April 2025

Resource Waste Management Plan

Proposed Large-Scale Residential Development at Sarsfield Rd, Wilton, Cork

On behalf of

The Land Development Agency

MALONE O'REGAN ENVIRONMENTAL

QUALITY ISO 9001:2015 NSAI Certified

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Resource Waste Management Plan

Proposed Large-Scale Residential Development at Sarsfield Rd, Wilton, Cork

The Land Development Agency

The Land Development Agency

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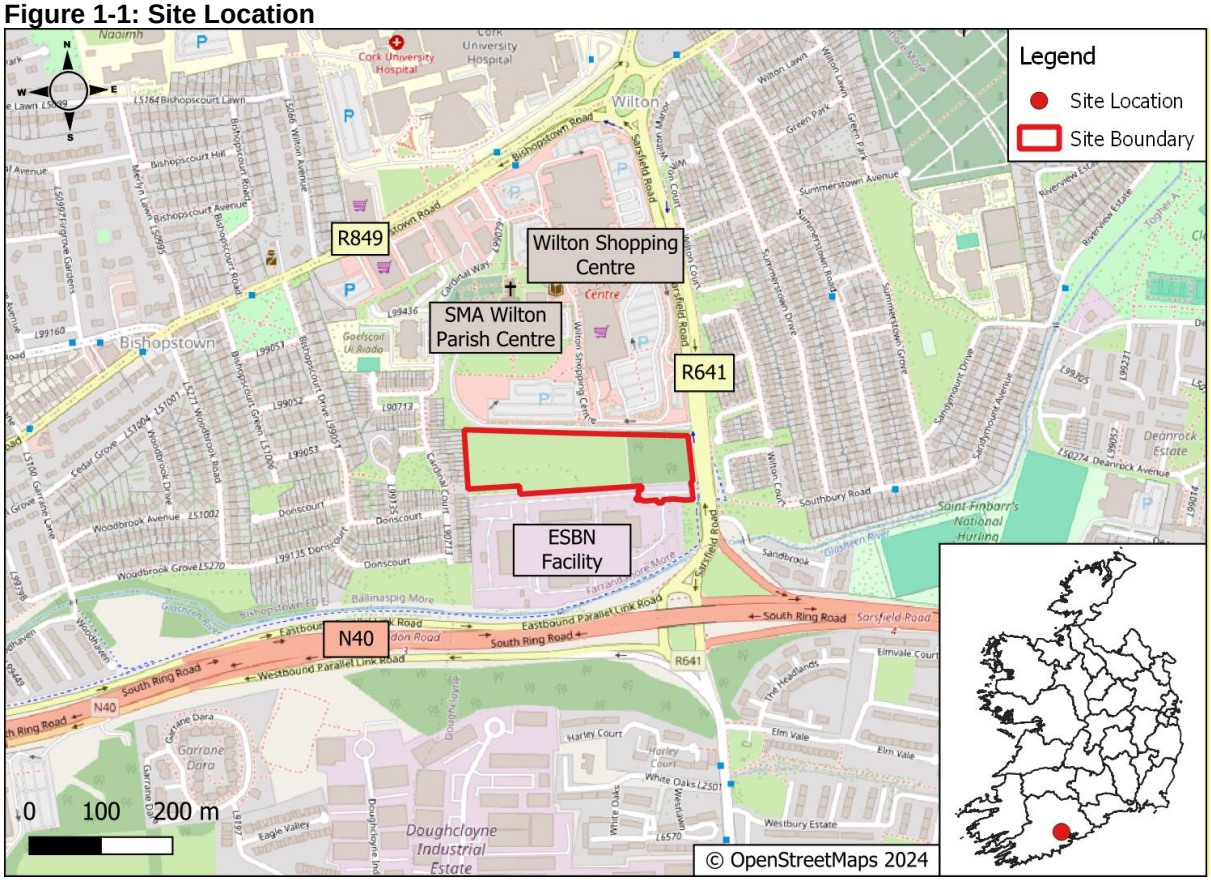
1 INTRODUCTION

Malone O'Regan Environmental ('MOR Environmental') was commissioned by the Land Development Agency ('the Applicant') to prepare a Resource Waste Management Plan ('RWMP'). The RWMP will accompany the planning application for the housing development and all associated works on lands at Farrandahadore More, Sarsfield Rd, Wilton, Cork. The location of the Proposed Development ('the Site') is shown in Figure 1-1.

Figure 1-1: Site Location



1.1 Scope and Objective

The purpose of the RWMP is to outline the manner in which construction, resources and waste will be managed throughout the construction phase of the Proposed Development in order to achieve compliance with the relevant waste legislation and policy. This will ensure that waste management activities at the Site will not have an adverse impact on the environment.

This RWMP has been prepared with reference to the following legislation and plans:

- The Waste Management Act, 1996 (as Amended) and Associated Regulations;
- The Litter Pollution Act, 1997;
- The Southern Region Waste Management Plan 2015 – 2021 [1];
- Waste Action Plan for a Circular Economy 2020 – 2025 [2]; and,
- Cork City Development Plan 2022-2028 [3].

This document has been prepared with the cognisance of the "Best Practice Guidelines on the Preparation of Resource & Waste Management Plans for Construction and Demolition Projects" [4]. The Guidelines recommend that planning authorities require a comprehensive

Resource and Waste Management Plan ('RWMP') to be prepared for all construction and demolition projects and that compliance with the comprehensive RWMP is a standard condition of planning permissions granted.

The comprehensive RWMP's level of detail depends on the project's scale and complexity. Developments are classified as "Tier 1" or "Tier 2" based on thresholds set out in the Guidelines.

The Proposed Development is above the following threshold:

"*New residential development of less than 10 dwellings*"

Therefore, the Proposed Development is classified as "Tier 2", requiring a bespoke comprehensive RWMP.

1.2 Commitment to Guidelines

The "*Best Practice Guidelines on the Preparation of Resource & Waste Management Plans for Construction & Demolition Projects*" [4] sets out the best practice approach to the prevention and management of Construction and Demolition ('C&D') waste and resources from the design to the Construction Phase of a project.

The project will be carried out in accordance with the policies / objectives of the developer and appointed contractor's resource and waste policies and procedures.

1.3 Environmental Policy

The project will be carried out in accordance with the developer's and appointed contractor's resource and waste policies, objectives and procedures.

1.3.1 Waste Policy and Legislation

Directive 2008/98/EC [5], also known as the Waste Framework Directive, establishes an overall policy on waste in the EU. The Directive, which was incorporated into Irish law by the Waste Directive Regulations 2011 (S.I. 126/2011), requires a waste hierarchy (see Figure 1-2, [6]), which sets out the order of preference for controlling and managing waste and is central to waste management and legislation. Member States are also required to promote reuse and recycling and are obliged to reduce the percentage of waste going to landfills.

The key piece of legislation in Ireland governing waste management is the Waste Management Act 1996, as amended. However, many other statutory instruments and regulations set out additional requirements regarding waste.

The waste hierarchy is encouraged throughout the Directive and will be adhered to during the construction phase of the Proposed Development.

Figure 1-2: Waste Hierarchy

C&D waste is the single most significant waste stream produced in Ireland in terms of both weight and volume; a total of 9 million tonnes was collected in 2021. Of this waste, approximately 85% consisted of soil and stones [6]. A total of 96% of the C&D waste was treated in Ireland [6].

The Waste Framework Directive required EU states to achieve 70% material recovery of C&D waste by 2020. Approximately 85% of the C&D waste from 2021 was backfilled, and another circa ('ca.') 8% was recycled, with only 7% being sent for final disposal [6]. Although soil and stones constituted the majority of back-filled material, substances such as concrete, brick and bituminous wastes were also recovered for back-fill.

1.3.2 National Waste Policy and Legislation

Ireland's National Waste Policy 2020-2025: A Waste Action Plan for a Circular Economy [2] focuses on preventing waste generation and resource consumption and extending the productive life of products and goods within Irish society and economy. The Waste Action Plan outlines methods for reducing and managing waste from construction and demolition ('C&D'). The Plan outlines areas in which the C&D sector will need to achieve over the coming years, and where possible, the Proposed Development will assist in reaching these objectives, such as promoting waste prevention, following the best available techniques, and expanding the range of recycled products.

1.3.2.1 Local Waste Policy and Legislation

The Southern Region Waste Management Plan 2015-2021 [1], operated over ten local authorities comprising Carlow, Clare, Cork County, Cork City, Limerick City & County, Kerry, Kilkenny, Tipperary, Waterford City & County and Wexford. The Plan sets out the strategic and policy context for the region, reviews the waste management strategies implemented before its publication, and assesses waste projections and plans for future waste management strategies.

One of the goals set out in the Plan is to "*reduce and where possible eliminate landfilling of all major waste streams including municipal, industrial and construction and demolition wastes in favour of the recovery of residual wastes*" by 2030 [1].

The Southern Region Waste Management Plan 2015-2021 [1] sets out 8 strategic objectives which represent the local authorities' statement of intent. The strategic objectives have been developed for key policy areas over the duration of the plan.

Objective A outlines the intent to align with EU and national waste policies by applying the waste hierarchy to the management of waste streams. Objective A states "*The region will implement EU and national waste and related environmental policy, legislation, guidance and codes of practice to improve management of material resources and wastes".*

Objective F sets out enforcement and regulation actions for waste enforcement in the region, the plan states "*The region will implement a consistent and coordinated system for regulation and enforcement of waste activities in cooperation with other environmental regulators and enforcement bodies".*

1.3.3 Cork City Development Plan 2022 – 2028

The Cork City Development Plan 2022-2028 [3] presents a six-year plan for the city's growth and development. Chapter 9 of the development plans outlines the waste management policy, which is based on the EU waste hierarchy prevention, preparing for reuse, recycling, energy recovery and sustainable disposal, which is a core waste management principle outlined in this report demonstrated in section 4.

The development plan includes a number of objectives that the Cork City Council has outlined regarding waste and waste management, which has been considered in preparing this report.

Objective 5.13 of the Cork City Development Plan states that " *all development proposals should minimise waste and maximise the recycling and re-use opportunities during the construction and operation phases."*

Objective 9.12 of the Cork City Development Plan presents the following commitments:

- *To support the sustainable waste management in line with the objectives of the Southern Region Waste Management Plan 2015-2021 and the National Waste Management Plan for a Circular Economy (NWMPCE) when published, which will replace the existing Regional Waste Management Plan.*
- *To facilitate the transition to a circular economy facilitating the value recovery and recirculation of resources in order to generate minimal waste.*
- *Continue to fulfil duties under the Waste Management (certification of historic unlicensed waste disposal and recovery activity) Regulations 2008 (S.I. No 524 of 2008), including those in relation to the identification and registration of closed landfills.*
- *To encourage the recycling of construction and demolition waste and the reuse of aggregate and other materials in future construction projects. Applications for large infrastructure projects shall be accompanied by a Construction and Environmental Management Plan that includes details of how construction and demolition waste generated is to be managed and, where reuse/recycling is not practicable, disposed of, in line with legislative requirements."*

1.4 Resource and Waste Management Objectives

The Resource and Waste Management Objectives for the construction phase of the Proposed Development are as follows:

- Preventing waste and maximising recycling and recovery of waste where possible;
- Diverting waste from landfill wherever possible;
- Prevent littering; and,

- Prevent any other environmental pollution such as soil or water contamination.

The RWMP is a “live” document and should be reviewed and updated throughout all stages of construction utilising the methodology provided in Section 5 of the “Best Practice Guidelines on the Preparation of Resource & Waste Management Plans for Construction and Demolition Projects” [4]. Once updated, the RWMP should be provided to the Local Authority.

2 DESCRIPTION OF THE PROPOSED DEVELOPMENT

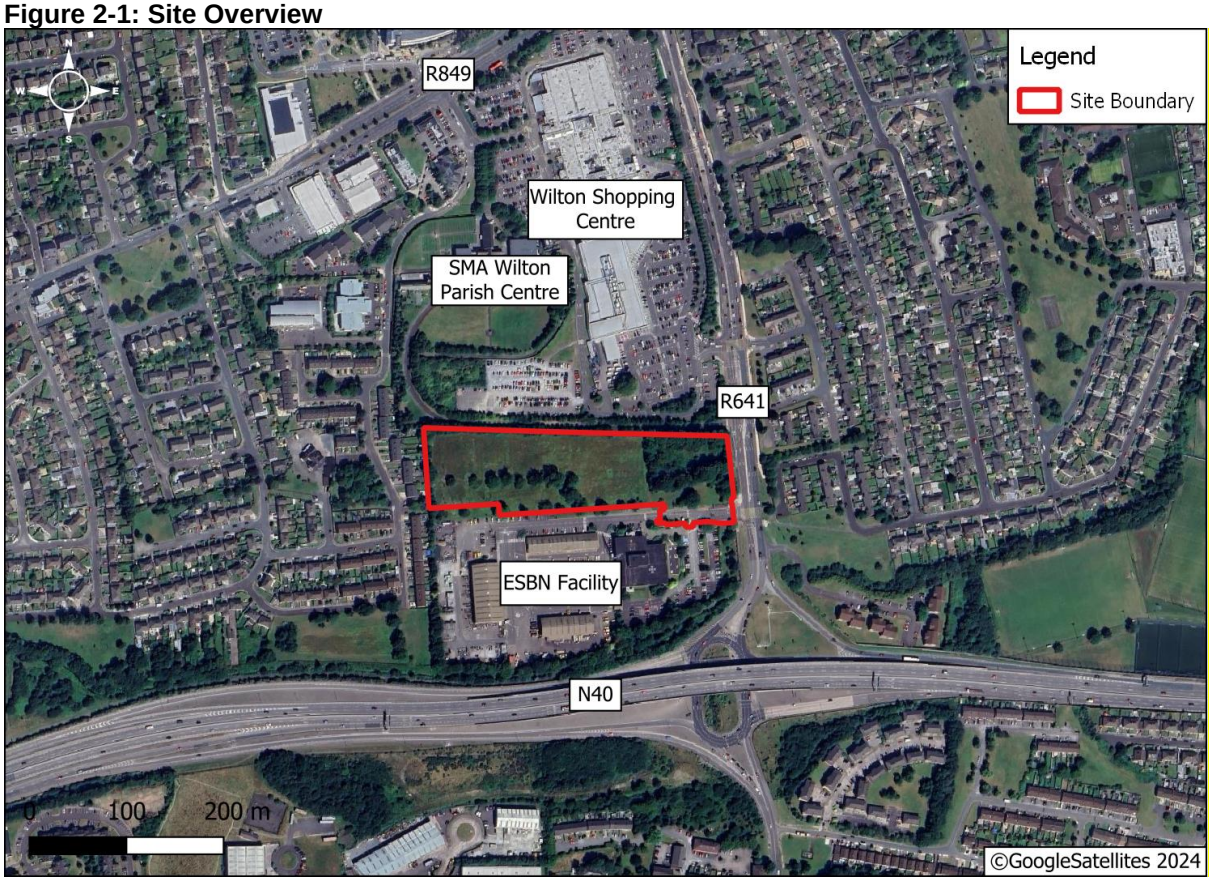
2.1 Site Context

The Site is located on a ca. 2.61-hectare ('ha') site, which is located ca. 3km southwest of Cork City. The Site is accessed via the ESB Networks facility entrance and a gate, which is along the regional road R641, also known as Sarsfield Road that connects to the N40 'Cork South Ring Road'.

The Site is comprised of an area of amenity grassland and a section of scrub in the northeast corner. A hedgerow / treeline borders the north and west of the Site and the section of scrub.

The Site is located in the centre of Wilton, to the west of Sarsfield Road (R641). The surrounding area is largely made up of residential, commercial and institutional uses. The Site is bordered to the north by the access road to the SMA Wilton Parish Centre and its associated buildings and lands. Wilton Shopping Centre and car park is located immediately to the east of the SMA Wilton Parish Centre and its associated buildings. To the west of the Site and east of the Sarsfield Road comprises large areas of residential premises, both semi-detached and terraced. The Site is bound to the south by the Wilton Electricity Supply Board Networks ('ESBN') Facility. See Figure 2-1 below.

Figure 2-1: Site Overview



2.2 Proposed Development

The Proposed Development will consist of the following:

> *'The Land Development Agency ('LDA') intends to apply to Cork City Council for permission for a Large Residential Development with a total application site area of c. 2.61ha, on lands adjoining the ESB Networks DAC Office, at Farrandahadore More, Sarsfield Road, Wilton, Cork City. The development will provide 348 no. residential*

units and a 156 sqm childcare facility, revised access arrangements to Sarsfield Road and all associated development above and below ground.'

Full details of the above Proposed Development can be found in the Planners Report submitted as part of this planning application

2.3 Construction

2.3.1 Construction Programme

The construction of the Proposed Development is anticipated to take ca. 36 months to complete; this will be confirmed upon the appointment of the main contractor.

2.3.2 Construction Management Plan

During the Construction Phase, the methods of working will comply with all relevant legislation and best practices in reducing the environmental impacts of the works. Although Construction Phase impacts are generally of a short-term duration and are localised in nature, the impacts will be reduced as far as practicable through compliance with relevant guidance outlined in section 1.1. Construction phase times will be as follows:

- 7:00am to 6:00pm Monday to Friday;
- 8:00am to 2:00pm on Saturdays; and,
- No work on Sundays or public holidays.

Construction works outside these hours will be limited to works necessary for health and safety reasons, to protect the environment or with prior agreement with the Planning Authority.

2.3.3 Construction Compound

To ensure the efficient management of the construction works, a temporary construction compound will be set up for the duration of the construction works. During the construction of the Proposed Development, it is expected that the site compound will be located to the east of the Proposed Development. The compound's location will be finalised before the commencement of works and the Local Authority informed.

2.3.4 Construction and Site Traffic access

During the construction works, construction vehicles i.e., Heavy Goods Vehicles ('HGVs') are proposed to approach the Site via the existing access road of the R641, which currently serves the ESB site to the south.

Figure 2-2: Proposed Development Site Layout

2.4 Drainage

2.4.1 Surface Water Drainage

2.4.1.1 Existing Surface Water Drainage

Following a desktop review of the available drainage records, along with a visual site inspection, it is noted there is no formal surface water drainage serving the site. There are a number of existing road gullies within the Site boundary on the existing ESB Networks facility access road to the southeast which appear to connect to an existing combined sewer which flows eastwards.

Beyond the Site boundary to the east, there is an existing 600mm diameter surface water pipe located below Sarsfield Road, which flows in a southerly direction, ultimately discharging to the Glasheen River. To the west, there is an existing 600mm diameter surface water pipe at Cardinal Court, which also flows in a southerly direction to a separate outfall to the Glasheen River

2.4.1.2 Proposed Surface Water Drainage

It is proposed that the 2.61ha catchment be split into five sub-catchments, as shown in Figure 2-3. The above strategy has been arrived at on the basis of the limited available open space available for one central attenuation facility. Due to various constraints, such as existing mature tree root protection zones and the need to avoid placing tanks below roads to be taken into charge in future, the above strategy allows for localised attenuation, with smaller structures, within each sub-catchment. Restricted flows from sub-catchments A, B, C & D will all ultimately drain via sub-catchment F and discharge finally at a rate limited to Qbar for the site (13.21l/s) to the existing 600mm diameter surface water network at Sarsfield Road.

Figure 2-3: Proposed Surface Water Catchment Strategy

2.4.2 Foul Drainage

The proposed foul drainage system will be designed to take discharges from the new residential units. There is a small amount of commercial space on site, namely the proposed creche facility within the Middle Block.

The foul network will be designed in accordance with Uisce Eireann's current Code of Practice for Wastewater Infrastructure. The foul network will comprise of 150mm, 225mm and 300mm diameter SN8 pipework, and will be designed for a minimum velocity of 0.75m/s (self-cleansing) and maximum peak velocity of 2.5m/s.

It is proposed to connect to the existing Irish Water network at an existing manhole on the 225mm foul sewer at Sarsfield Road and to upgrade the existing sewer from 225mm to 300mm downstream of this (ca. 12m in length) until its junction with the existing 525mm diameter combined sewer.

3 RESPONSIBILITIES AND TRAINING

A member of the construction management team will be appointed as the Project Resource and Waste Manager to ensure compliant, efficient and documented resource and waste management during the construction phase. Each member of the construction staff, including sub-contractors, will require training in resource and waste management procedures appropriate to their role. Each person will be responsible for complying with the RWMP and related resource and waste management procedures.

Table 3-1: Roles and Responsibilities

Role	Responsibility
Client	• Responsible for appointing and directing an appropriately qualified design team.
Contractor	• Responsible for appointing a Resource and Waste Manager; • Managing the Construction Phase of the project; was responsible for the project's overall environmental performance; • Responsible for reporting incident responses and, where required, communicating the incident details to relevant regulatory authorities; • Monitoring of the construction processes against the project objectives; • Liaison with all staff and local stakeholders dealing with any complaints or queries from the public; and, • Ensure compliance with environmental legislation, consents, objectives, targets and other environmental commitments, including those arising from the RWMP and other environmental reports.
Architect, Engineer and Quantity Surveyor	• Responsible for the design of the project, including setting environmental targets; • Liaison with the planning authority, client and contractor to ensure that requirements are communicated; and, • Ensure compliance with environmental legislation, consents, objectives, targets and other environmental commitments, including those arising from the RWMP and other environmental reports.
Resource and Waste Manager	• The Resource and Waste Manager will be given the responsibility and authority to select a resource and waste team, if required, i.e., site staff members who will aid them in the organisation, operation and recording of resource and waste management systems on the Site. The Resource and Waste Manager will oversee, record and provide feedback to the Client on everyday waste management at the Site. Authority will be given to the Resource and Waste Manager to delegate responsibilities to sub-contractors where necessary and coordinate with suppliers, service providers and sub-contractors to prioritise on-site waste prevention and recycling; • They will be responsible for appropriately training all relevant site personnel for their role in implementing the RWMP and related waste management procedures. These procedures will include litter prevention and mitigation measures to ensure that all waste is disposed of legally, economically, and safely; • The Resource and Waste Manager will be required to ensure that only appropriately permitted waste collection contractors are used to collect waste from the Site; • The Resource and Waste Manager will be trained in how to establish and maintain a waste record-keeping system, perform an audit and establish targets for waste management on site. They will also be trained in the best methods for segregation and storage of recyclable materials,

	have information on the materials that can be reused onsite and know how to implement the RWMP. They will also be responsible for conducting waste audits from time to time; and, • The Resource and Waste Manager will be available for any Local Authority or other audits as required. They will also update the RWMP as required.
Site staff, including sub-contractors	• It will be the responsibility of all relevant site construction / operational staff and sub-contractors to ensure that waste is segregated and stored appropriately in line with the RWMP and related waste management procedures; and, • An introductory awareness course will be given to all site staff and relevant sub-contractors to outline the RWMP to detail the segregation of waste materials at source and litter prevention requirements. This may be incorporated with other site training sessions e.g. general site induction. This introductory course will describe the materials to be segregated, the storage methods and the location of the waste storage areas. A sub-section on hazardous wastes will be incorporated into the training program, and the particular dangers of each hazardous waste will be explained. This may also include the provision of training and reminder material such as posters, signs and contact details for the Waste Manager or their nominated deputy.

4 DESIGN APPROACH

4.1 Workshops

The scope, attendees, agenda and dates of any design out workshops will each be decided upon at the contractor's tender stage. All attendees will be notified within an appropriate timeframe.

Site personnel shall be trained appropriately to ensure they are competent to perform tasks that have the potential to cause a significant environmental impact as part of the Proposed Development, refer to Section 6.1. All managers and supervisors will be briefed on the RWMP.

Method Statements will be prepared for specific activities before the work commences and will include environmental management / best practice measures and emergency preparedness appropriate to the activity covered. The Contractor's Construction Manager will review key Method Statements before their issue. Method Statement briefings will be given before personnel carry out key activities for the first time.

4.2 Reuse and Recycling

Reusing materials onsite will reduce the costs of transportation, disposal, and landfill levy fees, as well as a reduction in the use of virgin raw materials. Reuse and/or recovery will be used where practicable, but the scope will be limited given the proposed Site size and development. However, it will be considered during the detailed design stage.

Excavated soil and stone will be stored in segregated piles on the Site and will be removed from the Site and sent to a C&D waste recovery facility, or an Article 27 by-products notification will be sought for reuse elsewhere. The soil and stone material from the Site are expected to be minimal. This waste will be source segregated, and where necessary, hardened concrete waste will be sent to a C&D waste recovery facility and recovered for hardcore offsite. Wood material generated as part of the site clearance will be minimal and source segregated for subsequent separation and recovery at a remote facility.

The Proposed Development has been designed to maintain the proposed ground level where possible and to minimise the cut and fill across the Site.

The cost of waste recycling can be lower than that of disposal, depending on segregation at the source for certain materials such as plastic, glass and cards. If waste streams can be segregated on-site, waste collection and management fees would be significantly reduced.

Metals will be segregated at source on site where possible, as some revenue can be earned from source-segregated metal. Where it is not possible to segregate metals on site, it can be segregated at a C&D waste processing facility, and the contractor can receive a rebate against the overall cost of waste transport and disposal.

Concrete waste will be minimal and will be generated from the construction process. As the concrete waste will be the excess left due to ordering, there will not be any reinforcing steel to recycle. Masonry waste resulting from the construction process will also be sent to a C&D waste recovery facility and recovered for hardcore offsite. It is expected that there will be unavoidable construction waste, material surpluses and damaged materials that will need to be disposed of.

4.3 Green Procurement

The Resource and Waste Manager shall ensure that materials are ordered so that the quantity delivered and the storage are not conducive to the creation of unnecessary waste. The Resource and Waste Manager will be responsible for ensuring resource waste prevention and reduction capability and competence criteria are met using a questionnaire in the contract / tender request package. They will have expert knowledge of waste prevention and

minimalization. Reviews will be required during the design process to monitor compliance with waste design principles.

Material specifications will be assessed when ordering materials and will outline the essential performance properties required of a material. During the design stage, consideration will be given to using measures such as the “Just in Time” method to prevent as much material waste as possible.

The RWMP is a working document that will need to be updated as the Proposed Development progresses. The Client will ensure that a contractual agreement is in place to implement the initiatives outlined.

4.4 Offsite Construction

The use of prefabricated and precast materials will be considered in the detailed design stage, along with the consideration of modular construction.

4.5 Material Optimisation

The Resource and Waste Manager shall ensure that materials are ordered so that the quantity delivered, and the storage are not conducive to creating unnecessary waste. Where possible, the overall material used in the design of structures will be reduced.

During the detailed design stage of the Proposed Development, internal and external simplification of the design and layout will be considered. Where appropriate and feasible, standardizing design details and materials to reduce the number of materials on site will be considered. Consideration will also be given to material dimensions and product sizes to ensure specific design specifications and requirements are met.

4.6 Flexibility and Deconstruction

During the detailed design stage of the Proposed Development, consideration will be given to using recyclable, flexible and adaptable materials for a low-waste future change of use so that materials can easily be recovered / reused should the Proposed Development undergo disassembly / deconstruction.

5 KEY MATERIALS, QUANTITIES AND COSTS

5.1 Targets

At the time of writing this report volumes of construction materials were not available and therefore specific resource and waste management targets for the Proposed Development have not yet been established. Targets will be set by the design phase Resource and Waste Manager on completion of the comprehensive RWMP prior to the commencement of construction.

Typical Key Performance Indicators ('KPIs') that may be used to set targets as per the Guidelines [4] include:

- Weight (tonnes) or Volume (m^3) of waste generated per construction value;
- Weight (tonnes) or Volume (m^3) of waste generated per construction floor area (m^2);
- Fraction of resource reused on site;
- Fraction of resource notified as a by-product;
- Fraction of waste segregated at source before being sent off-site for recycling / recovery; and,
- Fraction of waste recovered, fraction of waste recycled, or fraction of waste disposed.

5.2 Estimates of Residual Resource/Waste Streams

It is expected that the construction phase will result in typical amounts of waste generated from the construction activities of the Proposed Development. A Waste and Materials inventory should be completed by the Resource and Waste manager during the construction phase of the Proposed Development, including the resource management route options, which will be considered during the detailed design stage of the project. A template of the waste and materials inventory is included in Appendix A.

The Environmental Protection Agency ('EPA') provides a breakdown of the proportion of different resource management routes for C&D wastes collected in Ireland [7]. Table 5-1 is an example of estimated construction waste types and associated List of Waste ('LoW') codes.

Please note that volumes, rates and targets are to be determined and set out by the Resource and Waste Manager appointed to the Proposed Development during the construction phase.

Table 5-1: Estimated Construction and Demolition Waste Volumes

Description	LoW Code	Volume generated (tonnes)	Unit Cost rate (€)	Total Cost (€)	Reuse, Recovery or Recycling Target
Concrete	17 01 01	TBC			
Wood	17 02 01	TBC			
Bituminous mixtures	17 03 02	TBC			
Mixed Metals	17 04 07	TBC			
Soil and Stone	17 05 04	TBC			
Insulation Material	17 06 04	TBC			
Gypsum	17 08 02	TBC			
Mixed C&D Waste	17 09 04	TBC			
Paper & Cardboard	20 01 01	TBC			
Chemicals (Solvents, Paints, etc.)	20 01 03 20 01 19	TBC			

	20 01 27-30				
Green Waste	20 02 01	TBC			

Mixed C&D waste is the most common C&D waste after soils and stone in Ireland. Due to its mixed nature, which is made up of numerous materials, mixed C&D waste cannot be recovered or recycled. Some mixed C&D waste can be somewhat segregated, and a portion recycled at the receiving waste facility, e.g., removal of metal by a magnet. However, to achieve a target of 20% reuse, recovery, or recycling for this waste stream, a greater proportion of segregation will be required.

Materials should be ordered on an 'as needed' basis to avoid excess materials becoming waste. Any excess, unused, materials will be sent back to the supplier. To facilitate this, materials in packaging should not be unpackaged until they are ready for use.

6 SITE MANAGEMENT

As per "Best Practice Guidelines on the Preparation of Resource & Waste Management Plans for Construction and Demolition Projects" [4] Section 5, "Updating the RWMP during site works," outlines the methodology for updating the RWMP. The construction phase Resource and Waste Manager will be responsible for ensuring that the updated RWMP is implemented during the Construction Phase and for delivering all training and induction relating to resource and waste management.

6.1 Training

The updated RWMP will be distributed to the project team including sub-contractors, to ensure the requirements are communicated effectively. Site induction training will be completed at the beginning of the construction phase and will include the aims and objectives of the updated RWMP. It will also be noted that the updated RWMP will be a working document, and the RW Manager will be required to update the document as the construction of the Proposed Development progresses (see section 1.4 for details on updating the RWMP). As per the Guidance [4], induction training will include the following:

- Scope and content of the updated RWMP;
- Project commitments and targets;
- List of anticipated resources and waste volumes to be generated;
- Procedures for the proper identification and segregation of resources and wastes;
- Temporary storage and the location of the waste storage areas; and,
- Clear instructions on hazardous wastes and the particular dangers of each type of hazardous waste.

6.2 Toolbox Talks

Toolbox talks will be scheduled regularly during the construction phase of the Proposed Development. They will include instruction on incident response procedures and resource management practices associated with their work.

6.3 Waste Collection Operators and Waste Destination Sites

The Resource and Waste Manager will ensure that all waste is handled in accordance with the Waste Management Act (as amended).

The Resource and Waste Manager will be required to ensure that only appropriately permitted waste collection contractors are used to collect waste from the Site. This will be checked on the National Waste Collection Permit Office ('NWCPO') website. Waste management contractors must provide copies of relevant collection permits.

The Resource and Waste Manager will also be responsible for ensuring that all waste is processed and / or disposed of at a suitably licenced or permitted waste facility. The status of a facility's waste permit or Certificate of Registration ('CoR') will be checked on the NWCPO website or on the EPA website for licenced sites.

6.4 Resource Efficient Supply Chains

The following best practice measures will be utilised where possible and as far as practicable:

- Select procurement routes to minimise unnecessary packaging (e.g. 'Just-in-Time' delivery process);

- Use strategically located (consolidation centres) storage and distribution facilities where materials can be stored prior to delivery;
- Prepare ordering procedures and supply chain systems that avoid waste;
- Use take-back schemes for packaging and material surplus and offcuts;
- Select procurement routes that minimise unnecessary packaging; and,
- Plan phases of work to reduce the potential for on-site residual resource generation.

6.5 Control of Records

Resource and waste management records will be maintained in accordance with the company's respective procedures and legal requirements. The records will be kept, in either hard copy or electronic format as required by the individual procedure that the records relate to, in such a way that they are readily identifiable, retrievable and protected against damage, deterioration or loss. The records procedure also specifies the retention time for the records and who has the authority to dispose of them.

6.6 Records for Onsite Resource Uses

Records will be kept for waste / resource movement within the Site, i.e., excavated soil reused onsite for soil stabilisation or reinstatement / landscaping works. A system will be put in place to detail the weight and type of material, its source, and its destination within the Site.

This record system will allow the comparison of recorded waste amounts with the targets established for recovery, reuse, and recycling in the updated RWMP. It should also be linked with the delivery records and records of waste transported off-site so that the percentage of waste generated from each waste / resource stream can be established.

6.7 Consultation / Communication

The Contractor will define procedures for internal and external communication. During the Construction Phase, internal communication will include regular progress meetings, which should cover:

- Training undertaken;
- Progress reports;
- Inspections, audits and non-conformance;
- Complaints received;
- Visits by external bodies and the outcome or feedback from such visits;
- Objective / target achievement, including reporting on performance; and,
- External communication, including letter drops or meetings and liaison with statutory authorities, will be overseen by the Site Manager.

6.8 Auditing and Inspections

The Resource and Waste Manager will conduct audits at the Site at the end of each phase of the construction of this project. An audit plan will be prepared before the audit when the waste management procedures and plan are being put in place at the start of the project. The audits will include the following:

6.8.1 Work practice

The Resource and Waste Manager will inspect signage and waste storage infrastructure. Any required repairs or upgrades will be recorded and carried out as soon as possible. Compliance

with procedures regarding segregation should be noted, and any contamination should be highlighted so that corrective action can be taken. The Resource and Waste Manager should observe (sub)contractor work practices for compliance with the updated RWMP.

6.8.2 Record keeping

The Resource and Waste Manager will inspect all waste and resource records to ensure they are readily identifiable, retrievable, and protected against damage, deterioration, or loss. The resource records will be compared with established Site targets (refer to Section 5). Progress towards these targets will be analysed, and areas for improvement will be identified.

6.8.3 Audit Findings

The audit findings should highlight corrective actions that may be implemented in relation to management policies or site practices to reduce waste further. A tracking system will be stipulated to determine the success or failure of corrective actions.

C&D waste audit procedures and template advice, including an audit checklist and templates for waste records, are available in the European Commission [8]"*Guidelines for the waste audits before demolition and renovation works of buildings*".

7 SITE INFRASTRUCTURE

Waste will be segregated onsite where possible. The storage methods and location of the Waste Storage Areas will be included in induction training and in the signage required onsite. Posters and signs on site will include the contact details of the Resource and Waste Manager.

It is not predicted that hazardous materials will be present on site; however, on the occasion that hazardous materials do arise, they will be segregated, classified in accordance with the LoW, and removed by a licensed waste contractor.

It is proposed to have exclusion zones and barriers between stockpiled materials and surface water features to prevent sediment from washing into the receiving water environment. Consideration will be given to Article 5 of EU Regulation 2019/1021 in the unlikely event of stockpiling of certain persistent organic pollutants over 50kg; examples of such pollutants include ground contamination, EPA/XPS insulation material containing brominated flame retardant ('HBCDD') or polychlorinated biphenyls from the removal of electrical equipment.

The handling and export of resources will be further considered during the detailed design stage of the Proposed Development.

8 CONCLUSION

This RWMP document outlines the management procedures to enable the Appointed Project Manager to prepare and update a construction stage RWMP.

The appointed Contractor will be required to develop an updated RWMP prior to the commencement of any construction works, and this will be submitted to the Planning Authority for approval if requested.

Implementing all of the environmental management measures outlined in this RWMP will ensure that the construction programme is completed without significant adverse effects on the surrounding environment and that waste disposal is minimised.

9 REFERENCES

[1] SWR, “Southern Region Waste Managment Plan 2015 - 2021,” Southern Waste Region, 2017.

[2] Government of Ireland, “Waste Action Plan for a Circular Economy,” Government of Ireland, 2020.

[3] Cork City Council, “Cork City Development Plan 2022-2028,” Cork City Council, Cork, 2022.

[4] EPA, “Best Practice Guidelines on the Preparation of Resource & Waste Management Plans for Construction and Demolition Projects,” EPA, 2021.

[5] European Union, “Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain directives,” EU, 2008.

[6] EPA, “National Waste Statistics Summary Report for 2021,” EPA, Wexford, 2023.

[7] EPA, “Construction & Demolition Waste Statistics for Ireland,,” EPA, Wexford, 2023.

[8] EPA, “Guidelines for the waste audits before demolition and renovation works of buildings,,” 2018. [Online]. Available: https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&ved=2ahUKEwjcz9G8zOWHAxWYU0EAHRd3DGkQFnoECBMQAQ&url=https%3A%2F%2Fec.europa.eu%2Fdocsroom%2Fdocuments%2F31521%2Fattachments%2F1%2Ftranslations%2Fen%2Frenditions%2Fnative&usg=AOvVaw2tvcn_NTCNiJ. [Accessed 08 08 2024].

APPENDICES

APPENDIX A

1 RESOURCE AND WASTE INVENTORY TEMPLATE

Table 1-1: Resource and Waste inventory template

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								

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 05	Iron and Steel								
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								