PROPOSED LARGE-SCALE RESIDENTIAL DEVELOPMENT AT KILWOGHAN WOODS, CRODAUN, CELBRIDGE, CO. KILDARE

Outline Resource and Waste Management Plan

Seattle Construction Limited

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Outline Resource and Waste Management Plan

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1 INTRODUCTION

DNV was retained by Seattle Construction Limited (hereafter referred to as the Client) to prepare this Resource and Waste Management Plan (RWMP) for the construction works of the Proposed Large-scale Residential Development located at Kilwoghan Woods, Crodaun, Celbridge, Co. Kildare (hereafter referred to as the 'site' and the 'Proposed Development').

A description of the Proposed Development is provided in Section 2 of this report

1.1 Scope and Purpose of this RWMP

This RWMP has been prepared in response to the Section 32D Opinion received from Kildare County Council (hereafter referred to as KCC) on the 23rd of July 2025 (KCC Reference LRD2025004) requested that the following information be submitted with the planning application:

"Please note that an outline Resource & Waste Management Plan (RWMP) in accordance with Appendix C of the "EPA Best Practice Guidelines for the Preparation of Resource and Waste Management Plans for C&D Projects (20201)" including demonstration of proposals to adhere to best practice and protocols will be required. A report outlining the overall waste management strategy including that of the proposed apartment blocks in accordance with the Kildare County Council Waste Presentation byelaws, and in accordance with Policy Ref's IN O42 and IN 047 of the Kildare County Development Plan 2023-2029, including the following:

- *Brief outline of the proposed waste management strategy, including calculations of the waste management requirements of the occupants,*
- *Clear details of the proposed waste storage facilities for the apartment block, including plans and elevations, and*
- *Details of how it is proposed to secure the waste management facilities against fly tipping and vermin."*

The purpose of this RWMP is to provide the information necessary to ensure that the management of resources, materials and ultimately construction and demolition (C&D) waste arising from the construction works of the Proposed Development at the Site is undertaken in accordance with all statutory requirements and current industry standards.

This RWMP will ensure minimum waste is generated and maximum recycling, re-use and recovery of waste with diversion from landfill, wherever possible.

The RWMP will provide guidance on the appropriate waste collection and transportation from the Site to prevent issues associated with litter or more serious environmental pollution (e.g. contamination of soil and/or water).

This RWMP forms part of the Construction and Environmental Management Plan (CEMP) which has been developed to define the approach to environmental management during implementation and roll-out of the construction phase of the project. Note that the CEMP has been submitted under separate cover as part of the planning application.

It is important to note that this RWMP relates to the demolition and construction element of the construction stage.

As detailed in this document, the exact materials and quantities of construction waste that will be generated from the proposed works will be audited throughout the project roll-out phase to prevent waste arising in the first place, and to re-use, recycle or recover waste materials where possible.

It is noted that an OWMP has been prepared by DNV (DNV, 2025) and submitted with the planning application under separate cover to ensure that the management of waste during the operational phase of the Proposed Development is undertaken in accordance with current legal and industry standards including the 'Waste Management Act 1996, as amended', and associated Regulations including, 'Protection of the Environment Act 2003 as amended', 'Litter Pollution Act 1997 as amended', the 'National Waste Management Plan for a Circular Economy 2024-2030' and 'The Kildare County Council (Segregation, Storage and Presentation of Household and Commercial Waste) Bye-laws, 2018' (hereinafter referred to as 'the bye-laws').

1.2 'Live document'

This RWMP is considered a 'live' document and as such will be reviewed and updated throughout the construction phase by the Construction Management Team (CMT) as follows:

- On appointment of the Main Construction Contractor.
- On appointment of the Waste Contractor.
- In the event of a change of Contractor.
- Following KCC inspections or comments.
- In the case that any major design changes are made.
- In the case that there are any changes in waste management practices/ legislation.

This document forms the basis of the RWMP, which the main contractor will be required to update and implement prior to commencement of works on Site.

All compliance documentation required by this RWMP such as Waste Collection Permits, Certificates of Registration (CORs), Waste Facility Permits and Waste Licences, in addition to waste transfer documents and landfill gate receipts will be compiled in the annex of documents to accompany this RWMP. A register of documents is provided in Section 1.3.

1.3 Register of Documents

A live register of documents will be maintained both digitally and in hard copy on site as part of this waste management plan. The content of this register is outlined below. It will be the responsibility of the Site Construction Waste Manager to ensure that the register of documents is updated as appropriate. The Site Construction Waste Managers contact details will be submitted to KCC prior to the commencement of construction works on-site.

The following documents will be maintained in the live register of documents:

A. Register of Authorised Waste Facilities
B. Approved Receiving Waste Facility Permits/ Licences and Acceptance Letters
C. Register of Authorised National Waste Collection Permits
D. Approved Waste Collection Permits
E. Waste Management Log Sheet – (Digital Log to be Maintained On-Site)
F. Chain of Custody / Waste Dispatch Dockets
G. Landfill Gate Receipts
H. Waste Classification Report(s)
I. Site Contact Details

2 DESCRIPTION OF THE PROJECT

2.1 Site Location and Description

The site is located on lands at Kilwoghan Woods in the townland of Crodaun to the north of Celbridge, County Kildare.

The site location is presented in Figure 2-1

The site subject to the original application is vacant farmland and the immediate site context has no discernible features. Hedgerows located on the interior of the site have been removed following receipt of the commencement notice for Phase 1. The subject lands are located between the built-up edge of Celbridge and the educational and institutional developments further north. The site, when undeveloped, offers the opportunity to consolidate the existing and proposed developments.

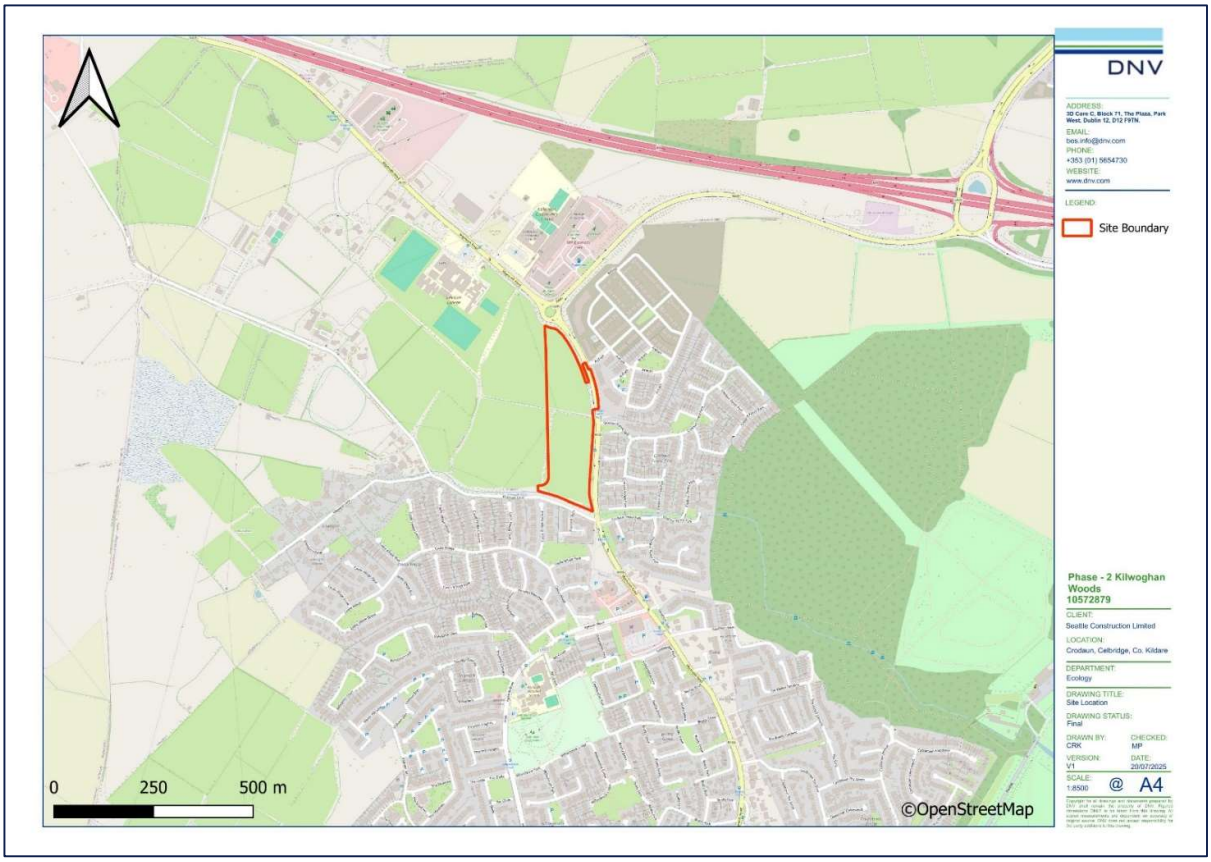

Figure 2-1. Site Location

The site subject of this planning application and full extent of the Applicant's lands is identified in Figure 2-1 and 2-2. The lands subject of this planning application is located at Kilwoghan Woods in the townland of Crodaun, Celbridge, Co. Kildare on a site area of approximately c.12.93 ha. The subject site of this application without constructed areas, areas under construction or to be constructed as granted (i.e., refer to Phase 1 on Figure 2) is c 3.943 ha.

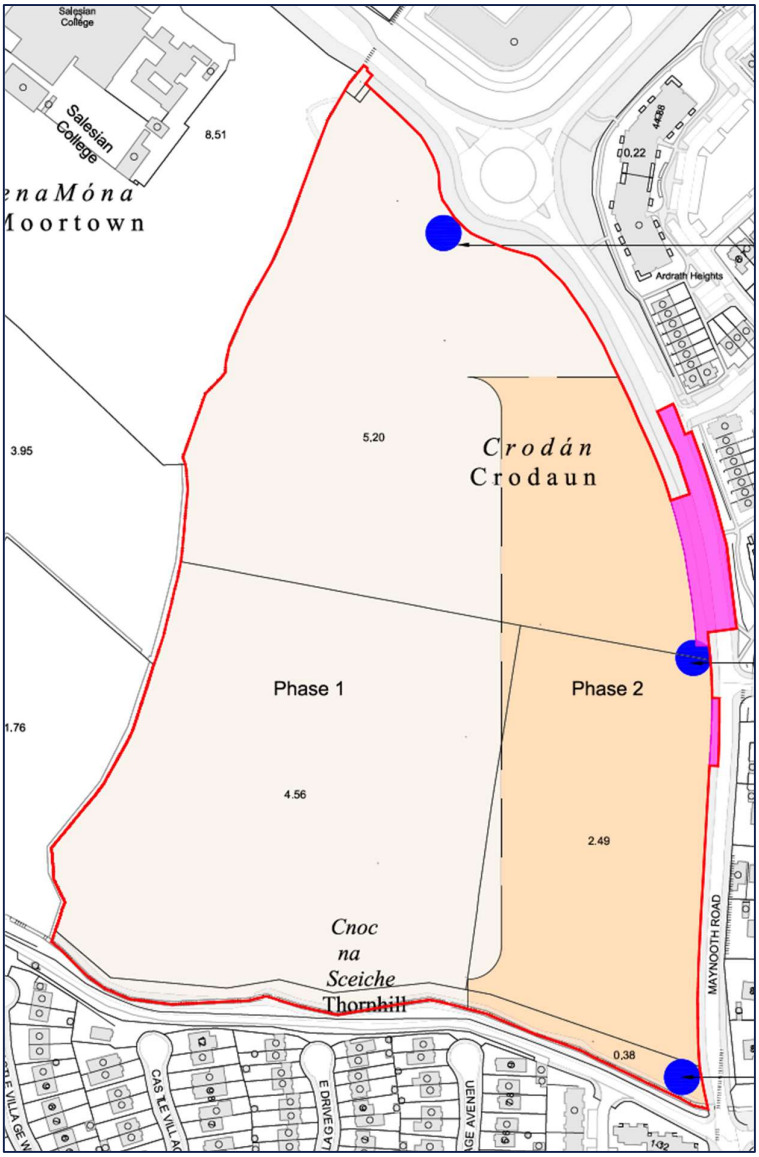

Figure 2-2. Site Location Map Outlining Phase 1 (currently under construction) and Phase 2 (subject of this application)

The site has the benefit of planning permission for 467 residential units under (ABP Case Reference 307100). Phase 1 is already under construction, including the delivery of roads and infrastructure serving this area.

The site is bound to the east and to the north by Maynooth Road which provides links to the M4 and subsequently offers wider connections to Dublin, this allows the site to form a key strategic northern 'gateway' to Dublin. There is also a dedicated pedestrian and cycleway located along the Maynooth Road. To the south of the site there is an existing stream which runs alongside Kilwoghan Lane. This lane is lined with dense hedging and gives access to a small cul-de-sac development of 1 and 2 storey housing at its eastern edge. The remaining housing to the south of the lane is located behind mature hedging and does not impact with Kilwoghan lane either visually or physically. To the west of the site the land is typically undeveloped and zoned for agricultural use in the Local Area Plan.

The overall site is bound by residential development to the south and to the east. To the northwest of the site there is a secondary school and to the northeast of the site there is a community college, commercial park and industrial development. The site development will consolidate the space between these and the town.

During the initial pre-planning engagement with Kildare County Council, it was requested that that the proposed scheme allows for connectivity in the case that the zoning of these sites changes at a future date. The design put forward made provision for two potential vehicular connections to be formed along the western boundary. In addition to this, a local boy's

secondary school (Salesian College), located to the west of the site had an influence on its design. The design approach adopted the provision of a permeable and integrated network of pedestrian and cycle routes in the south and north of the site.

The removal of the central hedgerows has taken place in line with the serving of the commencement notice. Work is currently being undertaken to set up the internal road network to install new ESB ducts in order to drop the overhead power lines.

2.2 Proposed Development Description

Seattle Construction Limited intend to apply to Kildare County Council for permission to amend a previously permitted Strategic Housing Development (SHD) (ABP 307100-20) by way of a planning application for a Large-Scale Residential Development (LRD) on an overall site of approx. 12.93 ha located on lands at Kilwoghan Woods in the townland of Crodaun, Celbridge, Co. Kildare. The proposed amendments relate to phase 2 (c.3.94ha) of the overall permitted development and will include amending 239 no. residential units. (The overall total number of permitted 467 no. units in phase 1 and 2 remain unchanged).

The proposed amendments comprises a re-design of phase 2 only to include:

a) The construction of 2 no. 4-storey apartment blocks at the north of the site (81 no. units in total) to include a retail unit (153 sqm) and creche (212sqm – 47 children) with outdoor play area at ground floor;
   i. Block A – 40 no. units consisting of 18 no.1 bed and 22 no. 2 bed units
   ii. Block B - 41 no. units consisting of 19 no. 1 bed and 22 no. 2 bed units
b) 5 no. 3-storey apartment and duplex units to be located on the eastern boundary of the site;
   i. Duplex C - 08 no. units consisting of 4 no. 2 beds and 4 no. 3 beds
   ii. Duplex D - 18 no. units consisting of 4 no. 1 beds, 8 no. 2beds, and 6 no. 3 beds
   iii. Duplex E – 18 no. units consisting of 4 no. 1 beds, 8 no. 2beds, and 6 no. 3 beds
   iv. Duplex F – 20 no. units consisting of 10 no. 2beds, and 10 no. 3 beds
   v. Duplex G – 18 no. units consisting of 4 no. 1 beds, 8 no. 2beds, and 6 no. 3 beds
c) 76 no. terraced houses consisting of;
   i. 48 no. 2 bed mid terrace units;
   ii. 12 no. 3 bed end terrace units;
   iii. 16 no. 3 bed end terrace dual frontage units
d) 252 no. of car parking spaces which includes 2 no, car sharing spaces, 14 no. motorcycle spaces and 538 no. bicycle parking spaces will be provided for in phase 2.
e) Amendments to the previously permitted open space in phase 2 to now provide 5,357sqm Public Open Space, 1,165 sqm Communal Open Space and 3,313 Amenity Space. Each of the units are afforded their own private open space in the form of private gardens, balconies or terraces.
f) Amendments to internal residential access roads and cyclist/pedestrian paths to allow for the 4 arm entrance junction and a new shared pedestrian / cycle path through the site running north to south.
g) All associated site development works, services provision, infrastructural and drainage works, internal access roads, home zones, cycle and pedestrian infrastructure, bin stores, car and bicycle parking, public lighting, communal open spaces, private open space in the form of gardens, terraces and /or balconies, landscaping and boundary treatment works.

The layout of the Proposed Development is presented in Figure 2-3.

2.2.1 Construction Phase

The construction phase of the Proposed Development will include:

- Excavation of soil and subsoil for the construction of building foundations, drainage and other infrastructure.
- It is anticipated that localised excavation of bedrock may also be necessary to accommodate deeper drainage infrastructure.
- It is intended to reuse suitable excavated soil and subsoil for landscaping and engineering use. However, where required, the removal of unsuitable soil and subsoil offsite will be undertaken in accordance with all statutory legislation.
- The importation of aggregate fill materials will be required for the construction of the Proposed Development (e.g., granular material beneath road pavement, under floor slabs and for drainage and utility bedding / surrounds etc.).
- Temporary stockpiling of excavated material pending waste classification for removal off-site or for reuse in the Proposed Development.

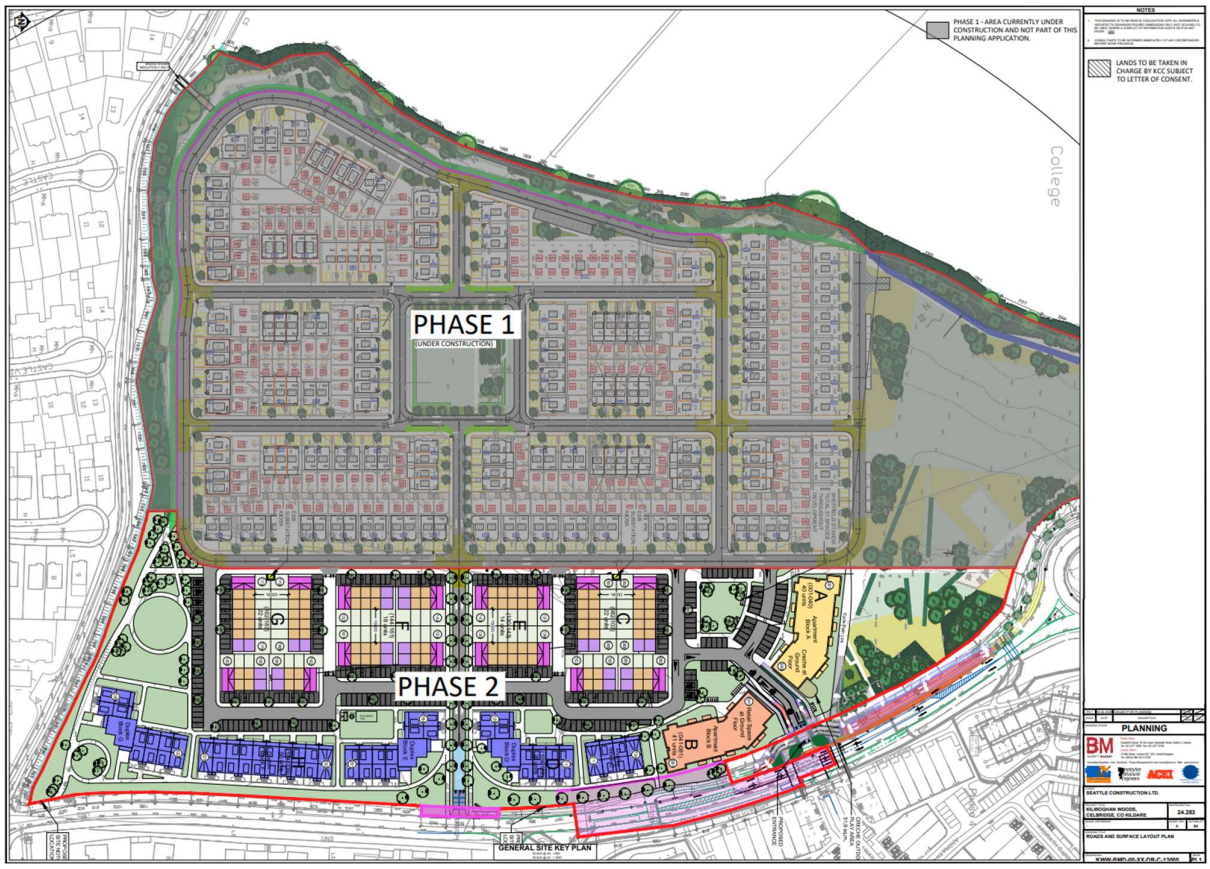

Figure 2-3. Proposed Development Site Layout (Barrett Mahony, 2025)

3 RELEVANT NATIONAL POLICY, LEGISLATION AND GUIDANCE IN IRELAND

A register of the current list of relevant legislation regulations and policy pertaining to the circular economy, resources and waste management are discussed below.

3.1 National Waste Policy

The Irish Government's policy document of 1998, 'Waste Management: Changing our Ways', represented Ireland's first steps towards identifying objectives for the prevention, minimisation, reuse, recycling, recovery, and disposal of waste, including C&D waste.

The Irish Construction Industry responded to the 'Waste Management: Changing Our Ways' report by setting up a waste sector task force and released a report entitled 'Recycling of Construction and Demolition Waste'. The report dealt with the development and implementation of a voluntary construction industry programme to meet the Government's objectives for the recovery of C&D waste.

In 2012, the then Department of the Environment, Community and Local Government (DoECLG) (previously DoEHLG), published 'A Resource Opportunity – Waste Management Policy in Ireland' which supported the prioritisation of the waste hierarchy and identified specific producer responsibilities for construction and demolition projects (over certain thresholds) as a key area for exploration.

'A Waste Action Plan for a Circular Economy – Ireland's National Waste Policy 2020-2025' was published in September 2020 (& updated in January 2021) by the Department of Communications, Climate Action and Environment (DCCAE).

'A Waste Action Plan for a Circular Economy' focuses on the waste prevention by maximising the value of material resources and reducing waste generation. The Waste Action Plan also sets out a number of actions in relation to Construction & Demolition including updating the C&D waste management plan guidelines, putting in place incentives to encourage the use of recycled materials, further develop methods to encourage segregation of waste materials on-site and improve consistency across the waste sector.

3.2 Best Practice Guidance

The National Construction and Demolition Waste Council (NCDWC) was launched in June 2002 and subsequently produced the 'Best Practice Guidelines for the Preparation of Waste Management Plans for Construction and Demolition Projects' in July 2006 in conjunction with the then Department of the Environment, Heritage and Local Government (DoEHLG). The guidelines outlined the issues that needed to be addressed at the pre-planning stage of a development all the way through to its completion. The Best Practice Guidelines also identified development thresholds above which a C&D Waste Management Plan must be prepared. The Best Practice Guidelines noted that arrangements need to be established in a manner which ensures that there is a contractual obligation on the Contractor(s) to prepare a Waste Management Plan in accordance with the above considerations at a minimum.

The above Best Practice Guidelines have been followed in the preparation of this document which includes the following elements:

- Procedures to prevent, minimise, recycle and reuse resources.
- Waste recovery/recycling/disposal of C&D wastes at the site.
- Predicted C&D wastes.
- Provision of training for Construction Waste Manager and site crew.
- Details of proposed record keeping system.
- Details of waste audit procedures and plan.

Details of consultation with relevant bodies (i.e., Local Authorities, the National Waste collection permit office (NWCPO), the National Transfrontier Shipments Office (NTFSO), haulage companies, recycling and waste collection companies, materials recovery facilities, soil recovery facilities, and waste management companies).

Section 3 of the Best Practice Guidelines identifies thresholds above which there is a requirement for the preparation of a C&D Waste Management Plan for developments. This development requires a RWMP under the following criterion:

- Civil Engineering projects producing in excess of 500m3 of waste, excluding waste materials used for development works on the site.

In 2015, the EPA's 'Design Out Waste' report noted that the preparation of a Waste Management Plan within the early design and feasibility phases provides a framework to carry out design reviews, and should be used as an implementation, benchmarking, monitoring and reporting tool throughout the overall construction process.

Design Out Waste Guidelines recommends that a Waste Management Plan should address the following aspects of the Proposed Development:

- Project description.
- Waste forecasting: Analysis of the waste arising / materials surpluses.
- Specific waste management objectives for the project.
- Proposed strategies and associated costs: Methods proposed for prevention, reuse and recycling of wastes.
- Materials logistics.
- Individual responsibilities.
- Monitoring procedures: Auditing and record keeping.
- Proposals for education of workforce and plan dissemination programme.

In 2021, following a process of public consultation, the Environmental Protection Agency (EPA) produced 'Best Practice Guidelines for the Preparation of Resource & Waste Management Plans for Construction & Demolition Projects', which supersedes the DoEHLG Best Practice Guidelines 2006. The EPA's Best Practice Guidelines (2021) set out a practical and informed common approach to preparing Resource and Waste Management Plans (RWMP) prior to construction and during construction.

The Best Practice Guidelines recommend that an RWMP will be submitted for all C&D projects to inform the planning consent process, and that the level of detail presented in the RWMP should be reflective of the scale and complexity of the project. The guidelines provide thresholds for classifying C&D projects into two different tiers with regards to resource and waste management. These thresholds are based on the principle of proportionality to ensure larger projects with larger potential resource footprints are required to more actively manage resources compared to smaller scale projects.

The Best Practice Guidelines also reflect the current waste legislation and policy including 'A Waste Action Plan for a Circular Economy – Ireland's National Waste Policy 2020-2025' published in September 2020 by the Department of Communications, Climate Action and Environment (DCCAE) (updated in January 2021).

3.2.1 Other relevant guidance

Other guidelines followed in the preparation of this report include 'Construction and Demolition Waste Management – a handbook for Contractors and Site Managers' published by FÁS and the Construction Industry Federation in 2002.

The above-mentioned policy and guidance documents are considered to define best practice for C&D projects in Ireland and describe how C&D projects are to be undertaken such that environmental impacts and risks are minimised, natural resources are protected and conserved and the maximum levels of materials recovery, reuse and waste recycling are achieved.

3.3 Irish Materials Recovery and Waste Management Targets

The 'National Waste Management Plan for a Circular Economy 2024-2030 was published in February 2024 and covers the period 2024-2030. It is the first National Waste Management Plan for a Circular Economy and sets a framework for the prevention and management of waste in Ireland. The plans seek to 'influence sustainable consumption and prevent the generation of waste, improve the capture of materials to optimise circularity and enable compliance with policy and legislation.

"A Waste Action Plan for a Circular Economy: Ireland's National Waste Policy 2020-2025" sets a "target of preparing for reuse, recycling and other material recovery (incl. beneficial backfilling operations using waste as a substitute) of 70% by weight of C&D non-hazardous waste (excluding natural soils & stone).

The "Circular Economy Action Plan: For a cleaner and more competitive Europe" (EC, March 2020) announced the launch of a new "Strategy for a Sustainable Built Environment", which revised material recovery targets for construction and demolition waste that were previously set through EU legislation. These targets are incorporated into the Irish "National Waste Management Plan for A Circular Economy 2024-2030", stemming from the Waste Action Plan for a Circular Economy 2021-2025.

To further support the appropriate reuse and recovery of resources at construction sites, the plan offers further support towards the designation of greenfield soil and stone as 'by-product' and not waste under Article 27 of the Waste Framework Directive (Regulation 27 in National Legislation). Similarly, the plan recognises that significant progress is anticipated from the end-of-waste process under Article 28 of the Waste Framework Directive (Regulation 28). Both routes will contribute to meeting the National Targets set out in the Plan 2024-2030.

By 2021, Ireland exceeded the 70% target, achieving an 85% C&D waste recovery rate (EPA, 2023. Circular Economy and Waste Statistics Highlights Report 2021), representing an increase from 78% in 2020 (EPA, 2022. National Waste Statistics Summary Report for 2020). It should be noted, however, that soil and stone C&D wastes (LoW 17 05 03* and 17 05 04) are excluded from the calculation of the Waste Framework Directive targets.

The EPA (EPA, 2024. Circular Economy and Waste Statistics Highlights Report 2022) notes that C&D produces the largest volume of waste in the state amounting to 8.3m tonnes of waste in 2022, which represents a decrease of 9% from the 9m tonnes generated in 2021. It also notes that the overall composition of C&D waste changed little between 2021 and 2022. At 82% soil and stone waste remained dominant, followed by waste concrete, brick, tile and gypsum (7%) and mixed C&D waste (7%). The proportion of segregated (wood, paper, glass, plastic and metal) C&D waste collected remained small at just under 4.0% in 2022 no change since 2021.

Final treatment (recycling, re-use as backfilling, re-use as a fuel, disposal) varied greatly between the various material streams generated during C&D operations as noted in Table 2-1. However, approximately 94% of all C&D waste material in 2022 was either recovered, re-used or recycled with the most dominant recovery operation being re-use as backfilling (i.e., land reclamation, improvements, or infill works).

Table 3-1 Final Treatment for C&D Wastes Classes (EPA, 2024. National Waste Statistics Summary Report 2022)

C&D Waste Material	Recycled (t)	Energy Recovery(t)	Recovered/ Backfilled (t)	Disposal (t)	Total
Metal	314,020	0	11	4	304,574
Segregated Wood, Glass and Plastic	30,828	14,879	477	7,947	54,101
Concrete, brick, tile and gypsum*	348,105	4,789	254,913	10,564	618,372
Waste bituminous mixtures	53,352	0	45,747	0	99,099
Mixed Construction and Demolition waste	31,238	35,635	26,578	46,951	140,402
Waste soils, stones and Dredging spoil	5,494	0	6,280,304	453,466	6,739,263
Waste treatment residues	43,367	91,628	75,870	101,137	312,003
Total (T)	816,943	146,931	6,683,870	620,070	8,267,813
% of total treated	9.9%	1.8%	80.8%	7.5%	**100%**

**Note: No gypsum was backfilled or landfilled*

3.4 Regional Policy

The proposed development is located in the jurisdiction of KCC and is governed by the National Waste Management Plan for a Circular Economy 2024-2030.

The National Waste Management Plan for a Circular Economy 2024 -2030 sets out the framework for the prevention and management of waste across Ireland. This document is a statutory document underpinned by national and EU waste legislation, and reflects the targets set out for C&D waste in the Waste Framework Directive (WFD).

The overall goal of the plan is to achieve zero % waste growth per person over the lifetime of the plan with an emphasis on non-household wastes including waste from commercial activities and the C&D sectors. The Plan responds to the Waste Action Plan for a Circular Economy requirement to include targets for reuse, repair, resource consumption and a reduction in contamination.

Eight national Targets have been developed as shown in Figure 1 below:

Figure 3-1. National Targets for Waste prevention and reduction 2024-2030

The Plan also recognises that there is a national capacity deficit for non-hazardous construction and demolition waste (including brownfield soil and stone). While these materials can be managed in landfill, this route is a poor use of landfill space. Dedicated materials recovery facilities are required to address the short to medium term capacity issues nationally.

The strategic vision of the Plan is to rethink the approach to managing waste, and to move towards a 'circular economy' approach where resources are reused or recycled as much as possible and the overall generation of waste is minimised.

In order to achieve this vision, the Plan has set out a number of specific and measurable performance targets in relation to C&D waste:

Achieve a 2% reduction per annum is proposed for total construction and demolition waste to achieve a cumulative 12% reduction by 2030 (Baseline is 9 million tonnes)

Achieve 70% of C&D waste sent for reuse, recycling and other recovery of construction and demolition waste (excluding natural soils and stones and hazardous wastes)

The Plan aims to “prioritise waste prevention and circularity in the construction and demolition sector to reduce the resources that need to be captured as waste”.

3.5 Legislative Requirements

The primary piece of legislation governing waste management in Ireland is the Waste Management Act 1996, (as amended) and all associated regulations. Waste management is also regulated by the Environmental Protection Act 1992, (as amended), Litter Pollution Act 1997, (as amended) and the Planning and Development Act 2000, (as amended).

Under the Waste Management Act, 1996, (as amended), the waste producer is responsible for waste from the time it is generated until it is legally sent for recycling, recovery, or disposal (including its method of disposal). This includes transportation by an authorised waste contractor.

3.6 Regulatory Requirements

3.6.1 European Communities (Waste Directive) Regulations 2011

These regulations transpose European Directive 2008/98/EC amending and superseding a number of provisions of the Waste Management Act 1996 (as amended), and associated regulations. Provisions include extended producer responsibility, the implementation of the Waste Management Hierarchy, and measures to promote the preparation of materials for re-use, recycling, and other material recovery (including beneficial backfilling operations using waste as a substitute). The European Communities (Waste Directive) Regulations 2011 also transpose EU waste management targets as set out in Section 1.3 as statutory benchmarks to achieved by Ireland.

3.6.2 Waste Management (Facility Permit & Registration) (Amendment) Regulations 2015 (S.I. No. 198/2015)

Waste receiving facilities must be appropriately permitted or licensed and must be listed in the appendix of the Waste Collection Permit as an authorised destination. Operators of such facilities cannot receive any waste, unless in possession of a Certificate of Registration (COR) or Waste Management Facility Permit granted by the relevant Local Authority under the Waste Management (Facility Permit & Registration) Regulations 2007 as amended or a licence granted by the EPA under the Waste Management (Licensing) Regulations 2004 (S.I. No. 395 of 2004) and S.I. No. 137/2013 - Environmental Protection Agency (Industrial Emissions) (Licensing) Regulations 2013.

The COR/permit/licence held will specify the type and quantity of waste that the facility is authorised to accept, store, process, recycle, recover and/or dispose of.

3.6.3 Waste Management (Licensing) Regulations 2004 and Waste Management (Licensing) (Amendment) Regulations 2010

These regulations relate to the process for obtaining a waste licence from the EPA for the operation of certain waste recovery or disposal facilities under Part V of the Waste Management Act.

3.6.4 Waste Management (Collection Permit) Regulations 2007 (S.I. No. 820/2007), as amended

The Waste Management (Collection Permit) Regulations 2007, as amended (S.I No. 820 of 2007) regulate the transport of waste in Ireland and provide that in order to transport waste, a waste carrier must hold a valid waste collection permit. Waste contractors engaged by construction contractors must be legally compliant with respect to waste transportation, recycling, recovery, and disposal. This includes the requirement that a contractor handle, transport, and recycle/recover/dispose of waste in a manner that does not give rise to environmental pollution or the risk of environmental pollution.

A valid waste collection permit to transport the specific waste types generated by the project must be held by each waste contractor which is issued by the National Waste Collection Permit Office (NWCPO).

3.6.5 Waste Classification – List of Waste & Determining if Waste is Hazardous or Non-Hazardous

Correct classification of waste is the foundation for ensuring that the collection, transportation, storage and treatment of waste is carried out in a manner that provides protection for the environment and human health and in compliance with legal requirements.

In 1994, the European Waste Catalogue was published by the European Commission. In 2002, the EPA published a document titled the European Waste Catalogue and Hazardous Waste List. This document has been replaced by the EPA 'Waste Classification – List of Waste & Determining if Waste is Hazardous or Non-Hazardous' which became valid from the 1st July 2018.

The waste classification system applies across the EU and is the basis for all national and international waste reporting obligations such as those associated with waste collection permits, certificates of registration, waste facility permits, EPA Waste and Industrial Emissions licences and the EPA National Waste Database.

The EPA document 'Waste Classification – List of Waste & Determining if Waste is Hazardous or Non-Hazardous' (EPA, 2018) consolidates the legislation and allows the generators of waste to classify the waste as hazardous or non-hazardous and in the process to assign the correct List of Waste entry.

Under the classification system, different types of wastes are fully defined by a code. The List of Waste (LoW) code (previously referred to as European Waste Code or EWC).

4 RESOURCES & WASTE MANAGEMENT TEAM

4.1 Roles and Responsibilities

The roles and responsibilities of personnel and the lines of communication specific to resource and waste management are outlined below.

All parties involved in the project will have responsibility for resources and waste management. Responsibility will vary at different stages of the project lifecycle.

The Main Contractor will have overall responsibility for the implementation of the RWMP and appointing the following roles and responsibilities within the CMT. It should be noted that one person may be appointed to multiple roles.

The roles and responsibilities are indicative and may be amended over the course of the project. The project organogram will be prepared by the Main Contractor in advance of construction works commencing and will be maintained and updated in the live RWMP

The key responsibilities are set out in Table 4-1.

Table 4-1 Construction Phase Resource and Waste Management - Key Responsibilities

Responsible Party	Responsibility
The Developer	Allocating the correct resources in order to ensure the successful implementation of the RWMP.
	Assist in the management review of the RWMP for suitability and effectiveness.
Project Manager	To report to the Construction Director on the on-going performance and development of the RWMP.
Project Environmental Consultants	To discharge his/her responsibilities as per the RWMP.
	To support and augment the Construction Management Team (CMT) through the provision of adequate resources and facilities for the duration of the implementation of the RWMP.
	Read, understand, and implement the RWMP.
	Have knowledge of the requirements of the relevant law in environmental matters and take whatever action is necessary to achieve compliance. Where necessary seek the advice of the contracted Environmental Officer.
	Ensure that environmental matters are considered at all times.
	Be aware of any potential environmental risks relating to the site, plant, or materials to be used on the premises and bring these to the notice of the appropriate management.
Main Contractor	Ensuring that the requirements of the RWMP are reviewed and waste management system elements (including procedures, method statements and work instructions) are implemented and adhered to with respect to waste management requirements.
	Reviewing the waste management responsibilities of all sub-contractors in scoping their work and during their contract tenure.
	Ensuring that advice, guidance, and instruction on all RWMP matters is provided to all managers, employees, construction contractors and visitors on site.
Construction Director	Reporting to the Construction Director on the waste management performance of Line Management, Supervisory Staff, Employees and Contractors.
	Advising site management on waste management matters.
	Be aware of any potential waste management risks relating to the Contractors and bring these to the notice of the appropriate management.

Responsible Party	Responsibility
Site Foreman	Ensure materials/waste register is completed.
	Maintenance of all waste management related documentation.
	Training of all site staff in the requirements of the RWMP including waste management controls.
	Ensuring commitment, operational efficiency and accountability during the C&D phases of the project in line with the RWMP.
	Selecting a waste team if required, i.e., members of the site crew that will aid them in the organisation, operation and recording of the waste management system implemented on site.
	Overseeing, recording and providing feedback to the Client everyday waste management at the site.
	Delegating responsibility to sub-contractors, where necessary, and to coordinate with suppliers, service providers and sub-contractors to prioritise waste prevention and material salvage.
Environmental Officer	Conducting waste audits, maintaining a record system, and establishing targets for waste management at the site during the Construction Phase of the Permitted Development.
	Responding to any concerns or complaints raised by the public in relation to the Construction Phase of the Permitted Development.
	To liaise with the Construction Environmental Site Manager on community concerns relating to waste management.
	Ensure the Construction Environmental Site Manager is informed of any complaints relating to waste management.
	Keep the public informed of project progress and any construction activities that may cause inconvenience to the local community.
	If required, the Main Contractor will engage with a Project Environmental Consultant(s) to provide specialist environmental inputs and act in the roles of Environmental Clerk of Works (including Contaminated Land Consultant) as required. The key responsibilities of the Project Environmental Consultant are summarised as follows
	Updating of the RWMP and advising the Main Contractor in the updating of the RWMP, waste management controls and supporting procedures.
	Advising the Site management on waste management matters as appropriate.
	Provision of specialist input and supervision where necessary, of construction activities in relation to waste management.
Construction Waste Manager	Completing any waste classification of excavated soil waste materials to enable off-site disposal in compliance with all relevant waste management legislation.
	To co-operate fully with the CMT and the Environmental Officer in the implementation and development of the RWMP at the site.
	To conduct all their activities in a manner consistent with regulatory and best environmental practice.
	To participate fully in the environmental training programme and provide management with any necessary feedback to ensure effective environmental management at the site.

Responsible Party	Responsibility
	Adhere fully to the requirements of the site environmental rules.
Project Communications Officer	Comply with the RWMP and CEMP where relevant
	Allocating the correct resources in order to ensure the successful implementation of the RWMP.
	Assist in the management review of the RWMP for suitability and effectiveness.
	To report to the Construction Director on the on-going performance and development of the RWMP.
Site Personnel	To discharge his/her responsibilities as per the RWMP.
	To support and augment the Construction Management Team (CMT) through the provision of adequate resources and facilities for the duration of the implementation of the RWMP.
	Read, understand, and implement the RWMP.
	Have knowledge of the requirements of the relevant law in environmental matters and take whatever action is necessary to achieve compliance. Where necessary seek the advice of the contracted Environmental Officer.
Sub-contractors	Ensure that environmental matters are considered at all times.

4.2 Site Contact Details

The contact details for the appointed Main Contractor, Project Manager, Site Foreman, the Environmental Officer and the Construction Waste Manager will be displayed on the site hoarding and are included in the live register of documents. These contact details will be kept up to date by the Main Contractor.

4.3 Resources & Waste Management Plan Awareness & Training

All training records will be documented and maintained and will be made available to the Main Contractor (once appointed) and all relevant regulatory authorities upon request. All site personnel and sub-contractors will be instructed about the objectives of these plans and informed of the responsibilities which fall upon them as a consequence of its provisions. Where source segregation and selective material reuse techniques apply, each member of staff will be given instructions on how to comply with the RWMP and the best practice guidelines.

4.3.1 Construction Waste Manager

The Construction Waste Manager will keep up to date with waste legislation, codes of practice and other literature.

The Construction Waste Manager will be trained in how to perform an audit and how to establish targets for waste management onsite. The Construction Waste Manager will also be trained in the best methods for segregation and storage of recyclable materials, have information on the materials that can be reused on-site and be knowledgeable in how to implement this RWMP.

The Construction Waste Manager will also assist with the waste management training requirements, and subsequent training for all levels of the Main Contractor's (once appointed) employees on the project.

4.3.2 Site Personnel Training

A basic awareness briefing will be held for all site crew to outline the RWMP and to detail the segregation of waste materials at source. This may be incorporated with other site training needs such as general site induction, health and safety awareness, asbestos awareness training and manual handling.

This basic briefing will describe the materials to be segregated, the storage methods and the location of the Waste Storage Areas (WSAs). A sub-section on hazardous wastes will be incorporated into the briefing and the particular dangers of each hazardous waste will be explained.

The subcontractors will be instructed to comply with this RWMP and will be audited by the Construction Waste Manager and the Main Contractor's (once appointed) Environmental Personnel to ensure that this is the case.

All training records will be documented and maintained in the Project Health, Safety, Environment and Quality Management System (HSEQMS) records which will be made available to the Main Contractor (once appointed) and all relevant regulatory authorities upon request.

5 CONSTRUCTION SCHEDULE AND WORKS MANAGEMENT PLAN

5.1 Programme

The programme duration and proposed sequence of construction will be developed by the Main Contractor (once appointed) in advance of construction works commencing onsite. The live RWMP will be updated accordingly.

5.2 Working Hours

Normal site working hours will apply to the Construction Phase of the Proposed Development (i.e., (07:00 to 19:00 Monday to Friday (excluding bank holidays) and 07:00 to 14:00 Saturdays).

No works are envisaged to be carried out on Sundays or Bank Holidays. However, should there be a need to work on Sundays, Bank Holidays or outside the specified normal working hours, a written submission, with compelling reasons for the proposed deviation, seeking authorisation will be made by the Main Contractor to KCC. The Main Contractor must give the times and dates of the proposed work, and the mitigation measures that are to be used to minimise noise/disturbance.

Any such approval from KCC may be subject to conditions pertaining to the particular circumstances being set by KCC. It is noted that any breaches of permitted working hours or permitted extended working hours or developers or subcontractors not carrying out their requirements under this protocol may lead to enforcement action and may also result in the withdrawal of any extension of hours of works for a period that will be at the discretion of KCC.

5.3 Construction Compound and Waste Management

All construction support related activities will be contained within the site. This will include office facilities, welfare facilities such as toilets and canteen. The exact location, layout and size of the compound(s) will be at the discretion of the Main Contractor (once appointed) with the agreement of KCC. The Main Contractor (once appointed) will prepare a detailed site security and compound plan including hoarding, signage, signing in / out procedures etc. Information notices located at the site entry, site compound and appropriate locations throughout the site will identify the site-specific PPE requirements and the potential risks associated with entering a live construction environment.

All cabins will be brought to site in good condition and will be maintained in good order throughout the project. Double stacking of cabins may be required, with safe stairs and walkways provided to the upper levels of offices.

Foul drainage discharge from the construction compound will be tankered off site to a licensed facility until a connection to the public foul drainage network has been established. The construction compound's potable water supply will be protected from contamination by any construction activities or materials.

A power supply from ESB Networks to power both the compound and the construction site will be applied for by the Main Contractor. Prior to any site works commencing, the Main Contractor will investigate/identify the exact location of and tag all existing services and utilities around and through the site with the assistance of the relevant KCC technical divisions and utility companies. The size of the required supply will be calculated to ensure it is sufficient to power both the site compound and construction site activities. In the event of any delays securing the required power supply to power offices and cranes, generators may be required. Diesel generators will have sound enclosures and will be regularly serviced to prevent noise and odour pollution, and setup in a spill tray to prevent any spillage contaminating the ground. Temporary site lighting will be installed to provide safe and well- lighted walkways around the site compounds, and task lighting to the construction sites

Materials handling and storage areas, including waste segregation and storage areas (including waste segregation and storage, chemical, fuel and oil stores), will be contained within the boundary of the site. The required size for the site compound and waste storage areas will be specified by the Main Contractor in advance of construction works commencing.

Designated storage areas will be maintained within the boundary of the site for materials handling, waste segregation and temporary storage of soils (e.g., of skips or stockpiled material until a viable load is available or if pending waste classification). The designated storage areas will house all bins and skips for the storage of segregated construction waste generated. All designated storage areas will be identified by clear legible signage and recorded on the site layout drawings which will be maintained onsite. All containers will be marked with clear signage which will identify which waste types are to be placed into each container.

The storage of construction materials will not be permitted on any public road or footpath, unless agreed in writing with KCC, having regard to the prior reasonable justification and circumstances of any such storage.

6 CONSULTATION WITH RELEVANT BODIES

6.1 Local Authority

The local authority (KCC) will be consulted as required throughout the construction phase of the Proposed Development with prior agreement with the Client.

6.2 Recycling/Salvage Companies

Companies that specialise in C&D waste management will be contacted to determine their suitability for engagement. In addition, information regarding individual construction materials will be obtained, including the feasibility of recycling each material, the costs of recycling/reclamation and the means by which the wastes will be collected and transported offsite, and the recycling/reclamation process each material will undergo offsite.

6.3 The Client

All information regarding the management of the waste during works, will be made available to the Client upon request.

The Construction Waste Manager or delegate will submit appropriate written reports of findings and recommendations to the Client relating to site waste management. Full Waste Reports will be generated and submitted to the Client, as required.

The Construction Waste Manager will inform the Client on all aspects of waste generation, waste recycling and waste minimisation on site.

In the event of an environmental incident or emergency the Client will be immediately notified by the Project Manager.

In the event of ground contamination being encountered, Client will be immediately notified by the Project Manager. noting that Client or their representative may require to complete a visual assessment

7 RESOURCE WASTE MANAGEMENT

The management of the main waste streams are detailed in the following sections.

In line with the Waste Hierarchy (from the Waste Framework Directive), prevention of waste and re-use will be prioritised over disposal. The construction phase of the proposed development will align with this policy by implementing the following measures:

- A policy of 'as needed' ordering and strict purchasing procedures will prevent waste arisings as far as possible.
- Any excavated soil will be incorporated into the design of the Proposed development. However, where the offsite removal of surplus soil materials is required, removal under an Article 27 By-product notification will be prioritised.
- Where required for landscaping, imported Article 27 soils will be prioritised.
- All waste streams will be segregated onsite to ensure the correct recovery and recycling.
- As far as possible, site hoarding, facilities and welfare units will be repurposed from previous sites and projects to reduce waste and encourage a circular building environment.
- Materials which have a high percentage of recycled material or that have a low environmental impact will be prioritised where feasible.

Figure 7-1. Waste Hierarchy (Source: Waste Framework Directive)

7.1 Opportunities for Prevention and Reduction

Opportunities for the prevention and reduction of waste will be considered throughout all stages of the Proposed Development Construction Phase. The Main Contractor (once appointed) will plan the construction process to eliminate/reduce waste. specifically, careful planning will minimise the volume arising on-site, facilitate the use of reclaimed materials in the works, and influence wastage caused by poor materials handling.

Opportunities for the prevention and reduction of waste will be considered throughout the Construction Phase of the Proposed Development. The Main Contractor (once appointed) will plan the construction process to eliminate/reduce waste. specifically, careful planning will minimise the volume arising on-site, facilitate the use of reclaimed materials in the works, and influence wastage caused by poor materials handling.

The targets for recovery during the Construction Phase of the Proposed Development based on data from the EPA National Waste Statistics (EPA, September 2024, National Waste Statistics Summary Report for 2022) are presented in Table 7-1.

Table 7-1. Predicted Recovery Targets

Waste Type	Recycling	Energy Recovery	Backfilling	Disposal
	%	%	%	%
Mixed C&D waste	22%	25%	19%	33%
Segregated wood, glass, and plastic	57%	28%	1%	15%
Bituminous Mixtures	54%	0%	46%	0%
Metals	100%	0%	0%	0%
Concrete, brick, tile, and gypsum	56%	1%	41%	2%
Soil and Stone	0%	0%	93%	7%
Waste treatment residues	14%	29%	24%	32%
Total	**9.9%**	**1.8%**	**80.8%**	**7.5%**

Note:

'*' = Backfilling refers to a recovery operation, carried out at authorised facilities, where suitable waste is used for reclamation purposes in excavated areas or for engineering purposes in landscaping and where the waste is a substitute for non-waste materials. It includes worked out quarries that are in the process of being restored or sites where soil and stone is imported to the site to raise natural ground levels (EPA, 2024)

The predicted recovery targets will be reviewed and updated by the Main Contractor (once appointed) in advance of construction works commencing onsite when the final materials and detailed construction methodologies have been confirmed. The waste management objective will be to prevent waste arising in the first place, and to re-use, recycle or recover waste materials where possible. A policy of 'as needed' ordering and strict purchasing procedures will also prevent waste arisings as far as possible.

7.2 Article 27 By-product

Where appropriate the removal of surplus materials as a by-product during the construction phase of the proposed development will be undertaken under an Article 27 By-product notification to the EPA. All statutory requirements of Article 27 By-product under the European Communities (Waste Directive) Regulations 2011 (S.I. No 126 of 2011) must be demonstrated to the satisfaction of the EPA. A separate assessment would be required to verify that the any surplus material meets the four conditions of Article 27 by-product prior to notifying the EPA or moving material off-site. It should be noted that the EPA advises that material should not be moved off-site until a determination has been made by the EPA regarding the notified material.

7.3 Quantities of Surplus Materials and Waste

Table 6-2 shows the breakdown of C&D waste types produced on a typical site based on data from the EPA National Waste Statistics (EPA, September 2024. National Waste Statistics Summary Report for 2022). The waste categories in Table 6-2 will be segregated into general waste and dry recycling categories.

Table 7-2 Quantities of C&D Materials collected in Ireland in 2022 (Source: EPA, September 2024)

Waste Types	%
Soil, stones & dredging spoil	82
Segregated concrete, brick, tile, and gypsum	7
Mixed C&D waste	7
Metals	3
Segregated wood, glass, and plastic	>1
Bituminous Mixtures	1
Total	**100**

It is anticipated that there will be a surplus of soil, subsoil and bedrock arising from groundworks which will require offsite removal for reuse or recovery in accordance with appropriate statutory consents and approvals. Where possible, surplus soil that is verified to be clean inert soil will be removed from the Site under an Article 27 By-product notification.

The RWMP will be updated with predicted and actual C&D waste / surplus soil and bedrock quantities determined as part of the design for planning and as information becomes available in advance of construction works commencing on-site.

Until final materials and detailed construction methodologies have been confirmed, it is difficult to predict with a high level of accuracy the construction waste that will be generated from the proposed works as the exact materials and quantities may be subject to some degree of change and variation during the construction process.

The RWMP will be updated with actual quantities as information becomes available during the works. These waste quantities will be recorded along with the List of Waste (LoW) code for each waste stream. The waste management objective will be to prevent waste arising in the first place, and to re-use, recycle or recover waste materials where possible.

A policy of 'as needed' ordering and strict purchasing procedures will also prevent waste arisings as far as possible

7.4 Invasive Plant Species

A Preliminary Ecological Appraisal (PEA) walkover was carried out at the site by DNV on the 28th of May 2025 which involved a survey of habitats and flora (including invasive species). The habitats present within the site, as recorded during the field survey are described in the Appropriate Assessment (AA) Screening Report (DNV, 2025) submitted with the planning application under separate cover.

There were no invasive species recorded at the site during the site walkover. However, where required, and in agreement with KCC, additional invasive plant species survey will be undertaken where necessary to ensure that plants within the works area are identified to ensure the appropriate management measures are implemented. Any invasive plant species identified will be managed in accordance with statutory obligations and guidance including TII (formerly NRA) Guidelines on The Management of Noxious Weeds and Non-Native Invasive Plant Species on National Roads (2010), with consideration given to the prevention of spread of these plants.

8 WASTE CLASSIFICATION

8.1 C&D Materials

The waste classification of inert C&D materials generated throughout the Demolition Phase of the Proposed Development including structural concrete, brick, metal and timber / timber composite will be based on visual observations by the Construction Waste Manager or appointed delegate (i.e., Environmental Officer).

The waste classification of inert C&D materials generated throughout the Construction Phase of the Proposed Development including structural concrete, metal, timber, cladding, plastics, cardboard, and tiles will also be based on visual observations by the Construction Waste Manager or appointed delegate (i.e., Environmental Officer).

8.2 Asbestos and Asbestos Containing Materials (ACMs)

It is anticipated that there will be no asbestos containing materials (ACMs) generated during the construction phase of the proposed development. However, in the event that ACMs are found at any stage during the construction phase, the Main Contractor will notify the Client, and a suitable management plan will be implemented for the safe removal and disposal.

Where required, the waste classification of ACMs will be based on an assessment by an appropriately qualified asbestos specialist.

8.3 Soil and Stone

The design for construction of the Permitted Development will require excavation and off-site removal of soil for reuse or recovery in accordance with appropriate statutory consents and approvals. Prior to works commencing onsite the RWMP will be updated with exact quantities of excavation and/or off-site removal of soil for reuse or recovery in accordance with appropriate statutory consents and approvals

The offsite re-use of soil including under an Article 27 By-product Notification where applicable (Refer to Section 7.2) will be prioritised.

In the event that soil is deemed to be unsuitable for re-use or does not meet the requirements of Article 27 By-product Notification, the removal of surplus soils and materials off-site for disposal will be undertaken in accordance with all relevant waste management legislation and the procedures outlined in Section 8.3.1.

8.3.1 Assessment and Waste Classification

Sampling and assessment of soil and materials will be required to ensure that the materials are managed and removed offsite in accordance with waste management legislation. Where the material is not suitable for re-use and considered a waste, the waste classification of sample results will be based on the following method:

- Soil sample collection and analysis in accordance with relevant industry standards including but not limited to:
  - EPA guidance document 'List of Waste & Determining if Waste is Hazardous or Non-hazardous and Waste Classification' (EPA, 2018).
  - BS 10175:2011 Investigation of potentially contaminated sites - Code of practice (BSI, 2011).
- Assessment of results to determine if the sample is a hazardous or non-hazardous waste and assigning a List of Waste (LoW) Code to the sampled material in accordance with EPA guidance 'Waste Classification – List of Waste & Determining if Waste is Hazardous or Non-Hazardous' (EPA, 2018).
- The material will also be assessed to determine if the material meets the waste acceptance criteria for authorised landfills and soil recovery facilities as follows:
  - Screening the sample analytical results against the waste acceptance criteria (Landfill WAC) set out in the adopted EU Council Decision 2003/33/EC establishing criteria and procedures for the acceptance of waste at landfills pursuant to Article 16 and Annex II of Directive 1999/31/EC (2002).
  - Screening the sample analytical results against the Maximum Concentrations and/or Soil Trigger Levels set out in the Environmental Protection Agency (2020) "Guidance on Waste Acceptance Criteria at Authorised Soil Recovery Facilities" (SRF WAC)

9 MANAGEMENT OF MATERIALS AND WASTE

9.1 Handling of Materials and Waste

As detailed in Section 7.3, construction materials and waste will be generated during the development works at the site including structural concrete, brick, metal and timber / timber composite, cladding, plastics, cardboard, and tiles. The management of the main materials and waste streams are detailed in the following sections.

A policy of 'as needed' ordering and strict purchasing procedures will also prevent waste arisings as far as possible.

9.1.1 Concrete and Bricks

The majority of concrete and bricks generated during the construction phase is expected to be clean, inert material. Concrete will be segregated for removal offsite to an authorised permitted/licensed waste facility for recovery and/ or recycling.

9.1.2 Bitumen

Bitumen generated as part of the construction phase will be segregated onsite pending removal to an authorised permitted/licensed waste facility for recovery and/ or recycling.

9.1.3 Tiles, Ceramics and Gypsum

Tiles, ceramics and gypsum generated as part of the construction phase will be segregated into dedicated skips/receptacles and recycled offsite at an authorised recycling facility. Under no circumstances, will gypsum containing materials (e.g., plasterboard) be stored with mixed waste. The Construction Waste Manager or delegate will ensure that supply of new plasterboard is carefully monitored to minimise waste.

9.1.4 Timber Glass and Hard Plastic

Glass, hard plastic (e.g., material cut offs) and timber generated as part of the construction phase and is uncontaminated (i.e., free from paints, preservatives, glues etc.) will be segregated into dedicated skips/receptacles and recycled offsite at an authorised recycling facility, where possible.

9.1.5 Metal

Metals will be segregated into mixed ferrous, aluminium cladding, high grade stainless steel, low grade stainless steel etc., where practical and stored in skips and recycled of site at an authorised recycling facility.

9.1.6 Waste Electrical and Electronic Equipment (WEEE)

Any WEEE will be stored in dedicated covered cages/receptacles/pallets pending collection for recycling.

9.1.7 Other Recyclables

Where any other recyclable wastes such as cardboard and soft plastic are generated, these will be segregated at source into dedicated skips and removed offsite.

9.1.8 Non-Recyclable Waste

C&D waste which is not suitable for reuse or recovery, such as polystyrene, some plastics and some contaminated cardboards, will be placed in separate skips or other receptacles. Prior to removal from Site, the non-recyclable waste skip/receptacle will be examined by the Construction Waste Manager or delegate to determine if recyclable materials have been placed in there by mistake. If this is the case, efforts will be made to determine the cause of the waste not being segregated correctly and recyclable waste will be removed and placed into the appropriate receptacle.

9.1.9 Inert / Non-hazardous Soil and Stone

Surplus soil and stone arising from groundworks will require offsite removal for reuse or recovery in accordance with appropriate statutory consents and approvals.

The removal of all soil and stone for offsite recovery/disposal will be undertaken in accordance with the sampling, testing specification and classification will be undertaken in accordance with the procedures outlined in Section 8.3.1.

Surplus soil generated as part of the construction works will be re-used, recycled, or sent for recovery, where appropriate and feasible.

Where suitable, surplus soil will be removed from the site for re-use, under an Article 27 By-product notification and all other statutory requirements (refer to Section 7.2).

Where the material cannot be re-used as a by-product and is deemed to be a waste it will be consigned to an authorised facility permitted to accept it.

9.1.10 Hazardous Wastes

Fuels and oils are classed as hazardous materials. The storage of small quantities of fuels / oils will be required to allow for refuelling of machinery in the site compound and on an impermeable area with appropriate containment in place and in accordance with the procedures outlined in the CEMP. Provided that these requirements are adhered to, and site crew are trained in the appropriate refuelling techniques, it is not expected that there will be any fuel/oil wastage at the Site.

Any paints, glues, adhesives, and other known hazardous substances will be stored in designated areas and will be sealed, bunded and clearly marked. They will generally be present in small volumes only, ordered as needed and therefore, associated waste volumes generated will be kept to a minimum.

It is not envisaged that there will be any other hazardous waste generated throughout the construction works. However, if generated onsite storage of any hazardous wastes produced (i.e., waste fuels/chemicals) will be kept to a minimum, with removal off-site organised on a regular basis. Storage of all hazardous wastes onsite will be undertaken so as to minimise exposure to onsite personnel and the public and to also minimise potential for environmental impacts. Hazardous wastes will be recovered, wherever possible, and failing this, disposed of appropriately. Hazardous wastes produced (i.e., waste fuels/chemicals) will be kept to a minimum, with removal offsite organised on a regular basis by an appointed specialist hazardous waste contractor.

It is noted that storage of all hazardous wastes on-site will be undertaken to minimise exposure to on-site personnel and to also minimise potential for environmental impacts. A specialist hazardous waste contractor will be used to remove any hazardous waste arising.

9.1.10.1 Hazardous Waste Containing Asbestos

It is anticipated that there will be no asbestos containing materials (ACMs) generated during the Construction Phase of the Proposed Development.

However, where identified, the management of asbestos at the site and off-site transport will be undertaken by an appointed specialist contractor in accordance with an asbestos management plan for the works.

Asbestos and ACMs will be removed by the specialist contractor into laminated, double walled and sealed 1 tonne bags. Temporary storage of asbestos and ACMs will be stored, where required, in a dedicated, secure, dedicated quarantine skip for non-conforming materials. The Construction Waste Manager or appointed delegate (i.e., Environmental Officer) will ensure that all drivers hold valid ADR training certificates, as required under the Carriage of Dangerous Goods Regulations, 2007. Waste will be transferred offsite by an authorised haulage contractor to an authorised waste transfer station for shipment and disposal in mainland Europe in accordance with Trans-Frontier Shipment (TFS) controls and legislative requirements.

9.1.10.2 Hazardous Soil and Stone

In the event that hazardous wastes, previously deposited wastes or previously unidentified contaminated soil are discovered onsite, that material will be segregated and stored appropriately for sampling and classification as per Section 8.3.1.

9.1.11 Invasive Species

If required, the removal of any invasive plant species identified will be managed in accordance with statutory obligations and guidance including TII (formerly NRA) Guidelines on The Management of Noxious Weeds and Non-Native Invasive Plant Species on National Roads (2010), with consideration given to the prevention of spread of these plants.

9.2 Segregation of Materials and Waste

Surplus materials / waste will be segregated on-site for the appropriate waste stream and disposal destination. The Construction Waste Manager or appointed delegate will ensure waste streams are adequately identified. The segregation and management of materials / waste storage and stockpiling will be routinely inspected and audited by the Environmental Officer and audit findings recorded in the waste management records.

There will be no crushing of concrete on-site using a mobile crushing plant. Concrete will be segregated for removal off-site to an authorised permitted/licensed waste facility for recovery, recycling.

C&D materials will be segregated onsite into labelled dedicated skips / receptacles. Where the onsite segregation of certain waste types is not practical, offsite segregation will be carried out an authorised waste recovery facility.

Dedicated bunded storage containers will be provided for hazardous wastes which may arise such as batteries, paints, oils, chemicals etc., if required.

Waste materials generated from the Site office and canteen will be segregated into general waste, biodegradable waste and dry recycling and stored in appropriate refuse bins in a dedicated storage area onsite, where it is practical.

In the event of material being temporarily stockpiled onsite for reuse in the Proposed Development or in the event of material excavated pending waste classification for removal off-site, the material will be temporarily stockpiled in a designated area onsite. Stockpiles of different waste material will be located, maintained, and separated by a sufficient distance to prevent any inadvertent mixing of excavated material. All stockpiles will be managed in accordance with the measures outlined in the CEMP.

Any heavily contaminated material/soil that may be encountered will be segregated in accordance with the measures outlined in the CEMP for appropriate sampling, waste classification and authorised removal off-site in accordance with the procedures outlined in Section 8.3.1.

The Construction Waste Manager will ensure that site personnel involved in the excavation and removal of waste soil materials at the Site are informed of and can identify the different waste types and categories of waste soil materials encountered on-site.

9.3 Storage of Materials and Waste

Designated waste storage areas will be provided onsite for the duration of the construction works (refer to Section 5.3). The dedicated waste storage areas within the Waste Segregation points will house all bins and skips for the storage of segregated construction waste generated. All containers will be marked with clear signage which will identify which waste types are to be placed into each container.

It is noted that adequate storage space will be provided in a dedicated waste storage area on the Site to accommodate the separate collection of dry recyclables and organic food/garden waste. The dedicated waste storage area will not be visible from or on a public street, it will be outdoors and secure. All bins and skips will be collected from the waste compound and will not be placed for collection on the public street.

9.3.1 Soil Stockpiles

Where material is being temporarily stockpiled onsite pending waste classification for removal off-site or for reuse in the Proposed Development, the material will be temporarily stockpiled in a designated, secure and impermeable area onsite. The temporary stockpiling of materials onsite will be undertaken in consultation with the Client, and where required the Environmental Regulation Unit of MCC and the EPA, prior to commencing storage, to ensure that any relevant authorisations are obtained and that spoil is managed, at all times, in accordance with all relevant legislation. Surplus soil identified as waste soil will be considered a waste until compliantly removed from the site and received at the final authorised recovery/reuse/disposal facility in accordance with all waste management legislation.

Stockpiles of different waste material will be located, maintained, and separated by a sufficient distance to prevent any inadvertent mixing of excavated material. All stockpiles will be clearly identified (e.g., signage) and recorded on a site map.

When a stockpile has been sampled for classification purposes (Refer to Section 7.2), it will be considered to be complete, and no more soil will be added to that stockpile prior to disposal. An excavation/stockpile register will be maintained on-site showing at least the following information:

- Stockpile number.
- Origin (i.e., location and depth of excavation).
- Approximate volume of stockpile.
- Date of creation.
- Description and Classification of material.
- Date sampled.
- Date removed from site.
- Haulier details including waste collection permit details.
- Disposal/recovery destination including waste facility permit / licence details.
- Photograph.

Details on the management of stockpiles and procedures to prevent environmental and nuisance issues are set out in the CEMP. Stockpiles will be located, arranged and managed so that risk to receiving water, and other receptors, from silt and contaminants is minimised

9.3.2 Storage of Materials and Waste Policy

Materials / waste storage, fuel storage and stockpiling and movement are to be undertaken with a view to protecting the underlying soils and groundwater. Materials / waste will be stored onsite, including non-hazardous soil and stone and inert C&D materials, in such a manner as to:

- Prevent environmental pollution (bunded and/or covered storage, minimise noise generation and implement dust/odour control measures, as may be required).
- Maximise material / waste segregation to minimise potential cross contamination of waste streams and facilitate subsequent re-use, recycling, and recovery.

- Prevent hazards to Site workers and the public during construction phase (largely noise, vibration and dust.

10 OFF-SITE REMOVAL OF MATERIALS AND WASTE

Removal and recovery/recycling/disposal of all surplus materials and waste will be carried out in accordance with the Waste Management Act 1996 and as amended, S.I. No. 820/2007 - Waste Management (Collection Permit) Regulations 2007 and as amended and S.I. No. 821/2007 - Waste Management (Facility Permit and Registration) Regulations 2007 and as amended. This includes the requirement for all waste contractors to have a waste collection permit issued by the NWCPO. The nominated Construction Waste Manager will maintain a copy and a register of all waste collection permits in the waste management file onsite and will review these to ensure they have not expired. All permits must be reviewed prior to removal of any materials / waste from the Site.

10.1 Materials and Waste Management Procedure

All surplus materials and waste will be documented prior to leaving the Site. Surplus materials and waste will be weighed or logged by the contractor, either by weighing mechanism on the truck or at the receiving facility. These material / waste records will be maintained onsite by the Construction Environmental Site Manager.

Prior to any removal of surplus materials / waste from the Site, written confirmation should be obtained from the receiving waste facility, that acceptance of the waste will be in accordance with all statutory legislation and the conditions of the receiving waste facility licence or permit. A copy of the waste acceptance letters will be included in Appendix C.

If the material / waste is being transported to another site, a copy of the Local Authority waste Certificate of Registration (COR) or permit, or EPA Licence for that site will be provided to the Construction Environmental Site Manager.

If any soil is to be removed from the site under an Article 27 By-product notification of the European Communities (Waste Directive) Regulations 2011 (as amended), a separate assessment will be required to verify that all statutory requirements of the Article 27 By-product notification are met to the satisfaction of the EPA.

If the waste is being shipped abroad, a copy of the Transfrontier Shipping (TFS) notification document will be obtained from the National Transfrontier Shipment of Waste Office (NTFSO) (as the relevant authority on behalf of all local authorities in Ireland) and kept onsite along with details of the final destination. A receipt from the final destination facility of the material will be kept as part of the onsite waste management records. The Construction Waste Manager will undertake regular audits of waste paperwork to ensure traceability of all loads offsite to the final authorised destination facility.

To control offsite movements of surplus materials and waste a comprehensive docketing / waste tracking system should be implemented onsite. A daily record (including preparing and reconciling waste transfer note) of excavation at, and dispatch from the site should be maintained onsite.

All surplus material and waste excavated or segregated for offsite disposal should be transferred from the Site under chain of custody or waste dispatch dockets that should record:

- Date and time of transfer.
- Name of Carrier.
- National Waste Collection Permit Number and details
- Vehicle Registration and Name of Driver.
- List of Waste (LOW) Code.
- Waste Classification and origin of material at the Site.
- Details of waste including quantity (tonnes/litres as appropriate).
- Details of proposed treatment (Reuse/Recycling/Disposal) including appropriate disposal/recovery code.
- Destination of load (receiving facility).
- Destination facility Waste Licence or Waste Permit number and details.
- Confirmation of receipt and acceptance at the final designated waste facility.

Chain of custody / waste dispatch dockets will be issued in triplicate. On dispatch the docket will be signed by the issuing operative and one copy retained onsite. The remaining two copies will accompany the load and be signed or stamped by the receiving facility.

To ensure complete site records are maintained onsite, a copy of the completed chain of custody / waste dispatch docket will have a copy of the weighbridge docket from the receiving facility attached. The completed chain of custody / waste dispatch docket will be maintained in the register of documents of the live RWMP.

All loads will be checked prior to exiting the Site. In addition to logging the trucks of surplus materials / waste, all trucks will be visually inspected to ensure the loads are within the permissible haulage limits. All trucks and skips will be covered, and any loose debris removed prior to leaving the Site.

All necessary documentation requirements will be fulfilled prior to transfer of material / waste. A log of each load of materials / waste being transported offsite will be compiled that will include details of the waste collection permit or skip operator licence, load of materials, name of the destination facility and serial number on the accompanying waste docket.

In addition, the stamped dockets and gate receipts will be cross checked against details of the outgoing load and details entered on the log sheet. A record of all necessary documentation including waste transfer documents and landfill gate receipts will be maintained in the register of documents of the live RWMP.

Some of the sub-contractors onsite will generate waste in relatively low quantities. The transportation of non-hazardous waste by persons who are not directly involved with the waste business, at weights less than or equal to 2 tonnes, and in vehicles not designed for the carriage of waste, are exempt from the requirement to have a waste collection permit (Ref. Article 30 (1) (b) of the Waste Collection Permit Regulations 2007 as amended). Any sub-contractors engaged that do not generate more than 2 tonnes of waste at any one time can transport this waste offsite in their work vehicles (which are not designed for the carriage of waste). However, they are required to ensure that the receiving facility has the appropriate COR / permit / licence and the waste generated must be ancillary to their own activities.

10.2 Off-Site Destinations for Waste Materials

All surplus materials and waste that will require transport offsite for further treatment or disposal will be undertaken in compliance with all statutory legislation and all materials / waste will only be transferred to appropriately permitted or licensed waste management facilities.

Prior to any removal of materials, written confirmation should be obtained from the proposed receiving authorised waste facility, that acceptance of the material will be in accordance with all waste management legislation and the conditions of the receiving facility licence or permit. A copy of the waste acceptance letters will be included in the register of documents of the live RWMP.

Details of the nominated waste facilities proposed for each specified waste type will be provided to KCC once appointed by the Main Contractor (once appointed) in advance of construction works commencing onsite. The nominated waste facility template, which will be updated and provided to KCC in advance of construction works commencing onsite, is included in Appendix A.

The Construction Waste Manager will be required to maintain a detailed register of the nominated waste facilities (i.e., facility location, waste facility permit / licence number and expiry / renewal date) proposed for each specified waste type and to obtain a copy of all waste facility licences/permits which will be retained within the waste management file.

The expiry dates on all licences and permits will be reviewed routinely by the Construction Environmental Site Manager as part of the waste audits. The Construction Environmental Site Manager will ensure that only facilities with a valid permit or licence a will be retained for offsite management of waste.

10.3 Collection and Transport of Materials and Waste

Only carriers/hauliers with a valid NWCPO issued Waste Collection Permit which authorises the transport of the applicable List of Waste (LoW) Code and delivery to the receiving facility will be appointed to transport the surplus materials and waste from the Site.

Details of the nominated carriers/hauliers proposed for each specified waste type will be provided to KCC once appointed by the Main Contractor (once appointed) in advance of construction works commencing onsite. The nominated carrier's / haulier's template, which will be updated and provided to KCC in advance of construction works commencing onsite, is included in the register of documents of the live RWMP.

The Construction Waste Manager will be required to maintain a detailed register of the waste haulage contractors (i.e., haulage contractor name, address, waste collection permit / skip operator licence number and expiry date) proposed for each specified waste type and to obtain a copy of all the applicable permits / licences which will be included in Appendix B.

The expiry dates on all permits will be reviewed routinely as part of the waste audits. The Construction Waste Manager will ensure that only haulage contractors with a valid permit will be retained for offsite removal of waste.

11 RECORD KEEPING, AUDITS, INSPECTIONS AND REPORTING

11.1 Materials and Waste Management Records

Records of all waste classification report(s) will be included in Appendix J of the RWMP and made available to KCC as required.

Detailed records of all materials and waste removed from the Site will be maintained by the Main Contractor verifying the compliant management and removal off-site of all materials and waste in accordance with all relevant waste management legislation.

Records will be kept for all materials and waste which leave the Site, either for reuse on another site, recycling, recovery or disposal. A Materials and Waste Register (spreadsheet) will be held onsite where a record will be kept of each consignment of materials and waste taken from the Site. This spreadsheet will be maintained and made available for inspection by authorised officers of KCC. The details recorded for each consignment will, at a minimum, include:

- Date of removal of waste.
- Waste stream.
- Waste EWC code.
- Waste contractor details including NWCPO Permit Number.
- Vehicle registration.
- Driver name.
- Docket number for waste leaving the Site.
- Quantity of waste (in tonnes or litres as appropriate).
- Waste treatment (Reuse/Recycling/Disposal) including appropriate disposal/ recovery code.
- Transporter of waste (including transporters licence number).
- Final destination of the waste (including docket number or waste licence number).
- Confirmation that waste was received/accepted by designated facility.
- All necessary documentation requirements will be fulfilled prior to transfer of material.

Similar records will be maintained onsite and available for inspection detailing all materials exported under any EPA Article 27 notifications.

A copy of the receiving waste facility permits and licences with all appendices will be retained onsite.

A copy of the NWCPO waste collection permit with all appendices will also be retained onsite.

As well as the Waste Management Log Sheet (register) (refer to the template included at Appendix C), the appointed Construction Waste Manager or delegate (e.g., Environmental Officer) will record the following:

- Materials / waste removed for reuse offsite.
- Materials / waste removed for recycling.
- Materials / waste removed for disposal.
- Reclaimed materials / waste brought to the Site for reuse (if required).

All materials and waste will be documented prior to leaving the Site. Waste volumes will be recorded by the Main Contractor, either by obtaining the weighbridge weight from at the destination facility or by converting cubic meters to tonnes. In all cases the number of loads will be recorded so that these can be cross checked and the weights obtained from the destination facility. These waste records will be provided and maintained onsite by the Construction Waste Manager and provided to the Main Contractor for auditing. A receipt from the final destination of the material will be kept as part of the onsite waste management records.

For each movement of surplus materials and waste on or offsite, a signed docket will be obtained by the Construction Waste Manager or delegate from the haulage contractor, detailing the date, vehicle registration, driver name and signature weight and type of the material and the source and destination of the material. This will be carried out for each material type. This system will also be linked with the delivery records. In this way, the percentage of construction waste generated for each material can be determined. The system will allow the comparison of these figures with the targets established for the recovery, reuse and recycling of construction waste and to highlight the successes or failures against these targets. Certificates of recycling/recovery will be obtained from the facility to which the waste has been consigned, in order to confirm receipt and trace the waste to end destination. This documentation will be cross checked with removal dockets to ensure that all waste removed from the Site has been accounted for and accepted at end destinations. The completed chain of custody / waste dispatch docket will be maintained in the register of documents in the live CEMP.

A record of all necessary documentation including waste transfer documents and landfill gate receipts will be maintained in the register of documents in the live CEMP.

A template of the materials and waste register, and recording template is included in Appendix C. A digital copy will be maintained for the duration of the construction phase of the Proposed Development.

11.2 Monitoring, Audits and Inspection

The Construction Waste Manager or delegate will be responsible for conducting waste inspections at the Site during the Demolition and Construction Phase of the Proposed Development to ensure the compliance with waste management procedures as outlined above to ensure that all procedures are strictly adhered to.

Waste skips/receptacles and stockpiles (if required) will be inspected daily by the Construction Waste Manager to ensure materials are segregated onsite for the appropriate waste stream and disposal destination.

Regular audits will be undertaken by the Construction Waste Manager or designate which will include checking the following in relation to waste management onsite:

- Segregation and storage practices.
- Recycling rates.
- Litter prevention practices.
- Documentation for waste removed.
- Documentation for waste received at destination facilities.
- Centrally recorded waste data.
- Waste collection permits for all waste hauliers used.
- Waste management facility permits/licences for all waste management facilities used.

A review of all waste facility and collection permits/licences being used for waste from the Site will be carried out routinely to ensure that all permits and licences are not within 6 months of expiration. Any permits/licences within 6 months of the expiry date will be reviewed in detail.

Daily Site inspections will be carried out to check for housekeeping, litter, and correct segregation. More detailed waste audits will be carried out on a bi-weekly basis. Where poor segregation practices are observed, littering is apparent or housekeeping falls below standard, a non-conformance will be raised with the Construction Waste Manager for corrective action.

Regular checks will be carried out to ensure that all waste is accounted for, and full load traceability exists. Where gaps are identified in the records available, a root cause analysis will be carried out and a preventive measure put in place to ensure that this does not happen in future. Any missing documentation will be sought from the waste haulier and the waste destination in the event that it is not present for audit and inspection

The Client will be informed of any non-conformances and the corrective actions implemented.

Any audits undertaken by the Client will be facilitated and all documentation made available in a timely manner upon request.

11.3 Reporting

Monthly reports regarding the management of the waste during works, will be forwarded electronically to the Client by the Construction Waste Manager.

Where soil sampling and classification of soil waste is undertaken, the Project Environmental Consultant will prepare a comprehensive waste classification assessment report(s) incorporating all support documentation and drawing. The waste classification reports will be included in the register of documents in the live CEMP.

In the event that hazardous wastes, previously deposited wastes or previously unidentified contaminated soil are discovered onsite, that material will be segregated and stored appropriately for sampling and classification as per Section 8.3.1. A hazardous waste/soil management plan will be designed and implemented by the Project Environmental Consultant detailing the estimated volumes, mitigation measures, destinations for the authorised disposal/ treatment and the designated authorised contractors for the movement of the material. The soil management plan(s) will also be included in the register of documents in the live CEMP.

11.4 Non-Conformance and Corrective and Preventative Action

Non-conformances may be raised through site inspection or audit, or by any site personnel by reporting a non-conformance to the Construction Waste Manager.

Non-conformances will be recorded and investigated to determine the root cause, and Corrective Action Requests (CARs) will be issued to ensure that prompt action is agreed and committed to, with a view to the effective resolution of any deviations from the RWMP requirements or any environmental issues.

CARs may be raised as a result of:

- An internal or external communication.
- An internal audit.
- A regulatory audit or inspection.
- A suggestion for improvement.
- A complaint.
- An incident or potential incident.
- All corrective action requests will be numbered and logged.

Corrective Action Requests will only be closed out on sign off by the Construction Waste Manager that the required corrective actions have been completed.

12 REFERENCES

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About DNV

DNV is the independent expert in risk management and assurance, operating in more than 100 countries. Through its broad experience and deep expertise DNV advances safety and sustainable performance, sets industry benchmarks, and inspires and invents solutions.

Whether assessing a new ship design, optimizing the performance of a wind farm, analysing sensor data from a gas pipeline or certifying a food company's supply chain, DNV enables its customers and their stakeholders to make critical decisions with confidence.

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Appendix A

Waste Type	Facility Location	Waste Facility Permit / Licence No.	Expiry Date

Appendix B

Waste Type	Haulage Contractor	Waste Collection Permit/Skip Operator Licence No.	Expiry Date

Appendix C

Materials and Waste Register									
LoW Code	Description	Volume Generated (tonnes)	Prevention (tonnes) (non-waste)	Reused (tonnes) (non-waste)	Recycled (tonnes) (waste)	Recovered (tonnes) (waste)	Disposed (tonnes) (waste)	Unit Cost Rate (€/tonne)	Total Cost (€)
17 01 01	Concrete								
17 01 02	Bricks								
17 01 03	Tiles and Ceramics								
17 02 01	Wood								
17 02 02	Glass								
17 02 03	Plastic								
17 03 02	Bituminous Mixtures								
17 04 01	Copper, Bronze, Brass								
17 04 02	Aluminium								
17 04 03	Lead								
17 04 04	Zinc								
17 04 05	Iron and Steel								

Materials and Waste Register									
LoW Code	Description	Volume Generated (tonnes)	Prevention (tonnes) (non-waste)	Reused (tonnes) (non-waste)	Recycled (tonnes) (waste)	Recovered (tonnes) (waste)	Disposed (tonnes) (waste)	Unit Cost Rate (€/tonne)	Total Cost (€)
17 04 06	Tin								
17 04 07	Mixed Metals								
17 04 11	Cables								
17 05 04	Soil and Stone								
17 06 04	Insulation Material								
17 08 02	Gypsum								
17 09 04	Mixed C&D Waste								
17 01 06*	Mixtures of, or separate fractions of concrete, bricks, tiles and ceramics containing hazardous substance								
17 02 04*	Glass, plastic and wood containing or contaminated with hazardous substances								
17 03 01*	Bituminous mixtures containing coal tar								

Materials and Waste Register									
LoW Code	Description	Volume Generated (tonnes)	Prevention (tonnes) (non-waste)	Reused (tonnes) (non-waste)	Recycled (tonnes) (waste)	Recovered (tonnes) (waste)	Disposed (tonnes) (waste)	Unit Cost Rate (€/tonne)	Total Cost (€)
17 04 09*	Metal waste contaminated with hazardous substances								
17 05 03*	Soil and stones containing hazardous substances								
17 06 05*	Construction materials containing asbestos								
	Other resources (nonwaste materials) (specify as needed)								

Materials and Waste Consignment Register										
No.	Date	Haulage Contractor	National Waste Collection Permit No.	Vehicle Registration	LoW Code	Waste Collection Docket No.	Destination Facility	Facility Permit/Licence No.	Destination Facility Docket No.	Quantity (Tonne)