SDCC Rathcoole Housing Development

Environmental Impact Assessment Report (EIAR)
Appendix 17-1: Resource & Waste Management Plan (RWMP)
Volume 2

South Dublin County Council (SDCC)

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1 Introduction

1.1 Overview

AECOM Ireland Limited (hereafter referred to as 'AECOM') has been appointed by South Dublin County Council (SDCC) (hereafter referred to as the 'Applicant') to prepare a Resource, Waste and Recycling Management Plan (hereafter referred to as the 'Report) for a residential development at a site located in Rathcoole, County Dublin (hereafter referred to as 'Proposed Development').

The Proposed Development, in line with Environmental Impact Assessment Report (EIAR) Chapter 02: Description of the Development, will consist of:

- 130 residential units including:
  - 43 no. 2 storey houses (39 no. 3 bed and 4 no. 4 bed) provided within 12 no. terraced rows;
  - 16 no. duplex apartments (8 no. 1 bed and 8 no. 3 bed) provided within 2 no. 3 storey blocks;
  - 4 no. age friendly duplex apartments (2 no. 1 bed and 2 no. 2 bed) provided within 1 no. 3 storey block;
  - 7 no. age friendly 1 storey houses and 1 no. age friendly consultation room;
  - 60 no. apartments (17 no. 1 bed and 43 no. 2 bed) provided within 4 no. 4/5 storey blocks.
- 2 no. senior GAA grass pitches measuring 20,800 m^2 and 1 no. junior grass pitch measuring 6,240 sqm served by:
  - GAA pavilion of 137.26 m^2'
  - 43 no. car parking spaces'
  - 12 no. bicycle parking spaces.
- Site levelling, reprofiling of site, drainage;
- Access infrastructure.

1.1.1 Abbreviations and Acronyms

The abbreviations and acronyms included within this RWMP are listed in Table 1-1.

Table 1-1: Abbreviations and Acronyms

Abbreviations and Acronyms	Definition
BPM	Best Practice Measures
C&D	Construction & Demolition (waste)
DoW	Designing out Waste
EPA	Environmental Protection Agency
EWC	European Waste Catalogue
EWFD	European Waste Framework Directive
GAA	Gaelic Athletic Association
ICE	Institute of Civil Engineers
RC	Recycled Content
RWMP	Resource Waste Management Plan
SIC	Standardized Industrial Classification
WRAP	Waste and Resources Action Programme

Abbreviations and Acronyms	Definition
WTF	Waste Transfer Form

1.2 Purpose of the RWMP

RWMPs are used as a good practice measure on construction projects and to support planning and consenting application. This RWMP has been developed in accordance with the Environmental Protection Agency (EPA) Best Practice Guidelines for the Preparation of Resource and Waste Management Plans for Construction and Demolition Projects (EPA, 2021) (herein referred to as the 'RWMP Guidelines').

This RWMP is structured as follows:

1. Introduction;
2. Project Description;
3. Roles and Responsibilities;
4. Design Approach;
5. Key Materials and Quantities;
6. Site Management;
7. Site Infrastructure; and
8. Appendix A – Resource and Waste Generation Estimates Template.*

*The precise types and quantities of material use, and site clearance, construction and excavation waste arisings are not yet known. Therefore, high-level waste estimates are provided at this stage. The Proposed Development construction Contractor will populate the inventory provided in Annex A: Resource and Waste Inventory Template for inclusion in the Contractor's RWMP (having regard to this RWMP).

1.3 Commitment

The Contractor will take all reasonable steps to ensure that:

- All waste from the Proposed Development Site (refer to as 'the Site' herein) is dealt with in accordance with the legal requirements;
- Materials are handled efficiently, and waste managed appropriately; and
- Adherence to the RWMP Guidelines (EPA, 2021).

1.4 Legislation

'Waste' is defined by Article 1(a) of the European Waste Framework Directive (EWFD) (European Parliament and the Council of the European Union, 2008) as "*any substance or object (in the categories set out in Annex I) which the holder discards or intends or is required to discard*".

The legal definition of waste also covers substances or objects, which fall outside of the commercial cycle or out of the chain of utility. In particular, most items that are sold or taken off-site for recycling are wastes, as they require treatment before they can be resold or reused. In practical terms, wastes include surplus earthworks materials and soil, scrap, unwanted surplus materials, packaging, recovered spills, office waste, and damaged, worn-out, contaminated or otherwise spoiled plant, equipment, and materials.

Relevant National and European Legislation includes:

- The European Waste Framework Directive (Directive 2008/98/EC) (European Parliament and the Council of the European Union, 2008), as amended by Directive (EU) 2018/85 (European Parliament and the Council of the European Union, 2018) set the basic concepts and definitions

related to waste management, such as definitions of waste, recycling and recovery. It also included definitions for when waste ceases to be waste and becomes a secondary raw material (end-of-waste criteria) and how to distinguish between waste and by-product. Waste FD is enacted in Ireland under European Communities (Waste Directive) Regulations (2011).

- Waste Management Act (1996), as amended. Section 32 of the Act places a general obligation on the holder of waste to comply with legislation and ensure all wastes are managed within the requirements of the Act. In short, the obligation to manage waste legally lies with the holder of waste which means the waste producer or the person who is in possession of the waste. At a construction site, the mandatory obligation to appropriately manage waste generated at a construction site lies with the Client and the Principal Contractor.
- Industrial Emissions (Integrated Pollution Prevention and Control) Directive (2010/75/EU).
- Environmental Protection Agency Acts 1992 to 2024 (as amended).
- Waste Management (Collection Permit) Regulations 2007 (as amended).
- Waste Management (Facility Permit and Registration) Regulations 2007 (S.I. No. 821 of 2007).
- Litter Pollution Acts, 1997 and 2001.
- Local Government (Water Pollution) Acts 1977 to 2024 (as amended).

1.5 National and Regional Policy

1.5.1 Objectives

Some specific points on waste management policy and regulatory requirements are set out as follows:

- Construction and Demolition (C&D) waste can be defined as all waste that arises from construction, renovation and demolition activities and includes all waste listed in Chapter 17 of the List of Wastes (LoW), including hazardous and non-hazardous waste types.
- The EU Waste Framework Directive (2008/98/EC), enacted in Ireland under the Waste Directive Regulations, 2011 of the same title, requires Member States to take the necessary measures to achieve the minimum recycling/recovery target of 70% by weight for non-hazardous C&D waste, excluding naturally occurring materials, by 2020. The Directive specifies that such a target should be achieved by preparing for reuse, recycling and other material recovery, including backfilling operations using waste to substitute other material.
- The Southern Region Waste Management Plan 2015 – 2021 (SRWMP) was published in May 2015. Notable and relevant points are:
  - There has been a sharp drop in the number of available operational landfills nationally, Limerick has no operational landfill. Historically these were a significant outlet for C&D waste. Therefore, there is a need to maximize diversion of infill of C&D waste and consider alternative uses, for example, crushing and screening of masonry, stone and concrete wastes for re-use in a variety of engineering applications.
  - The need to progress towards a ‘circular economy’ whereby raw materials, traditionally almost entirely becoming waste in a linear life cycle, instead become a much smaller input into a circular approach to materials use from design through to production, through to consumption but then maximizing re-use and recycling to close the circle back to design. For example, C&D wastes can become raw materials in the design phase of a project.
  - The SRWMP plan sets out a target of 70% of C&D waste re-use and recycling (excluding soil and stones) by year 2020.
  - The SRWMP brings in the concept of ‘upcycling’ which is the re-purposing of items that otherwise are seen as waste or useless products.

For the purposes of waste management planning, Ireland is divided into three regions: Southern, Eastern-Midlands and Connacht-Ulster. Waste Management Plans for the three regions were published in May 2015.

A Waste Management Plan for the Dublin Region (comprising Dublin City Council, Fingal County Council, South Dublin County Council, and Dún Laoghaire-Rathdown County Council) was in place from 2005-2015, with periodic revisions. This was superseded by the Eastern-Midlands Region (EMR) Waste Management Plan 2015-2021, which was launched in May 2015 and remains the most recent regional Waste Management Plan. The Eastern Midlands Region comprises Dublin City Council, Dún Laoghaire-Rathdown, Fingal, South Dublin, Kildare, Louth, Laois, Longford, Meath, Offaly, Westmeath and Wicklow County Councils.

The South Dublin County Development Plan 2022 – 2028 sets out the following policy objectives:

- Waste Management Plans for Construction and Demolition.
- Projects to have regard to existing Best Practice Guidance on Waste Management Plans for Construction and Demolition Projects as well as any future updates to these guidelines in order to ensure the consistent application of planning requirements.

1.6 Resource Targets

EU Member states such as Ireland must ensure that the preparation for reuse, recycling and other material recovery of non-hazardous C&D waste (excluding naturally occurring material defined in List of Waste category 17 05 04) is a minimum of 70% by weight. The EWFD specifies that this target should be achieved by preparing for reuse, recycling and other material recovery, including backfilling operations using waste to substitute other material. However, as outlined in the RWMP Guidelines (EPA, 2021) the Waste Framework Directive C&D recovery target is designed for national statistics and is not an appropriate target for an individual project.

As outlined in the RWMP Guidelines (EPA, 2021) the responsibility for setting any project target lies with the applicable client who may dictate the appropriate performance specification for the project through imposing mandatory contractual obligations on the construction Contractor. Clients and design teams are recommended to reference the relevant industry practice, design standards and certification schemes in setting any project-specific target for the Contractor.

:

Standard, good and best practice recovery rates by material are provided by WRAP (2007). These rates can be taken into consideration when setting waste targets. Recovery rates for key construction materials and other construction wastes relevant to the Project are provided in Table 1-2.

Table 1-2: Standard, Good and Best Practice Recovery Rates by Material

Material	Standard Practice Recovery (%)	Good Practice recovery (%)	Best Practice Recovery (%)
Metals	95	100	100
Packaging	60	85	95
Concrete	75	95	100
Inert	75	95	100
Plastics	60	80	95
Miscellaneous	12	50	75
Electrical equipment	Limited information	70	95
Cement	Limited information	75	95
Liquids and oils	100	100	100
Hazardous	50	Limited information, cannot be 100% since some hazardous waste e.g. asbestos must be landfilled.	

1.7 Complementary Documents

This RWMP covers the Proposed Development enabling works and construction works only. The management of waste when the Proposed Development is occupied and operational is detailed in the accompanying Operational Waste Management Plan (OWMP) – refer to Appendix 17-2 of the EIAR.

2 Project Description

2.1 Project Details

The Contractor will complete Table 2-1 prior to commencement of Proposed Development construction.

Table 2-1: Project Details

Project Title	Rathcoole Village Housing Development		
Client	Name		
	Address		
	Contact		Email
	Phone		Mobile
Principal Contractor	Name		
	Address		
	Contact		Email
	Phone		Mobile
Sub-Contractor	Name		
	Address		
	Contact		Email
	Phone		Mobile
Site Manager	Name		
	Address		
	Contact		Email
	Phone		Mobile
Address of development	Address		
	Town		
	Postcode		
Planning Register Reference			
Person responsible for implementation of this plan (Resource Manager)	Name		
	Address		
	Contact		Email
	Phone		Mobile
RWMP Drafter	Name AECOM		
	Address		
	Contact		Email
	Phone		Mobile
Construction cost (estimated)			
Site area (gross area)	Application is 11.4 hectares (ha) within a wider landbank of 17.8 hectares (ha)		
Construction Start date	Day	Month	Year
Construction Completion date	Day	Month	Year
Document Controller / Secretary			

Project Title	Rathcoole Village Housing Development
Location of RWMP (electronic and hard copy)	

2.2 Project Description

The Contractor will complete Table 2-2 prior to commencement of Proposed Development construction.

Table 2-2: Project Description

Project title	Rathcoole Village Housing Development
Site location, including site location map and site layout maps.	
Site description to include site area, topography, description of existing structures, site access, adjoining land uses, sensitivity of the environment, etc.	
Site history including any details of previous land uses – in particular, potential for residual ground contamination from previous uses such as fuel/ material storage, industrial operations (gas works, foundries, collieries, etc.)	
Details of any proposed demolition including descriptions of scale and building fabric.	
Details of any site clearance including vegetation removal, topsoil stripping or other excavations to enable works, including estimations of potential volumes.	
Description of construction elements including all new structures, roads, drainage or other infrastructure.	
Material balance for the site indicating the cut/fill requirements for development and estimates for all other material imports.	
Details of project programme and phasing.	
In the event that Asbestos-Containing Material (ACM) is present on-site, details of the volume, nature and condition of all material. Confirm if an ACM inventory for the site is available.	
If there is known or suspected ground contamination on the site or adjoining lands, provide details of the nature and scale of contamination. This should include a gridded map of the site highlighting areas of contamination.	
For any brownfield development or development where there is known or suspected ground contamination, a remediation plan should be prepared to present the scale and nature of the contamination and the proposed approach to remediation, i.e. full excavation and off-site treatment, in-situ treatment, etc.	
Details of any other hazardous materials known on-site.	

3 Roles and Responsibilities

The Contractor will complete Table 3-1 prior to commencement of Proposed Development construction.

Table 3-1: Roles and Responsibilities

Position	Name	Contact Details	RWMP Responsibility
Client Advisory Team (e.g. Engineers, architects, consultants etc.) Project Manager	To be appointed	To be appointed	• Drafting and maintaining the RWMP through the design, planning and procurement phases of the project. • Appointing a Resource Manager (RM) to track and document the design process, inform the Design Team and prepare the RWMP. • Include details and estimated quantities of all projected waste streams. This should also include data on waste types (e.g. waste characterisation data, contaminated land assessments, site investigation information) and prevention mechanisms (such as by-products) to illustrate the positive circular economy principles applied by the Design Team. • Incorporate relevant conditions imposed in the planning permission into the RWMP. • Handover of the RWMP to the Principal Contractor at commencement of construction for the development of the RWMP in a similar fashion to how the safety file is handed over to the Principal Contractor. • Work with the Principal Contractor as required to meet the performance targets for the project.
Client Project Manager			• Establishing the ambition and the performance targets for the project. • Set out these commitments and targets in relation to prevention and minimisation in the project brief, tendering documentation including pre-qualification requirements, invitation to tender, etc. • Require the preparation and submission of an RWMP as part of the design and planning submission, even if not requested by the planning authority for planning. • Require the preparation and submission of an updated RWMP as part of the construction tendering process. • Ensure that the RWMP is agreed and submitted to the local authority prior to commencement of works on site. • Request the end-of-project RWMP from the Principal Contractor.
Principal Contactor Project Manager			• Preparing, implementing and reviewing the RWMP through construction (including the management of all suppliers and sub-contractors) as per the requirements of these guidelines. • Identifying a designated and suitably qualified Resource Manager (RM) who will be responsible for implementing the RWMP.

Position	Name	Contact Details	RWMP Responsibility
			• Identifying all hauliers to be engaged to transport each of the resources / wastes off-site. Note that any resource that is legally a 'waste' must only be transported by a haulier with a valid Waste Collection Permit. • Identifying all destinations for resources taken off-site. • End-of-waste and by-product notifications addressed with EPA where required. • Clarification of any other statutory waste management obligations, which could include on-site processing. • Full records of all resources (both wastes and other resources) should be maintained for the duration of the project. • Preparing a RWMP Implementation Review Report at project handover.
Local Authority			The Local Authority (or An Bord Pleanála) as the planning regulator is responsible for the following tasks: • Ensure that the requirement for an RWMP for C&D Projects (as specified in the RWMP Guidelines (2021) is required for all planning applications (through setting this requirement as an objective of the County Development Plan or local planning policy) for development where construction or demolition is proposed. • Ensuring that any RWMP submitted with planning complies with the requirements of the RWMP Guidelines (EPA, 2021). • Setting appropriate planning conditions as required in line with the requirements of Section 34(4)(l) of the Planning and Development Acts[1], as amended. • Ongoing enforcement of these conditions through the construction phase.

[1] Government of Ireland, 2024. Planning and Development Act, 2024. https://www.informea.org/en/content/legislation/planning-and-development-act-2024-n-34-2024

4 Design Approach

Decisions made at the Proposed Development detailed design stage will impact on the quantity and types of materials used, the quantity and types of waste arising and the management of materials and waste.

The Proposed Development design development has and will continue to apply the principles of Designing out Waste (DoW) which include:

- Design for reuse and recycling;
- Design for green procurement;
- Design for off-site construction;
- Design for materials optimisation; and,
- Design for deconstruction and flexibility.

The RWMP Guidelines (2021) provide further guidance with regard to designing out waste.

In general, the following measures will be implemented during the design and construction phases of the Proposed Development, where technically, economically and environmentally practicable:

- Manage waste in accordance with the waste hierarchy;
- Design-out and prevent waste arising;
- Reuse excavated earthworks materials within the Proposed Development;
- Divert waste from landfill through off-site recycling and recovery; and
- Use recycled and secondary aggregates (alternative materials) in the construction of the Proposed Development.

Prior to construction, the Contractor must record, in the Contractor's RWMP, all actions to be implemented to reduce waste or material use on the Proposed Development Site, and the resulting benefits. Table 4-1 will be populated by the Contractor during the detailed design of the Proposed Development.

Table 4-1: Designing out Waste Actions

Material/ Waste	Estimated Reduction in Waste Arising Tonnes m^3	Approach by Which Reduction Achieved	Will Additional Planning Permissions/ Authorisations be Required?	Estimated cost Saving (€)	Persons Responsible for Completing Action

5 Key Materials and Quantities

5.1 Identification of Each Waste Stream

During each stage of the construction process, there is the potential to generate waste from a variety of means, including the over-ordering or on-site damage of raw materials and construction process waste, such as material off-cuts, packaging and chemical residues.

Opportunities for minimising construction waste are discussed in this section, considering issues such as reducing waste through selection of more sustainable raw materials and the implementation of effective on-site waste management practices.

5.2 Predicted Quantities

Waste arisings from Site preparatory and construction works associated with the enabling works (approximately 91,735m^3 which includes approximately 65,971m^3 excavated materials and approximately 25,764m^3 construction waste) have been based on standard waste generation rates from the WRAP SMARTWaste Data Report. The waste arising results are presented in Appendix A along with the proposed recycling, recovery and disposal targets.

It is proposed to achieve a cut fill balance on the Site by using the excavated waste in infilling where appropriate to re-profile ground levels and create external environment. Where unsuitable for reuse on Site, excavated material will be taken off site for recovery/recycling at suitable waste management facilities.

5.3 Resource Management Routes

The waste hierarchy sets out the priority order that should be considered when managing wastes. A basic representation of the waste hierarchy is provided in Figure 5-1.

To reduce the potential impacts from materials and waste, and to achieve high levels of sustainability in the Proposed Development as a whole, the Applicant and their Contractor will apply the principles of the Waste Hierarchy and adopt Best Practice Measures (BPMs) which go beyond statutory compliance.

This may include BPMs as set out in construction industry guidance for example, guidance from the Considerate Constructors Scheme, or Construction Industry Research and Information Association (CIRIA).



Figure 5-1: Waste Hierarchy

5.4 Prevention and Preparing for Reuse

The following approaches will be implemented, where practicable, to minimise the quantity of waste arising and requiring disposal:

- Agreements with material suppliers to reduce the amount of packaging or to participate in a packaging take-back scheme;

- Implementation of a 'just-in-time' material delivery system where possible to avoid materials being stockpiled, which can increase the risk of damage and subsequent disposal as waste;
- Attention to material quantity requirements to avoid over-ordering and the generation of waste materials due to surplus;
- Reuse of materials on-site wherever feasible, e.g. reuse of excavated soil for landscaping, recycling of demolition materials into aggregates. Every opportunity will be taken to ensure that surplus material shall not be classified as waste by using it within planned construction activities on site;
- Off-site prefabrication, where practical, including the use of prefabricated structural elements;
- Segregation of waste at source, where practical, to facilitate a high proportion and high-quality recycling; and
- Off-site reuse, recycling and recovery of materials and waste where reuse on-site is not practical, e.g. through use of an off-site waste segregation or treatment facility or for direct reuse or reprocessing off-site.

A sustainable materials selection strategy will be prepared prior to construction. Measures should be taken to ensure that the Contractor is committed to identifying appropriate opportunities to reduce waste, promote recycling and use secondary or recycled construction materials. The ordering of appropriate, minimum amounts of building materials should be part of the materials selection strategy.

Some examples of manufactured materials or components with significant and known Recycled Content (RC) (Designing Buildings, 2012) are listed below:

- Concrete made with Recycled Crushed Aggregate (RCA)[2] (typically up to 40%, depending on the source). For example, using 'waste' from quarries;
- Concrete using cement replacement materials such as Pulverised Fuel Ash[3] or Ground Granulated Blast-Furnace Slag (GGBFS)[4] (5-15% RC);
- Precast concrete blocks, paving stones, kerbs, etc. made using RCA (more than 60% RC);
- Concrete pipes, drains, etc. made using RCA (more than 60% RC);
- Plastic street furniture (bollards, barriers etc.) made from 100% RC plastic;
- Decking, furniture etc made from 100% RC 'plastic lumber' that looks like timber;
- Plastic drain or soil pipes made using recycled plastic (50-100% RC);
- Cast iron drainpipes made using recycled cast iron (up to 96% RC); and
- Tarmac with crushed glass fill (up to 30% RC).

5.5 Recycling

The aim is to reuse materials won on-site by recycling them into an alternative form that can be used for construction purposes (for example crushing concrete, brick or other inert wastes to produce aggregate material). By recycling on-site, as far as practicable, the quantity of waste requiring off-site management is reduced and carbon emissions associated with transportation are eliminated/ minimised.

Recycling may also be achieved by utilising materials with a recycled content, such as recycled aggregates produced off-site.

5.6 Recovery

This generally aims to recover energy from waste which cannot otherwise be reused or recycled. This may include waste materials such as hazardous liquids or solids that can be sent to energy from waste facilities.

Recovery may also include the beneficial use of materials on land for restoration (backfilling operations).

[2] RCA is the term used to describe the material produced from crushed C&D waste, primarily consisting of concrete, but also including aggregate materials such as sand, gravel, slag, and crushed stones.
[3] PFA is formed during the process of combustion of pulverised coal in the furnace of a power station's boiler.
[4] GGBFS is a by-product of iron in a blast-furnace. It mainly consists of silicate and aluminosilicate of melted calcium.

5.7 Disposal

The least preferred option in the waste hierarchy is a final disposal route such as landfill. Some waste streams will inevitably end up with such a solution.

When placing waste disposal contracts, the Contractor will consider the implications of long-distance travel in terms of health and safety risk, commercial terms and increased emissions from vehicles.

6 Site Management

6.1 Training

A member of the Contractor's construction team will be appointed as the Proposed Development's waste manager to ensure commitment, operational efficiency and accountability during the C&D phase.

The nominated waste manager will be given responsibility and authority to select 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 the Site. The waste manager will have overall responsibility to oversee, record and provide feedback to the Applicant on everyday waste management at the Site. Authority will be given to the waste manager to delegate responsibility to subcontractors, where necessary, and to coordinate with suppliers, service providers and sub-contractors to prioritise waste prevention and material salvage.

The waste manager will be trained in how to set up and maintain a record keeping system, how to perform an audit and how to establish targets for waste management on the Site. The 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 the Site and be knowledgeable in how to implement the Contractor's RWMP.

Training of construction staff will be the responsibility of the waste manager and, as such, a waste training programme would be organised. A basic awareness course will be held for all site crew to outline the Contractor's 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 and manual handling.

This basic course will describe the materials to be segregated, the storage methods and the location of waste storage areas. A sub-section on hazardous wastes will be incorporated into the training programme and the dangers of each hazardous waste will be explained.

6.2 Waste Collection

All waste generated on the Proposed Development will be dealt with in accordance with legal requirements. The proposed waste carrier for each waste stream will be recorded in the registration table, with Waste Carriers Licence details appended to the Contractor's RWMP. A table for demonstrating waste carrier registration is shown in Appendix B.

The Contractor will ensure that the following is collected for all waste contractors:

- Contractor's name;
- Date(s) of waste removal;
- Type(s) of waste removed (i.e. non-hazardous waste, hazardous waste, inert (specify));
- Method of treatment, recovery, or disposal (i.e. reuse, recycling, incineration, landfill etc.);
- Volume or weight of waste removed; and
- Costs associated with waste removal, transport, and treatment, including Landfill Tax charges where applicable.

6.3 Waste Shipments/Movements of Hazardous Waste Within Ireland

Dublin City Council is designated as the National Competent Authority for the export, import and transit of waste shipments. More information is available at: https://www.dublincity.ie/residential/environment/national-tfs-office/about-national-tfs-office.

6.4 Waste Disposal/Recovery

The placing of waste disposal contracts will, where possible, consider the implications of long-distance travel in terms of health and safety risk, commercial terms, and increased emissions from vehicles. Wherever possible, contracts are to be awarded as locally as possible.

All hazardous and non-hazardous wastes must be pre-treated prior to disposal to landfill. The methods of pre-treatment will enable the waste to meet the 'three-point test':

- It must be a physical, thermal, chemical, or biological process including sorting;
- It must change the characteristics of the waste;
- It must do so in order to:
  - Reduce its volume, or
  - Reduce its hazardous nature, or
  - Facilitate its handling, or
  - Enhance its recovery.

Source segregation can be used as a pre-treatment option and as such can be applied to waste generation on the Site including general waste and arisings and will take place.

A declaration stating the pre-treatment method applied to the waste will be appended to any WTF for non-hazardous waste being disposed of to landfill and will accompany the WTF.

6.5 Auditing

The effectiveness of the Contractor's RWMP will depend upon the enforcement of its requirements on Site by the nominated Waste Champions and the Site Manager. Responsibility for the formal recording of waste movements lies with the Waste Champion or Project Manager.

A log will be maintained of all materials that come on to the Site, and details will be obtained from each waste disposal company of the exact amount of waste materials removed from Site. Details will also be provided outlining the recovery/disposal actions for the specific waste streams.

Waste receptacles will be monitored by the Contractor to ensure that contamination has not occurred; results will be recorded and monitored for change with time.

The Contractor will continually review the type of surplus materials being produced and will change the Site set up to maximise reuse or recycling and the use of landfill will be the last option.

'Spot checks' may be made in relation to the completeness of any Waste Management Documentation and WTFs and any Hazardous Waste Consignment notes by the Client or their representatives.

If any problems are identified during the lifetime of the Proposed Development construction phase in relation to exceeding the expected RWMP waste stream volumes, failure to meet stated targets or issues relating to cost effective and legal transfer of waste materials, then they will be escalated to the Contracts Manager for further discussion on the best solution. This may trigger a review of the Contractor's RWMP.

6.6 Tracking and Tracing

6.6.1 Waste Management Documentation (All Waste)

A Waste Documentation System will be prepared by the Contractor and included in their SWMP.

The Contractor will be responsible for implementation and auditing the Waste Documentation System on a regular basis.

The documentation to be maintained, as a minimum, shall be the following:

- The names of the agent(s) and transporter(s) of the wastes;
- The name(s) of the person(s) responsible for the ultimate recycling, recovery or disposal of the wastes;

- The ultimate destination(s) of the wastes;
- Written confirmation of the acceptance and recovery, recycling or disposal of any waste consignments;
- The tonnages and LoW code for all waste materials; and
- Details of any rejected waste consignments.

All waste records will be maintained for at least a period of three years and must be subject to verification and validation.

All waste documentation will be maintained by the Contractor in a safe place, preferably on the Site, during the project implementation phase.

Electronic records will be placed on a secure server that is backed up regularly. Allowance of time and resources will be made to collate outstanding waste records once the project implementation phase has been completed.

6.6.2 Hazardous Waste

The following apply to Hazardous Waste:

- Waste Transfer Forms (WTF for hazardous wastes transferred from the Site and associated appendices;
- Completed Transfrontier Shipment Forms (TFS) for hazardous wastes transferred abroad.

6.7 Communications

The following communication tasks are recommended in the RWMP Guidelines (EPA, 2021) through the Proposed Development construction phase:

- Internal reporting of resource statistics to the Client and the Contractor management. This includes performance relative to agreed targets and objectives which should be included as an agenda item at site meetings;
- Engaging with relevant local authority on any site inspection or enforcement audits undertaken at the Site. All follow-up actions and corrective actions should be logged and reported to the local authority;
- Engaging with other stakeholders (EPA, public, etc.) as appropriate in relation to the resource management on the Site;
- Upon completion of construction, the final report summarising the outcomes of resource management processes adopted, the total reuse and recovery figures and the final destinations of all resources taken off-site. This report will be issued to the Client, Contractor management and the local authority. The local authority may make such a requirement a condition of planning and require the formal sign-off of same by the local authority for full planning compliance.

7 Site Infrastructure

7.1 Site Waste Storage and Segregation Options

Excavated soils/earth materials will be stored on the Site in stockpiles until required for use. Additionally, the construction compound will incorporate a designated Waste Storage Area for skips or similar waste receptacles. This area will be surfaced with an impermeable barrier, such as hardstanding/tarmac or using impermeable membranes and the location of any existing drainage will be noted.

At the Waste Storage Area, waste will be segregated into the following as a minimum:

- Waste wood;
- Metals;
- General waste;
- Hazardous solid wastes; and
- Hazardous liquid wastes.

The following waste management procedures will be implemented:

- All skips will be enclosed and lockable to ensure no waste can escape;
- All containers for waste storage shall be clearly labelled using a colour coding system so that users know what wastes can be placed in each container. Waste storage skips shall be appropriately colour coded using ICE's generic colour codes as shown below:

Grey: Inert



Green: Wood



Black: Mixed



Brown: Packaging



Blue: Metal



Orange: Hazardous



White: Gypsum



- Lockable storage will be provided for all hazardous waste;
- All waste containers will be sited at least 10m away from watercourses, ditches, and other areas of environmental sensitivity;
- Liquid wastes will be stored in enclosed/lidded containers and stored within a suitable bunded area, or otherwise provided with secondary containment;
- Separate containers will be provided for each type of hazardous waste;
- Sewage from the site offices/compounds will drain to septic tank and be collected by a suitable specialist waste contractor; and
- Portable toilet facilities on site (Portaloos etc.) will be emptied by the facility provider as per their service agreement.

7.2 Waste Carriers

All waste generated on the Site shall be dealt with in accordance with legal requirements. The proposed waste carrier for each waste stream will be recorded in the registration table, with Waste Carriers Licence details appended to the Contractor's RWMP. A table for demonstrating waste carrier registration is shown in Appendix B.

The Contractor will ensure that the following is collected for all waste contractors:

- Contractor's name;
- Date(s) of waste removal;
- Type(s) of waste removed (i.e. non-hazardous waste, hazardous waste, inert (specify));
- Method of treatment, recovery, or disposal (i.e. reuse, recycling, incineration, landfill etc.);
- Volume or weight of waste removed; and
- Costs associated with waste removal, transport, and treatment, including Landfill Tax charges where applicable.

8 References

Best Practice Guidance on Waste Management Plans for Construction and Demolition Projects. Available at: https://www.igbc.ie/resources/cd-bestpractice/

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The Waste and Resources Action Programme (WRAP) (2007). Waste Recovery Quick Wins. Improving Recovery Rates without Increasing Costs. Available at: No longer available online.

The Waste Management Act (1996) (as amended 2001).

Waste Management (Collection Permit) Regulations (2007) (as amended).

Waste Management (Facility Permit and Registration) Regulations (2007) (as amended).

Appendix A Resource and Waste Generation Estimates Template

EWC Code	Waste Stream	Total Waste Arising (m^3)	Reused (tonnes) (non-waste)	Recycled (tonnes) (waste)	Recovered (tonnes) (waste)[5]	Disposed (tonnes) (waste)	Estimated Waste Recovered (m^3)	Estimated Waste Disposed (m^3)	Comments
17 03 02	Asphalt	228.00		100			228.00	0.00	
17 01 01	Binders	114.00			95	5	108.30	5.70	
17 01 02	Bricks	1824.00		100			1824.00	0.00	
20 03 01	Canteen/office/ad hoc waste	684.00		75		25	513.00	171.00	Canteen/office waste has been assumed to include food waste that will not be recovered.
17 01 01	Concrete	2052.00		100			2052.00	0.00	
20 01 36	Electrical equipment	0.00		100			0.00	0.00	
20 01 11	Floor coverings (soft)	0.00		100			0.00	0.00	
20 03 07	Furniture	0.00			50	50	0.00	0.00	
17 08 02	Gypsum	1368.00		95		5	1299.60	68.40	Plasterboard
17 09 03	Hazardous	342.00			50	50	171.00	171.00	
17 01 07	Inert	6840.00		100			6840.00	0.00	Includes bricks, concrete, tiles, ceramics, rocks, and

[5] Recovered here includes energy recovery, backfilling and other recovery.

EWC Code	Waste Stream	Total Waste Arising (m^3)	Reused (tonnes) (non-waste)	Recycled (tonnes) (waste)	Recovered (tonnes) (waste)[5]	Disposed (tonnes) (waste)	Estimated Waste Recovered (m^3)	Estimated Waste Disposed (m^3)	Comments
									other inert waste but excludes soil.
17 06 04	Insulation	684.00		75		25	513.00	171.00	
16 10 02	Liquids	114.00			100		114.00	0.00	
17 04 07	Metals	342.00			100		342.00	0.00	
17 09 04	Mixed	4332.00			75	25	3249.00	1083.00	Includes non-segregated wastes discarded together in a skip. Assumes that waste recovery will be undertaken off site.
13 01 13*	Oils	0.00			100		0.00	0.00	
	Other	1026.00		90		10	923.40	102.60	Includes vegetation removed from development areas – assume the majority will be sent off site for composting.
15 01 06	Packaging	1824.00	95			5	1732.80	91.20	
17 02 03	Plastics	798.00	95			5	758.10	39.90	
17 05 04	Excavated Materials*	65971.00	100				65971.00	0.00	Assumes that excavated material will be reused on or off-site following quarantine period.
17 01 03	Tiles and Ceramics	114.00		100			114.00	0.00	
17 02 01	Timber	3078.00	95			5	2924.10	153.90	Assumes 5% of total timber waste consists of treated

EWC Code	Waste Stream	Total Waste Arising (m^3)	Reused (tonnes) (non-waste)	Recycled (tonnes) (waste)	Recovered (tonnes) (waste)[5]	Disposed (tonnes) (waste)	Estimated Waste Recovered (m^3)	Estimated Waste Disposed (m^3)	Comments
									wood that cannot be recovered.
	Total	**91,735.00**					**89,677.30**	**2,057.70**	

*Excludes Topsoils which will be re-used on site

Appendix B Waste Carrier Details

Waste type(s)	Waste Carrier Name	Contact Details	Date checked with EA (dd/mm/yyyy)	Registration Number