and the proposed development can be concluded to meet and exceed BRE recommendations.

Insufficient physical activity has been identified by the World Health Organisation as the fourth leading risk factor for global mortality. Urban air pollution and traffic injuries are also responsible for a further 2.6 million deaths annually. The proposed scheme prioritises both pedestrians and cyclists and thus promotes active movements for future occupants. The health benefits of sustainable and active transport (walking and cycling combined with public transport) can prevent many of these deaths from physical inactivity.

The proposed open spaces and adjacency to the Ringwood woodland will result in likely, significant positive effects on the health, both mental and physical, of residents of the scheme and those in the immediate area.

Population and Economic Activity

In terms of the operational phase, the potential employment opportunities will be limited, given the fact that residential is the predominant land use proposed. Notwithstanding this, there will be additional employment from the proposed creche element in Phase 1. The economic impact of the operational phase on the immediate area would therefore be likely, permanent, slight, and positive.

The provision of 323no. quality homes within the proposed development will have a likely significant permanent positive impact on the population of Cork City, contributing to the city's growth in a compact manner. It is envisaged that the proposed development will accommodate a projected full-time residential population of approximately 888 persons[3]. This population will generate additional spending within the area which will likely have a permanent moderate positive impact on economic activity in Blarney. This increase in population will also support the ongoing and future enhanced provision of an efficient public transport system in Blarney, including a future rail station at Stoneview as well as improvements to the bus network under BusConnects.

Local Amenities and Services

The proposed layout provides for excellent public amenity and recreational facilities, including outdoor play areas and communal areas, as well as public parks with Ringwood as the backdrop. The provision of amenity facilities within the development will be of benefit to future residents and existing residents in the local environs.

[3] Based on the average local household size of 2.75 people per household (CSO, 2022).

Using the average local family size of 2.75 persons per unit based on Census 2022 data, 323no. units will yield a population of 888 persons. Census 2022 data indicates that there are likely to be an estimated 414no. (12.5%) children in the 5-12 (primary school going) age bracket in the study area. The proposed development would therefore likely result in an additional 110no. children of primary school going age in the settlement.

It is also illustrated that 5.4% of the population of the study area are in secondary school going age range (13-18 years). Using this percentage as a basis, it can be approximated that the proposed development will result in demand for an additional 48no. secondary school spaces being generated.

It is considered that there is adequate capacity within the existing schools to cater for the likely demand to be generated from the proposed development.

As identified, there is a deficit in the provision of early years childcare services in the area. As the proposed development includes provision of an onsite early years childcare facility, which has been designed following consultation with the Cork City Childcare Committee, the proposed development will have capacity to accommodate the childcare space demand it is likely to generate.

17.5 Mitigation Measures

17.5.1 Construction Phase

A site Construction and Environmental Management Plan (CEMP) will be prepared by the selected contractor prior to work commencing on site. The main purpose of a CEMP is to provide a mechanism for implementation of the various mitigation measures which are described in this EIAR. An outline Construction Management Plan prepared by MHL Consulting Engineers is included with the planning application.

All personnel will be required to understand and implement the requirements of the CEMP and shall be required to comply with all legal requirements and best practice guidance for construction sites.

Project supervisors for the construction phase will be appointed in accordance with the Health, Safety and Welfare at Work (Construction Regulations) 2013, and a Preliminary Health and Safety Plan will be formulated during the detailed design stage which will address health and safety issues from the design stages, through to the completion of the construction phases.

Adherence to the construction phase mitigation measures presented in this EIAR will ensure that the construction of the proposed development will have an imperceptible and neutral impact in terms of health and safety.

17.5.2 Operational Phase

The proposed development has been designed to avoid negative impacts on population and human health through;

- Incorporating amenity facilities within the layout, including the provision of high quality packs and play areas, and provision for walking and cycling throughout the development;
- Landscaping to mitigate against issues arising from microclimate conditions;
- The inclusion of a comprehensive foul and surface water management system;
- Energy efficient measures; and,
- High quality finishes and materials.

No significant risks to population and human health have been identified in relation to the operational phase of the development. Accordingly, no further mitigation measures are required.

17.5.3 Monitoring

Measures to avoid negative impacts on population and human health are largely integrated into the design and layout of the proposed development. Compliance with the design and layout will be a condition of any permitted development.

Monitoring will be undertaken by the Building Regulations certification process and by the requirements of specific conditions of a planning permission.

Monitoring of compliance with Health & Safety requirements will be undertaken by the Project Supervisor for the Construction Process.

17.6 Interactions

During the construction phase, the following aspects would interact with population and human health and in the absence of mitigation may give rise to likely significant effects:

Traffic and Transportation: Traffic flow for construction vehicles in the locality has potential to impact upon road safety.

Noise & Vibration: There is potential for impact on human health associated with noise and vibration during the construction phase.

Water and Material Assets: There is the potential for stoppages of existing water supplies during the construction period.

Major Accidents and Disasters: There is the potential for accidents during the construction phase.

Air Quality: There is potential for impact on human health from dust associated with construction activities.

During the operational phase the potential interactions are:

Landscape: The landscape plan will impact on the quality of the private and public open spaces, which could impact on people's health and well-being.

Noise & Vibration: The increased population and activity in the area may result in increased noise and vibration for established residential areas in the vicinity of the proposed development site.

Traffic and Transportation: Traffic flows within the site has the potential to create safety risks for pedestrians and cyclists.

Major Accidents and Disasters: There is the potential for accidents, e.g., from fire, or wind, during the operational phase.

Air Quality: There is potential for impact on human health from a deterioration in air quality associated with emissions from vehicles.

The potential significant impact on population and human health have been considered within the relevant discipline and mitigation measures outlined where required. With mitigation measures in place, no significant residual negative interactive effects are predicted.

17.7 Cumulative Effects

The most likely cumulative effect of the proposed development, with regard to population and human health, is the demand it will place on local infrastructure and services. As is demonstrated in the preceding sections, there is adequate capacity available to cater for the projected effect within the identified local schools and within the existing open spaces in the area as well as the proposed open spaces on site.

The recent refusal by An Coimisiún Pleanála of the Monacnapa SHD on the 7th November 2025 has been considered in regard to the potential for cumulative impacts arising from the proposed development. Owing to the refusal of permission, there is potential for the Monacnapa site to be brought forward again for residential development. However, in the absence of an active planning application on the site the potential population increase as a result of the development of Monocapna site has not been considered as it would be deemed to be premature without an active development proposal on the site.

Residential development at Ringwood will further contribute towards achieving NPF population growth targets and the objective of compact growth in Blarney, and will support the establishing of a sustainable, balanced community at the Ringwood Expansion Area.

The future new link road east and south of the subject site at Ringwood will augment the accessibility and connectivity of the site.

17.7.1 Cumulative Effects – Childcare

The report from Cork City Childcare to the S32B submission in respect of the proposed development which was received on the 30th May 2025. In their submission, Cork City Childcare sets out that there is currently a shortage of childcare spaces in the area. It is evident, therefore, that there is a deficit in childcare spaces in the catchment area.

A creche facility is incorporated into Phase 1 of the Ringwood Development which is designed to cater for 137no. children. This granted facility provides for sufficient capacity to cater for the childcare needs arising from Phase 1 of the development as well as the development proposed.

Therefore, this cumulative effect is considered to be not significant and neutral.

17.7.2 Cumulative Effects – Education

Using the average local family size of 2.75 persons per unit based on Census 2022 data, future residential development of c. 323no. units will yield a population of 888 persons. Census 2022 data indicates that there are likely to be an estimated 414no. (12.5%) children in the 5-12 (primary school going) age bracket in the study area. Future residential development at Ringwood would therefore likely result in an additional 111no. children of primary school going age in the settlement.

It is also illustrated that 5.4% of the population of the study area are in secondary school going age range (13-18 years). Using this percentage as a basis, it can be approximated that future residential development at Ringwood could result in demand for an additional 48no. secondary school spaces being generated.

In addition to this, Phase 1 of residential development at Ringwood granted permission by An Coimisiún Pleanála on the 6th May 2025 for 246no. residential units could result in an additional 85no. children of primary school going age and an additional 37no. children of post-primary school going age.

Cumulatively, the proposed development, future residential development at Ringwood, and the Phase 1 Ringwood LRD could result in an additional 196no. children of primary school going age and an additional 85no. children of post-primary school going age living in the study area.

With the recent extension of Scoil Mhuire Gan Smal to cater for 1,200 pupils, it is likely that the cumulative increased population of post-primary school going children in Blarney can be accommodated. Therefore, the cumulative effect of the proposed development with the other developments in the area will be neutral in terms of post-primary school places.

Regarding primary school places, the cumulative increased population of primary school going children in Blarney is likely to require the creation of new school places within the study area.

It is considered that the preparation of the Stoneview Framework Masterplan, the preparation of which is an objective of the Cork City Development Plan, will require the identification of a site suitable for the development of educational uses. It is also noted that the Department of Education has identified the need for up to 3no. new or expanded post-primary schools in the vicinity of the study area over the next decade. Given the above, it is considered that the cumulative effect of additional children requiring primary school places in the area will be mitigated by the provision of one or more new primary schools in the area.

There is good access from the catchment area to a wide range of high quality third level facilities in Cork City. It is anticipated that the growth of the area's population as a result of the proposed development

can be catered for by these nearby facilities. It is anticipated that this will also be the case of the increased population as a result of future development at Ringwood.

Therefore, this cumulative effect is considered to be not significant and neutral.

17.7.3 Cumulative Effects – Healthcare

The proposed development is likely to result in an increase in the population of Blarney by 888 persons. The Phase 1 of residential development at Ringwood may result in the local population increasing by 677 persons. The cumulative effect of these developments would be an overall increase in population of 1,565 persons, from 3,310 to 4,875.

A shortage in the provision of primary healthcare services has been identified in the study area. It is noted that a grant of permission to develop a Primary Care Centre in Blarney, to the southwest of the site, was quashed by the High Court.

The subject planning application proposes a new primary care centre on a fully serviced zoned site at Ringwood. This facility is 1724sqm in size and includes for a retail pharmacy and GP services.

With the provision of a new Primary Care Centre, the cumulative effect of the increase in Blarney's population regarding healthcare provision is considered significant and positive.

17.7.4 Cumulative Effects – Open Space

The proposed development provides for 15% of the site as open space, including play areas. The Phase 1 LRD at Ringwood provides for 16% of the site for open space uses also. A new wetland amenity area is also proposed.

While the study area is well-served by open spaces, including amenity walks in areas of green infrastructure, and while each individual development will provide open space on the respective sites, cumulatively an additional 1,565 persons living in Blarney is likely to give rise to the need for an additional public park to serve the town. In this regard it is noted that c. 10ha of land immediately south of the subject site at Ringwood are zoned for open space uses in the Development Plan. In addition, it is envisaged that the future Stoneview Framework Masterplan will require the identification of land for the provision of open space/ outdoor recreational uses.

Given all of the above, and if a new town park is developed on the lands zoned for open space uses at Ringwood, the cumulative effect of the increase in Blarney's population regarding open space is considered significant and positive.

17.7.5 Cumulative Effects – Social and Community Facilities

While the study area is reasonably well served in terms of social and community services, an increase in Blarney's population by an additional 1,565 people would require additional social and community services.

In light of this, the proposed development provides for the redevelopment of existing farm outbuildings (460sqm) for their conversion to retail/pharmacy and café/restaurant uses.

On balance, the proposed retail/pharmacy and café/restaurant uses provided for a social facility of an appropriate scale, the cumulative effect of the increase in population with regard to social and community facilities is considered not significant and positive.

17.7.6 Cumulative Effects – Arts and Culture

A shortfall has been identified in the study area regarding the provision of arts and culture facilities.

Paragraph ZO 6.2 of the *Cork City Development Plan 2022-2028* states the following with regard to the Plan's ZO 6 Urban Town Centre land use zoning objective:

> *The primary purpose of this zone is to consolidate and develop the existing urban town centre areas as primary locations for retail, economic, residential, cultural, community, leisure, civic and other related uses.*

In addition, cultural uses are open for consideration on lands zoned for residential (ZO 1 and ZO 2), long-term strategic regeneration (ZO 3) and mixed use development (ZO 4) according to the Cork City Development Plan.

In the context of Blarney, from a planning and sustainable development perspective the zoned urban town centre of Blarney is the most appropriate location for the development of arts and culture facilities. Additional populations within Blaney will make the feasibility of providing such facilities more viable.

17.7.7 Cumulative Effects – Faith and Worship

76.7% of the existing population of Blarney town identify as Catholic, while 4.4% as having another religion.

According to the Central Statistics Office,

> *In 2016 persons indicating 'No Religion' accounted for 9.8 per cent of the population up from 5.9 per in 2011. This was an increase of 198,610 persons over the five years, bringing the total to 468,421 and making 'No Religion' the second largest group in 2016*[4].

Census 2022 figures now indicate that, nationally, the increase in those stating they have no religion in the census has increased to over 14% of the population, with 69% of the national population identifying as Roman Catholic.

[4] Census of Population 2016 – Profile 8 Irish Travellers, Ethnicity and Religion, Religion - Religious Change

While the local levels of religious identification in Blarney departs from the overall national trend, it is likely that the demographic making up the cumulative population increase in the town of 1,565 persons will be culturally, ethnically and religiously diverse.

Notwithstanding the above, however, if 76.7% of the cumulative increase in population identify as Roman Catholic, this will mean an additional 1,200 people will be living in the town who may identify as Roman Catholic.

The most recent research about the number of Catholics who regularly attend mass in Ireland dates from 2011 and is contained in *Practice and Belief among Catholics in the Republic of Ireland: A summary of data from the European Survey Round 4 (2009/10) and the International Social Science Programme Religion III (2008/9)*.

In 2011, 42.1% of Catholics in the Republic of Ireland attended mass once per week. If this trend has remained constant over the intervening years, then it can be estimated that c. 505 of the cumulative increase in Blarney's population will seek to attend mass once per week.

It is considered that the existing Catholic centres of worship in the study area can accommodate this potential increase in numbers attending mass.

Therefore, the cumulative effect of the increase to the population of Blarney is considered to be slight and neutral regarding the availability of faith and worship facilities.

17.7.8 Cumulative Effects – Other services

With regard to the provision of retail and other services, with the cumulative effect of an increase in population of 1,565 persons, it is likely that additional retail and other services will be required in the area in the future.

From a planning and sustainable development perspective, the most appropriate location for such uses is on lands zoned urban town centre, district or neighbourhood centre, or for mixed use development.

The Cork City Development plan advises that small-scale convenience shops are also open for consideration on lands zoned for residential uses. Future development of residentially zoned lands at Ringwood could include a small convenience retail use.

In such a case, the overall cumulative effects of the increase to the population of Blarney would be not significant and neutral.

17.7.8 Cumulative Effects – The N/M20 Scheme

The route protection corridor of the preliminary N/M20 scheme overlaps with part of the eastern side of the site. The TII N/M20 design team have confirmed, as published in June 2025, that the proposed motorway route at Blarney will comprise an online solution that does not impact upon the subject site or adjoining housing estates.

It is anticipated that the N/M20 scheme will improve the connectivity of Blarney and the site of the proposed development, including facilitating improved infrastructure for bus and active travel modes.

It is considered that the cumulative effects of the proposed development with the N/M20 scheme will be significant and positive.

17.8 Residual Effects

It is anticipated that the proposed development will realise positive overall economic and social benefits for the local community and the wider Cork City area. Strict adherence to the mitigation measures recommended in this EIAR will ensure that there will be no negative residual impacts or effects on population and human health from the construction and operation of the proposed scheme. Indeed, the delivery of much needed housing will realise a likely positive effect for the local area.

17.8.1 Worst Case Scenario

The worst-case scenario where mitigation measures failed for a development of the type proposed is considered to be the risk of an accident during the construction phase. This is considered highly unlikely and indeterminable.

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18.0 MATERIAL ASSETS

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18.1 Introduction

MHL & Associates Ltd., Civil Engineering Consultants, undertook the preparation of this section of the Environmental Impact Assessment Report (EIAR), in association and consultation with Coakley O'Neill Town Planners, Conroy Crowe Kelly Architects, Systra Ltd, JBA Consulting and Cunnane Stratton Reynolds Land Planning and Design. This chapter of the EIAR was prepared by Mr. David Murphy, B.Eng. (Hons), M.A, MIEI, of MHL & Associates, and reviewed by Mr. Brian Murphy, BE, CEng MIEI of MHL & Associates.

'Material assets' refer to resources that hold intrinsic value within specific locations, originating from either human or natural sources. This value can be derived for either economic or cultural reasons. Assessments of these assets differ based on their type, with economic asset assessments focusing on equitable and sustainable resource utilisation. In contrast, evaluations of cultural assets are more centred on preserving the integrity and continuity of both the asset itself and its essential context.

The proposed development will consist of a large-scale residential development (LRD), representing Phase 2 of development in the Blarney East / Ringwood Expansion Area, and comprising the construction of (i) 323 no. residential dwellings comprising of 157 no. terraced, end-of-terrace, and semi-detached houses (including 129 no. 3-bed and 28 no. 4-bed units); 52 no. duplexes provided in 5 no. 3-storey buildings (including 26 no. 2-bed and 26 no. 3-bed units) and 114 no. apartments provided in 2 no. 5-storey buildings (including 54 no. 1-bed and 60 no. 2-bed units); (ii) a primary care centre, over 2 stories and 1,724sqm in area, incorporating GP services (iii) the refurbishment and redevelopment of existing farm outbuildings for conversion to a retail/pharmacy use, 80sqm in area, and café/restaurant use, 380sqm in area; (iv) a new access roadway into the site from the R617 with associated pedestrian and cyclist infrastructure, which will form the 1st phase of the proposed Stoneview Access Link Road, (v) a new signalised junction on the R617 road which will provide a single lane approach to the west and a two lane approach to the east, comprising one lane for through traffic on the R617 and a right turn lane for traffic turning into the site, and associated footpath improvements and cycle lane provision (vi) a new signalised junction at the R617 and Killard Road junction which will provide a two lane approach from the west, one lane for through traffic heading eastbound on the R617 and a right turn lane onto the Killard Road, with associated footpath improvements and pedestrian and cyclist infrastructure; (vii) a new signalised junction on Station Road that reflects the junction permitted under the Phase 1 LRD scheme (Reg. Ref. 2443031); (viii) private, communal, and public open spaces and hard and soft landscaping, boundary treatments and amenity areas, including a new wetland public amenity area, (ix) drainage works and nature-based SuDS measures (x) foul sewer infrastructure, including 1no. pump station, the diversion of existing foul and water sewers and other new network works, (xi) car parking, including EV charging points, bicycle parking, and motorcycle parking bays (xii) 2no. substations, all associated ancillary site, drainage and development works.

The planning application is accompanied by an Environmental Impact Assessment Report (EIAR).

The application may be inspected online at the following website: www.ringwoodphase2lrd.ie

The EIA Directive mandates the assessment of Archaeological and Cultural Heritage as part of Material Assets. However, recognising the significance of this issue in Ireland, EIA best practices advocate for a distinct and separate treatment of Archaeology and Cultural Heritage within the Environmental Impact

Assessment Report (EIAR). In alignment with this approach, the assessment of Archaeology and Cultural Heritage is thoroughly addressed in Chapter 12 of the EIAR document, emphasising the importance of giving due consideration to the unique and substantial impact that these elements may have on the environmental assessment process.

This chapter focuses on the examination of physical resources in the environment that have human origins, distinct from those of natural origins, which are discussed elsewhere in the Environmental Impact Assessment Report (EIAR). The primary goal of this assessment is to guarantee the sustainable utilisation of these human-origin assets, ensuring their availability for future generations beyond the implementation of the proposed development. This approach underscores the commitment to responsible resource management and the long-term environmental sustainability of the project.

According to the 2022 EIAR Guidelines published by the EPA, "Material assets" are now defined as built services and infrastructure. For Landscape visual effects and amenity, please refer to Chapter 13 of this EIAR. This expanded definition includes traffic, as it consumes roads infrastructure. Additionally, factors such as the sealing of agricultural land and impacts on mining or quarrying potential are categorised under the broader considerations of land and soils. This nuanced understanding of material assets reflects an effort to comprehensively address the diverse elements that contribute to and are affected by infrastructure and development projects in the environmental impact assessment process.

Considering this definition, the chapter assesses material assets, encompassing various aspects such as urban settlements, ownership and access, foul and surface water, water supply, electricity supply, information and communications technology, and waste. It's worth noting that a dedicated chapter, Chapter Seven in this Environmental Impact Assessment Report (EIAR), exclusively addresses traffic and transport considerations, specifically focusing on the impact of the development on roads infrastructure. This structured approach allows for a thorough evaluation of material assets, ensuring a comprehensive understanding of their implications and considerations in the context of the proposed development.

18.2 Study Methodology

In formulating this chapter of the Environmental Impact Assessment Report (EIAR), strict adherence to the criteria outlined in the European Commission's "Guidance on the preparation of the Environmental Impact Assessment Report (2017)" and the 2022 EPA guidelines has been a guiding principle. These documents align with the stipulations of Directive 2014/52/EU, providing invaluable guidance on assessing the effects of development on material assets and specifying the types of assets meriting examination in the EIAR. This chapter assesses Economic Assets of Natural Origin and Economic Assets of Human Origin. The Economic assets of natural origin, including biodiversity, land & soil, and water, are addressed in other chapters (eleven, fourteen, fifteen) of the EIAR. Cultural Assets of a Physical Type and Cultural Heritage of a Social Type are explored in Chapter Twelve.

This chapter, however, focuses on economic assets of human origin. A desktop study was conducted to scrutinise the existing material assets associated with the site designated for the proposed development. Projections of resource utilisation were carefully undertaken for both the construction and operational phases, with subsequent impacts thoroughly assessed. The document proposes mitigation measures

where appropriate, ensuring a comprehensive understanding of the economic aspects tied to human-origin assets within the proposed project's context.

Specifically addressing foul sewage, water supply, gas supply, electricity, and telecommunications, this chapter evaluates the significant impacts on the material assets serving the subject lands. The proposed development involves constructing 323 units on site during phase 02. The granted Phase 1 development, for which the cumulative impact is also being referenced, is to comprise of circa 246 residential units. Characteristics of potential impacts during the Construction and Operational phases are discussed and assessed. Mitigation measures to limit significant impacts to Services, Infrastructure, and Utilities are recommended, with any residual impacts identified for a thorough and informed evaluation.

18.2.1 Guidance

The Material Assets - Services, Infrastructure and Utilities section of the EIAR is prepared in accordance with the following guidelines:

- Environmental Impact Assessment of Projects: Guidance on the Preparation of the Environmental Impact Assessment Report (European Commission, 2022)
- Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment August 2018

18.2.2 Assessment Methodology

The scope of the work for the assessment involved undertaking a Desk Study, a site walkover, site surveys and investigations.

During the Desk Study, information on the relevant existing material assets associated with the development was derived from the following sources:

- Uisce Éireann records.
- Cork County and Cork City Council records.
- ESB Networks records.
- Gas Networks Ireland records.
- EIR records.
- Consultations with Uisce Éireann, Cork City and Cork County Council.
- Topographical survey.
- Site Investigations data.
- Site walkover.

The methodology used to determine significant effects on material assets and the referenced impact criteria have been developed in consideration of the EPA guidelines. Using established best practice and professional judgement, the significance of impact on Material Assets Services, Infrastructure and Utilities is based on the criteria developed in Table 18.1.

Importance	Criteria
Profound	Profound impact occurs where there is a permanent disruption to a utility service or where there is significant surcharging of an existing system.
Major	Major impact occurs where there is a long-term disruption to a utility service or where there is minor surcharging of an existing system.
Moderate	Moderate impact occurs where there is a medium-term disruption to a utility service or where there is significant increase of flow within an existing system.
Slight	Slight impact occurs where there is a short-term disruption to a utility service or where there is a minor increase of flow within an existing system.
Imperceptible	Imperceptible impact occurs where there is a temporary disruption to a utility service or where there is a no quantifiable increase of flow within an existing system.

Table 18.1: Material Assets - Services, Infrastructure & Utilities Impact Significance Criteria

18.3 Description of Existing Baseline Environment

In the assessment of the receiving environment, careful consideration is given to the context, character, significance, and sensitivity of the baseline conditions. This evaluation aims to understand the existing state of the environment into which the proposed development will be integrated. It considers the unique features and qualities of the surrounding area, acknowledging its importance and vulnerability. Additionally, the assessment considers any other proposed developments that are anticipated to occur in the short to medium term, ensuring a comprehensive understanding of the broader environmental context and potential cumulative impacts of multiple projects in the area.

18.3.1 Economic Assets (Manmade)

This sub-section examines critical aspects related to material assets concerning the proposed development site and its surrounding area. It considers urban settlements, ownership and access, potable water supply, wastewater discharge, electricity supply, telecoms, and municipal waste. Notably, Chapter 7 of this Environmental Impact Assessment Report (EIAR) is dedicated explicitly to assessing the impact of the development on traffic and transport, ensuring a focused exploration of this key aspect. The proposed development is anticipated to impact material assets within the vicinity, and the following aspects are considered:

- Urban Settlements
- Ownership & Access
- Foul Water Disposal (refer to MHL & Associates Ltd. Engineering Design Report)
- Potable Water Supply (refer to MHL & Associates Ltd. Engineering Design Report)
- Surface Water Disposal (refer to MHL & Associates Ltd. Engineering Design Report)
- Electrical Supply (refer to MHL & Associates Ltd. Engineering Design Report)
- Telecoms (refer to MHL & Associates Ltd. Engineering Design Report)
- Municipal Waste (refer to Construction Environmental Management Plan prepared by MHL & Associates Ltd.)

This comprehensive assessment ensures a detailed understanding of the potential impacts on material assets associated with the proposed development and facilitates the formulation of effective mitigation measures where necessary.

18.3.2 Ownership

The lands subject to the planning application primarily belong to the applicant, Clockstrike Limited. The Forrest Family who are joint owners of Clockstrike Ltd are multi-generational owners of the site. The area at the access junction on Station Road, along the western site edge, are under the control of the Local Authority. Necessary consent from the Local Authority has been obtained for this arrangement (incorporating the public road and footpath), as confirmed in the provided letter of consent accompanying the planning application.

18.3.3 Access

The Traffic Transportation Assessment (TTA) by Systra Ltd. and the Engineering Design Report by MHL, along with associated drawings, demonstrate that the proposed access, with a signalised junction layout and associated pedestrian crossing proposed at both accesses, will operate effectively within normal capacity limits. The reports ensure no adverse impact on the local road network or the future BusConnects proposals for Blarney. Adequate sight lines are provided, and the development complies with the Design Manual for Urban Roads and Streets, as confirmed by MHL & Associates Ltd.

The site boasts a strategic location within a three-minute drive from the N20. It is also in proximity to employment-intensive areas, including Blarney Business Park, Blackpool, and Cork City Centre. High-frequency public transport is accessible through the (Route 215) Mahon Point - Ballinlough - Cloghroe urban bus service on the nearby R617 Road. Future public transport developments include the Rail Station link at Stoneview directly north of the Ringwood site and Bus Connects (Route 16-Cloghroe to Kent Station), enhancing connectivity to the City Centre and surrounding areas.

18.3.4 Urban context

The subject site generally falls under the 'Residential Area' zoning designation as per the Cork City Development Plan 2022.

The site enjoys a strategically accessible location, benefiting from close proximity to high-frequency public transport services. Notably, there are proposed public transport enhancements planned by Cork City Council, the NTA and Irish Rail adjacent to the site, including the implementation a new suburban rail service a high frequency BusConnects service and new segregated cycle routes. This convenient accessibility is further complemented by the site's proximity to various employment areas and Cork City Centre. Blarney holds a pivotal position as the top-tier settlement in the county hierarchy, earning the designation of an Urban Town in the Cork City Development Plan 2022-2028. This status is in line with the Regional Spatial and Economic Strategy (RSES), identifying Blarney as one of the key towns in the Metropolitan Area Strategic Plan (MASP).

As a key Metropolitan Town, Blarney is recognised for its regional and county significance, with the RSES emphasising its capacity and potential for accommodating above-average growth in the region. The development plan strategy for Blarney centres around consolidation, active land management, employment generation, and residential development. This approach is closely tied to the regeneration of the town centre and the integration of high-quality public transport through initiatives such as Cork Metropolitan Area Transportation Study (CMATS), Cork Area Commuter Rail Programme and Bus Connects.

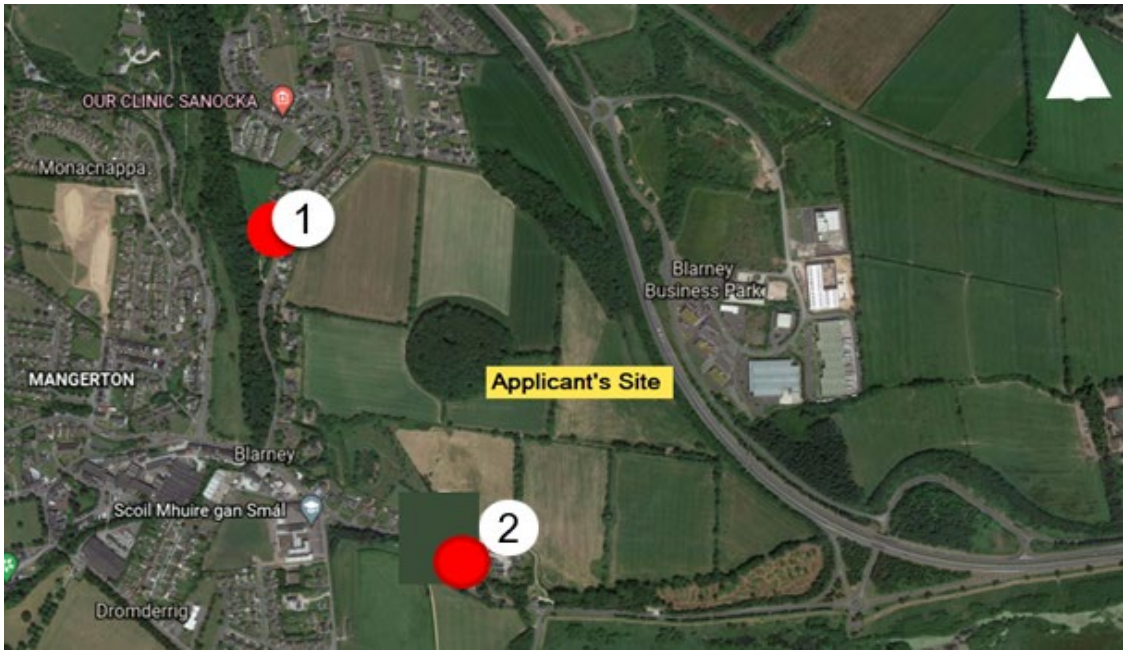


Figure 18.1: Proposed Access Junction for Phase 1 / Phase 2



Figure 18.2: Proposed Development Junction for Phase 1 / Phase 2

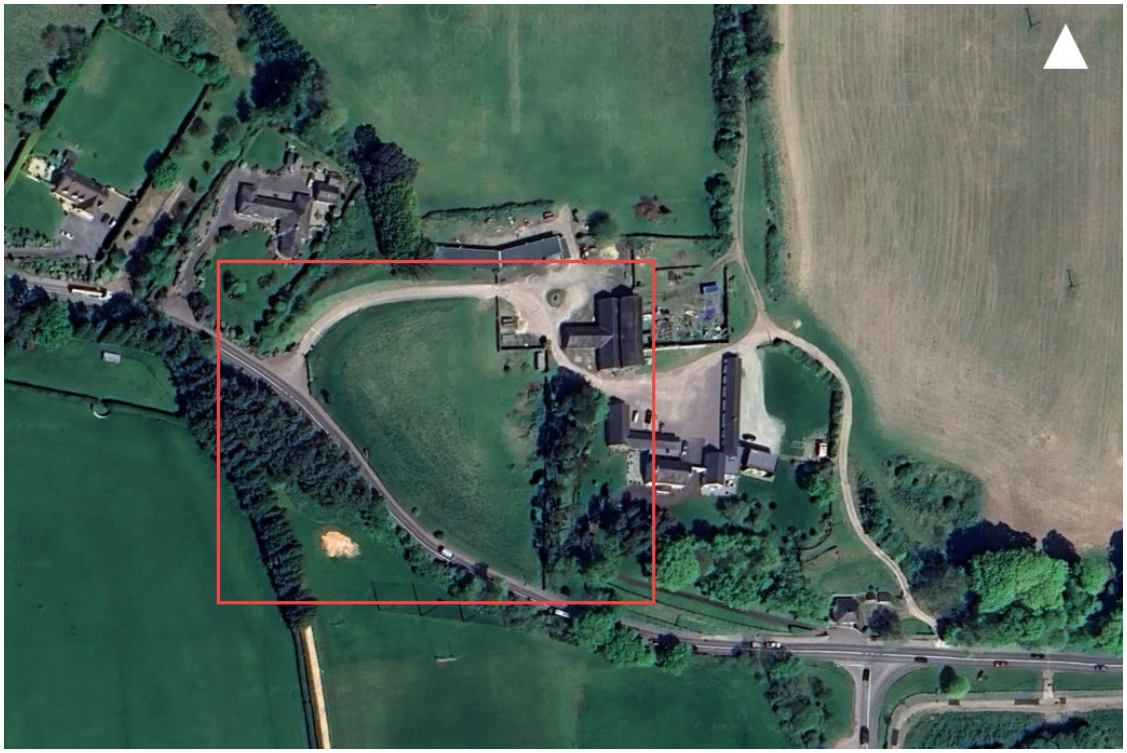


Figure 18.3: Proposed Development Junction with the R617

The proposed development aligns with the existing surroundings and neighbouring developments, presenting a fitting and appropriate form of land use for the subject site. Despite the site's current status as greenfield lands in agricultural use, it is deemed underutilised in its present state. The envisioned development not only conforms to the site's designated zoning but also represents an appropriate development response to the existing land use conditions. It stands as an opportunity to enhance the functionality and potential of the area, transforming it into a more purposeful and integrated space.

18.3.5 Surface Water Drainage

There is no existing formal surface water network within the proposed development site. There is an existing 225mm diameter Cork City Council storm sewer running for a portion of the nearby Station Road to the south-west of the site. An existing wayleave / storm sewer runs parallel with Station Road, in close proximity with the site's western boundary. This storm run outfalls just south of the proposed new development entrance, out falling into the nearby River Martin. The invert level and distance to the sewer allow for connection from the development site by gravity so all discharges of stormwater will be to the River Martin for a portion of the northwestern section of the site. The eastern portion of the site is to be attenuated and connected to an existing culvert to the eastern boundary of the site. The lower section of the site is to tie into the existing storm sewer on the R617, catering for the proposed Primary Care Centre, Retail Pharmacy, café /Restaurant and new spine road development access. The existing wayleave along the western portion of the site is to be extinguished and these existing services to be integrated into the proposed development site, rerouted within the confines of the proposed site plan. A new wayleave for these rerouted services is to be agreed between all relevant parties. See drawings as submitted for further details.

A detailed description of the surface water proposals is included in chapter 15 of the EIAR and also in the accompanying Engineering Design Report.

The surface water strategy employs a series of nature based Sustainable Urban Drainage tools ensuring that the development will:

- Manage and control runoff volumes and flow rates from impermeable surfaces, reducing the impact of urbanisation on flooding.
- Provide opportunities harvesting rainwater run for use close to where it falls.
- Promote groundwater and aquifer body recharge.
- Protect natural flow regimes in watercourses.
- Encourage evapotranspiration from planted and other storage area.

The nature based Sustainable Urban Drainage tools employed as part of this scheme are to include:

- **Basins** - store and treat surface water run off while encouraging biodiversity and adding public amenity value.
- **Tree Pits** - capture rainwater and lower street and building temperatures by providing shade. They also add value to biodiversity and public amenity in development areas.
- **Soakaways and Infiltration Systems** - encourage infiltration as an effective means of managing water runoff and aiding groundwater recharge. Infiltration can be implemented via overground shallow basins or underground infiltration systems.

18.3.6 Foul Water Drainage

There is no foul water network within the proposed development site. There is an existing 225mm diameter public foul sewer in the Station Road to the west of the site and on the R617, west of the Phase 2 Development Access with the R617. This sewer runs in a north- south direction along Station Road and runs east-west on the R617,eventually discharging to the Wastewater Pumping Station in Blarney. See Figur for the wastewater sewer location.

From the pumping station for Phase 2 the flows are pumped to a header manhole on Station Road a gravity flow from this location to the Blarney Wastewater Treatment plant. See Appendix 18 of this EIAR for Uisce Éireann maps of locations mentioned above.

The design team for this application has undertaken extensive consultation with Uisce Eireann in relation to site development servicing and connections. A letter of Confirmation of Feasibility is included in the Appendix 18 of this EIAR.



Figure 18.4: Existing Wastewater Networks

The existing wastewater and stormwater sewer runs located adjacent to/in Station Road have been surveyed by Dyno rod Ltd. to confirm condition, pipe size and inverts levels of these services for design evaluation.

18.3.7 Potable Water

The water main records indicate there is a 150mm diameter uPVC watermain in the Station Road to the west of the site. This main runs north to south before turning in a westerly direction and increasing downstream to a 300mm diameter ductile iron main. Existing watermains within and in the vicinity of the site are depicted in Figure .



Figure 18.5: Existing Watermain Networks

18.3.8 Power

The MHL & Associates Engineering Design Report (EDR) confirms that there is extensive ESB Networks infrastructure in the vicinity of the site, and it is expected that there will be sufficient capacity to cater for this new development. From utility maps received from ESB Networks (see Appendix 18 of this EIAR), the existing dwellings on Station Road are served by an overhead LV network. There is an overhead MV network traversing the site on a south-west to north-east axis.

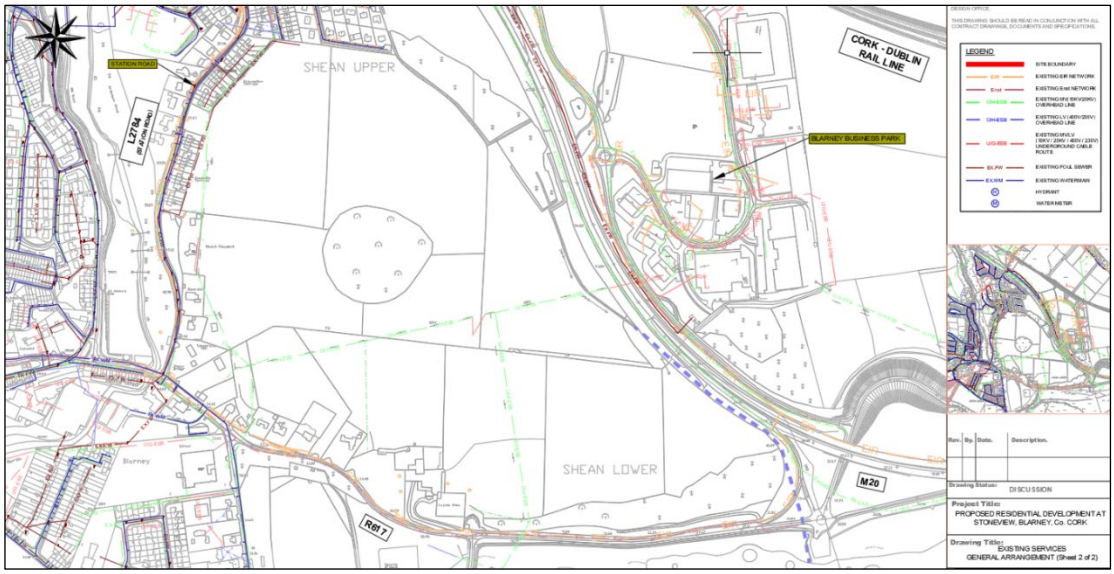


Figure 18.6: ESBN Infrastructure

18.3.9 Telecom

The MHL & Associated EDR Statement submitted along with the application details that the subject site is served by existing ICT (internet and phone) services from various providers including EIR. Postal services to the area are provided by An Post. EIR will provide agreement of the most appropriate connection points following connection application. From utility maps received from EIR (see Appendix 18 of this EIAR), there are telecommunications networks serving the existing dwellings along the Station Road and along the R617.

Also, from the Department of Environment, Climate and Communications online mapping the area surrounding the proposed development is serviced by High-Speed Broadband.

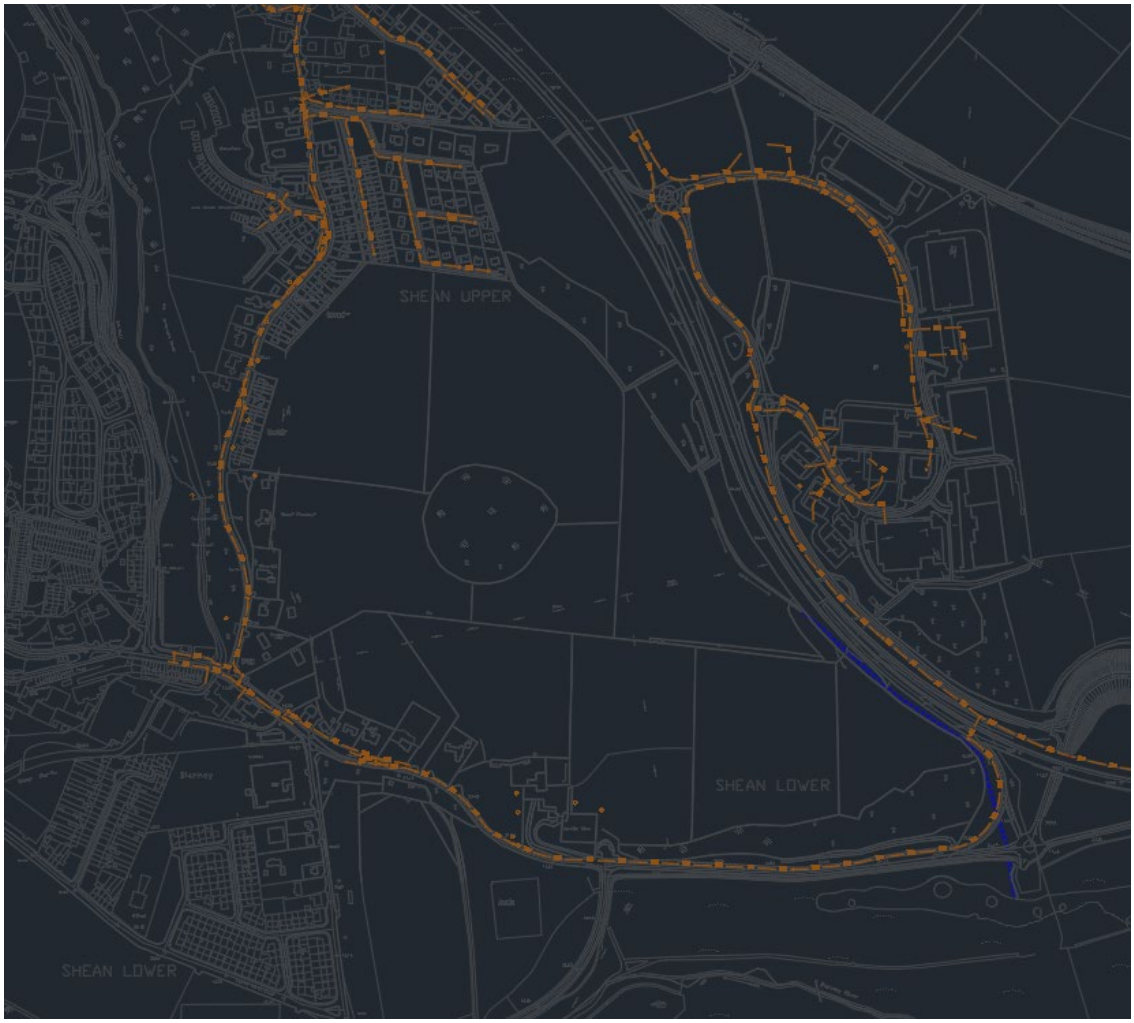


Figure 18.7: Existing Service- Telecom

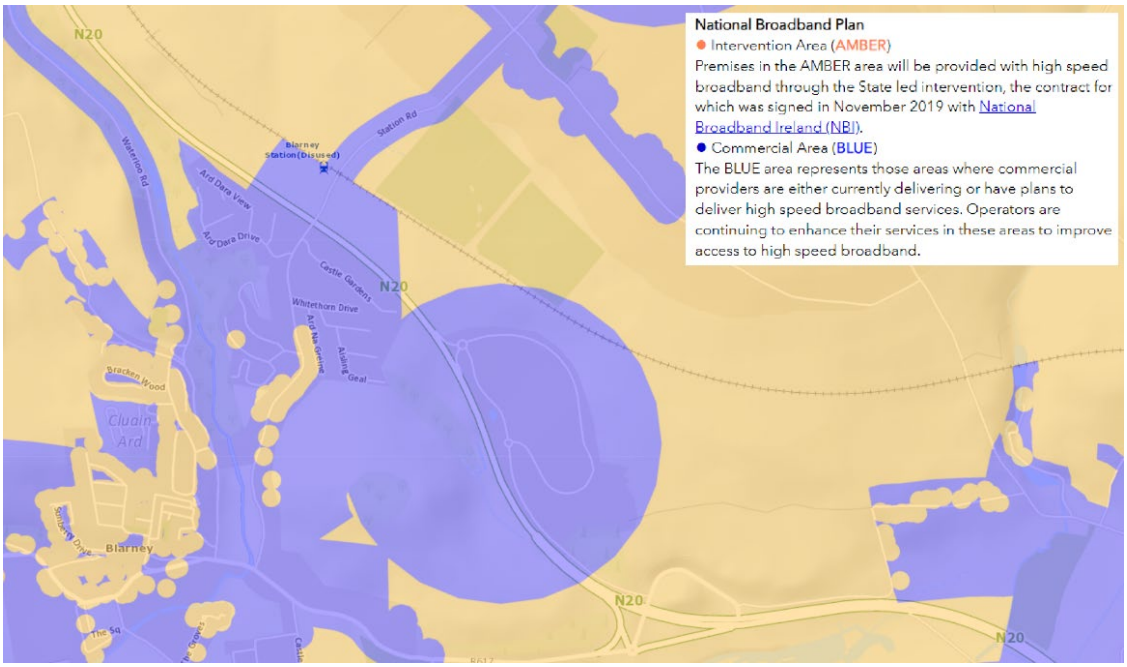


Figure 18.8: National Broadband Plan Map *(Department of the Environment, Climate and Communications)*

18.4 Characteristics of the Proposed Development

18.4.1 Surface Water Drainage

The proposed surface water network will include a storm drainage pipe network, attenuation storage and several SuDS features which will aid the reduction of runoff volumes by slowing surface water flows, providing the opportunity for evapotranspiration, and providing the opportunity for infiltration to ground. The restricted discharge from the site will discharge to the River Martin to the east of the site and to the Shean Upper to the east.

18.4.2 Foul Water Drainage

Wastewater collection within the proposed development will be via a network of 225mm and 375mm diameter gravity sewers, which will direct the flows to the western boundary of the site and will connect directly to the foul sewer in the Station Road. See drawings as submitted for details.

Foul Water from the proposed development will discharge to the Blarney WWTP for treatment and disposal. This discharge will incrementally increase over a five to ten-year period as the development is completed and occupied with a final estimated daily discharge of 148.61 m3/day.

The above demand assessments are based on Uisce Éireann's design parameters for domestic housing as follows:

RINGWOOD PHASE 2 - WASTEWATER DEMAND			
RESIDENTIAL	**DESCRIPTION**	**DEMAND**	**UNITS**
	No. Residential Units	323	dwellings
	Average Occupancy	2.7	persons/Dwelling
	Per Capita Consumption (DWF + 10%)	165	litres/person/day
	Total Damand (Occupancy)	872	persons
	Total Daily Foul Water Discharge	143,897	l/day
	Peak Flow Factor	6	
	Average Discharge	1.665	l/sec
	Peak Discharge	9.99	l/sec
COMMERCIAL	**DESCRIPTION**	**DEMAND**	**UNITS**
	Retail/ Pharmacy	80	sqm
	Staff No.	4	
	Per Capita Consumption (DWF)	75	litres/person/day
	Total Daily Foul Water Discharge	300	l/day
	Peak Flow Factor	6.0	
	Average Discharge	0.003	l/sec
	Peak Discharge	0.021	l/sec
COMMERCIAL	**DESCRIPTION**	**DEMAND**	**UNITS**
	Café / Restaurant	380	sqm
	Staff No.	21	
	Per Capita Consumption (DWF)	15	litres/person/day
	Total Daily Foul Water Discharge	315	l/day
	Peak Flow Factor	6.0	
	Average Discharge	0.004	l/sec
	Peak Discharge	0.022	l/sec
COMMERCIAL	**DESCRIPTION**	**DEMAND**	**UNITS**
	PCC	1,724	sqm
	Staff No.	82	
	Per Capita Consumption (DWF)	50	litres/person/day
	Total Daily Foul Water Discharge	4,100	l/day
	Peak Flow Factor	6.0	
	Average Discharge	0.047	l/sec
	Peak Discharge	0.285	l/sec
Total Daily Discharge		148.61	m^3/sec
Total Average Discharge		1.72	l/sec
Total Peak Discharge		10.32	l/sec
Based on loadings from EPA Wastewater Treatment Manual - Treatment Systems for Small Communities, Business, Leisure Centres and Hotels.			
Staff numbers have been determined from floor areas using standard employment density guidelines applicable to Ireland (aligned with UK Employment Densities Guide 2010 for			

Figure 18.9: Calculated Loadings Uisce Éireann (Wastewater)

A Pre-Connection Enquiry was submitted to Uisce Éireann, the response to which confirmed that the proposed development can be serviced by the existing wastewater infrastructure network in the area. A copy of the confirmation is included in Appendix 18 of this EIAR.

The Confirmation of Feasibility (COF) states that sufficient capacity is available in the UE network to facilitate a wastewater connection of 323 units. UE have advised that in order to facilitate the wastewater connection, it will be required to upgrade approximately 450m of foul sewer on the Station Road from 225mm to 300mm /450mm at a minimum. Uisce Éireann have advised that they are commencing network upgrade works in Blarney in the short term. For phase 2, a proposed-on site pump station will cater for flows running east and south through the applicant's site and will reroute theses flows by means of a proposed rising main towards a new proposed wastewater connection at Station Road /R617 Junction. The existing wayleave along the western portion of the site is to be extinguished and these existing services to be integrated into the proposed development site, rerouted within the confines of the proposed site

plan. See drawings as submitted for further details. A new wayleave for the rerouted UE service must be established and agreed upon by the relevant parties before the existing sewer lines can be removed.

UE have been consulted in order to agree a high-level solution for any further works, and they have confirmed these works will consist of upsizing the existing pipe diameters only. Agreement on the optimum procurement methods for the provision of this infrastructure can be a matter for later detailed agreement with Uisce Éireann.

The proposed foul water drainage system has been designed and will be constructed in accordance with the requirements of Uisce Éireann and will comply with the following:

- 'Code of Practice for Wastewater Infrastructure' (Uisce Éireann).
- 'Wastewater Infrastructure Standard Details' (Uisce Éireann).
- Building Regulations, Technical Guidance Document Part H 'Drainage and Wastewater Disposal' and IS EN752, "Drain and Sewer Systems Outside Buildings".

18.4.3 Potable Water

A 150mm diameter uPVC watermain is located in the Station Road to the west of the development site and on the R617 west of the new development access with the R617.

A Pre-Connection Enquiry was submitted to Uisce Éireann, the response to which confirmed that the proposed development can be serviced by the existing water infrastructure network in the area. A copy of the confirmation is included in Appendix 18 of this EIAR. The Confirmation of feasibility states that sufficient capacity is available in the UE network to facilitate a water connection of 323 units. UE have advised that the connection is to be made via an existing 150mm diameter watermain in Station Road. The granted phase1 and this application (phase 2) has a combined development number of circa 500 houses be connected. Future proposals to upgrade the network with a water tower/ booster station are forecast to be required with a final location in Stoneview to be determined.

The proposed water supply system has been designed and will be constructed in accordance with the requirements of Uisce Éireann and will comply with the following:

- 'Code of Practice for Water Infrastructure' (Uisce Éireann).
- 'Water Infrastructure Standard Details' (Uisce Éireann); and
- Building Regulations, Technical Guidance Document Part B 'Fire Safety'.

See drawings pack as submitted for details.

This increase in water supply demand will happen incrementally over a five to ten-year period as the housing development is completed and occupied with an estimated ultimate daily demand for phase 2 of 135.63 m3/day.

The above demand assessment is based on Uisce Éireann's design parameters as follows:

RINGWOOD PHASE 2 - WATER DEMAND			
RESIDENTIAL	**DESCRIPTION**	**DEMAND**	**UNITS**
	No. Residential Units	323	dwellings
	Average Occupancy	2.7	persons/Dwelling
	Per Capita Consumption	150	litres/person/day
	Total Damand (Occupancy)	872	persons
	Total Daily Water Demand	130,815	l/day
	Average Demand in Peak Factor	1.250	
	Peak Demand	1.89	l/sec
COMMERCIAL	**DESCRIPTION**	**DEMAND**	**UNITS**
	Retail/ Pharmacy	80	sqm
	Staff No.	4	Staff
	Per Capita Consumption	45	litres/person/day
	Total Daily Water Demand	180	l/day
	Average Demand in Peak Factor	1.25	
	Peak Demand	0.003	l/sec
COMMERCIAL	**DESCRIPTION**	**DEMAND**	**UNITS**
	Café / Restaurant	380	sqm
	Staff No.	21	Staff
	Per Capita Consumption	45	litres/person/day
	Total Daily Water Demand	945	l/day
	Average Demand in Peak Factor	1.3	
	Peak Demand	0.014	l/sec
COMMERCIAL	**DESCRIPTION**	**DEMAND**	**UNITS**
	PCC	1,724	sqm
	Staff No.	82	Staff
	Per Capita Consumption	45	litres/person/day
	Total Daily Water Demand	3,690	l/day
	Average Demand in Peak Factor	1.3	
	Peak Demand	0.053	l/sec
Total Daily Demand		135.63	m^3/sec
Total Peak Demand		1.96	l/sec
Based on loadings from EPA Wastewater Treatment Manual - Treatment Systems for Small Communities, Business, Leisure Centres and Hotels.			
Staff numbers have been determined from floor areas using standard employment density guidelines applicable to Ireland (aligned with UK			

Figure 18.10: Calculated Loadings Uisce Éireann (Water)

The demand assessment is conservative as the above parameters are applied to the proposed residential units. UE and the fire service to confirm flow rates requirements for firefighting in the development.

- Fire hydrants will be provided such that each building will be within 45m of a hydrant and these hydrants will be provided so as to be fully accessible to the fire service.

- Sluice valves will be installed on all principal watermain connections to ensure that sections of the development can be isolated for maintenance and repair as required.

- A water-meter will be installed on the main connections, subject to detailed agreement with Uisce Éireann/Cork City Council.

18.4.4 Power

Power supply, and the requirement for any alterations to the existing power supply network for the development of the site, will be agreed with ESB Networks in advance of construction. All power supply

related works will be carried out in accordance with ESB Networks relevant guidelines. It is estimated that two substation will be required to be supplied subject to ESB calculations, geography, routing, etc.

18.4.5 Gas

If it is required any alterations to the existing gas supply network for the development of the subject site, will be agreed in advance of construction with Gas Networks Ireland. All gas supply related works will be carried out in accordance with Gas Networks Ireland relevant guidelines.

18.4.6 Telecommunications

The existing infrastructure serving the housing to the west of the development, shall be extended into the proposed development as is normal practice for developments of this type. The development will install, in ground, vendor neutral ducting to allow for any user to be provided by any vendor. Access to the ducts will be by means of manhole cover junction relay boxes, mounted in ground. Telecommunications supply, and the requirement for any alterations to the existing telecommunications network for the proposed development, will be agreed in advance of construction with the relevant telecommunications providers. All telecommunications related works will be carried out in accordance with relevant guidelines.

18.5 Potential Impact of the Proposed Development

18.5.1 Do nothing Scenario.

In the 'do nothing' scenario, the subject lands will remain undeveloped and there are no predicted impacts on these material assets.

18.6 Construction Phase

18.6.1 Surface Water Drainage

The installation of the surface water sewers for the development will be conducted in parallel with the other services. This will involve the construction of the drainage network using trench excavation. The potential adverse impact on the local infrastructure during the construction phase of the development would therefore be temporary.

18.6.2 Foul Water Drainage

The installation of the foul sewers for the development will be conducted in parallel with the other services. This will involve the construction of the drainage network using trench excavation.

The potential adverse impact on the local infrastructure during the construction phase of the development would therefore be temporary.

The foul sewer for the development will be connected to the existing foul drainage network outside the site. The existing network will require an upgrade to facilitate the proposed development. These upgrade

works will be agreed with Uisce Éireann. The potential adverse impact on the local foul drainage network would be short term and slight during the upgrade works.

The site compound will require a temporary foul connection. The likely adverse impact of this connection will be temporary and imperceptible and will be subject to a Connection Agreement with Uisce Éireann.

18.6.3 Potable Water

Provision of a new water main distribution network would involve construction activities within the subject lands involving trench excavations conducted in parallel with the other services. The existing water network will require an upgrade to facilitate the proposed development. The potential adverse impact on the local public water supply network would be short term and slight.

There is a risk of a temporary short-term disruption to the quality of local public water supply during the construction of the upgrade works and temporary shutdowns will be required for such works. All such temporary shutdowns will be operated under agreement with Uisce Éireann with appropriate procedures put in place to advise local users of the short-term impacts (such as temporary discolouration/temporary water- supply interruptions/etc.). The site compound will require a temporary water connection. This likely adverse impact of this temporary connection will be temporary and imperceptible and will be subject to a Connection Agreement with Uisce Éireann.

18.6.4 Power, Gas and Telecommunications

The installation of the utilities for the development will be conducted in parallel with the other services and will primarily involve construction of ducting and chambers using open excavation. Any adverse impact on the local network would be short term and imperceptible.

The diversion of the overhead power lines to underground ducting will be carried out by ESB under planned outages. As a result, the impact of these works would be temporary, regionally short term, with moderate impact to existing users or to the local electrical grid.

There may also be a potential temporary loss of connection to the ESB infrastructure while carrying out works to provide connection to the proposed development. This likely adverse impact may be characterised as a temporary, regionally short term, moderate impact.

There may be a potential temporary loss of connection to the Gas Networks Ireland infrastructure while carrying out works to provide connection (if one is required) to the proposed development. As there are no gas requirements during the Construction Phase and there will be no connections made to the natural gas network as part of the Proposed Development. As such, the potential impact from the construction phase on the gas supply network is likely to be permanently neutral and imperceptible.

There may be a potential temporary loss of connection to the telecommunications infrastructure while carrying out works to provide connection to the proposed development. This likely adverse impact may be characterised as a temporary, locally short term, minimal impact.

The site compound will require a temporary power and telecommunications connection. The likely adverse impact of the provision of this supply will be temporary and negligible.

18.7 Operational Phase

18.7.1 Surface Water Drainage

As surface water discharges will be at a restricted rate equivalent to the greenfield runoff, any impact without mitigation will be permanent but slight. The increased impermeable areas will reduce local ground water recharge and potentially increase surface water runoff if not attenuated to greenfield runoff rate. Any impact will be permanent and slight without mitigation. The development could lead to accidental hydrocarbon leaks along roads and subsequent discharge into piped surface water drainage network. Any unlikely adverse impact would be temporary and slight.

The Geological Survey of Ireland Groundwater Vulnerability map that groundwater vulnerabilities are variable at the site, with areas of High to Extreme Vulnerability and 'Rock at or near surface' noted. Detailed construction stage surface water management proposals are outlined in the supporting Outline CEMP. The Outline CEMP explains how impact on local watercourses and groundwater is to be protected as part of the construction stage works.

The development surface water management measures comprise of a range of nature based sustainable urban drainage systems as well as underground storage tanks. All of the surface water flows are to be directed through a Hydrocarbon Interceptor prior to discharge into adjoining watercourses or to the local surface water network.

18.7.2 Foul Water Drainage

The impact of the proposed development (phase 2) on the foul drainage network will be to increase the quantity of foul water entering the collection network and discharging to Blarney WWTP for treatment and disposal. The estimated discharge on completion of the development site is approximately 148.61 m3/day. The potential impact from the operational phase of the development on the existing wastewater treatment plant at Blarney will be long-term. The development will add to the environmental and financial costs associated with treatment and disposal at the Blarney WWTP.

Following a Pre-Connection Enquiry, Uisce Éireann issued a Confirmation of Feasibility for the proposed development. Given that the overall development will take place and become occupied in phases the load on the existing foul sewer network will increase slowly over a period of five to ten years, providing the time required for any upgrades, if required. As such the impact of the proposed development on the existing foul sewer network will be long term and minimal. There exists a minor risk associated with the possibility of leakage from damaged foul sewers and drains within the development site. Any foul water leakage could result in minor contamination of groundwater in the area. Any adverse impact would be temporary and minimal.

18.7.3 Potable Water

The impact of the operational phase of the proposed development (phase 2) on the public water supply is likely to be to increase the demand on the existing water supply by approximately 135.63 m3/day. As such additional water quantities would need to be treated and supplied through the existing network to the site. This will result in extra cost as well as increasing abstraction volumes from the existing source. Any potential impact of the proposed development on the public water supply network is likely to be permanent and minimal.

18.7.4 Power, Gas and Telecommunications

The impact of the operational phase of the proposed development on the power supply network would be the requirement for new sub stations to be located on the site.

The impact of the operational phase of the proposed development on the gas supply (if required) would be the requirement for an additional gas load to accommodate the development of the lands. The Proposed Development will not be connected to the natural gas network. Heat Pumps powered by electricity will be used for space heating and domestic hot water during the Operational Phase. As such, the potential impact from the Operational Phase on the gas supply network is likely to be permanently neutral and imperceptible.

The impact of the operational phase of the proposed development on the telecommunications network would be to increase the demand on the existing network.

The potential adverse impact of the proposed development on the power and telecommunications networks is likely to be permanent and minimal.

18.8 Mitigation Measures, Monitoring and Residual Effects

18.8.1 Construction Phase

Mitigation measures integral to the infrastructure development encompass various aspects related to drainage, water, power, and telecommunications services. A "Construction and Environmental Management Plan" has been crafted and will undergo further refinement and implementation throughout the construction phase. Site inductions will incorporate procedures and best practices outlined in the plan, emphasising adherence to Uisce Éireann standards. New sewers will undergo pressure testing and CCTV surveys to detect and rectify defects before being commissioned.

The construction compound will feature adequate staff welfare facilities, including provisions for foul drainage and potable water supply. Foul drainage discharge from the compound will be appropriately managed until a connection to the public foul drainage network is established, ensuring compliance with licensing requirements.

The permanent connection to serve the development will follow an agreed methodology, with full notification to existing Uisce Éireann customers affected by short-term water supply interruptions during

connection. Contingency plans, such as backup network supply, will be implemented where feasible to minimise disruptions during relocation or diversion works, with users informed in advance.

Coordination with relevant utility providers is paramount for connections to the existing gas and telecommunications networks, conducted by approved contractors. The storm sewer network design prioritises flowing beneath public roads and open spaces to facilitate unimpeded access for monitoring and maintenance, including hydrocarbon interceptors and silt traps.

With these robust mitigation measures in place, the construction phase is anticipated to unfold without significant negative impacts on material assets. Continuous consultation with service providers throughout the design and construction processes ensures alignment with their requirements, and representatives will be present on-site as needed for monitoring purposes.

18.8.2 Operational Phase

Mitigation measures designed for the operational stage encompass various facets to ensure the sustainable and effective functioning of the proposed development's infrastructure. One critical aspect involves a stringent quality assurance process for the drainage system. Both foul and surface water lines will undergo comprehensive pressure testing and CCTV surveys, allowing for the identification and rectification of any defects before being commissioned for operational use.

Furthermore, a proactive approach to regular maintenance will be implemented, focusing on key components such as the petrol interceptor, flow control, and surface water attenuation system. This ongoing upkeep is essential to guarantee the optimal and correct functioning of the drainage network.

The development's construction and occupancy will be executed in a phased manner, adopting a gradual approach to loading the downstream foul sewerage system. This strategic, phased development will contribute to the efficient and manageable integration of the new infrastructure into the existing network.

Water conservation strategies will be an integral part of the operational phase, involving the incorporation of features such as low flush toilets and low flow taps within residential units. This intentional reduction in water volumes aims to alleviate the load on the foul sewer network and the treatment works at Blarney WWTP.

Given the phased and occupancy-driven approach, the operational phase is anticipated to unfold smoothly without significant negative impacts on material assets. Post-construction, no additional mitigation measures are proposed for the electrical, gas, and telecommunications infrastructure, reaffirming the comprehensive nature of the planned strategies to sustainably manage the development's impact on material assets.

18.8.3 Foul Water Drainage

The information indicates that the proposed development will introduce additional foul sewage flows to the existing network and wastewater treatment facilities. However, these added flows are deemed minor when considered in the broader context of the capacity of the existing network and treatment facilities.

The figures from Uisce Éireann for Blarney WWTP (2024) likely provide insights into the treatment plant's capacity and its ability to handle the anticipated increase in foul sewage flows from the development.

- The peak hydraulic capacity at the Blarney WWTP is 2925 m3/day.
- The annual max flow to the WWTP is 8,166 m3/day.
- The annual mean flow to the WWTP is 3,934 m3/day.
- The Organic capacity (as constructed) at the WWTP is 13,000 PE.
- The collected load at the WWTP (peak week) is 10,150 PE.

Given the information provided, the wastewater treatment plant (WWTP) appears to have ample spare capacity to accommodate the proposed development's flows, with 2850PE spare capacity noted in the report. The proposed mitigation measures suggest that once construction concludes, there will be no residual impacts on the foul water infrastructure. During the operational phase, the residual impacts on both the existing municipal wastewater treatment plant and foul sewer network are projected to be long term but minimal, underscoring the effectiveness of the proposed mitigation strategies.

18.8.4 Potable Water

Potable water for the proposed development will be sourced from the public water mains connected to the existing Uisce Éireann network. The distribution within the site will be facilitated by a network of 100mm, 150mm and 200mm diameter water main pipes, designed and constructed in accordance with the Water Supply Code of Practice outlined by Uisce Éireann. The resultant impact on the existing potable water infrastructure during the operational phase is characterised as long term, considering the additional demand in relation to the existing network's capacity in the area.

18.8.5 Power and Telecommunications

The connection to power and telecommunications networks is not anticipated to yield significant residual impacts during either the construction or operational phases of the development. The influence of these connections, when considered cumulatively with other projects in the immediate area, does not alter the Material Assets criteria ratings for the proposed development. The combined effects of these projects, both known and proposed, are deemed to have no potential for significant cumulative impacts on material assets infrastructure and utilities.

18.9 Waste Characteristics of the Proposed Development

18.9.1 Municipal Waste Construction Phase

The construction phase of the proposed development necessitates the removal or introduction of various quantities of material, which in turn generates construction-related waste on-site. This waste generation has implications for the local municipal waste disposal network. Key points from the resource and waste management planning prepared by MHL & Associates are summarised below:

While efforts will be made to reuse excavated material on-site. It is anticipated that limited on-site reuse opportunities will necessitate the removal of all excavated material offsite for appropriate reuse, recycling,

or disposal. Excavation activities for Phase 2 will produce further quantum of material (m3) comparable to the granted Phase 1 application.

This addresses various waste types associated with the construction phase, providing a detailed framework for waste management strategies. For a complete understanding of waste management practices during construction, referring to the CEMP is recommended.

Waste Material	LoW/EWC Code
Concrete, bricks, tiles, ceramics	17 01 01-03 & 07
Wood, glass and plastic	17 02 01-03
Treated wood, glass, plastic, containing hazardous substances	17-02-04*
Bituminous mixtures, coal tar and tarred products	17 03 01*, 02 & 03*
Metals (including their alloys) and cable	17 04 01-11
Soil and stones	17 05 03* & 04
Gypsum-based construction material	17 08 01* & 02
Paper and cardboard	20 01 01
Mixed C&D waste	17 09 04
Green waste	20 02 01
Electrical and electronic components	20 01 35 & 36
Batteries and accumulators	20 01 33 & 34
Liquid fuels	13 07 01-10
Chemicals (solvents, pesticides, paints, adhesives, detergents etc.)	20 01 13, 19, 27-30
Insulation materials	17 06 04
Organic (food) waste	20 01 08
Mixed Municipal Waste	20 03 01

Figure 18.11: Typical waste types generated.

The resource and waste management planning for the site, as outlined by MHL in the CEMP, emphasises the practical on-site segregation of waste materials. In cases where on-site segregation is impractical, off-site segregation will be implemented. The site will be equipped with skips and receptacles to facilitate segregation at the source, ensuring that all waste receptacles leaving the site are covered or enclosed.

An approved waste contractor with a current waste collection permit will be responsible for handling all waste arisings. The contractor will collect and transfer wastes as receptacles are filled, and records will be diligently maintained, detailing waste arisings, their classification, waste collection permits for contractors and permits/licenses for the receiving waste facility for off-site disposal, reuse, recycling, recovery, or disposal.

In the event of hazardous wastes, such as batteries, paints, oils, and chemicals, dedicated bunded storage containers will be provided, if required, to ensure safe and compliant handling. Therefore, the significance of the impact of the development for both construction and operational activities is not significant and is considered not to change in combination with the other projects.

The management of various waste streams during the construction phase of the proposed development is outlined in detail below.

18.9.2 Topsoil and Subsoil

Excavated material is intended to be exported off-site, hindering the preferred option of prevention. The possibility of reusing material as a by-product will be explored, and if deemed waste, removal and reuse/recovery/disposal will be in accordance with waste management regulations.

18.9.3 Bedrock

Bedrock, if encountered, will be removed offsite and not crushed onsite unless permitted by the appropriate waste permit.

18.9.4 Silt & Sludge

Silt and sludge from runoff and pumped water will be collected by a licensed contractor and removed offsite.

18.9.5 Concrete Blocks, Bricks, Tiles & Ceramics

Clean, inert materials are expected to be recycled.

18.9.6 Hard Plastic

Recyclable hard plastic will be segregated and recycled.

18.9.7 Timber

Uncontaminated timber will be disposed of in a separate skip and recycled off-site.

18.9.8 Metal

Metals will be segregated and stored in skips for recycling.

18.9.9 Plasterboard

Plasterboard will be stored in a separate skip for recycling.

18.9.10 Glass

Glass materials will be segregated for recycling.

18.9.11 Waste Electrical and Electronic Equipment (WEEE)

WEEE will be stored in dedicated cages/pallets for recycling.

18.9.12 Other Recyclables

Various recyclable wastes like cardboard and soft plastic will be segregated at source and removed off-site.

18.9.13 Non-Recyclable Waste:

Non-recyclable waste will be placed in separate skips, examined for segregation errors, and corrected before removal.

18.9.14 Other Hazardous Wastes:

On-site storage of hazardous wastes will be minimized, and removal organized regularly. Recovery will be prioritized, and proper disposal ensured. It's important to note that specific destinations for each construction waste stream will be provided to the relevant authorities before construction commences.

18.10 Operational Phase

During the operational phase of the development, the Operational Waste Management Plan provides detailed proposals for the effective management of waste generated. Specifically, dedicated communal Waste Storage Areas (WSAs) have been strategically allocated within the development design for both residential and commercial units. The shared residential WSAs are situated on the basement/under croft level, while two shared WSAs are designated for the commercial units at the same level.

These waste storage areas have been sized and designed to align with the projected operational waste requirements of the proposed development. Within the residential units, space will be provided to accommodate bins, facilitating waste segregation. The design also accounts for the anticipated waste arising from local amenities such as residential units (apartments, duplexes, houses) and a proposed Primary Care Centre, retail pharmacy and cafe/restaurant as part of the development.

The Operational Waste Management Plan assures that the waste management strategy outlined will adhere to the relevant requirements of the Local Authority and applicable byelaws. While the operational phase is expected to increase demand for municipal waste disposal, the potential impact is anticipated to be long-term and imperceptible.

18.11 Cumulative Effects

The proposed development's cumulative impacts on material assets have undergone a comprehensive assessment, taking into account other projects in the surrounding area. Each environmental topic's cumulative effects are detailed in various chapters of this Environmental Impact Assessment Report (EIAR).

The evaluation includes a thorough consideration of the proposed development alongside other significant projects nearby, such as the Cork Cycle Network Plan R617 Cycle Project and the Stoneview Masterplan lands', Blarney Business Park Expansion have been factored into the analysis.

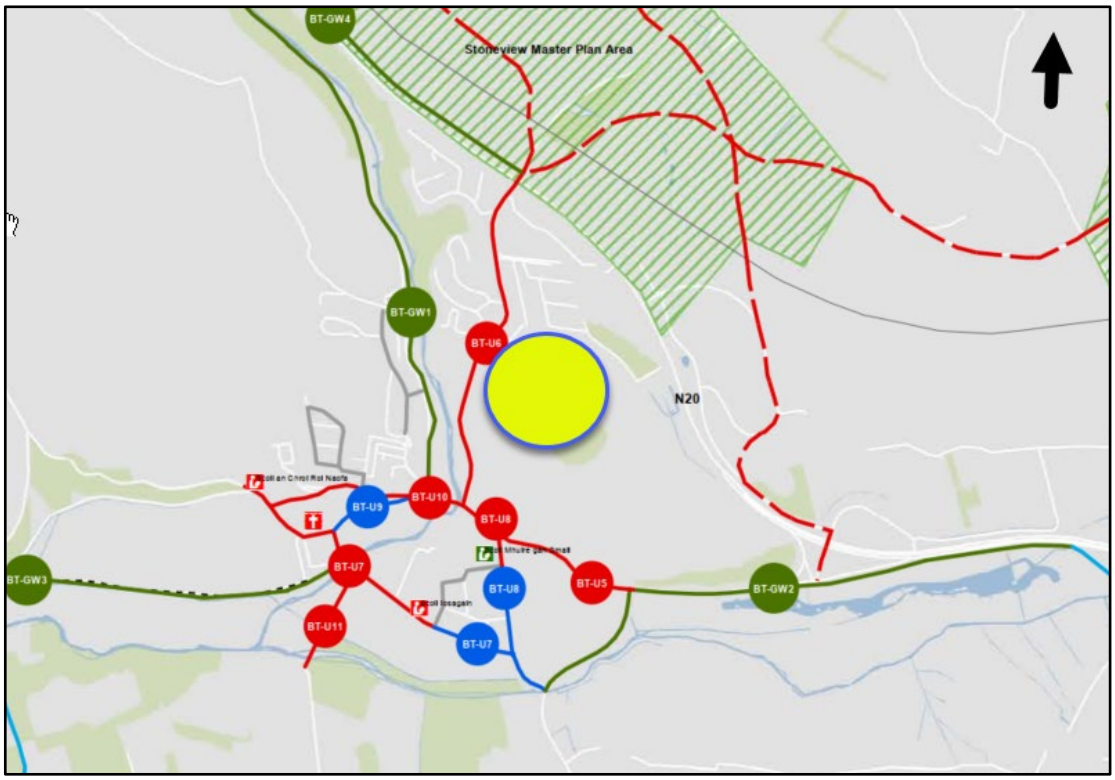


Figure 18.12: Cork Cycle Network Plan – Blarney (c: CCC/AECOM)

In the cumulative context of surrounding, permitted, planned, and existing developments, it is anticipated that the proposed development will bring positive contributions to the overall urban structure. These contributions encompass improvements to the public realm, cyclist and pedestrian infrastructure, and the establishment of a local population in a location designed to minimise car dependency, especially in an area with frequent and accessible public transport. Consequently, a positive and enduring impact is expected cumulatively on urban settlements. The cumulative effects on electrical supply, telecoms, and municipal waste are foreseen to be negligible.

18.12 Do Nothing Scenario.

To offer a comprehensive and fair evaluation of the proposed development, this section examines the project in the context of potential impacts on the receiving environment if the development does not proceed. In the scenario where the proposed development does not move forward, there would be no additional demand or loading on material assets of natural or human origin.

18.13 Mitigation Measures

To comprehensively address potential impacts across various environmental aspects, this document incorporates practical remedial, mitigation, and avoidance measures aligned with the principles outlined in the Development Management Guidelines 2007. These measures aim to reduce or eliminate identified

significant adverse impacts. It's important to note that some mitigation measures relevant to material assets are detailed in other chapters of the EIAR document, ensuring a concise yet integrated strategy for addressing potential impacts.

18.13.1 Construction Phase

The proposed development is committed to effective construction waste management through adherence to the Resource & Waste Management Plan. A comprehensive Construction and Environmental Management Plan and Construction Traffic Management Plan, submitted with the EIAR, encompasses measures for construction traffic management. This plan will be implemented to safeguard local amenities and ensure the integrity of the local road network during construction. In alignment with recommendations from relevant statutory bodies and providers such as ESB, Networks Ireland, Uisce Éireann, EIR, and Cork City Council, the provision of utilities will be carried out. Additionally, each unit within the development will feature water metering systems to accurately record consumption, contributing to efficient and sustainable water management.

18.13.2 Operational Phase

No mitigation measures are considered necessary during the operational phase.

18.14 Proposed Development's Predicted Impacts

This section provides an opportunity for a qualitative exploration of the specific effects—be they direct, indirect, secondary, cumulative, short, medium, or long-term, and of a permanent, temporary, positive, or negative nature—that may result from the proposed development, assuming the successful implementation of all specified mitigation measures. It's important to highlight that, beyond remedial and mitigation efforts, the EIAR and project design processes have also incorporated impact avoidance measures. These measures are integrated through the assessment of alternatives, as detailed in Chapter Three of this EIAR document. The comprehensive consideration of impacts and the proactive inclusion of avoidance measures underscore a holistic approach to the assessment and planning of the proposed development.

18.14.1 Construction Phase

Acknowledging the potential impacts associated with the construction phase of the proposed development, it is recognized that without mitigation, there could be disruptions to local natural and human material assets, leading to both short-term and long-term effects. However, the implementation of the specified mitigation measures outlined in this chapter and across other sections of the EIAR document is poised to effectively address and alleviate these concerns.

By adhering to these mitigation measures, the potential for significant residual impacts during the construction phase is mitigated. Consequently, any impacts that may arise are anticipated to be temporary and neutral, underlining a commitment to minimizing the environmental footprint of the development and ensuring a harmonious integration with the surrounding environment.

18.14.2 Operational Phase

The proposed development is positioned to make a positive contribution to the existing urban environment by introducing high-quality residential units that address the pressing housing needs of a growing population in the locality and region. This is achieved while utilising a currently underutilised site in a location deemed appropriate for sustainable development. The traffic movements associated with the development are thoroughly addressed in the Chapter Seven of this Environmental Impact Assessment Report (EIAR).

In terms of wastewater generation, the predicted volumes from the proposed development are expected to be accommodated within the local foul sewer network, subject to necessary upgrades, as confirmed in the Confirmation of Feasibility from Uisce Éireann. The connection to the public sewer, along with the required upgrades, will be undertaken by Uisce Éireann under the agreed Connection Agreement. This follows the standard procedure for works within public roadways concerning Uisce Éireann infrastructure.

The development is designed to align with Sustainable Urban Drainage Systems (SuDS), minimising residual impacts on surface water drainage. Water supply for the proposed development is sourced from an existing water main along the R617 and Station Road adjacent to the site. The overall impact of the proposed development on local water and electricity supply is anticipated to be long-term and neutral, indicating a balanced and sustainable approach to the utilisation of these utilities.

18.14.3 Worst case impacts

Adhering to the European Commission EIAR Guidelines (2022), the document appropriately describes various future scenarios, including a worst-case scenario. However, systematic risk assessments are selectively applied, particularly when the "worst case" impacts carry substantial risks to the environment or human health. In the context of the proposed development, it's crucial to note that such extreme scenarios are not applicable, and the likelihood of such events occurring is deemed negligible. This reflects a balanced and context-specific approach to risk assessment within the framework of the project.

18.15 Monitoring

Monitoring measures for the proposed development will adhere to the provisions detailed elsewhere in this Environmental Impact Assessment Report (EIAR) document. This ensures a systematic and aligned approach to monitoring that aligns with the established guidelines and considerations outlined throughout the document.

18.16 Interactions

The Environmental Impact Assessment Report (EIAR) acknowledges and outlines various interactions between Material Assets and other environmental factors. Notable interactions include the connection between proposed drainage and wastewater arrangements and the water chapter of the EIAR. Additionally, there is a correlation between Municipal Waste and Land and Soils, particularly concerning the quantity of material to be removed from the site. Moreover, the interactions between Urban Settlements, Ownership and Access, and Transportation are identified, emphasising the interdependence and interconnected

nature of these environmental components. These recognitions help provide a comprehensive understanding of how different aspects of the environment influence and relate to one another within the context of the proposed development.

18.17 Cumulative Effects

18.17.1 Planning in the Immediate Vicinity

The cumulative residual construction and operational impacts of the proposed development and the following projects and plans have been assessed:

18.17.2 Recent Planning Application

The following planning applications have been assessed.

Cork City Council Ref: 2342359	Permission for development which will consist of modifications to the as constructed light industry/warehouse building (Block 9003), Blarney Business Park, Shean Upper, Blarney, Cork permitted under application register reference 19/38496	Planning permission granted on 28/01/2022
Cork City Council Ref: 2240907	Permission for development which will consist of amendments to Block 8004 (under construction) of the 2-no. light industrial/warehouse buildings (Blocks 8003 and 8004) permitted under application register reference 20/39681, as further modified under application register reference 21/40709.	Planning permission granted on the 29/04/2022
Cork City Council Ref: 2241571	Permission for development at Unit 9000, Blarney Business Park, Shean upper, Blarney, Cork, T23KN56. The development will consist of (1) Demolition of existing single-storey storage/warehouse facility and plant room,	Planning permission granted on 11/05/2023
Cork City Council Ref: 2443031 **Phase 1 Ringwood**	Permission for a Large-Scale Residential Development (LRD) at this site at Ringwood, Shean Upper, Blarney, Cork. The proposed development will consist of a largescale residential development (LRD), representing Phase 1 of the development in the Blarney East / Ringwood Expansion Area, and comprising of 246no. residential dwellings as follows: 101no. apartments arranged in 4no. part 3-storey, part 4-storey apartment blocks (to include 6no. 1-bed studio units, 35no. 1-bed units and 60no. 2-bed units); 30no. duplex dwellings arranged in 3no. 3-storey buildings (to include 15no. 1-bed dwellings and 15no. 2-bed dwellings); and 115no. 2-storey and 3-storey houses (to include 19no. 2-bed dwellings, 64no. 3-bed dwellings, and 32no. 4-bed dwellings). The proposed development also includes crèche (380.6sqm) with capacity to accommodate 61no. children. The proposed development will include provision for car parking, including EV charging points, bicycle parking, and motorcycle parking bays, and the provision of an area reserved for future resident car parking to the rear of Woodville Terrace on Station Road. The proposed development will also include the provision of private, communal, and public open spaces; internal roads	Planning permission granted on 06/05/2023

	and pathways with potential for future links to adjacent lands; pedestrian and cyclist routes; hard and soft landscaping and boundary treatments; waste storage; plant; signage; a new signalised access onto Station Road and road and footpath improvement works on Station Road and the R617 road; public lighting; 2no. new substations; all associated site development works; and all drainage and foul sewer infrastructure and network works, including nature-based SuDS measures. The planning application is accompanied by an Environmental Impact Assessment Report (EIAR). The application may be inspected online at the following website: www.ringwoodphase1lrd.ie	

Figure 18.1: Potential Cumulative Effects (Permitted Proposed Developments)

Cork City Council Ref: 2544173 **Phase Ringwood**	Permission for a Large-Scale Residential Development (LRD) of 100 no. residential units comprising 100 no. residential units comprising 63 no. dwelling houses, 23 no. apartment units and 14 no. apartment/duplex units, a creche facility and all ancillary site development works at lands associated with the Former St. Ann's Hydropathic Establishment, St. Ann's Hill, Kilnamucky, Tower, Blarney, Cork. The proposed development consists of: (A) The partial demolition, conservation and refurbishment of the remains of the former St. Ann's Hydropathic Establishment which is a Protected Structure (Reference PS1168), to facilitate integration into a proposed two storey apartment building containing 16 no. apartment units (8 no. 1 bedroom and 8 no. 2 bedroom) and an adjacent two storey mixed-use building, providing a creche at ground floor and 2 no. 2 bedroom apartments at first floor. (B) The partial demolition, conservation and refurbishment of the remains of former stable buildings to facilitate integration into 6 no. terrace units (1 no. 4 bedroom, 3 no. 3 bedroom and 2 no. 2 bedroom). (C) The refurbishment and change of use of a former Coach House to 1 no. 3 bedroom detached dwelling house. (D) The construction of a two-storey apartment building accommodating 5 no. apartment units (2 no. 2 bedroom and 3 no. 1 bedroom). (E) The construction of a 2-3 storey apartment/duplex building accommodating 14 no. units (7 no. 2 bedroom and 7 no. 1 bedroom). (F) The proposed development also provides for the construction of an additional 56 no. detached, semi-detached and terraced dwelling houses comprising 15 no. 4 bedroom, 17 no. 3 bedroom and 24 no. 2 bedroom units. (G) The proposed development also includes the restoration of the former Clock Tower structure and parkland which served the former St. Ann's Hydropathic Establishment. (H) Access to the proposed development will be provided via an existing vehicular entrance and internal road from the R617 permitted by Cork County Council Planning Reference 18/7111 (An Bord Pleanála Reference 305373-19) as amended by Cork City Council Planning Reference 23/41719 (An Bord Pleanála Reference 316276-23). (I) Ancillary site	At Planning Stage

	development works include the provision of bicycle and bin storage facilities. The proposed development consists of or comprises the carrying out of works to a Protected Structure. A Natura Impact Statement has been prepared in respect of the proposed development. The LRD application may also be inspected online	
Monacnapa	Application Register Reference: ABP-312893-22. Permission was granted for 113no. residential units at Monacnapa, Blarney, Co. Cork on 19th July 2022 (143no. units were applied for but Condition No. 2 of the grant of permission for this development omitted 30no. Apartments). This permission was quashed by the courts and remitted back to the Commission under An Coimisiún Pleanála - Case reference: TA28.319963 where it was refused permission on the 7th November 2025	Refused permission by ACP on the 7th November 2025 Development potential for resubmission of a similar scheme in the future.
N/M20 National Road	The N/M20 scheme is to deliver a high-quality transport link connecting Cork and Limerick. Consultants were appointed in 2019 to bring the scheme through phases 1-4 of project development to secure planning permission. The Phase 3 Design and Environmental Evaluation stage of the project is currently progressing, and the proposed mainline corridor has been reduced to 200m. A planning application for the project will be submitted to An Coimisiún Pleanála in 2026 as part of Phase 4.	No works have commenced as yet
Blarney/Stoneview	Cork Area Commuter Rail Project which is being progressed by Iarnród Éireann through a number of separate but interrelated projects which will be delivered in specific work packages which will be subject to a future Railway Order to An Coimisiún Pleanála. Phase 2 of the Project focuses on proposals for eight new stations for Cork, three station upgrades, a new depot, and full electrification of the Cork rail network. One of the 8 new stations is to be located at Blarney/Stoneview to the northeast of the subject site. Further Phase 2 works include the provision of a Strategic Park and Rides at Blarney/Stoneview. The capacity of the Strategic Park and Ride facilities will be in the range of 400 – 600 spaces which will include Mobility Impaired Parking located close to the station entrance, standard car parking, motorcycle parking and bicycle parking including secure bicycle lockers.	No works have commenced as Yet Subject to Railway Order to An Coimisiún Pleanála

Figure 18.13 Potential Cumulative Effects (Other Proposed Developments)

18.17.3 N20/ M20

The preferred route for the new M20 motorway road as confirmed by TII/ Cork City Council is north of Ringwood site along the existing N20 route. Phase 3 of the N20/M20 roads design programme notes that Design and Environmental Evaluation Stage is currently being pursued at this time of writing this chapter. This will then be followed by public consultation on the emerging preferred route. The preferred route will then be confirmed following public consultation.

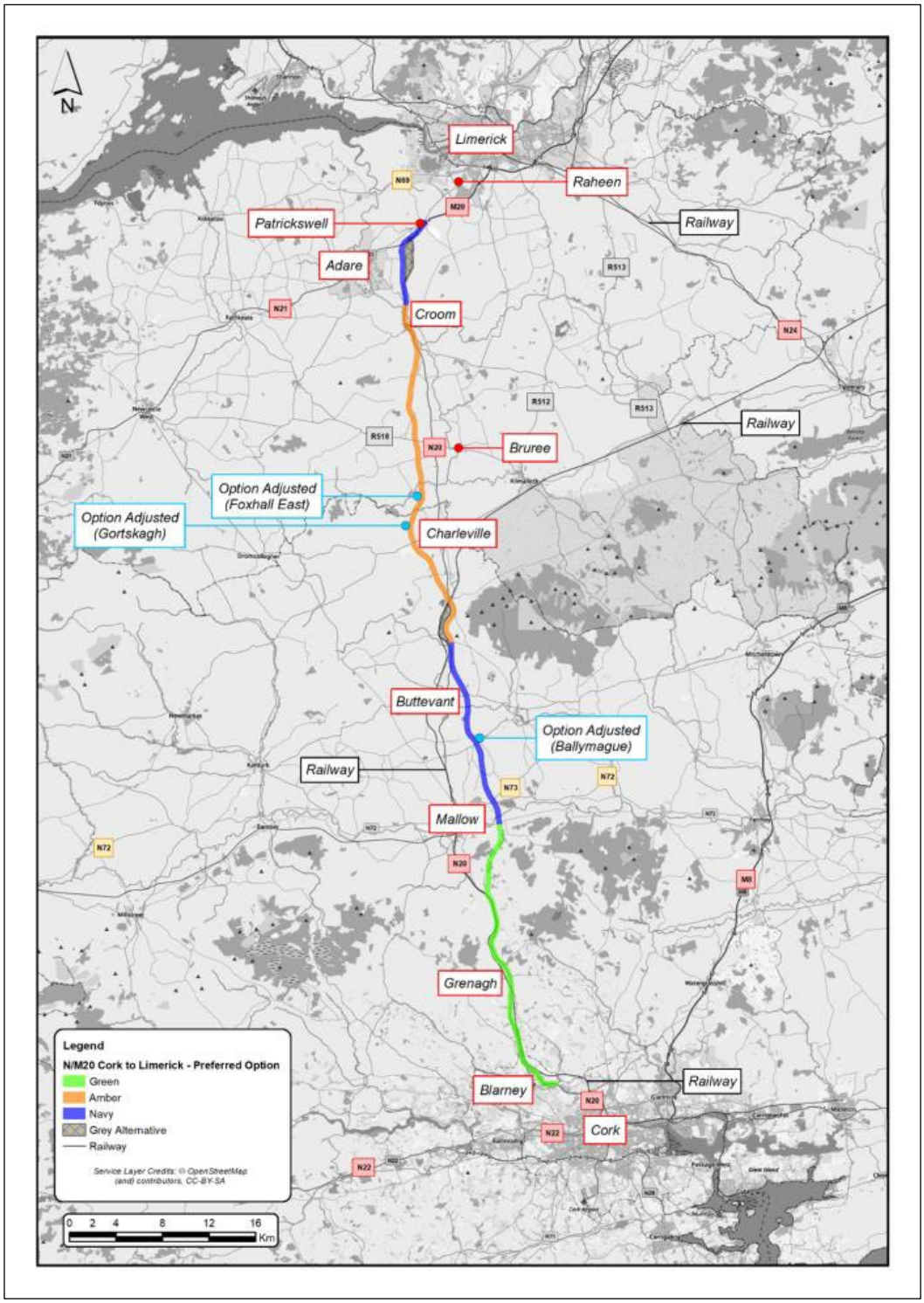


Figure 18.14: N20/M20 Preferred Route (c: TII)

18.17.4 Irish Rail (Train Station at Stoneview)

The Cork Area Commuter Rail Programme is a comprehensive initiative involving developments and improvements to the rail network spanning from Mallow through Cork to Cobh and Midleton. The program encompasses the delivery of new rail infrastructure, electrification, and re-signalling across the three main lines of Mallow, Cobh, and Glounthaune to Midleton. This ambitious rail program is advancing through several distinct yet interconnected projects, each to be delivered through specific work packages.

Lands in Blarney to the north of the site have a proposed zoning of ZO 02 New Residential Neighbourhoods / Z0 03 Tier 3 Residential Neighbourhoods. A portion of these lands are under the ownership of Clockstrike Ltd and are to be developed to closely align with the aspirations of the Blarney Stoneview Park and Ride and upcoming new commuter train service.



Figure 18.15: Cork Area Commuter Rail

18.17.5 Blarney Business Park Lands

Blarney Business Park lands to the east of the site have a proposed zoning of ZO 10 light industry and related uses. Undeveloped lots within the business park are currently being built out at the time of writing this chapter, with a new grant of planning obtained within the site for a new warehouse development unit.

18.7.6 Cumulative Effects

In terms of material assets for the Proposed Development, MHL is cognisant of the larger development area, encompassing the existing urban area and the planned future phases at Ringwood, namely Phase

and Phase 2. Recognising the cumulative impacts of these future phases on the immediate vicinity of the applicant planning site, the strategy ensures proposed service connections, proposed development site service routing, proposed road alignments and access junctions are appropriately designed and catered for within the context of the existing locality and site proposals. Existing service utility mapping and network utility capacity confirmations form third parties service providers (UE/CCC) have been obtained.

Proposed site development works have been designed to account for future phasing on site with service connections and layouts developed to be expanded going forward, with proposed road and unit levels to tie into future planned phasing. Proposed wastewater and surface water drainage networks have been designed to ensure sequential phasing can tie into one another and design flow paths are maintained. Existing ESB overhead power lines cross the development site are proposed to be replaced by underground services within the new layout, ensuring network connection is maintained to the local area while also providing connection for the development to the existing power grid.

Future road connections (spine road/ R617 junction connection) within the site will ensure sequential phasing as outlined can be achieved.

In the vicinity of the development site, several key developments are at varying stages as of November 2025.

Ringwood Phase 1, involves a permitted residential development of 246 units south of the site, granted by An Coimisiún Pleanála on May 6, 2025, with 25 conditions, and initial site works ongoing.

Monacnapa, saw an initial 2022 permission for 113 units (reduced from 143) quashed by courts and refused again by the Commission on November 7, 2025, leaving potential for future resubmission.

The N/M20 National Road scheme aims to link Cork and Limerick with a high-quality corridor; Phase 3 design and environmental evaluation is advancing, narrowing the mainline to 200m, with a 2026 planning application planned but no construction started.

The Blarney/Stoneview element of the Cork Area Commuter Rail Project, proposes a new station northeast of the site, three station upgrades, full electrification, and a 400–600-space strategic park-and-ride with accessible parking options, all pending a future Railway Order to An Coimisiún Pleanála, with no works commenced.

Please refer to Chapter 20 - Cumulative Projects of this EIAR for further details.

18.18 Difficulties Encountered

No difficulties were encountered during the preparation of this chapter of the EIAR.

18.19 References

- Environmental Protection Agency (EPA) — Guidelines on the information to be contained in Environmental Impact Assessment Reports (EIAR) (May 2022)
- Environmental Protection Agency. "Guidelines on the information to be contained in EIS" (EPA 2002).
- Environmental Protection Agency (2003) Advice Notes on Current Practices in the Preparation of Environmental Impact Statements. (EPA 2003).
- ESB Networks. Code of Practice for Avoiding Danger from Overhead Electricity Lines (ESB 2008).
- CIRIA Environmental Good Practice on Site 3rd Edition, (C692), (CIRIA Publications, 2010).
- CIRIA Control of water pollution from construction sites, guidance for consultants and contractors, (C532), (CIRIA Publications, 2001).
- Cork Area Commuter Rail (Irish Rail)
- Cork Metropolitan Area Transport Strategy 2040 (CMATS)- NTA/TII/ CCC
- Department of Housing, Local Government and Heritage (DHPLG) — Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment
- EU legal framework: Directive 2014/52/EU (amended EIA Directive

19.0 MAJOR ACCIDENTS & DISASTERS

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19.1 Introduction

This chapter describes the likely significant negative effects arising from the vulnerability of the proposed development to risks of major accidents and/or disasters. This assessment has been carried out in compliance with the EIA Directive 2014/52/EU of the European Parliament and the Council of 16th April 2017 (amending Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment) which states the need to assess:

> *"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"*

The underlying objective of this assessment is to ensure that appropriate precautionary actions are taken for any development projects which *"because of their vulnerability to major accidents and/or natural disasters, are likely to have significant adverse effects on the environment"*.

The following paragraphs are set out in the EIA Directive in relation to major accidents and/or disasters.

Recital 15 of the EIA Directive states that:

> *"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 and Council Directive 2009/71/Euratom, or through relevant assessments carried out pursuant to national legislation provided that the requirements of this Directive are met."*

Note: Directive 2012/18/EU is the directive on the control of major-accident hazards involving dangerous substances, referred to as the COMAH or Seveso III Directive.

Article 3 of the EIA Directive provides that the EIAR shall identify, describe, and assess in the appropriate manner, the direct and indirect significant effects on population and human health, biodiversity, land, soil, water, air and climate, material assets, cultural heritage and landscape deriving from (amongst other things) the "*vulnerability of the project to risks of major accidents and/or disasters that are relevant to the project concerned*".

Specifically, the information relevant to major accidents and/or disasters to be included in the EIAR is set out in Section 8 of Annex IV of the EIA Directive as follows:

"(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".

Based on the requirements of the EIA Directive, this chapter seeks to determine:

- The relevant major accidents and/or disasters, if any, that the proposed development could be vulnerable to,
- The potential for these major accidents and/or disasters to result in likely significant adverse environmental effect(s), and
- The measures that are in place, or need to be in place, to prevent or mitigate the likely significant adverse effects of such events on the environment and details of the preparedness for and proposed response to such emergencies.

19.2 Assessment Methodology

19.2.1 Categorisation of the Baseline Environment

A desk-based study has been undertaken to establish the baseline environment on which the risk assessment is being carried out, as this will influence both the likelihood and the impact of a major accident and/or disaster. This assessment has considered the following guidance:

- Environmental Impact Assessment of Projects – Guidance on the preparation of the Environmental Impact Assessment Report (European Commission, 2017)
- Guidelines on the information to be contained in Environmental Impact Assessment Reports (EPA, 2022)
- The Framework for Major Emergency Management and associated protocol and guidance documents; preparing a major emergency plan and risk assessment (Government of Ireland, 2010)
- The National Risk Assessment (Government of Ireland 2019)

19.2.2 Impact Assessment Methodology

General

The scope and methodology of this assessment is centred on the understanding that the proposed development will be designed, built and operated in line with best international current practice and, as such, the vulnerability of the proposed development to risks of major accidents and/or disasters is considered low.

Current EIA practice already includes an assessment of some potential accidents such as pollution incidents to ground and watercourses as well as assessment of flooding events. These are addressed in detail in the relevant EIAR assessment chapters (refer to **Chapter 14 – Land, Soils, Geology & Hydrogeology** and **Chapter 15 – Water** for further detail).

Site Specific Risk Assessment Methodology

This section identifies the potential of unplanned but potential events that could occur during construction and operation of the proposed development. Risks are set out according to the classification of risk, taken from the Guide to Risk Assessment in Major Emergency Management (2010).

Ranking	Classification	Likelihood
1	Extremely Unlikely	May occur only in exceptional circumstances; once every 500 or more years
2	Very Unlikely	Is not expected to occur; and/or no recorded incidents or anecdotal evidence; and/or very few incidents in associated organisations, facilities or communities; and / or little opportunity, reason or means to occur; may occur once every 100-500 years.
3	Unlikely	May occur at some time; and /or few, infrequent, random recorded incidents or little anecdotal evidence; some incidents in associated or comparable organisation's worldwide; some opportunity, reason or means to occur; may occur once per 10-100 years.
4	Likely	Likely to or may occur; regular recorded incidents and strong anecdotal evidence and will probably occur once per 1-10 years
5	Very Likely	Very likely to occur; high level of recorded incidents and/or strong anecdotal evidence. Will probably occur more than once a year.

Table 19.1: Risk Clarification Table - Likelihood

Classification of Consequence

The risks are then tested in terms of consequences. It should be noted that when categorising the Consequence Rating, the rating assigned assumes that all proposed mitigation measures and safety procedures have failed to prevent the major accident and/or disaster. In addition, Cork City Council have in place a 'Major Emergency Plan' which, if implemented as intended, will work to reduce the effect of any major accident or disaster.

Ranking	Consequence	Impact	Description
1	Minor	Life, Health, Welfare Environment Infrastructure Social	Small number of people affected; no fatalities and small number of minor injuries with first aid treatment. No contamination, localised effects <€0.5M Minor localised disruption to community services or infrastructure (<6 hours).
2	Limited	Life, Health, Welfare Environment Infrastructure Social	Single fatality; limited number of people affected; a few serious injuries with hospitalisation and medical treatment required. Localised displacement of a small number of people for 6-24 hours. Personal support satisfied through local arrangements. Simple contamination, localised effects of short duration €0.5-3M Normal community functioning with some inconvenience.

3	Serious	Life, Health, Welfare Environment Infrastructure Social	Significant number of people in affected area impacted with multiple fatalities (<5), multiple serious or extensive injuries (20), significant hospitalisation. Large number of people displaced for 6-24 hours or possibly beyond; up to 500 evacuated. External resources required for personal support. Simple contamination, widespread effects or extended duration €3-10M Community only partially functioning, some services available.
4	Very Serious	Life, Health, Welfare Environment Infrastructure Social	5 to 50 fatalities, up to 100 serious injuries, up to 2000 evacuated Heavy contamination, localised effects or extended duration €10-25M Community functioning poorly, minimal services available
5	Catastrophic	Life, Health, Welfare Environment Infrastructure Social	Large numbers of people impacted with significant numbers of fatalities (>50), injuries in the hundreds, more than 2000 evacuated. Very heavy contamination, widespread effects of extended duration. >€25M Serious damage to infrastructure causing significant disruption to, or loss of, key services for prolonged period. Community unable to function without significant support.

Table 19.2: Risk Classification Table – Consequence

The impact ratings are taken from the Guide to Risk Assessment in Major Emergency Management (Department of the Environment, Heritage & Local Government, 2010).

Likelihood Rating	Very Likely	5					
	Likely	4					
	Unlikely	3					
	Very Unlikely	2					
	Extremely Unlikely	1					
			Minor	Limited	Serious	Very Serious	Catastrophic
			1	2	3	4	5
			Consequence Rating				

Table 19.3: Risk Matrix

19.3 Baseline Environment

19.3.1 Disasters

Ireland's geographic position means it is less vulnerable to natural disasters such as earthquakes or tsunamis, which might pose risk to projects of this nature and scale in other locations. Whilst there has been no natural disaster of relevance in recent years, there has been an increase in the number of extreme weather events in the country, particularly those leading to severe weather conditions including flash flooding, snow and strong wind gusts. For the more recent severe weather events (Storm Ophelia, October 2017; Storm Emma, February 2018; and Storm Barra, December 2021, the Cork City Major Emergency Plan was activated. For Storm Barra in December 2021 and Storm Eunice in February 2022, Cork City Council

activated its Severe Weather Plan. With regard to disasters, severe weather conditions pose a plausible potential risk to the proposed development.

19.3.2 Major Accidents

According to Cork City the Major Emergency Plan there have been incidents in Cork City which necessitated the activation of the Plan. Such incidents included a multi vehicle road traffic collision in the city centre involving a bus and several cars (June 2007) and the plane crash at Cork Airport (2012). Following the completion of risk assessments by Cork City, a number of risks within the functional area were identified which had various implications for the Local Authority. These risk assessments were prepared with regard to other existing emergency plans for facilities within the city e.g., Port of Cork Emergency Plan, Kent Rail Interagency Emergency Plan, Jack Lynch Tunnel Interagency Emergency Plan.

Licenced Facilities - Seveso sites

The European Communities (Control of Major Accident Hazards involving Dangerous Substances) Regulations, 2015 (SI 209 of 2015) implement the requirements of the Council Directive 2012/18/EU on the control of major accident hazards involving dangerous substances.

These Regulations require operators of establishments where dangerous substances are used or stored in large quantities to take all measures necessary to prevent and mitigate the effects of major accidents to man and the environment.

Establishments which fall under the remit of the Seveso III Regulations are classified as either "lower tier" or "upper tier" sites. There are six Seveso sites within the Cork City functional area. As can be seen from Table 19.4 all Seveso sites are located over 1km from the proposed development.

Name	Tier	Activity	Distance from Proposed Development Site
Grassland Agro, Carrigrohane	Upper	Production and/or storage of fertilisers	4.8km - South
Irish Oxygen Co. Ltd, Waterfall Road	Lower	Industrial Gas Supplier	7.4km - South
Gouldings Chemicals Ltd Docklands	Lower	Production and/or storage of fertilisers	8.1km - Southeast
Flogas Ireland Ltd Tivoli	Upper	Liquefied Petroleum Gas storage	10.4km - Southeast
Calor Teoranta Tivoli	Upper	Liquefied Petroleum Gas storage	10.6km - Southeast
Chemical Bulk Storage Ltd Tivoli	Lower	Chemical installations	10.8km - Southeast

Table 19.4: Seveso Sites in relation to proposed development.

The nearest facility to the proposed development is Grassland Agro. In accordance with the Regulations operators of a "Upper Tier Establishment" are to develop a site-specific Major-Accident Prevention Policy (MAPP) which is implemented by site specific procedures and systems. The proposed development is not within the consultation distance for Grassland Agro.

The nearest site to the proposed development which has a licence issued by the EPA is the Dulux site in Blackpool, Cork. This facility is located approximately 5km southeast of the proposed development site and is involved in waste collection and processing.

19.4 Likely Significant Effects

19.4.1 Do Nothing

If the proposed development does not proceed, there will be no increase in the likelihood of major accidents occurring, or indeed the consequences should a major accident occur. There will be no change to the likelihood or consequences of a disaster, therefore the site would remain the same as it is currently.

19.4.2 Direct Effects

Construction

A risk register will be developed which contains the risks specific to the construction phase of the proposed development and possible causes. An outline of the relevant considerations is presented in Table 19.5**.**

Risk ID	Potential Risk	Possible Cause
Potential to cause major accidents and/or disasters		
C1	Structural collapse and/or damage to existing structures	Vehicle collision / accidental damage to existing structures Vibration from ground works/ excavations
C2	Contamination of water courses (surface and ground water)	Uncontrolled discharge of pollutants due to fuel spill / leaks Equipment and/or power failure
C3	Collison of construction vehicles with members of the public	Collisions with other road users, pedestrians, cyclists due to increase in construction traffic entering and leaving site.
C4	Fire/ Explosion	Construction vehicle or machinery collision Ignition of fuels on site Strikes to underground services
C5	Incident at IE licenced site leading to fire/explosion or pollution of water courses and/or release of harmful substances into the atmosphere.	- Equipment or power failure - Vehicle / plant machinery collision

Table 19.5: Risk Register – Direct Effects during Construction Phase

Operation

A risk register will be developed which contains the identified risks specific to the operational phase of the proposed development. These are presented Table 19.6 and discussed in detail below.

Risk ID	Potential Risk	Possible Cause
Potential to cause major accidents and/or disasters		
Op1	Explosion/fire	- Electrical faults - Use of flammable/combustible materials

Op2	Pollution of water courses – surface and ground water	- Equipment failure or power outage leading to uncontrolled discharge
Op3	Collision with vehicles/pedestrians/cyclists etc	- Increase in operational traffic
Op4	Personal injury	- Effects of severe winds

Table 19.6: Risk Register – Direct Effects during Operational Phase

19.4.3 Indirect Effects

Construction and Operational Phase

A risk register will be developed which contains the common indirect risks specific to the construction and operation phases of the proposed development and possible causes. An outline of these is presented in Table 19.7.

Risk ID	Potential Risk	Possible Cause
C5 & Op4	Incident at IED site leading to fire/explosion or pollution of water courses and/or release of harmful substances into the atmosphere.	- Equipment or power failure - Vehicle / plant machinery collision - Sabotage/arson leading to ignition of fuel and/or explosion
C1 & Op4	Extreme weather events affecting infrastructure.	- Flooding - High winds/ storms - Extreme temperature (primarily low temperatures giving rise to adverse snow/ice conditions)

Table 19.7: Risk Register- Potential indirect effects during Construction & Operational Phase

Risk Assessment

Table 19.8 categorises each of the potential risks by their 'risk score.' A corresponding risk matrix is provided in Table 19.9, which is colour coded, the red zone represents 'high risk scenarios', the amber zone represents 'medium risk scenarios' and green represents 'low risk scenarios'.

Risk ID	Potential Risk	Likelihood Rating	Consequence Rating	Risk Score
C1	Structural collapse and/or damage to existing structures including quay walls	1	4	4
C2	Contamination of water courses (surface and ground water)	2	2	6
C3	Collison of construction vehicles with members of the public	2	2	4
C4	Fire/ Explosion	1	3	3
C5	Incident at IE facility	1	3	3
Op1	Explosion/fire	1	3	3
Op2	Pollution of water courses – surface and ground water	1	2	2
Op3	Collision with vehicles/pedestrians/cyclists etc	2	2	4
Op4	Personal injury	1	4	4

Table 19.8: Risk Scores for Construction Phase (C) and Operational Phase (Op)

Likelihood Rating							
	Very Likely	5					
	Likely	4					
	Unlikely	3		C2			
	Very Unlikely	2		C3			
	Extremely Unlikely	1	C1, C4, C5, Op1, Op2, Op4	Op3			
			Minor	Limited	Serious	Very Serious	Catastrophic
			1	2	3	4	5
			Consequence Rating				

Table 19.9: Risk Matrix – Construction and Operational Phase

No plausible potential risks were identified which would result in the proposed development causing a major accident or disaster on or outside of the proposed development.

19.5 Mitigation Measures and Monitoring

19.5.1 Mitigation

Mitigation during Construction

All potential risks, direct and indirect, identified during the construction phase were determined to be 'low risk scenarios'. A detailed CEMP will be prepared by the contractor and implemented throughout the works. The CEMP will be a live document and continuously updated to ensure that potential risks of major accidents and/or disasters are identified, avoided, and mitigated as necessary.

Mitigation during Operation

The fire risk mitigation for the apartments and duplexes, primary care centre and retail/hospitality units will comprise all fire safety measures necessary to comply with the requirements of Part B (Fire) of the Second Schedule to the Building Regulations 1997-2017. It is noted that these measures will be validated under the Building Control Act 1990-2007 through the obtaining, in due course, of statutory Fire Safety Certificates under Part III of the Building Control Regulations 1997-2021 from Cork City Council/Cork City Fire Brigade.

Otherwise, the proposed development will be designed and built and managed in line with best international current practices and as such mitigation against the risk of major accidents and/ or disasters will be embedded throughout the design stage. All potential risks, direct and indirect, identified during the operation phase were determined to be 'low risk scenarios'.

19.5.2 Monitoring

Monitoring during Construction

Aside from the monitoring measures to be carried out by the contractor, as outlined in the CEMP (e.g., site inspections and audits) and throughout the EIAR, no additional monitoring is considered necessary during the construction phase of the proposed development.

Monitoring during Operation

No additional monitoring is considered necessary during the operational phase of the proposed development.

19.6 Residual Effects

19.6.1 Residual Effects during Construction

The risk of a major accident and/or disaster during the construction of the proposed development is considered 'low' in accordance with the risk evaluation methodology. It is considered that the proposed development will not give rise to significant residual effects.

19.6.2 Residual Effects during Operation

The risk of a major accident and/or disaster during the operation of the proposed development is considered 'low' with regards the risk evaluation methodology. It is therefore considered that there is no significant residual effect(s) during the operation of the proposed development.

19.7 Cumulative Effects

A number of local developments have the potential to give rise to cumulative adverse effects on the environment as a result of a major accident and/ or disaster. Other permitted or proposed developments considered include the following:

N/M20 Scheme

The National Development Plan (NDP) sets out that the N/M20 Cork to Limerick scheme would provide better connectivity between Ireland's second and third largest cities, Cork and Limerick. It would improve the quality of the transport network, addressing safety issues associated with the existing N20 route and provide for safer and more efficient journey times. The project is a key element in Project Ireland 2040.

The route protection corridor of the preliminary M20 scheme is located to the east of the subject site of the proposed development. The route protection corridor does not overlap or abut the subject site. As of May 2024, the scheme includes indicative active travel proposals along the eastern side of the road, a new junction area between the N/M20 and the R617 and a new side road along the R617.

The scheme is currently at Phase 3 Design and Environmental Evaluation.

Granted development at Ringwood

As explained in **Chapter 1 – Introduction**, the proposed development comprises Phase 2 of the two-part development of a larger land parcel at Ringwood. Phase 1 comprises of the construction of 246no. residential units as granted permission by An Coimisiún Pleanála on the 6th May 2025 subject to 25no. planning conditions.

The potential for the accident scenarios considered in this chapter affecting Phase 1 have been considered, and the overall conclusions regarding risk and consequence remains as described in the detailed risk score tables.

19.8 References

Council Directive 2009/71/Euratom of 25 June 2009 establishing a Community framework for the nuclear safety of nuclear installations (OJ L 172, 2.7.2009, p.18)

Department of the Environment Heritage and Local Government (2010) A Guide to Risk Assessment in Major Emergency Management. Available from: http://mem.ie/wp-content/uploads/2015/05/A-Guide-to-Risk-Assessment.pdf

Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment

Directive 2012/18/EU of the European Parliament and the Council of 4 July 2012 on the control of major-accident hazards involving dangerous substances, amending and subsequently repealing Council Directive 96/82/EC (OJ L 197, 24.7.2012, p. 1).

Directive 2014/52/EU of the European Parliament and 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

Environmental Protection Agency (2014) Guidance on Assessing and Costing Environmental Liabilities. Available from: https://www.epa.ie/pubs/advice/licensee/EPA_OEE%20Guidance%20and%20Assessing%20WEB.pdf

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20.0 CUMULATIVE AND INTERACTIVE EFFECTS

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Table 20.1 Cumulative Projects

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20.1 Introduction

This chapter has been prepared by Coakley O'Neill Town Planning Ltd. The lead author is Dave Coakley, Director, Coakley O'Neill Town Planning Ltd, who graduated as a town planner from the University of West England in 2005, and holds the qualifications of BA (Hons), MPhil, MTCP, MIPI, and has worked in the public and private sector in Cork since 2001. Dave has over 23 years professional experience in the field of planning, which has included providing consultancy services in respect of several urban development, infrastructural development, and tourism development including EIA.

This chapter summarises the residual effects that have been identified in Chapters 7 – 19 and determines whether they give rise to cumulative and/or interactive effects based on best scientific knowledge. Accordingly, when a topic is not mentioned, the authors have concluded that there are no likely residual significant effects that could give rise to cumulative and/or interactive effects. Cumulative effects are changes to the environment that are caused by an action in combination with other actions. They can arise from and this EIAR will look at:

- the interaction between all of the different permitted and planned projects in the same area in combination with this proposed development; and
- the interaction between the various effects within this proposed development.

Cumulative effects will consider whether the addition of many minor or significant effects of the proposed development itself or the cumulation of effects of other permitted or planned projects have the potential to result in larger, more significant effects when combined with the effects of the proposed development. Interactive effects will consider the interaction between the various environmental aspects, for example the interaction between noise and ecology.

20.2 Assessment Methodology

20.2.1 Overview

The assessment of cumulative effects has been undertaken on a qualitative basis by each of the environmental topic leads based on best scientific knowledge. The approach has aligned with the overarching EIA guidance as outlined in Section 1.3.3 of Chapter 1 (including the EPA guidance (2022) and EC guidance) as well as per the methodology adopted for each environmental factor as described in Chapters 7 – 19. A summary of these effects is provided herein based on best scientific knowledge.

20.2.2 Cumulative Effects

The EIAR has considered and assessed cumulative effects arising from the construction and operation of the proposed development. A cumulative assessment has been undertaken based on best scientific knowledge in accordance with Part 5(e) of Annex IV of the EIA Directive:

> *"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;*

At the initial stage of preparing the EIAR for the proposed development, the potential for significant cumulative impacts were examined and any potential effects were identified. These potential effects were included in the scope and addressed in the baseline and impact assessment studies for each of the relevant environmental factors.

Likely significant cumulative effects of the proposed development in-combination with other existing and/or approved projects for each of the environmental factors were initially identified, considered, and assessed in respective chapters of the EIAR.

20.2.3 Interactive Effects

The EIAR has considered and assessed the interactive effects arising from the construction and operation of the proposed development based on best scientific knowledge. Interactive effects (or interactions), as defined in Section 20.1 above specifically refer to any direct or indirect effects caused by the interaction of environmental factors as outlined in Part 1(e) in Article 3 of the EIA Directive which states:

> *"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)."*

20.3 Cumulative Effects

20.3.1 Overview

The assessment of cumulative effects has considered likely significant effects that may arise during the construction and operation of the proposed development.

Cumulative effects were assessed to a level of detail commensurate with the information that was available at the time of assessment based on best scientific knowledge.

The assessment specifically considers whether any of the proposed and/or recently approved schemes in the local area have a potential to exacerbate (i.e., alter the significance of) effects associated with the proposed development based on best scientific knowledge.

Proposed and existing developments in close proximity to the proposed development site which are most likely to result in cumulative effects arising from the construction and operation of the proposed development are outlined in Table 20.1. Any other existing projects not identified in this chapter, do not have the potential to exacerbate effects.

NUMBER	LOCATION	DESCRIPTION	STATUS
1.	Ringwood	Phase 1 of residential development at Ringwood granted permission by An Coimisiún Pleanála on the 6th May 2025 subject to 25no. planning conditions. The permitted development is for the construction of 246no. residential units on zoned lands directly to the south of the subject site.	Initial site development works currently ongoing.
2.	Monacnapa	Application Register Reference: ABP-312893-22. Permission was granted for 113no. residential units at Monacnapa, Blarney, Co. Cork on 19th July 2022 (143no. units were applied for but Condition No. 2 of the grant of permission for this development omitted 30no. Apartments). This permission was quashed by the courts and remitted back to the Commission under An Coimisiún Pleanála - Case reference: TA28.319963.	No works have commenced as yet
3.	N/M20 National Road	The N/M20 scheme is to deliver a high-quality transport link connecting Cork and Limerick. Consultants were appointed in 2019 to bring the scheme through phases 1-4 of project development to secure planning permission. The Phase 3 Design and Environmental Evaluation stage of the project is currently progressing, and the proposed mainline corridor has been reduced to 200m. A planning application for the project will be submitted to An Coimisiún Pleanála in 2026 as part of Phase 4.	No works have commenced as yet
4.	Blarney/Stoneview	Cork Area Commuter Rail Project which is being progressed by Iarnród Éireann through a number of separate but interrelated projects which will be delivered in specific work packages which will be subject to a future Railway Order to An Coimisiún Pleanála. Phase 2 of the Project focuses on proposals for eight new stations for Cork, three station upgrades, a new depot, and full electrification of the Cork rail network. One of the 8 new stations is to be located at Blarney/Stoneview to the northeast of the subject site. Further Phase 2 works include the provision of a Strategic Park and Rides at Blarney/Stoneview.	No works have commenced as yet Subject to future Railway Order to An Coimisiún Pleanála

		The capacity of the Strategic Park and Ride facilities will be in the range of 400 – 600 spaces which will include Mobility Impaired Parking located close to the station entrance, standard car parking, motorcycle parking and bicycle parking including secure bicycle lockers.	

Table 20.1: Cumulative Projects.

20.3.2 Cumulative Effects During Construction

Possible cumulative effects during construction are outlined in the individual assessment chapters of this EIAR – Chapter 7 through Chapter 19. It is concluded that should the construction of any of the developments mentioned in Table 20.1 above occur concurrently, the potential cumulative construction effects are not considered significant, given the implementation of standard construction environmental measures, the Construction Environmental Management Plan for the proposed development and a Construction Traffic Management Plan.

20.3.3 Cumulative Effects During Operation

Possible cumulative effects during operation are outlined in the individual assessment chapters of this EIAR – Chapter 7 through Chapter 19.

Potential cumulative operational effects are not considered significant.

20.4 Potential Interactions

20.4.1 Traffic and Transportation

During the construction phase, the following aspects would interact with traffic and transportation and in the absence of mitigation may give rise to likely significant effects:

Noise & Vibration: Construction traffic may give rise to localised noise and vibration effects.

Air Quality: Emissions from construction traffic may impact local air quality and climate in terms of increased emissions of greenhouse gases from vehicles.

During the operational phase the potential interactions are:

Air Quality: Emissions from traffic associated with future occupants may impact local air in terms of increased emissions of greenhouse gases from vehicles.

The potential significant impacts of traffic and transportation have been considered within the relevant discipline and mitigation measures outlined where required. With mitigation measures in place, no significant residual negative interactive effects are predicted.

20.4.2 Air Quality

During the construction phase, the following aspects would interact with air quality in the absence of mitigation may give rise to likely significant effects:

Population & Human Health: There is potential for impact on human health from dust associated with construction activities.

Traffic & Transport: Emissions from construction traffic may impact local air quality in terms of increased emissions of greenhouse gases from vehicles.

During the operational phase the potential interactions are:

Population & Human Health: There is potential for impact on human health from a deterioration in air quality associated with emissions from vehicles.

Biodiversity: Air quality can potentially impact ecosystems; however, this assessment demonstrates that the emissions to air from the Proposed Development will have no negative impacts on ecosystems.

Traffic & Transportation: Emissions from traffic associated with future occupants may impact local air quality in terms of increased emissions from vehicles.

Climate: Potential emissions associated with vehicle movement onsite can influence GHG emissions associated with the Proposed Development.

Material Assets: Air quality can be impacted by increased traffic volumes. The effects of traffic emissions associated with the proposed development has been assessed under traffic congested conditions and determined that all impacts will be Neutral and the effects not significant.

20.4.3 Climate

During the construction phase, the following aspects would interact with air quality in the absence of mitigation may give rise to likely significant effects:

Material Assets: The built services have an interaction with climate in the availability and use of non-greenhouse gas reliant power and heat sources. The potential significant impacts on climate have been considered within the relevant discipline and mitigation measures outlined where required. With mitigation measures in place, no significant residual negative interactive effects are predicted.

During the operational phase the potential interactions are:

Biodiversity: Climate Change has the potential to impact ecosystems. However, the effects of GHG emissions associated with the Proposed Development were determined as not likely and not significant.

Water: Climate Change can have a direct impact on water shown to be influencing the Proposed Development. The frequency of extreme rainfall events is expected to increase under changing climate conditions. The impact of Climate Change on the Proposed Development, with respect to flooding, was considered to be not likely and not significant.

Materials Assets: Traffic and Transport: Climate Change is directly linked to GHG emissions, with road traffic considered one of the highest contributors to national emissions. The assessment of GHG emissions from vehicle movements associated with the Proposed Development has determined effects to be not likely and not significant.

20.4.4 Noise and Vibration

During the construction phase, the following aspects would interact with noise and vibration and in the absence of mitigation may give rise to likely significant effects:

Population & Human Health: There is potential for impact on human health associated with noise and vibration generated during the construction phase.

Traffic & Transport: Construction traffic may give rise to localised noise and vibration effects. No potential operational interactions were identified.

Biodiversity: Noise can influence fauna, through disturbance of animals. Effects of the Proposed Development on specific species have been outlined in Chapter 6 Biodiversity where relevant. The modelling shows no significant noise effects beyond the local environment therefore no noise impact at the SAC or SPAs identified within 15km.

The potential significant impacts of noise and vibration have been considered within the relevant discipline and mitigation measures outlined where required. With mitigation measures in place, no significant residual negative interactive effects are predicted.

20.4.5 Biodiversity

During the construction phase, the following aspects would interact with biodiversity and in the absence of mitigation may give rise to likely significant effects:

Land & Soils: Site preparatory works have the potential to cause impact on the biodiversity of the site, through removal and disturbance of habitats and species.

Water: Any negative impact on water quality arising from accidental spillages etc. may impact biodiversity.

Noise and Vibration: There is the potential for disturbance of species as a result of construction noise.

During the operational phase the potential interactions are:

Air Quality: Air quality can potentially affect sensitive habitats through deposition of dust are nutrients in the form of NOx, nitrogen or ammonia.

Landscape & Visual: They quality of the landscaping plan and appropriateness of the species may significantly impact biodiversity.

Water: Any negative impact on water quality arising from accidental spillages during the operational phase etc. may impact biodiversity. Aquatic ecological diversity is strongly linked to water quality and how this might change in light of the proposed developed. With the effective implementation of the design and mitigation measures outlined negative impacts to water quality were not predicted.

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 interactive effects are predicted.

20.4.6 Archaeology and Cultural Heritage

During the construction and operational phases no potential interactions are identified.

20.4.7 Landscape and Visual

During the construction phase, the following aspects would interact with visual and in the absence of mitigation may give rise to likely significant effects:

Land & Soils: There is potential for impact on landscaping from the earth remodelling works during the construction phase.

Biodiversity: Landscape delivers new green infrastructure for the site which has the potential to enhance the biodiversity of the site and linkages with off-site green infrastructure.

Archaeology: Landscape design needs to take account of site sensitivities associated with and archaeological analyses and influences.

During the operational phase the potential interactions are:

Architecture: The architectural and engineering design strategy delivers the housing and spatial framework for the site along with the access infrastructure and materiality of the buildings. Landscape's interaction with this is important to the quality of the spaces achieved.

Population & Human Health: The nature and extent of the proposed development will have a visual impact on the local population's views and perceptions of their environment. The landscape plan will impact on the quality of the private and public open spaces, which will impact on people's health and well-being.

Biodiversity: The landscaping has significant interaction with biodiversity in relation to the planting. . It also delivers new green infrastructure for the site to enhance the biodiversity potential of the site and to supplement existing site boundary vegetation.

Water: Nature-based SuDS measures are also delivered in the landscape based on the overall drainage strategy for the site prepared by MHL. These including the delivery of a large SuDS attenuation area to the south of the WN6 wetwood which has been adapted to provide spaces for informal recreation along with seating and picnic facilities.

The potential significant impacts of landscape and visual have been considered within the relevant discipline and mitigation measures outlined where required. With mitigation measures in place, no significant residual negative interactive effects are predicted.

20.4.8 Land, Soils Geology and Hydrogeology

During the construction phase, the following aspects would interact with land and soils and in the absence of mitigation may give rise to likely significant effects:

Water: Surface water effects are directly linked with hydrogeology or groundwater effects, with surface water pathways leading to groundwater and vice versa. 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.

Traffic and Transportation: The removal of material from the site will require vehicles using the road network in the area. It is concluded that no significant effects are anticipated from traffic and transport during the construction phases.

Biodiversity: Site preparatory works have the potential to cause impact on the biodiversity of the site, through removal and disturbance of habitats and species and the spread of hazardous materials or contaminated land.

During the operational phase the potential interactions are:

Material Assets: The material assets on site (surface and stormwater drainage) have been designed in accordance with SuDS and the Greater Dublin Strategic Drainage Study. The potential for effects on groundwater from these assets is considered to be long term, imperceptible and neutral.

The potential significant impacts of land and soils have been considered within the relevant discipline and mitigation measures outlined where required. With mitigation measures in place, no significant residual negative interactive effects are predicted.

20.4.9 Water

During the construction phase, the following aspects would interact with water and hydrology and in the absence of mitigation may give rise to likely significant effects:

Material Assets: The construction of the proposed services (water supply, drainage and IT etc.) may affect the local hydrological and hydrogeological environment as there is a risk of suspended solids run off. Construction vehicles moving on site during the construction phase could result in hydrocarbons entering the surface water drainage system, leading to effects downstream.

Land & Soils: Surface water effects are directly linked with hydrogeology or groundwater effects, with surface water pathways leading to groundwater and vice versa. Surface water runoff can also have an effect on soil quality in the area, with chemicals or suspended solids influencing soil fertility, aeration and contamination.

Biodiversity: Effects on water quality or hydrology can have further effects on biodiversity and ecology, through the mobilisation of silts, dusts, suspended solids, oils, or chemicals.

During the operational phase the potential interactions are:

Material Assets: There will be an increased demand on potable water supply and on the municipal drainage system, as well as an increase in surface water flow.

Climate: There is potential for an increase in frequency of rainfall in the future as a result of climate change. This will result in greater pluvial flooding risk at the site. The drainage and layout design include adequate attenuation and drainage to account for climate change effects

The potential significant impacts of water and hydrology have been considered within the relevant discipline and mitigation measures outlined where required. With mitigation measures in place, no significant residual negative interactive effects are predicted.

20.4.10 Resource and Waste Management

During the construction phase, the following aspects would interact with resource and waste management and in the absence of mitigation may give rise to likely significant effects:

Land & Soils: During the construction phase excavated soil and stone) will be generated from the excavations. It is envisaged that surplus m3 of the excavated soils and stones will be reused on. It will be taken for reuse or recovery, where practical, with disposal as last resort. Adherence to the mitigation measures in Chapter 13 of this EIAR and the requirements of the C&D WMP, will ensure the effect is long-term, imperceptible, and neutral.

Biodiversity: The improper handling and storage of waste during the Construction and Operational Phases could negatively impact on biodiversity

Water): The improper handling and storage of waste during the Construction and Operational Phases could negatively impact on Hydrology and Hydrogeology.

During the operational phase the potential interactions are:

Traffic and Transportation: Waste collection activities at the Proposed Development have the potential to impact upon traffic movements in the surrounding area.

2.4.11 Population and Human Health

During the construction phase, the following aspects would interact with population and human health and in the absence of mitigation may give rise to likely significant effects:

Traffic and Transportation: Traffic flow for construction vehicles in the locality has potential to impact upon road safety.

Noise & Vibration: There is potential for impact on human health associated with noise and vibration during the construction phase.

Water and Material Assets: There is the potential for stoppages of existing water supplies during the construction period.

Major Accidents and Disasters: There is the potential for accidents during the construction phase.

Air Quality: There is potential for impact on human health from dust associated with construction activities.

During the operational phase the potential interactions are:

Landscape: The landscape plan will impact on the quality of the private and public open spaces, which could impact on people's health and well-being.

Noise & Vibration: The increased population and activity in the area may result in increased noise and vibration for established residential areas in the vicinity of the proposed development site.

Traffic and Transportation: Traffic flows within the site has the potential to create safety risks for pedestrians and cyclists.

Major Accidents and Disasters: There is the potential for accidents, e.g., from fire, or wind, during the operational phase.

Air Quality: There is potential for impact on human health from a deterioration in air quality associated with emissions from vehicles.

The potential significant impact on population and human health have been considered within the relevant discipline and mitigation measures outlined where required. With mitigation measures in place, no significant residual negative interactive effects are predicted.

20.4.12 Material Assets

During the construction phase, the following aspects would interact with built services and in the absence of mitigation may give rise to likely significant effects:

Population & Human Health: Connections to existing services may require a temporary interruption to existing services in the local area.

Water: The construction of the proposed services (water supply, drainage and IT etc.) may affect the local hydrological and hydrogeological environment as there is a risk of suspended solids run off.

Land & Soils: There is a correlation between Municipal Waste and Land and Soils, particularly concerning the quantity of material to be removed from the site.

During the operational phase the potential interactions are:

Water: There will be an increased demand on water supply.

Climate: The built services have an interaction with climate in the availability and use of non-greenhouse gas reliant power and heat sources.

The potential significant impacts of material assets have been considered within the relevant discipline and mitigation measures outlined where required. With mitigation measures in place, no significant residual negative interactive effects are predicted.

20.5 References

Cork City Council (2025) Search for a Planning Application Available at: https://www.corkcity.ie/en/councilservices/services/planning/search-for-aplanning-application/

Department of Housing, Planning and Local Government (2018) Circular PL05/2018 -Transposition into Planning Law of Directive 2014/52/EU amending Directive 2011/92/EU on the effects of certain public and private projects on the environment (the EIA Directive);

Department of Housing, Planning, Community and Local Government (2017) Key Issues Consultation Paper on the Transposition of 2014 EIA Directive (2014/52/EU) in the Land Use Planning and EPA Licencing Systems;

Department of Housing, Planning, Community and Local Government (2017) Circular PL 1/2017 - Implementation of Directive 2014/52/EU on the effects of certain public and private projects on the environment (EIA Directive): Advice on the Administrative Provisions in Advance of Transposition;

Department of the Environment, Community and Local Government (2013) Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment;

Environmental Protection Agency (2022) Guidelines on the Information to be contained in Environmental Impact Assessment Reports (2022);

European Commission (2017) Environmental Impact Assessment of Projects: Guidance on the preparation of the Environmental Impact Assessment Report; and

Government of Ireland (2018) Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment (August 2018).

21.0 SUMMARY OF MITIGATION, MONITORING AND RESIDUAL EFFECTS

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21.1 Introduction

This chapter has been prepared by Coakley O'Neill Town Planning Ltd. The lead author is Dave Coakley, Director, Coakley O'Neill Town Planning Ltd, who graduated as a town planner from the University of West England in 2005, and holds the qualifications of BA (Hons), MPhil, MTCP, MIPI, and has worked in the public and private sector in Cork since 2001. Dave has over 23 years professional experience in the field of planning, which has included providing consultancy services in respect of several urban development, infrastructural development, and tourism development including EIA.

A key objective of the Environmental Impact Assessment (EIAR) process is to identify likely significant environmental impacts at the pre-consent stage and where necessary to propose measures to mitigate or ameliorate such impacts. This chapter of the EIAR summarises the proposed mitigation measures set out in Chapters 7-18.

It is proposed that the appointed contractor will develop a site-specific Construction and Environmental Management Plan (CEMP) prior to works commencing on-site. All the mitigation measures proposed within the individual specialists' assessments will be incorporated into the plan.

21.2 Mitigation and Monitoring Measures

Traffic and Transportation	**Mitigation and Monitoring During Construction Phase** Traffic impacts during the construction stage will be mitigated through the implementation of a Construction Traffic Management Plan (CTMP), which will be agreed with CCC. An Outline CTMP, which sets out the principles to be followed, has been prepared by MHL & Associates Ltd, submitted with this application. The CTMP sets out the principles by which construction traffic will be planned for, managed, and monitored, to ensure that any impacts on local communities, vulnerable users and road users, will be minimised as far as possible. **Mitigation and Monitoring During Operation** A Mobility Management Plan has also been prepared by SYSTRA and is included in the Transport Assessment (as part of the planning application submission), as a 'best practice' measure, to accompany the planning application. The aim of the Mobility Management Plan is to minimise the proportion of single occupancy vehicle trips and address the forecast transport impacts of the end-users of the subject site. These mobility measures will also support and enable those residents who may be living 'car-free' providing them with a range of sustainable mobility options and negating the need to own a car. These measures are primarily focussed on encouraging walking, cycling and the use of public transport and can be broadly summarised into the following groups: • Appointing a Mobility Manager. • Provision of a Welcome Travel Pack for residents. • Measures to encourage walking, such as the provision of clear signage and maps throughout the site.

	• Measures to encourage cycling, including the provision of bike hire hubs on the site, and the provision of cycling signage and maps, showing cycle times to key destinations. • Measures to encourage Public Transport use, including liaising with local bus operators regarding bus scheduling, routes and school travel. The development will be designed to complement and support future transport initiatives such as such as Cork Bus Connects and the Blarney Rail Station. **Monitoring** A Mobility Manager will be appointed from within the management company to ensure the implementation and monitoring of the Mobility Management Plan. They will act as a point of contact for residents for all mobility and access related issues.
Air Quality	**Mitigation and Monitoring During Construction Phase** In order to mitigate dust emissions and minimise air quality impacts during the construction phase, standard mitigation measures would be implemented onsite to control emissions during construction. The dust management plan as detailed in Appendix 8.1 will also be implemented to reduce dust impacts. In the dust management plan the mitigation measures have been divided into general measures applicable to the entire site for the duration of the Construction Phase and measures applicable specifically to the earthwork, construction and trackout activity. In summary the measures which will be implemented will include: • Hard surface roads will be swept to remove mud and aggregate materials from their surface while any un-surfaced roads will be restricted to essential site traffic. • Avoid unnecessary vehicle movements and limit speeds on site so as to minimise the generation of airborne dust. • Use of rubble chutes and receptor skips during construction activities. • Site roads shall be regularly cleaned and maintained as appropriate, especially during dry and/or windy conditions. Any unsurfaced roads shall be restricted to essential site traffic only. • Vehicles exiting the site shall make use of a wheel wash facility where appropriate, prior to entering onto public roads. • The overloading of tipper trucks exiting the site shall not be permitted and aggregates will be transported to and from the site in covered trucks. • Material handling systems and site stockpiling of materials will be designed and laid out to minimise exposure to wind, stockpiles holding fine or dusty elements including top soils shall be covered with tarpaulins. Water misting or sprays will be used as needed if particularly dusty activities are necessary during dry or windy periods. • Where drilling or pavement cutting operations are taking place, measures to control dust emissions will be used to prevent unnecessary dust emissions by the erection of wind breaks or barriers. • All vehicles which present a risk of spillage of materials, while either delivering or removing materials, will be loaded in such a way as to prevent spillage. • Public roads outside the site will be regularly inspected for cleanliness and cleaned as necessary.

- A complaints log shall be maintained by the construction site manager and in the event of a complaint relating to dust nuisance, an investigation shall be initiated.

With the implementation of the above mitigation measures, the effects of the construction phase on air quality will be not significant, and the risk of impacts reduced to Negligible.

Monitoring

If the construction contractor adheres to good working practices and the mitigation measures are in place, the levels of emissions generated are assessed to be minimal and are unlikely to cause an impact on air quality during the construction phase, there is no monitoring recommended.

Mitigation and Monitoring During Operation

No mitigation measures are required as the operational phase of the proposed development as it is predicted the operational phase will not generate air emissions that would have an adverse impact on local ambient air quality under current EU standards. In terms of nationally reducing emissions that could help contribute towards achieving WHO targets some measures are outlined below as suggested by the latest EPA's 2024 report on air quality in Ireland which include improvements for individuals and local authorities. Particularly the NO2 reducing measures are most relevant currently in helping to work towards the WHO final target 2040.

- Reduce home heating pollution (PM reduction measures): Avoid the use of solid fuels and use cleaner heating systems. Change how dwelling/homes are heated, by using cleaner fuel choices. Make residential units more energy efficient with thermally efficient materials.
- Reduce car pollution (NO2 reduction measures): Leave the car at home if you can for one day a week. Carpool and reduce the number of cars on the road. Use public transport or walk or cycle. Work from home (if possible) for part of your working week. This helps reduce the number of vehicles on the road. Use cleaner transport options i.e. replace diesel vehicles to electric vehicles. Reduce car idling and switch off the engine when the vehicle is stopped.
- Additional facilities to support air emission reduction: Local authorities - provide incentives to reduce car use and support for electric vehicles. Solid fuel regulations – full implementation. Clean/environmentally friendly public transport, maintain and increase investment. Active travel – create more and safer footpaths and cycle lanes for public use.
- All the mitigation measures have the potential to reduce pollutant levels. In concentration reduction terms, none of the measures can be singled out as being more successful than the others, greater reductions could be achieved by implementing multiple measures together.

Monitoring

There is no monitoring recommended for the operational phase of the development as impacts to air quality are predicted to be negligible.

Climate	**Mitigation and Monitoring During Construction Phase** Mitigation measures can be introduced to avoid, reduce, replace and offset carbon emissions associated with the Proposed Development. These measures will follow the mitigation hierarchy, which includes the following approaches: **Avoid:** The avoidance of GHG emissions involves strategies to minimise emissions by avoiding or reducing activities that contribute to them, including: • Energy Efficiency: Use high-performance insulation, windows and roofing materials to minimise heat loss and gain, which will reduce the energy required for heating and cooling. • Electrical Vehicle Charging: The Proposed Development will provide electrical vehicle charging infrastructure to encourage residents to use electric vehicles. **Reduce:** The reduction of GHG emissions focuses on implementing measures that minimise emissions during the Construction Phase. These include: • Local sourcing: The Proposed Development will source construction material from local sources as far as practicable. • Plant and Operations: The Construction Phase will reduce the idling of onsite plant when not in use. **Replace:** The replacement approach involves substituting high-emission activities or materials with lower emission alternatives. These include: • Recycled Materials: The use of recycled materials and aggregates for road pavements and infilling as far as practicable; • Site Equipment: Site equipment worn will be reused as far as practicable. **Offset:** Offset measures involve compensating for the unavoidable GHG emissions by investing in activities that reduce GHG emissions elsewhere. These include: • Landscaping: Facilitate landscape design that promotes tree and shrub growth as far as practicable. **Mitigation and Monitoring During Operation Phase** • Waste Management: Effective waste management practices, including recycling and composting programmes, to minimise landfill waste and associated methane emissions.
Noise and Vibration	**Mitigation and Monitoring During Construction Phase** The assessment of the proposed development has identified construction stage noise will not be compliant with typical limit values at most NSRs. The following measures are therefore recommended to minimise the potential for disturbance due to noise emissions from the proposed development. Proper application of these measures should reduce noise emissions less than those predicted in this report. In advance of construction phase commencement, the appointed contractor will submit a CEMP to the Council for approval. Reference should be made to BS 5228:

Noise control on construction and open sites which provides detailed guidance on the control of noise from demolition and construction activities.

In particular, it is proposed that various practices be adopted during general construction activities which include (but are not limited to) the following:

- Establishing channels of communication between the contractor / developer, Local Authority and residents.
- Appointment of a site representative responsible for matters relating to noise.
- Provision of 2.4m high perimeter hoarding around the site boundary.
- Selection of plant with low inherent potential for generation of noise.
- Erection of barriers as necessary around items such as generators or high duty compressors.
- Placement of noisy plant as far away from sensitive properties as permitted by site constraints.
- Avoiding unnecessary revving of engines and switch off idling engines / equipment when not in use.
- Restricting construction activities to daytime periods only.
- Use of acoustic enclosure for high noise impact activities, such as breaking;
- Turning off / powering down plant when not in use;
- Turning off HGVs when not in use;
- Reduction in drop heights of incoming materials;
- Appointing project liaison officer to communicate with locals regarding noise works, their duration and organising construction phase noise monitoring;
- Strict controls on construction hours to prevent noise works occurring early morning or into the evening period; and,
- Inclusion of response procedure within CEMP to noise complaints and noise breaches.

The Contractor will ensure these measures required to control noise emissions will be in place and all workers on the Site are kept aware of them through on-site toolbox talks.

It is also recommended that when construction activities are carried out in the vicinity of the residential dwellings near each common boundary, that they be managed / coordinated with local residents of the adjacent dwellings in order to minimise potential noise impact as far as practicable.

Monitoring

The operator should consider conducting noise monitoring for the construction phase to assure that limits will not be exceeded at the Phase 2 boundaries.

This monitoring should be undertaken during the construction phase, particularly during critical periods and at sensitive locations. The proposed monitoring locations are shown in Figure 10-9 below, subject to the appointed contractors programme of works and agreement with the Competent Authority.

Mitigation and Monitoring During Operation Phase

	Based on the results of the assessment, all operational noise emission levels are predicted to be with the established criteria limits and below the ambient noise levels in the vicinity of the nearest residential receptors. The only mitigation measures that were deemed to be required in this instance were as follows: • Residential building heat pumps shall be selected to have maximum sound pressure levels no louder than 48dB LAeq,T at 1m. • A noise assessment of the proposed development building services should be carried out by a qualified acoustic consultant during the design stage to confirm compliance with the relevant criteria established in this chapter. • Primary Care Centre & Café / Retail Building services plant shall be selected to have maximum sound pressure levels no louder than 65dB LAeq at a distance of 1m from the unit or building façade (or have noise control measures incorporated to achieve the same). **Monitoring** No operational monitoring is required.
Biodiversity	**Mitigation and Monitoring During Construction Phase** **Habitats / Flora** The extent of vegetation clearance will be limited to the area required to facilitate construction. All vegetation, including hedgerows/treelines, woodland and other semi-natural habitats, not required to be cleared should be fenced off as part of site preparations and protected/managed as per the landscape specification during construction. In particular, mature trees shall be retained and protected wherever possible, with felling being a last resort only to be used where absolutely necessary to facilitate construction. **NE Woodland** The design of the proposed access road has gone through several iterations in order to minimise negative impacts on the north-eastern woodland. This included i) moving the crossing point to the northerly extent of the woodland to prevent woodland severance and ii) re-design of the access road to minimise the interface between the woodland and the proposed access road. However, as potential impacts cannot be entirely avoided, a series of appropriate mitigation measures are being designed. A planting scheme aimed at mitigating loss of woodland / trees has been developed by the landscape architect in consultation with project ecologists for lands immediately south of the north-eastern woodland. This area has been chosen as it would extend the north-eastern woodland further to the south further reinforcing a woodland corridor along the eastern side of the site (which includes landscaping along the N20) and providing greater ecological connectivity with woodland outside the southern site boundary and to Blarney Bog pNHA beyond. This area is also to be used for the creation of Sustainable Urban Drainage wetlands (SuDS). The approach to planting will therefore include: -

- Wet woodland option in / around the proposed SuDS wetlands focusing on trees such as Alder (Alnus glutinous).
- Planting of trees along the fringes of the access road / SuDS wetlands in clusters (following the Miyawaki tree planting methods).
- Planting of oak trees between the wetlands and the boundary woodland in order to replace any felled oak trees in time and create an oak based native woodland.
- Trees such as alder will mature in the short-medium term, while oaks will take longer (long term) to replace those lost to facilitate construction of the proposed access road.

No further mitigation measures are proposed for habitats and flora.

Invasive Species

While no species listed on the 3rd Schedule of the Natural Habitats Regulations or EU IAS Regulations, were recorded, if planning is granted it is possible that a number of years would elapse before any site works would be undertaken. Therefore, a pre-construction invasive alien plant species (IAPS) survey should be undertaken to determine if any such species are present on site; to identify their precise locations and extents of all IAPS on site, the Contractor's ecologist will map the distribution and extents of all IAPS within and adjoining the red-line boundary and prepare an IAPS Management Plan, taking into account:

- The specific IAPS present and the scale and extent of infestation,
- The sensitivity of the local environment,
- The growth stage/season of the plants, and
- The construction sequence/programme.

The IAPS Management Plan will be prepared in agreement with the Employer or the Employer's Representative and in accordance with the following:

- TII (2020a) The Management of Invasive Alien Plant Species on National Roads – Standard. GE-ENV-01104. December 2020. Transport Infrastructure Ireland, Dublin.
- TII (2020b). The Management of Invasive Alien Plant Species on National Roads – Technical Guidance. GE-ENV-01105. December 2020. Transport Infrastructure Ireland, Dublin.

The following shall be implemented during the construction stage (including advance works):

- The IAPS Management Plan will be implemented by the Contractor with the advice and assistance of their ecologist.
- The 'toolbox talk' for all persons entering the site will include an overview of the IAPS present on site, their identification, the importance of controlling them/preventing their spread, and the responsibilities of site staff in avoiding any spread of IAPS.
- The Contractor will ensure that all vehicles, plant, equipment and PPE intended for use on site are dry, clean and free from debris and plant material prior to being brought to site.
- A dedicated and clearly marked cleaning facility/wash-down area will be strategically placed in a contained area on site for use by staff, vehicles and machinery.

- All vehicles and equipment that have been used in a contaminated zone will be thoroughly pressure-washed in the wash-down area each time they leave site and once work in that zone is complete. This includes footwear, personal protective equipment (PPE), tools, and other light equipment.
- This facility will be located at least 20m from any watercourse and be appropriately bunded to prevent run-off.
- Material gathered in this facility will be appropriately stockpiled and treated along with other contaminated material.
- Soil management during the works will be in accordance with Section 5.5 of NRA (2006b).
- All imported materials (e.g. fill and topsoil) will be sourced from licensed suppliers who shall certify that in advance of delivery that any such materials are free from IAPS material, especially propagules such as seeds or rhizome fragments.
- The Contractor will implement appropriate controls on the movement of machinery and materials in IAPS-contaminated zones.
- Where it is necessary to work in contaminated zones, every effort will be made not to use vehicles with caterpillar tracks.
- Vehicles leaving contaminated zones will be confined to marked haulage routes protected by root barrier membranes or be pressure-washed before leaving the zone.
- Any Ash trees or fallen Ash branches or leaf litter to be removed will be assumed to be infected with Hymenoscyphus fraxineus, the causal agent of 'Ash dieback disease'. Any Ash material arising will be stockpiled appropriately and disposed to a licenced landfill, along with all other IAPS-contaminated material.
- In relation to stockpiling of IAPS-contaminated material: -
    a. Any such material will be stockpiled separately from other material and clearly marked as contaminated.
    b. The length of time for which such material is stored on site will be kept to a minimum.
    c. Measures will be implemented to prevent any run-off from stockpiles of contaminated material which could convey IAPS propagules to watercourses.
    d. Only vehicles that are deemed to be bio-secure (i.e. sealed so that no soil can escape) will be used to transport IAPS-contaminated material and will be thoroughly pressure-washed in the wash-down area before leaving site.
- The Contractor's ecologist will oversee and keep a record of the implementation of the IAPS Management Plan and all works relating to IAPS, as per TII (2020a, b). In particular, they will: -
    a. Inspect the demarcation and signage of contaminated zones, the cleaning/wash-down facility and IAPS material stockpiling area prior to their use,
    b. Directly supervise and document all IAPS removal works,
    c. Carry out weekly inspections of the site for compliance with the biosecurity measures detailed in the IAPS Management Plan, and
    d. Provide monthly updates to the Employer or the Employer's Representative on the implementation of the IAPS Management Plan.

In addition, the proposed development and adjoining areas will be monitored for regrowth of IAPS for a minimum of 2 years. Any regrowth of treated IAPS will be accurately mapped and reported to Cork City Council. The removal of IAPS may be considered successful after two consecutive growing seasons with no sign of regrowth from the removed stands.

Terrestrial Mammals

Based on the results of the desk studies and field surveys undertaken to inform this chapter on biodiversity there are no bat roosts or any breeding or resting places of other protected mammals within or immediately adjacent to the proposed development and, therefore, there is no requirement for any licences under either Section 23 of the Wildlife Act or Regulation 54 of the Habitats Regulations.

However, due to the presence of an active badger sett to the south of the Phase 2 proposed development boundary and the mobility of such species and consequent potential for changes in their distribution in the time between the surveys which informed this chapter on biodiversity the granting of any planning permission and commencement of construction, the following pre-construction surveys will be undertaken in advance of any works commencing on site (including preparatory works): -

- Identification of any breeding or resting places of protected non-volant mammals, e.g. badgers; and,
- Inspections for roosting bats at trees with potential bat roost features.

These surveys will be undertaken by a suitably qualified and experienced ecologist (appointed by the Contractor) and in the appropriate survey seasons. Inspections of potential bat roost features must be undertaken no more than 1-2 days prior to proposed felling.

Birds

In order to protect nesting birds and other wildlife, Section 40 of the Wildlife Act makes it an offence to "cut, grub, burn or otherwise destroy, during the period beginning on the 1st day of March and ending on the 31st day of August in any year, any vegetation growing on any land not then cultivated". However, this does not apply to "the clearance of vegetation in the course of road or other construction works or in the development or preparation of sites on which any building or other structure is intended to be provided". Notwithstanding this, every effort shall be made to avoid cutting/felling trees or clearing vegetation during this period.

Where tree felling or vegetation clearance is necessary between 1st March and 31st August, a suitably qualified and experienced ecologist will inspect the trees/vegetation and identify any active bird nests present. Any active nests will be protected and surrounding cover not cleared until such time as the nest is no longer active, as advised by the ecologist.

Bats

Loss of Roosting Habitats

All trees scheduled to be felled shall be surveyed for potential or actual tree roosts 1-2 days prior to felling by a suitably qualified ecologist/ bat specialist. If no evidence of bat usage is found during the survey, development can commence. Should bats be found, development will be delayed, and a derogation license will be required from NPWS wildlife licencing section.

The outbuilding located at the south of the site shall be surveyed for the presence/absence of bats during the bat activity period (May to September) prior to the commencement of works. In the event that no evidence of bat usage is found during the survey, development can commence. Should bats be found, development will be delayed, and a derogation license will be required from NPWS wildlife licencing section.

Loss of Foraging and Commuting Habitat

The landscaping proposals include the retention of most of the hedgerows at the site. Ring Wood adjacent to the southern site boundary and the woodland at the north of the site. In order to protect foraging and commuting habitat, existing trees adjacent to the proposed construction area which will not be removed shall be protected from any accidental damage during construction through use of measures such as fencing. Protective fencing barriers will be installed as outlined in Section 6.2, Barriers and Ground Protection, of BS 5837. Measures shall be taken to ensure that trees and hedges being retained are incorporated into the development without being impacted upon. Protective fencing will be provided around trees and woodland vegetation being retained and this will enclose their Root Protection Areas (RPAs). The fencing will be at least 2.3m.

To mitigate for the loss of trees and hedgerow, the proposed landscaping plans incorporates the planting of compensatory woodland at the north and east of the site and planting of native tree species in a wetland amenity area at the east of the site. The planting scheme ensures connectivity to linear/ woodland habitats in the wider landscape.

Lighting

To minimise disturbance to bats and other fauna that are active at night, construction operations during the hours of darkness should be kept to a minimum. In circumstances where, during the bat activity period (April to September), daylight hours stretch beyond the likely permitted hours of operation on site, there will be no requirement for lighting to be used on the site during this period.

Aquatic Ecology / Water Quality

A Construction Environmental Management Plan (CEMP) has been written by MHL for the proposed development. The CEMP will assist the contractor in preventing, minimising, or managing environmental effects during the construction phase of the development. The CEMP was designed in accordance with standard best practice guidance outlined in the following: -

- 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); and
- Environmental Good Practice on Site (3rd edition) (C692).

Detailed control measures are set out in Section 15.5.2 of the Water chapter.

Mitigation and Monitoring During Operation Phase

Habitats / Flora

A detailed landscape specification has been developed by a Landscape Architect to maximise the biodiversity value of the final design (refer to accompanying Landscape Masterplan and Landscape Design Rationale (CSR, 2025a) which accompanies this application; as well as the Tree Survey report, CSR, 2025b). In particular, the landscape plan/specification will maximise the quantity, quality, diversity and connectivity of habitats within the finished site. To that end, the development of the landscape specification will be overseen by a suitably qualified and experienced ecologist and have regard to the following guidance documents: -

- Cork City Council (2021). Cork City Heritage and Biodiversity Plan, 2021-2026. Cork City.
- All-Ireland Pollinator Plan 2021-2025. National Biodiversity Data Centre Series 25. National Biodiversity Data Centre, Waterford. March 2021.
- Cork County Council Recommended List of Native Tree and Shrub Species for Residential & Industrial Developments, Version 2. CCC Ecology Office, Cork County Council, Cork. June 2022.
- Lundy, M.G., Aughney, T., Montgomery ,W.I. and Roche, N. (2011). Landscape conservation for Irish bats & species specific roosting characteristics. Bat Conservation Ireland.
- TII (2006). A Guide to Landscape Treatments for National Road Schemes in Ireland. GE-ENV-01102. February 2006. Transport Infrastructure Ireland, Dublin.

The design of landscape measures involved close consultation between the landscape architects, ecologists and designer of SuDS drainage measures.

Salvage and Temporary Removal

Topsoil arising on site from areas of different grassland habitats shall be stockpiled separately for re-use on site as part of the landscaping. The locations, heights etc. of stockpiles for topsoil's will be detailed in the landscape specification. The objective of this measure is to minimise the export and import of soil and to preserve as much as possible the local seedbank and soil conditions on site. Soils contaminated with IAPS or hazardous materials shall not be re-used.

Habitat Replacement and Creation

The methodology for establishing all new or replacement landscaping, including topsoil's, grasslands, hedgerows, treeline and swales/SuDS feature, will be established in the landscape specification, following the principles set out below. Proposed planting mixes are set out below in Figure 11 19.

PLANTING SCHEDULE

STREET TREES-NATIVE. All trees to have straight, unsupported leaders with symmetrical crowns.	Height / girth	Qty.no
Betula pendula*	18-20cm gth. RB	101
Sorbus aucuparia*	18-20cm gth. RB	101
Prunus padus	18-20cm gth. RB	101
SPECIMEN ORNAMENTAL POLLINATOR TREES	**Height / girth**	**Qty.no**
Amelanchier x grandiflora 'Robin Hill'	16-18cm gth. RB	13
Malus tschonoskii	16-18cm gth. RB	12
Pyrus calleryana 'Chanticleer'	16-18cm gth. RB	12
OPEN SPACE TREES -NATIVE -to be under-planted with bulbs & perennials	**Height / girth**	**Qty.no**
Quercus petraea*	16-18cm gth. RB	18
Sorbus aucuparia*	16-18cm gth. RB	18
Prunus avium*	16-18cm gth. RB	18
Alnus glutinosa	16-18cm gth. RB	10
Pinus sylvestris	120-150cm, RB	18
GARDEN TREES. All trees to have straight, unsupported leaders with symmetrical crowns.	**Height / girth**	**Qty.no**
Prunus*, Pyrus and Malus* species	6-8cm gth. RB	141
NATIVE HEDGEROW / SCREENING TREES 3m center spacing	**Height / girth**	**Qty.no**
Betula pendula*	8-10cm gth. BR	21
Quercus robur*	8-10cm gth. BR	20
Alnus glutinosa	8-10cm gth. BR	20
Pinus sylvestris	8-10cm gth. BR	20
Sorbus aucuparia*	8-10cm gth. BR	20
Prunus avium*	8-10cm gth. BR	21
COMPENSATION TREES 3m center spacing	**Height / girth**	**Qty.no**
Betula pendula*	8-10cm gth. BR	22
Quercus robur*	8-10cm gth. BR	20
Alnus glutinosa	8-10cm gth. BR	22
Sorbus aucuparia*	8-10cm gth. BR	22
SUDS AMENITY / BIODIVERSITY AREA TREES	**Height / girth**	**Qty.no**
Betula pendula*	8-10cm gth. BR	88
Quercus robur*	8-10cm gth. BR	78
Alnus glutinosa	8-10cm gth. BR	88
Salix spp.*	8-10cm gth. BR	88
COMPENSATION HEDGEROW WHIPS MIX 1.5m center spacing	**Height / girth**	**Qty. %**
Crataegus monogyna*	90-120cm high, BR	30
Prunus spinosa*	90-120cm high, BR	20
Viburnum opulus*	90-120cm high, BR	10
Ilex aquifolium*	90-120cm high, BR	10
Corylus avellana*	90-120cm high, BR	10
Euorymus europaeus	90-120cm high, BR	10
Rosa canina*	90-120cm high, BR	10
NATIVE HEDGEROW WHIPS MIX 1.5m center spacing	**Height / girth**	**Qty. %**
Crataegus monogyna*	90-120cm high, BR	30
Prunus spinosa*	90-120cm high, BR	20
Viburnum opulus*	90-120cm high, BR	10
Ilex aquifolium*	90-120cm high, BR	10
Corylus avellana*	90-120cm high, BR	10
Euorymus europaeus	90-120cm high, BR	10
Rosa canina*	90-120cm high, BR	10
SHRUB AND GROUNDCOVER POLLINATOR PLANTING- plant in groups of same species	**Size**	**Qty. %**
Rosmarinus officinalis	3L, PG	10
Hebe sp.*	3L, PG	10
Prunus tenella	3L, PG	8
Potentilla fruticosa	3L, PG	8
Skimmia japonica	3L, PG	8
Lavandula angustifolia 'Hidcote'*	3L, PG	10
Stachys byzantina	3L, PG	7
Erysimum 'Bowles's Mauve'*	3L, PG	10
Berberis darwinii	3L, PG	7
Bergenia 'Eroica'	3L, PG	7
Sarcococca hookeriana	3L, PG	8
Elaeagnus angustifolia	3L, PG	7
Ajuga reptans*	3L, PG	7
Hedera helix*	3L, PG	8
Origanum vulgare*	3L, PG	7
Verbena bonariensis*	3L, PG	7
BULBS & PERENNIALS MIX- plant in drifts	**Size**	**Qty. %**
Typical species wil include:		
Anemone nemorosa, Geranium robertianum, Hyacinthoides non-scripta*, Muscari 'Blue Spike', Oxalis acetosella, Primula vulgaris*, Viola riviniana, Colchicum sp., Crocus sp., Galanthus nivalis, Salvia sp., Anemone × hybrida, Anemone hupehensis, Aster sp., Chrysanthemum sp., Dahlia sp., Helleborus sp., Rudbeckia 'Goldstrum' Calamagrostis 'Karl Foerster', Stipa 'Ponytails'	bulbs, corms, & p9's	100
IRISH WILDFLOWER CONSERVATION	**Size**	**Qty. %**
Species to local origin. May include		
Black Meddick, Centaury, Corn Marigold, Corn Poppy, Cornflower. Corncockle, Cowslip, Devil's Bit Scabious, Eyebright, Kidney Vetch, Lady's Bedstraw, Marjoram, Scented Mayweed, Ox-eye Daisy, Red Bartsia, Red Campion, Red Clover, Selfheal, Sorrel, St Johnswort, Yarrow, Yellow Rattle	Seed mix	100

* Plant species identified by ecologist as favourable for bats

Figure 11-1: Planting Proposals *for the proposed development (from Landscape Design Rationale, CSR, 2025a)*.

Post-construction

The implementation of the landscape specification will continue into the operational phase with the establishment and ongoing management of landscaping. Ongoing management will focus in particular on preserving and, where possible, enhancing the quality and diversity of habitats present in the cycleway corridor.

Particular attention should be paid to the requirement for annual management of annual wildflower communities, in order to maintain and, where possible, enhance these communities, for their inherent botanical interest and also for their ecological provisioning function for invertebrates and birds and supporting ecosystem services for agriculture.

Fauna

No further mitigation measures are proposed.

Bats

Lighting

The protection of dark refuges is essential for bats, particularly in urban and suburban areas. Careful design of the lighting will be important to ensure that the residential development does not create barriers for bats commuting and foraging at the site, while maintaining health and safety requirements for human use. This is particularly important for bat foraging/commuting habitat within, and at the edge of, retained hedgerow and woodland habitats at the site.

The following general principals will be followed in relation to the overall lighting plan for the proposed development site: -

- Lighting design will be flexible and be able to fully take into account the presence of protected species. Therefore, appropriate lighting shall be used within the proposed development and adjacent areas with more sensitive lighting regimes deployed in wildlife sensitive areas, including the foraging areas for bats along hedgerows and woodland edges.
- Dark buffer zones will be used to separate habitats or features from lighting by forming a dark perimeter around them. This shall be used for habitat features noted as foraging and commuting areas for bats. Light spill onto foraging habitat (i.e. hedgerow and woodland edges) shall be avoided.
- Buffer zones will be used to protect dark buffer zones and rely on ensuring light levels (levels of illuminance measured in lux) within a certain distance of a feature do not exceed certain defined limits. The buffer zone can be further subdivided into zones of increasing illuminance limit radiating away from the feature or habitat that requires to be protected. This will apply along foraging habitat.

Luminaire design is extremely important to achieve an appropriate lighting regime. Luminaires come in a myriad of different styles, applications and specifications which a lighting professional can help to select. The following will be considered when choosing luminaires. This is taken from the most recent BCT Lighting Guidelines (BCT, 2023).

- All luminaires used will lack UV elements to reduce impact.

- LED luminaires will be used due to their sharp cut-off, lower intensity, good colour rendition and dimming capability.
- A warm white spectrum (<2700 Kelvins) is recommended to reduce the blue light component.
- Light sources shall feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats.
- Waymarking inground markers (low output with cowls or similar to minimise upward light spill) to delineate path edges.
- Column heights shall be carefully considered to minimise light spill and glare visibility. This should be balanced with the potential for increased numbers of columns and upward light reflectance as with bollards.
- Only luminaires with a negligible or zero Upward Light Ratio, and with good optical control, should be considered - See ILP GN01.
- Luminaires shall always be mounted horizontally, with no light output above 90° and/or no upward tilt.
- Where appropriate, external security lighting shall be set on motion sensors and set to as short a possible a timer as the risk assessment will allow. For most general residential purposes, a 1- or 2-minute timer is likely to be appropriate.
- The use of bollard or low-level downward-directional luminaires is strongly discouraged. This is due to a considerable range of issues, such as unacceptable glare, poor illumination efficiency, unacceptable upward light output, increased upward light scatter from surfaces and poor facial recognition which makes them unsuitable for most sites. Therefore, they should only be considered in specific cases where the lighting professional and project manager are able to resolve these issues.
- Only if all other options have been explored, accessories such as baffles, hoods or louvres can be used to reduce light spill and direct it only to where it is needed. However, due to the lensing and fine cut-off control of the beam inherent in modern LED luminaires, the effect of cowls and baffles is often far less than anticipated and so should not be relied upon solely.

For this development specifically no lighting is proposed within the existing woodland at the north of the site, the proposed areas of compensatory woodland and the proposed wetland amenity area at the east of the site; as such, these areas will remain dark and will valuable foraging habitat for bats during the operational phase.

Enhancement

The following recommendations for enhancement are adapted from Landscape and Urban Design for Bats and Biodiversity (BCT, 2012). To attract nocturnal flying insects, the following planting shall be implemented: -

- Mixtures of flowering plants, trees (including fruit trees) and shrubs to encourage a diversity of insects to sustain bats and other wildlife throughout the year. All new planting shall include pollinator friendly tree species including locally appropriate species listed in the Pollinator Friendly Planting Code . Replacement and new hedgerows shall include a range of different species to provide food throughout the year, for example willows and blackthorn for early season nectar; hawthorn, bramble and rose for summer flowers and autumn berries; ivy for autumn nectar and later winter berries.

- Flowers that vary in colour, fragrance, shape, amount of nectar and time of flowering.
- Pale flowers that are more easily seen in poor light, so attracting insects at dusk.
- Single flowers, which tend to produce more nectar than double varieties.
- Flowers with insect-friendly landing platforms and short florets, like those in the daisy or carrot families.

Other enhancement options include: -

- SuDs features, such as rain gardens
- Integrated bat boxes, also referred to as bat bricks built into the structure of new buildings at the proposed site. The bat bricks should be located where they will receive full/ partial sunlight (facing south, south-west or south-east. The bat bricks will need to be positioned a minimum of 2m above ground and should not be located above windows or doors; near the eaves or gable apex of the building is ideal.

Planting mixes as detailed within the Landscape Masterplan accompanying this submission (CSR, 2025a) have, through consultation with ecologists and relevant guidance (BCT, 2012), been created to maximise pollinator activity within the site to further create and enhance foraging habitat for bat species.

Aquatic Ecology / Water Quality

The surface water strategy and operational stage drainage has been designed by MHL Consulting Engineers and is described in full in the Engineering Report which accompanies this submission (MHL, 2025b). The surface water design employs a series of nature based Sustainable Urban Drainage (SuDS) tools ensuring that the development will: -

- Manage and control runoff volumes and flow rates from impermeable surfaces, reducing the impact of urbanisation on flooding.
- Provide opportunities harvesting rainwater run for use close to where it falls.
- Promote groundwater and aquifer body recharge.
- Protect natural flow regimes in watercourses.
- Encourage evapotranspiration from planted and other storage area.

The nature based Sustainable Urban Drainage tools employed as part of the proposed development are to include: -

- A new wetland area at the eastern edge of the site, along the existing Shean Upper stream.
- Water butts will be placed at residential properties, to serve as rainwater harvesters for gardens, and to provide additional storage volume for attenuation.
- Rooftop rainwater harvesting, for use as irrigation and toilet flushing, will be incorporated into the drainage design for the proposed creche.
- Permeable paving will be placed where site conditions and uses allow. Each house will be provided with a permeable paving driveway.
- Swales, soakaways, and bioretention areas will be used to increase attenuation storage and provide passive filtration of pollutants in surface water. These areas are shown on the Drainage Masterplan Drawing accompanying the planning application.

	• Hydrocarbon/Petrol interceptors are included in the proposed drainage network. These will prevent contamination of nearby watercourses. • Green roofs and tree pits to provide further attenuation and filtration. **Monitoring** No monitoring is proposed at this time.
Archaeology and Cultural Heritage	**Mitigation and Monitoring During Construction Phase** All topsoil stripping across the proposed development area will be subject to archaeological monitoring, which will be carried out by a suitably qualified archaeologist. Should any features of archaeological significance be identified, including the potential burial site of the RIC constable, further mitigation will be required, such as preservation by record or in situ. An Osteo-archaeologist will also be made available if any human remains are identified. Any further mitigation will require agreement from the National Monuments Service of the DoHLGH and Cork City Archaeologist. During the course of archaeological monitoring described above, a record will be made of the section of townland boundary to be removed by the proposed access road. The three post medieval structures to be retained and converted as part of the proposed development will be subject to a full written and photographic record, prior to the commencement of the development. This will be carried out by a suitably qualified heritage specialist. **Monitoring** The mitigation measures detailed above would also function as a monitoring system during construction to allow the further assessment of the scale of the predicted impacts and the effectiveness of the mitigation measures. **Mitigation and Monitoring During Operation Phase** No mitigation is required with regards to the archaeological, architectural and cultural heritage resource.
Landscape & Visual Assessment	**Mitigation and Monitoring During Construction Phase** The proposed remedial measures relate to implementation of appropriate site management procedures as outlined in the Outline Construction Management Plan (CEMP) prepared by MHL which accompanies the planning application – such as the control of site lighting, delivery of materials and site boundary hoarding to minimise impacts on receptors in the vicinity of the site. **Mitigation and Monitoring During Operation Phase** Mitigation by design was applied during the design development process. The proposed development has been designed to deliver an accessible high-quality residential neighbourhood in response to the zoning of the site, and the aspirations

	of Cork City Development Plan in respect of Green and Blue Infrastructure. Conservation of existing site trees and habitats has been a key consideration through design development, aimed at minimising the loss of existing site habitat, and ensuring that the new residential development benefits from the natural assets of the site in terms of place-making and local distinctiveness. Remedial mitigation includes a comprehensive landscape strategy for the delivery of public open spaces, break out spaces, play provision, pedestrian and cycle connectivity and green infrastructure measures. Open spaces and connectivity corridors will accommodate tree and hedgerow planting to mitigate the loss of some existing site vegetation. The emphasis will be on the use of native species in line with Green and Blue Infrastructure objectives set out in Cork City Council's Development Plan 2022-2028 and the All-Ireland Pollinator Plan. Planting proposals are shown on Landscape Masterplan drg. no. BLR-2-02-XX-00-DR-CSR-LA-100.
Land, Soils, Geology and Hydrogeology	**Mitigation and Monitoring During Construction Phase** A Construction Environmental Management Plan (CEMP) has been written by MHL for the proposed development. The CEMP will assist the contractor in preventing, minimising, or managing environmental effects during the construction phase of the development. The CEMP was designed in accordance with standard best practice guidance outlined in the following: • 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); and • Environmental Good Practice on Site (3rd edition) (C692). The CEMP also includes site-specific measures to mitigate potential effects on land and soils, including groundwater. These are outlined below. **Chemical Pollution** Mitigation measures for the protection of groundwater and soils from chemical pollution involve environmental operating plans, chemical storage, and Emergency Response Procedures. At construction stage, the following mitigation measures are proposed: • The contractor will construct a site compound at a location remote from any water bodies or open excavations, at least 10m from any drains. The exact location of the compound will be confirmed in advance of works and agreed with the local authority. The compound may be moved or altered dependent on construction needs over the course of the project; • Any lubricants or hydraulic oils will be bunded in bunds that can contain 110% volume of the largest container. Absorbent pig bags will be kept in the site offices. These will be disposed of correctly if used and replaced with new ones immediately. Disposal records for used adsorbent will be retained by the Site Manager; • All materials taken on-site will be clearly labelled and stored in sealable containers;

- The diesel fuel tank will be adequately bunded (110%) and the filling nozzle will be stored within the bunded area. The Site Manager will as part of their daily site walkaround check the integrity of the fuel tank(s). The condition of the tanks will be recorded by the Site Manager;
- Re-fuelling of construction vehicles and the addition of hydraulic oils or lubricants to vehicles, will take place in a designated area which will be away from any existing surface water drains which could also provide pathways to the underlying geology;
- The contractor will ensure that no hazardous or noxious materials enter a watercourse or drain or open excavation. Should this situation arise emergency procedures will be activated;
- During all works the weather forecast will be monitored and a contingency plan developed to prevent damage or pollution during extreme weather. Machinery and equipment will not be left on-site during such events and will be removed beforehand;
- Trucks delivering concrete to the site will not be allowed to washout their vehicles on site. Only washing of the chute will be allowed. The washing facilities will be remote from watercourses and will be bunded by a low earthen berm.
- The Contractor is to clean equipment prior to delivery to the site. The Contractor is to avoid using any equipment which leaks fuel, hydraulic oil or lubricant. The Contractor is to maintain equipment to ensure efficiency and to minimise emissions;
- Should mobilisation of soil particles/pollution be noted in the course of weekly monitoring by the Site Manager, works will stop temporarily, and the Site Manager will initiate the interception and treatment of pollution/silt run-off;
- Precast elements should be maximised to avoid wet concreting in close proximity to water.

Silt and suspended solids

Mitigation measures for the protection of groundwater quality from silt and suspended solids on site involve silt control, particularly at any drains or open excavations.

At construction stage, the following mitigation measures will be implemented:

- The contractor will construct a site compound at a location remote from any drains.
- All soil stockpiles will be covered (vegetated or with tarpaulins/similar material) to minimise the risk of rain runoff/wind erosion. Vegetation will be established as soon as possible on all exposed soils.
- Detailed silt control methods, e.g., silt fencing and silt bags, dewatering, silt sumps, shall be put in place downstream of exposed soils or soil stockpiles to contain surface water runoff from the site, in accordance with Section 8.8 of the CEMP.

Import and Export of Soil

Fill material will be tested and imported from a licensed facility to ensure no external contamination is introduced to the soil and geological environment.

	The contractor will be required to carry out a waste characterisation of the material that will be taken off site for disposal. A waste acceptance criteria (WAC) analysis and asbestos levels should be determined on any material that will be taken off site for disposal. WAC analysis and asbestos testing was carried out during Site Investigations by Priority Geotechnical in 2023 and Ground Investigations Ireland in 2025; no asbestos was detected, and the samples were classified as being suitable for inert landfill disposal. The acceptance of material at a licenced soil recovery facility will be subject to the approval of the facility operator. **Monitoring** During construction, visual and chemical monitoring of treated surface water will take place to ensure that water draining from the site is not affected by the proposed development. This will take place during the regular site audits during the construction process. Surface water collected in sumps will be monitored prior to discharge. Samples will be taken, and the pH, conductivity, chemical oxygen demand, total petroleum hydrocarbons, and suspended solids levels will be recorded. The monitoring results will be compared to the allowable limits given in the Surface Water Regulations. If the results show an exceedance in the allowable levels, then the appointed contractor will review the mitigation measures and remedy them to lower the levels of the pollutant. A record of these upgrades/changes to the mitigation measures will be recorded. The contractor is required to monitor the weather forecasts to inform the programming of earthworks and stockpiling of materials. If the mitigation measures in place during construction are observed to be insufficient or inefficient (i.e., elevated suspended solids, pH, conductivity, chemical oxygen demand, or total petroleum hydrocarbons are detected during monitoring prior to discharge), the discharge will be halted, and the mitigation measures will be revised and reimplemented. Further sampling will verify the success of the revised/updated surface water management. The affected water will be conveyed to the revised/updated treatment train and put through a hydrocarbon interceptor and settlement tanks to ensure compliance with the required levels in the treated water. **Mitigation and Monitoring During Operation Phase** No significant effects are anticipated during the operational phase. Therefore, no mitigation measures have been proposed. No operational phase monitoring is required for land and soils.
Water	**Mitigation and Monitoring During Construction Phase** Mitigation measures have been developed with the source-pathway-receptor links in mind and are designed to break this link either by removing the source or disrupting the pathway for pollution. **Best Practice Construction Methods**

A preliminary Construction Environmental Management Plan (CEMP) has been prepared for the proposed scheme and will be put in place by the appointed contractor. The preliminary CEMP was prepared in accordance with the following:

- National and International Legislation;
- Environment Liability Regulations; and
- Best Management Guidelines.

The CEMP will be used by the contractor to prevent and minimise environmental effects during construction. It includes the below to mitigate impacts on water:

Fine Sediment Pollution

Mitigation measures for the protection of water quality from fine sediment pollution involve silt control, particularly at any drains or open excavations.

At construction stage, the following mitigation measures will be implemented:

- The contractor will construct a site compound at a location remote from any drains.
- All soil stockpiles will be covered (vegetated or with tarpaulins/similar material) to minimise the risk of rain runoff/wind erosion. Vegetation will be established as soon as possible on all exposed soils.
- During extended dry periods, soil stockpiles will be dampened periodically to minimise the risk of airborne particles entering watercourses.
- Any temporary storage of spoil, hardcore, crushed concrete or similar material will be stored as far as possible from any surface water drains and stored in receptacles where possible. To minimise the risk of contamination, the stockpiled material will be removed off-site as soon as possible.
- Surface water drain gratings in areas near or close to where stockpiles are located will be covered by appropriate durable polyurethane covers or similar.
- Should mobilisation of soil particles/pollution be noted in the course of weekly monitoring by the Site Manager, works will stop temporarily, and the Site Manager will initiate the interception and treatment of pollution/silt run-off.
- A variety of silt control methods, e.g., silt fencing and silt bags, dewatering, silt sumps, shall be put in place downstream of exposed soils or soil stockpiles to contain surface water runoff from the site, in accordance with Section 8.8 of the CEMP.
- Monitoring the cleanliness of the adjacent road network, implementation of dust suppression, and vehicle wheel wash facilities.
- Concrete batching for in situ concrete pours will occur off-site, and concrete truck wash down will be conducted off-site at an authorized concrete batching plant, ensuring full compliance with relevant planning and environmental consents.

Accidental Spills and Leaks

Mitigation measures for the protection of water quality from accidental spills and leaks involve environmental operating plans, chemical storage, and Emergency Response Procedures.

At construction stage, the following mitigation measures will be implemented:

- The contractor will construct a site compound at a location at least 10m remote from any water bodies or drains. The exact location of the compound will be confirmed in advance of works and agreed with the local authority. The compound may be moved or altered dependent on construction needs over the course of the project;
- Any lubricants or hydraulic oils will be stored in bunded containers in designated bunded areas. Deliveries of fuel and chemicals will be supervised;
- Spill protection equipment such as absorbent mats, socks and sand will be available to be used in the event of an accidental release. These will be disposed of correctly if used and replaced with new ones immediately. Disposal records for used adsorbent will be retained by the Site Manager;
- All materials taken on-site will be clearly labelled and stored in sealable containers
- The diesel fuel tank will be adequately bunded (110%) and the filling nozzle will be stored within the bunded area. The Site Manager will as part of their daily site walkaround check the integrity of the fuel tank(s). The condition of the tanks will be recorded by the Site Manager;
- Re-fuelling of construction vehicles and the addition of hydraulic oils or lubricants to vehicles, will take place in a designated area which will be away from any existing surface water drains which could also provide pathways to the underlying geology;
- The contractor will ensure that no hazardous or noxious materials enter a watercourse or drain. Should this situation arise emergency procedures will be activated;
- During all works the weather forecast will be monitored and a contingency plan developed to prevent damage or pollution during extreme weather. Machinery and equipment will not be left on-site during such events and will be removed beforehand;
- Concrete washout will not be allowed within 10 metres of an existing surface water drainage point. Washouts are only allowed to take place into containment in designated areas with an impervious surface;
- The Contractor is to clean equipment prior to delivery to the site. The Contractor is to avoid using any equipment which leaks fuel, hydraulic oil or lubricant. The Contractor is to inspect and maintain equipment to ensure efficiency and to minimise emission.;
- Precast elements will be maximised to avoid wet concreting in close proximity to water.
- All storm water discharge during construction will be discharged through a mobile oil filter separator system, until construction programme has reached the stage when surface water discharges can be passed through the two specified newly installed hydrocarbon interceptors;
- A licenced waste management company will be retained to maintain the oil interceptors and the attenuation tank initial chamber: as necessary (at least annually).

Changes to runoff and flow pathways

The proposed development will require the removal of the existing site drainage system and provision of a new system. Before the operation of the new drainage

	system, mitigation measures to minimise effects on runoff and flow pathways involve the following: • The contractor will construct a site compound at a location remote from any drains or open excavations • Vegetation will be established as soon as possible on all exposed soils. **Monitoring** During construction, visual and chemical monitoring of treated surface water will take place to ensure that water draining from the site is not affected by the proposed development. This will take place during the regular site audits during the construction process. Surface water collected in sumps will be monitored prior to discharge. Samples will be taken, and the pH, conductivity, chemical oxygen demand, total petroleum hydrocarbons, and suspended solids levels will be recorded. The monitoring results will be compared to the allowable limits given in the Surface Water Regulations. If the results show an exceedance in the allowable levels, then the appointed contractor will review the mitigation measures and remedy them to lower the levels of the pollutant. A record of these upgrades/changes to the mitigation measures will be recorded. The contractor is required to monitor the weather forecasts to inform the programming of earthworks and stockpiling of materials. If the mitigation measures in place during construction are observed to be insufficient or inefficient (i.e., elevated suspended solids, pH, conductivity, chemical oxygen demand, or total petroleum hydrocarbons are detected during monitoring prior to discharge), the discharge will be halted, and the mitigation measures will be revised and reimplemented. Further sampling will verify the success of the revised/updated surface water management. The affected water will be conveyed to the revised/updated treatment train and put through a hydrocarbon interceptor and settlement tanks to ensure compliance with the required levels in the treated water. **Mitigation and Monitoring During Operation Phase** The inclusion of the proposed SuDS features, as per the Engineering Design Report prepared by MHL Consulting Engineers, will help to mitigate against additional surface water runoff and pollution. During the operational phase, regular visual inspection of the silt traps and hydrocarbon interceptors should be carried out to ensure they are operating correctly. No additional mitigation measures are required. **Monitoring** Once operational, silt traps and hydrocarbon interceptors will be visually inspected on a regular or annual basis. Any spillages onsite will be acted upon immediately. No other monitoring measures are required during the operational phase.
Resources and Waste Management	**Mitigation and Monitoring During Construction Phase**

The following mitigation measures will be implemented during the construction phase of the Proposed Development:

A Construction Environmental Management Plane (CEMP) will be prepared, and this will be implemented by the appointed contractor in line with the Best Practice Guidelines and will also include for the Preparation of Resource & Waste Management Plans for Construction and Demolition Projects (CWDP) (EPA 2021a).

The CEMP and CWDP outlines how waste arising during the construction phases of the proposed development will be managed in a way that ensures compliance with the provisions of the Waste Management Acts, 1996, as amended. The appointed contractor will update the CEMP / CWDP in advance of construction commencement.

Adherence to the high-level strategy presented in this CEMP / CWDP 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.

The CWDP addresses the following:

- Description of the project (refer to Chapter 4, Description of the Proposed Scheme and Chapter 5, Construction Strategy).
- Wastes arising including procedures for minimisation/segregated storage/reuse/recycling.
- Estimated cost of waste management.
- Roles and responsibilities for implementing the construction waste management plan.
- Procedures for training of workforce and plan dissemination programme.
- Record keeping procedures.
- Waste collectors, and recycling and disposal sites including copies of relevant permits or licences; and
- Waste auditing protocols.

Using the information identified in this section, the contractor(s) will be required to update the WMP, with its/their detailed procedures and the names of staff with assigned roles in the plan prior to commencement of construction, and as required during the construction of the proposed scheme.

In addition, the following mitigation measures will be implemented:

To minimise waste generation and promote responsible waste management practices, the construction project will incorporate various measures. Building materials will be selected with the goal of minimising waste during the design phase. On-site segregation of waste materials will be implemented to enhance opportunities for off-site reuse, recycling, and recovery. This includes segregating concrete rubble, plasterboard, metals, glass, timber, and leftover materials. Any suitable construction materials and leftovers will be reused on-site whenever possible.

All waste materials will be appropriately stored in designated areas using skips or other suitable receptacles. Hazardous wastes, such as chemicals, solvents, glues, fuels, and oils, will be segregated and stored in appropriate receptacles, often in bunded

areas. A Waste Manager will be appointed by the main Contractor(s) to oversee effective waste management throughout the excavation, and construction phases. Comprehensive training on waste management procedures will be provided to all construction staff. All waste leaving the site will prioritise reuse, recycling, or recovery to minimise materials designated for disposal. Transporting waste off-site will be entrusted to suitably permitted contractors, ensuring compliance with relevant regulations.

Detailed records, including relevant documentation, will be maintained for all waste leaving the site. 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 Article 27 of the EC (Waste Directive) Regulations (2011). 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, and the Southern Region Waste Management Plan 2015 – 2021. It will also ensure optimum levels of waste reduction, reuse, recycling, and recovery are achieved and will promote more sustainable consumption of resources.

Monitoring

The objective of setting targets for waste management is only achieved if the actual waste generation volumes are calculated and compared. This is particularly important during the excavation and construction works, where there is a potential for waste management objectives to become secondary to other objectives, i.e., progress and meeting construction schedule targets. The CEMP specifies the need for a Waste Manager to be appointed, who will have responsibility for monitoring the actual waste volumes being generated and ensuring that contractors and sub-contractors are segregating waste as required. Where targets are not being met, the Waste Manager will identify the reasons for this and work to resolve any issues. Recording of waste generation during the construction phase of the proposed development will enable better management of waste contractor requirements and identify trends. The data should be maintained to advise on future developments.

Mitigation and Monitoring During Operation Phase

Maintenance operations will be undertaken under the jurisdiction of the local authority and in accordance with their waste management plans. 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 Southern Region Waste Management Plan 2015 – 2020 and Cork City Council (Segregation, Storage, and Presentation of Household and Commercial Waste) Byelaws, 2019.

In addition, the following mitigation measures will be implemented:
The residents will be encouraged to ensure on-site segregation of all waste materials into appropriate categories, including (but not limited to):

	• Organic waste • Dry mix Recyclables • Mixed non-recyclable waste • Glass • Waste electrical and electronic equipment (WEEE) • Batteries (non-hazardous and hazardous) • Cooking oil • Light bulbs • Cleaning chemicals (pesticides, paints, adhesive, resins, detergents, etc.) • Furniture (and from time-to-time other bulky waste) and • Abandoned bicycles. The Local Authority or a Management Company, or a combination of both, will take charge of the development, providing residents with color-coded bins or appropriate receptacles for waste segregation. Both entities will ensure that all waste collected from the proposed development site undergoes reuse, recycling, or recovery, whenever feasible. The waste transportation off-site will be handled by approved contractors, directing it to registered, permitted, or licensed facilities. With the implementation of mitigation measures and a substantial rate of reuse, recycling, and recovery, the anticipated impact of the operational phase on the environment is expected to be long term, imperceptible, and neutral. **Monitoring** The waste generated during the operational phase will undergo monitoring to assess its suitability for re-use, recovery, or offsite disposal. This monitoring responsibility will be shared between the Management Company, fulfilling its legal obligations, and the Local Authority, which oversees waste legislation.
Population and Human Health	**Mitigation and Monitoring During Construction Phase** A site Construction and Environmental Management Plan (CEMP) will be prepared by the selected contractor prior to work commencing on site. The main purpose of a CEMP is to provide a mechanism for implementation of the various mitigation measures which are described in this EIAR. An outline Construction Management Plan prepared by MHL Consulting Engineers is included with the planning application. All personnel will be required to understand and implement the requirements of the CEMP and shall be required to comply with all legal requirements and best practice guidance for construction sites. Project supervisors for the construction phase will be appointed in accordance with the Health, Safety and Welfare at Work (Construction Regulations) 2013, and a Preliminary Health and Safety Plan will be formulated during the detailed design stage which will address health and safety issues from the design stages, through to the completion of the construction phases. Adherence to the construction phase mitigation measures presented in this EIAR will ensure that the construction of the proposed development will have an imperceptible and neutral impact in terms of health and safety.

	Monitoring Measures to avoid negative impacts on population and human health are largely integrated into the design and layout of the proposed development. Compliance with the design and layout will be a condition of any permitted development. Monitoring will be undertaken by the Building Regulations certification process and by the requirements of specific conditions of a planning permission. Monitoring of compliance with Health & Safety requirements will be undertaken by the Project Supervisor for the Construction Process. **Mitigation and Monitoring During Operation Phase** The proposed development has been designed to avoid negative impacts on population and human health through; • Incorporating amenity facilities within the layout, including the provision of high quality packs and play areas, and provision for walking and cycling throughout the development; • Landscaping to mitigate against issues arising from microclimate conditions; • The inclusion of a comprehensive foul and surface water management system; • Energy efficient measures; and, • High quality finishes and materials. No significant risks to population and human health have been identified in relation to the operational phase of the development. Accordingly, no further mitigation measures are required.
Material Assets	**Mitigation and Monitoring During Construction Phase** The proposed development is committed to effective construction waste management through adherence to the Resource & Waste Management Plan. A comprehensive Construction and Environmental Management Plan and Construction Traffic Management Plan, submitted with the EIAR, encompasses measures for construction traffic management. This plan will be implemented to safeguard local amenities and ensure the integrity of the local road network during construction. In alignment with recommendations from relevant statutory bodies and providers such as ESB, Networks Ireland, Uisce Éireann, EIR, and Cork City Council, the provision of utilities will be carried out. Additionally, each unit within the development will feature water metering systems to accurately record consumption, contributing to efficient and sustainable water management. **Mitigation and Monitoring During Operation Phase** No mitigation measures are considered necessary during the operational phase. Monitoring measures for the proposed development will adhere to the provisions detailed elsewhere in this Environmental Impact Assessment Report (EIAR) document.

	This ensures a systematic and aligned approach to monitoring that aligns with the established guidelines and considerations outlined throughout the document.
Major Accidents and Disasters	**Mitigation and Monitoring During Construction Phase** All potential risks, direct and indirect, identified during the construction phase were determined to be 'low risk scenarios'. A detailed CEMP will be prepared by the contractor and implemented throughout the works. The CEMP will be a live document and continuously updated to ensure that potential risks of major accidents and/or disasters are identified, avoided, and mitigated as necessary. **Monitoring** Aside from the monitoring measures to be carried out by the contractor, as outlined in the CEMP (e.g., site inspections and audits) and throughout the EIAR, no additional monitoring is considered necessary during the construction phase of the proposed development. **Mitigation and Monitoring During Operation Phase** The fire risk mitigation for the apartments and duplexes, primary care centre and retail/hospitality units will comprise all fire safety measures necessary to comply with the requirements of Part B (Fire) of the Second Schedule to the Building Regulations 1997-2017. It is noted that these measures will be validated under the Building Control Act 1990-2007 through the obtaining, in due course, of statutory Fire Safety Certificates under Part III of the Building Control Regulations 1997-2021 from Cork City Council/Cork City Fire Brigade. Otherwise, the proposed development will be designed and built and managed in line with best international current practices and as such mitigation against the risk of major accidents and/ or disasters will be embedded throughout the design stage. All potential risks, direct and indirect, identified during the operation phase were determined to be 'low risk scenarios'. **Monitoring** No additional monitoring is considered necessary during the operational phase of the proposed development.

Table 21.1: Summary of Mitigation Measures

21.3 Residual Effects

Traffic and Transportation	With the Mobility Management Plan in place, the residual impact of the Phase 2 Proposed Development will be 'not significant', in terms of the development in isolation.
Air Quality	Based on the receiving environment, type and intensity of activities (associated with the proposed development), the residual effects on human health will be negligible.
Climate	The effects of the GHG emissions as a result of the Proposed Development will be not likely and not significant in the context of the sectoral emissions ceilings. It is

	estimated that 16,500 houses would be needed to meet demand during the period 2026 to 2030. GHGs will be generated as a result of the Operational Phase of the Proposed Development, however given the design of the houses and the advancements of renewable energy infrastructure, these emissions are considered to be not significant.
Noise and Vibration	The residual noise effect, based on the proposed emissions, phasing and intensity of the site, the mitigation and practices to be employed and within the context of the existing ambient environment, is deemed to be negligible, negative and local during the operational phase. No significant effect, in relation to noise from the Proposed Development is likely, arising from the assessment findings.
Biodiversity	The biodiversity chapter has examined the biodiversity and baseline ecological conditions of the receiving environment within the site of the proposed development, and assessed the likely effects of the proposed development, individually and in combination with other plans and projects, on the sites, habitats, species and other ecological features of Local Importance (Higher Value) or above which were identified within the footprint of the proposed development and its Zone of Influence. This report has also proposed suitable measures to avoid or reduce the likely effects on those features and evaluated any residual effects. These measures, as well as further ecological enhancements of the proposed development, were developed in line best practice in relation to Biodiversity Net Gain and in close consultation with the landscape and drainage teams. The most significant habitat within the site is the woodland complex of WN6, WN4 & WD1 along the northeastern side of the site. While the design of the access road went through several iterations to minimise loss of woodland, there will still be some loss from within an area categorised as being of Local Importance (Higher Value) – i.e. along the western side of this woodland. Furthermore, 7 no. mature oak trees and 1 no. mature beech tree would also be lost. While such mixed woodland is well represented in the wider Blarney area, the loss of woodland and mature trees remains a significant ecological impact in the local environment, which will be partially offset by the proposed planting within the scheme, including in the biodiversity / SuDS are to the south. As noted, planting has already started within the wider site to allow young trees to become established. On the basis of that assessment, it is concluded that the site of the proposed development, provided that it is implemented in accordance with the measures proposed in this biodiversity chapter, will not give rise to any significant negative effects on the biodiversity or ecology of the receiving environment and will be aligned with the principle of Biodiversity Net Gain. With respect to bats; the effective implementation of the mitigation measures outlined in Section 11.5, such as landscaping and the avoidance of use of lights during the construction phase during the months of April to September, as well as the minimisation of artificial light spill during the operational phase of the development, there will not be any significant negative effects on the conservation status of bat species from the proposed Residential Development, Ringwood.

	In the absence of effective mitigation, there is potential for cumulative impacts on local bat populations arising from the Future Phase 2 development at Ringwood because of loss and severance of foraging and commuting habitat and an increase in artificial lighting at night.
Archaeology and Cultural Heritage	Following the completion of mitigation measures, there will be no significant negative residual impacts upon the archaeological, architectural and cultural heritage resource.
Landscape & Visual Impact	Residual impacts associated with the proposed development relate to the buildings and site access infrastructure which will remain visible in localised views into the future. Such visibility is in line with expectations for residential developments of this scale where new residential is delivered in close proximity to existing neighbourhoods and roads. The extent of residual effect will reduce, however, as tree, shrub and hedgerow planting on the site matures.
Land and Soils	Following implementation of the proposed mitigation measures, the residual effects of the proposed development on land, soils, and hydrogeology will be minimised.
Water	No residual effects identified.
Resources and Waste Management	The application of the outlined mitigation measures will guarantee high levels of reuse, recovery, and recycling at the proposed development site throughout both the construction and operational phases. This approach will contribute to effective pest control across different stages of the development. Furthermore, it will ensure compliance with European, National, and Regional legislative waste standards, along with meeting associated targets for waste management. The management of waste during the construction phase in accordance with the CEMP will meet the requirements of regional and national waste legislation. The residual effect of excavation and general construction waste on the environment during the construction phase will be short term, imperceptible and neutral.
Population and Human Health	It is anticipated that the proposed development will realise positive overall economic and social benefits for the local community and the wider Cork City area. Strict adherence to the mitigation measures recommended in this EIAR will ensure that there will be no negative residual impacts or effects on population and human health from the construction and operation of the proposed scheme. Indeed, the delivery of much needed housing will realise a likely positive effect for the local area.
Material Assets	The proposed mitigation measures suggest that once construction concludes, there will be no residual impacts on the foul water infrastructure. During the operational phase, the residual impacts on both the existing municipal wastewater treatment plant and foul sewer network are projected to be long term but minimal, underscoring the effectiveness of the proposed mitigation strategies. The connection to power and telecommunications networks is not anticipated to yield significant residual impacts during either the construction or operational phases of the development.

	By adhering to the mitigation measures, the potential for significant residual impacts during the construction phase is mitigated. The development is designed to align with Sustainable Urban Drainage Systems (SuDS), minimizing residual impacts on surface water drainage.
Major Accidents and Disasters	**Residual Effects during Construction** The risk of a major accident and/or disaster during the construction of the proposed development is considered 'low' in accordance with the risk evaluation methodology. It is considered that the proposed development will not give rise to significant residual effects. **Residual Effects during Operation** The risk of a major accident and/or disaster during the operation of the proposed development is considered 'low' with regards the risk evaluation methodology. It is therefore considered that there is no significant residual effect(s) during the operation of the proposed development.

Table 21.2: Summary of Residual Effects