

Construction and Demolition Resource and Waste Management Plan

(Working Document)



Strategic Housing Development

Victoria Cross, Co. Cork

On behalf of

Bellmount Developments Limited





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Strategic Housing Development
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Bellmount Developments Limited

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1 INTRODUCTION

Malone O' Regan Environmental Services (MOR) was commissioned by Bellmount Development Limited (the Applicant) to prepare a Construction and Demolition Resource and Waste Management Plan (C&D RWMP) to accompany a planning application to develop a Strategic Housing Development (SHD) and all associated works on lands at Wilton Road, Victoria Cross, Co. Cork (OS Reference W 65206 71067).

1.1 Scope and Objective

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

This C&D 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; and,
- The Southern Region Waste Management Plan 2015 – 2021 [1].

This document has been prepared taking cognisance of the “Best Practice Guidelines on the Preparation of Resource & Waste Management Plans for Construction and Demolition Projects” [2]. In these Guidelines, the category and quantity of waste generated by the Proposed Development is estimated and recommendations for the management of the various waste streams made.

1.2 Environmental Policy

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

1.2.1 Waste Policy and Legislation

1.2.1.1 EU Waste Policy and Legislation

Directive 2008/98/EC [3], also known as the Waste Framework Directive, establishes an overall policy on waste in the EU. The Directive outlines key concepts such as waste, recovery, disposal and puts in place the necessary requirements needed for the management of waste and establishes principles in order to handle waste in a way that does not negatively impact the environment or human health.

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

1.2.1.2 National Waste Policy and Legislation

Ireland's National Waste Policy 2020-2025 A Waste Action Plan for a Circular Economy [4] focuses on preventing waste generation and resource consumption and to extend 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 best available techniques and expanding the range of recycled products.

1.2.1.3 Local Waste Policy and Legislation

The Southern Region Waste Management Plan 2015-2021 [5], 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 publishing and assesses waste projections and planning for the 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 [5].

1.3 Resource and Waste Management Objectives

The Resource and Waste Management Objectives for the construction and demolition phases for 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.

Specific targets for the reuse, recovery and recycling of wastes are set in Section 5 of this document. The Construction Environmental Management Plan (CEMP) and C&D RWMP are “live” document and should be reviewed and updated throughout all stages of demolition and construction.

2 DESCRIPTION OF THE PROPOSED DEVELOPMENT

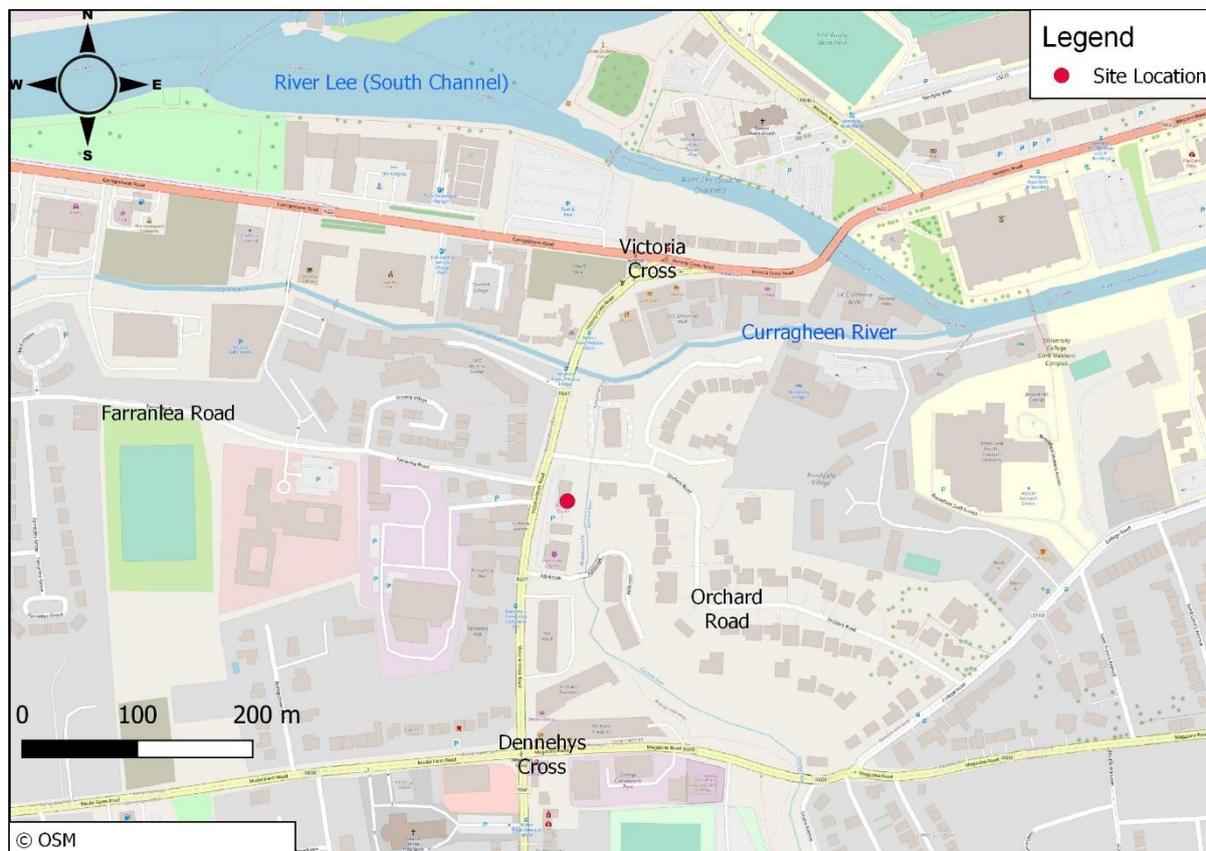
2.1 Site Context

The Site is located at Victoria Cross (South), Bishopstown, Cork, within a predominately urban landscape. The Site is ca. 0.29 ha in size. The Site is currently occupied by a Car Sales garage and is predominately comprised of areas of hardstanding with sections of treeline and vegetation along the eastern perimeter, followed by Glasheen River.

The Site is bordered to the west by Victoria Cross Road and to the north by Orchard Road, and existing buildings to the south. The surrounding area is a mix of private residential and university campus accommodation as well as restaurants, retailers, and other amenities due to the close proximity of University College Cork (UCC).

The Site is adjacent to the Glasheen River at the eastern border, refer to Figure 2-2 below. Refer to the Ecological Impact Assessment (EclA) for further information. The Site is located within the Lee, Cork Harbour and Youghal Bay Catchment [Catchment_ID: 19] and Glasheen [Cork City] Subcatchments [6]. The status of the Lee (Cork_090) river is moderate [7].

Figure 2-1: Site Location



2.2 Proposed Development

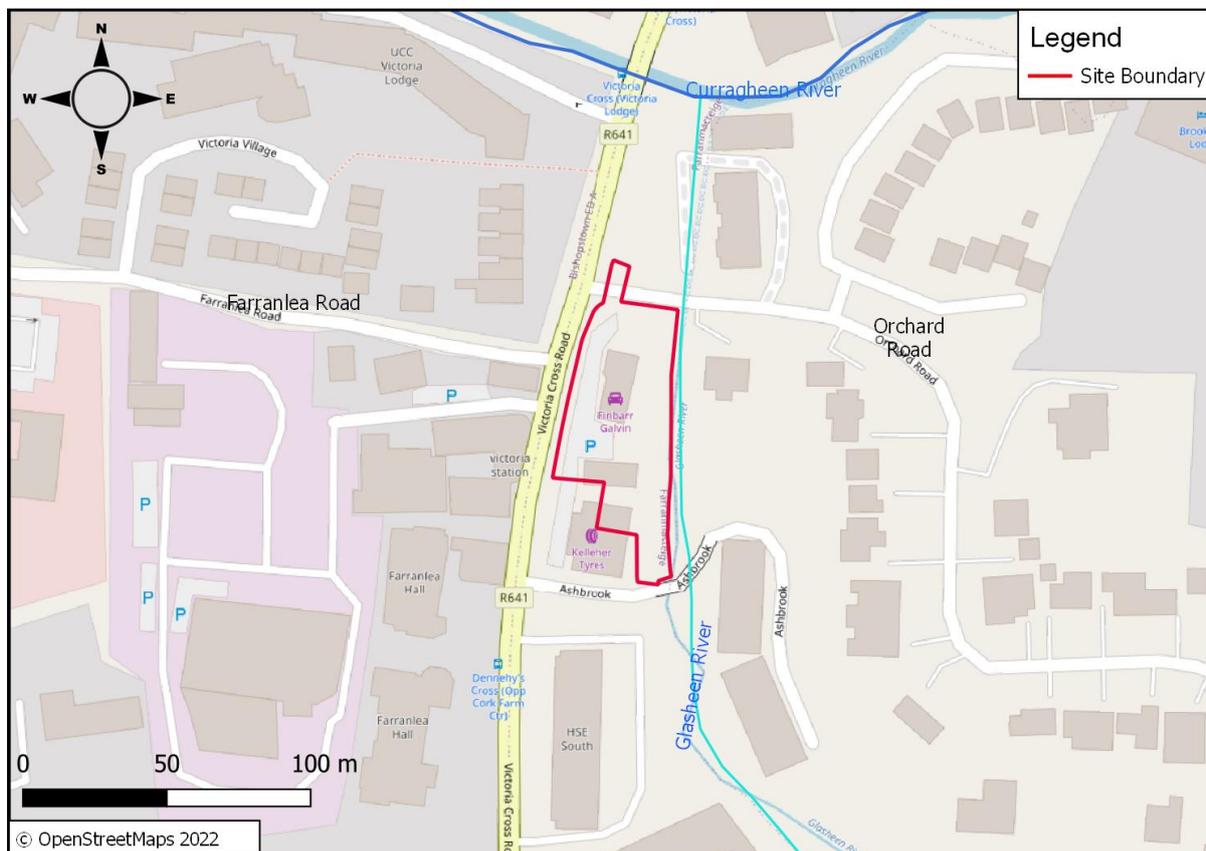
Bellmount Developments Limited intend to apply to An Bord Pleanála for planning permission for a strategic housing development at The Former Finbarr Galvin Motor Dealership, Fronting on to Victoria Cross Road and Orchard Road, Bishopstown, Cork.

The development will consist of:

- The demolition of existing structures on site;
- The construction of 78 no. student accommodation apartments (ranging in size from single bed studio apartments to 8-bed apartments) comprising a total of 206 no. bed spaces in 1 no. 6 storey block;
- Student amenity facilities including a study area, games room, lounge space, laundry room and server/ICT room;
- The provision of landscaping and amenity areas including a courtyard space (including modifications to the external amenity area of the student accommodation scheme permitted under An Bord Pleanála Ref. 19/38385), 1 no. rooftop terrace and a riverfront amenity incorporating a pedestrian and cycle path accessing onto Ashbrook Heights and Orchard Road;
- The provision of a set down area, 1 no. access point (for emergency vehicles only), footpaths and repositioned pedestrian crossing and associated tactile paving on Orchard Road;
- The provision of a new junction build out at the junction of Orchard Road and Victoria Cross Road;

- The provision of footpaths and landscaped areas along Victoria Cross Road; and,
- All associated ancillary development including pedestrian/cyclist facilities, lighting, drainage, boundary treatments, bin and bicycle storage and plant at ground and roof top levels.

Figure 2-2: Proposed Development Site Layout



2.3 Demolition

The demolition phase of the Proposed Development will consist of vegetation clearance and demolition of buildings, which will be completed by means of dismantling in order to segregate materials in so far as possible. The demolition phase will also include for the removal of the existing paving at the Site, followed by the excavation of trenches for services and foundation. It is not expected that there will be much concrete waste or soil and stone from the demolition process. The Proposed Development has been designed to keep cut and fill activities to a minimum.

2.4 Drainage

2.4.1 Surface Water Drainage

It is proposed to divert the existing storm water pipe moving along the western boundary of the Site and re-locate it under the existing footpath to get a sufficient distance to the edge of the foundation of the building in accordance with Section 3.5.9 of the Irish Water Code of Practice for Wastewater Infrastructure.

The proposed surface water drainage will discharge to the existing stormwater network northwest of the Site. The surface water drainage system will collect storm-water run-off from the Proposed Development, collecting run-off from impermeable road surfaces via gullies and adjoining areas. An attenuation tank has been proposed for the Site to provide flow

attenuation and to limit the discharge of surface water from the Site to the Glasheen River during any storm event. Refer to JODA Engineering Consultants Engineering Report for further details.

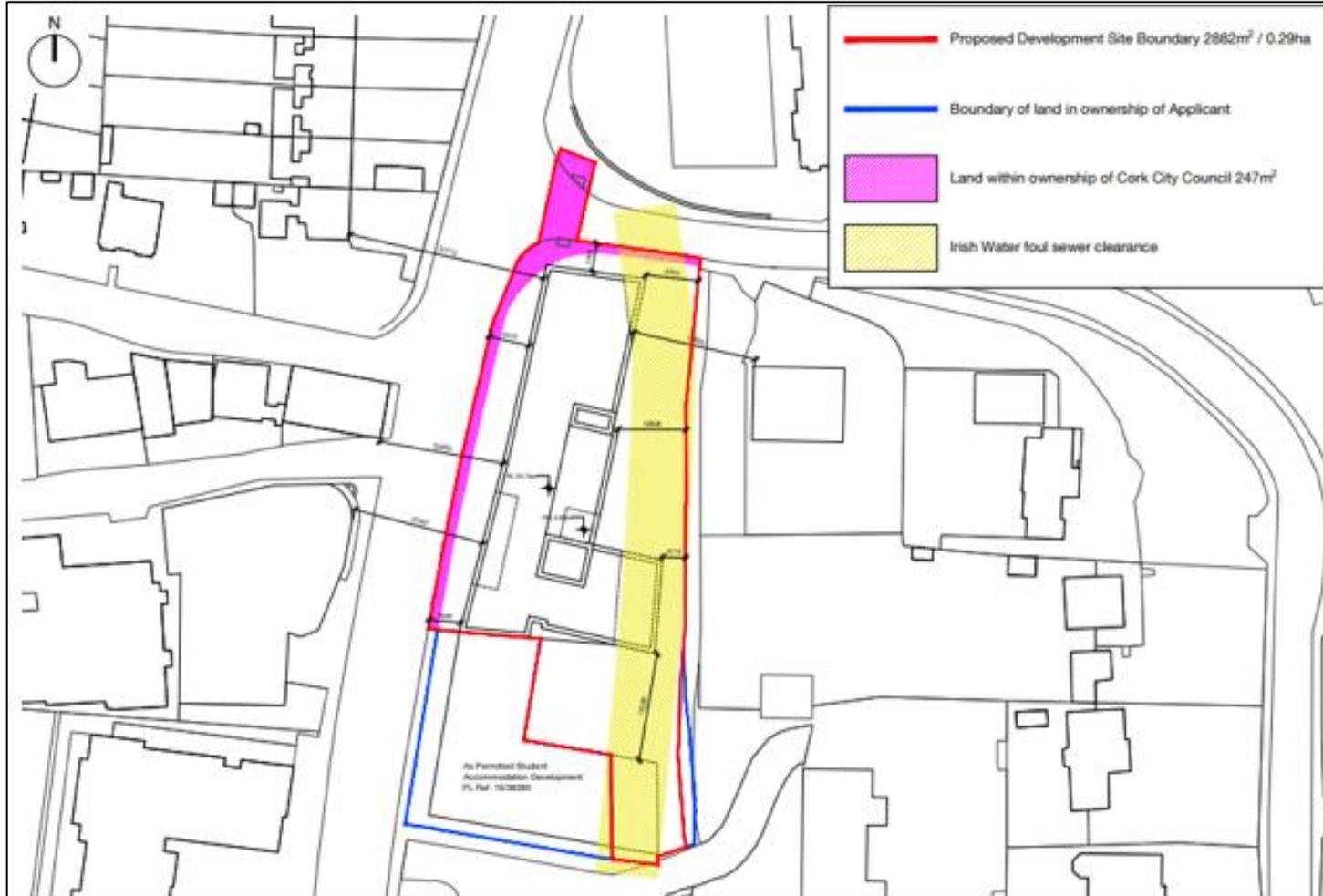
2.4.2 Foul Drainage

There is an existing 1050mm sewer on the eastern side of the Site. This sewer cannot be diverted and must be protected during the construction stage of the Site, ensuring a 5m wayleave. A wayleave in favour of Irish Water over the sewer will be required.

The layout of the proposed foul water network is shown on JODA drawing 4539-003. The pipework will be a network of 225mm diameter, and the material will be un-plasticised PVC. The foul sewer will discharge to the existing 1050mm sewer located on to the east of the Site. All foul sewers and manholes will be constructed in accordance with the Irish Water Standard Details and the Irish Water Code of Practice for Wastewater Infrastructure. A statement of design acceptance has been issued by Irish water.

Full details of the Proposed Development are provided as part of the overall Planning Application submitted to Cork County Council. Figure 2-1 below shows the site layout of the Proposed Development.

Figure 2-3: Proposed Development Site Layout (Refer to Drawing A01-10 submitted as part of the planning package)



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 and demolition phase of the project. However, each member of the construction staff, including sub-contractors, will require training in resource and waste management procedures appropriate to their role and each person will have the responsibility to comply with the C&D 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	<p>Responsible for appointing a Resource and Waste Manager.</p> <p>Responsible for management of the construction phase of the project. Has overall responsibility for the environmental performance of the project.</p> <p>Responsible for reporting incident responses and where required, communicating the incident details to relevant regulatory authorities.</p> <p>Monitoring of the construction processes against the project objectives.</p> <p>Liaison with all staff and local stakeholders dealing with any complaints or queries from the public.</p> <p>Ensure compliance with environmental legislation, consents, objectives, targets and other environmental commitments, including those arising from the C&D RWMP and other environmental reports.</p>
Architect, Engineer and Quantity Surveyor	<p>Responsible for design of the project including the setting of environmental targets.</p> <p>Liaison with the planning authority, client and contractor to ensure that requirements are communicated.</p> <p>Ensure compliance with environmental legislation, consents, objectives, targets and other environmental commitments, including those arising from the C&D RWMP and other environmental reports.</p>
Resource and Waste Manager	<p>The Resource and Waste Manager will be given responsibility and authority to select a resource and waste team, if required, i.e., members of the site staff that will aid them in the organisation, operation and recording of resource and waste management systems on the Site. The Resource and Waste Manager will have overall responsibility to 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 to coordinate with suppliers, service providers and sub-contractors to prioritise waste prevention and recycling onsite.</p> <p>It will be their responsibility that all relevant site personnel are trained, appropriately to their role in the implementation of the C&D 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.</p> <p>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, refer to Section 6 for further details.</p> <p>The Resource and Waste Manager will be trained in how to establish and maintain a waste record keeping system, how to perform an audit and how to</p>

	<p>establish targets for the waste management onsite. 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 C&D RWMP. They will also be responsible for conducting waste audits from time to time.</p> <p>The Resource and Waste Manager will be available for any Local Authority or other audits as required. They will also update the C&D RWMP as required.</p>
<p>Site staff including sub-contractors</p>	<p>It will be the responsibility of all relevant site construction staff and sub-contractors to ensure that waste is segregated and stored appropriately in line with the C&D RWMP and related waste management procedures.</p> <p>A basic awareness course will be given to all site staff and relevant sub-contractors to outline the C&D 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 basic 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.</p>

4 DESIGN APPROACH

4.1 Workshops

The scope, attendees, agenda and dates of any design out workshops will each be decided on at contractors 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 C&D RWMP.

Method Statements will be prepared for specific activities prior to the works commencing 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 prior to 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 given the size of the Site and development proposed, the scope will be limited, 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 site and sent to a C&D waste recovery facility or an Article 27 by-products notification will be sought for reuse elsewhere. It is expected that the soil and stone material from the Site will be minimal. This waste will be source segregated and where necessary it is intended that 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 will be 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 disposal, depending on segregation at source for certain materials such as plastic glass and card. If waste streams can be segregated onsite, waste collection and management fees would be significantly reduced.

Metals are often segregated at source onsite as some revenue can be earned from source segregated metal. Where metal is not segregated onsite this can be segregated at a C&D waste processing facility and a rebate against the overall cost of waste transport and disposal given to the contractor.

Concrete waste resulting will be minimal and will be generated from the construction process. As the concrete waste will be the excess left as a result of ordering there will not be any reinforcing steel to recycle. Masonry waste resulting from the construction process also will be sent to a C&D waste recovery facility and recovered for hardcore offsite. It is expected that while 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 is 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 is met using a questionnaire in the contract / tender request package. They will have expert knowledge on waste prevention and

minimalization. Reviews will be required during the design process to monitor compliance with designing out waste 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 C&D RWMP is a working document and 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. The waste prevention targets which are proposed to be adopted by the Client are outlined in Section 5 below.

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 is not conducive to the creation of unnecessary waste. Where possible the overall material use in the design of structures will be reduced.

During the detailed design stage of the Proposed Development, simplification of the design and layout internally and externally will be considered. Standardizing design details and materials to reduce the number of materials onsite will be considered where appropriate and feasible. Consideration will 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 Estimated Resource and Waste Inventory

The following quantities of waste estimated to arise following the completion of the planned demolition and construction activities at the Site have been estimated by Michael Barrett Partnership Construction Cost Managers. 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 EPA provides a breakdown of the proportion of different resource management routes for C&D wastes collected in Ireland [8]. This was used to estimate the reuse, recovery or recycling targets for the construction and demolition phases of the Proposed Development. Table 5-1 below demonstrates the above mentioned targets, along with the description, List of Waste (LoW) codes, estimated volumes generated and estimated costs.

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	898	30	26,940	90%
Wood	17 02 01	14	22	308	35%
Butminous mixtures	17 03 02	2	45	90	65%
Mixed Metals	17 04 07	39	25	975	100%
Soil and Stone	17 05 04	2,099	7.5	15,742	96%
Insulation Material	17 06 04	1	45	45	0%
Gypsum	17 08 02	12	22	264	90%
Mixed C&D Waste	17 09 04	2	45	90	15%

*These are preliminary estimates based on preliminary design and current unit rates excluding transports as of July 2022

Mixed C&D waste is the most common C&D waste after soils and stone in Ireland. Mixed C&D waste cannot be recovered or recycled due to its mixed nature being made up of numerous materials. Some mixed C&D waste can be somewhat segregated and at portion recycled at the receiving waste facility e.g., removal of metal by 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

The Resource and Waste Manager will be responsible for ensuring that the C&D RWMP has been implemented during construction phase and for the delivery of all training and induction relating to resource and waste management.

As mentioned in Section 3, 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 NWCPO website <https://www.nwcpo.ie/permitsearch.aspx> or by contacting the NWCPO directly. They 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 site's waste permit or COR will be checked on the NWCPO website at <http://facilityregister.nwcpo.ie/> or on the EPA website for licenced sites at <https://www.epa.ie/our-services/licensing/licencesearch/>. Dublin City Council can also be consulted regarding waste shipment and movements as they are the National Competent Authority for the export, import and transport of waste shipments.

Resource efficient supply chains will be considered during the detailed design stage and ordering stage of the Proposed Development.

6.1 Training

The C&D RWMP will be distributed to the project team, including sub-contractors, to ensure that 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 C&D RWMP. It will also be noted that the C&D RWMP is a working document, and the Resource and Waste Manager will be required to update the document as the Proposed Development progresses. As per the Guidance [9], induction training will include the following:

- Scope and content of the C&D RWMP;
- Project commitments and targets;
- List of anticipated resources and wastes volumes to be generated;
- Procedures for the proper identification and segregation of resources and wastes;
- Temporary storage and the location of the WSA's; and,
- Clear instruction on hazardous wastes and the particular dangers of each hazardous waste.

Relevant staff and Contractors will also be briefed on key activities and sensitive operations. Project, client and company resource and waste policies, where available, should be displayed onsite. Toolbox talks will be scheduled regularly during the construction phase of the Proposed Development and will include instruction on incident response procedures along with resource management practices associated with their work.

6.2 Consultation with Relevant Bodies

Formal or informal consultation with one or more of the following bodies may be required surrounding specific issues:

- Environmental Protection Agency (EPA);
- National Construction and Demolition Waste Council (NCDWC);
- National Waste Collection Permit Office;
- National Trans-Frontier Shipments (TFS) Office;

- experts such as waste practitioners, recyclers or members of academic or research institutions;
- other designers / developers / conservation architects and engineers who have implemented successful measures for improving waste management practices on similar projects; and,
- The Environmental Department of Local Authority within which a relevant waste facility is located.

Ongoing consultation with waste contractors and Cork City Council, will be pursued in order to ensure that the best practical option is being followed for waste management onsite. This will include the submission of waste audit reports in line with any conditions of planning.

The Contractor will define procedures for internal and external communication. The Client may require that any communication with external parties such as environmental regulators, the local authority or the public will be undertaken through a nominated client representative.

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.

6.3 Control of Records

Resource and waste management records will be maintained in accordance with the respective company procedure and legal requirements. The records are to be maintained, 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 procedure that the records relate to also specifies the retention time for the records and who has the authority to dispose of them.

Records will be kept for each waste movement from the Site i.e., each skip or load. A system will be put in place to record the construction waste arisings onsite. For each movement of waste, the Waste Manager, or nominated deputy will obtain a signed docket from the contractor, detailing the weight and type of the material, the source and destination of the material.

The Waste Manager of nominated deputy will record the following:

1. Waste taken for reuse offsite (e.g., as landfill capping or fill material at another site);
2. Waste taken for recycling;
3. Waste taken for disposal; and,
4. Reclaimed waste materials brought onsite for reuse.

The record system will allow the comparison of recorded waste amounts with the targets established for the recovery, reuse and recycling. This system should also be linked with the delivery records. In this way, the percentage of construction waste generated for each material can be determined.

6.4 Auditing

It is anticipated that a waste audit should be conducted at the end of each stage of the construction and demolition of this project. A review of all waste records as well as progress toward reuse, recovery and recycling targets will be undertaken.

An audit plan should be prepared in advance of the audit when the waste management procedures and plan are being put in place at the start of the project. The audit should involve a systematic study of all waste management practices which have been put in place onsite, both operational (e.g., segregation) and procedural (e.g., record keeping). Details of raw material inputs and the quantity, type and composition of all waste from the Site should be identified and summarised.

Special attention should be dedicated to obvious opportunities for waste reduction, but all areas and stages within the project should be reviewed. The audit findings should highlight corrective actions that may be taken in relation to management policies or site practices in order to bring about further waste reductions. A tracking system should be stipulated to determine the success or failure of corrective actions.

Summary audit reports outlining types, quantities of waste arisings and their final treatment method should be prepared within 1 month of completion of the audit. These reports should be sent to the relevant body (e.g., planning authority), as required, in line with the conditions of the grant of planning permission.

C&D waste audit procedure and template advice, including an audit checklist and templates for waste records are available in the European commission [10] "*Guidelines for the waste audits before demolition and renovation works of buildings*" available at the following link <https://ec.europa.eu/docsroom/documents/31521>.

7 SITE INFRASTRUCTURE

Waste will be segregated onsite, the storage methods and the location of the Waste Storage Areas will be included in induction trainings and will also be included in the signage required onsite. Posters and signs onsite will include the contact details of the Resource and Waste Manager.

It is not predicted that there will be any hazardous materials onsite, 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 any stockpiled materials and any surface water features to prevent sediment 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 CONCLUSIONS

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

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

The implementation of all of the environmental management measures outlined in this C&D RWMP will ensure that the construction programme will be completed without significant adverse effects on the surrounding environment and minimise waste disposal in so far as is possible.

9 REFERENCES

- [1] SWR, "Southern Region Waste Management Plan 2015-2021," Southern Waste Region, 2017.
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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								
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								