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# **RESOURCE WASTE MANAGEMENT PLAN FOR A PROPOSED DEVELOPMENT AMMENDMENT**

## **PARKGATE STREET BLOCKS A & B2**

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Report Prepared For

**Ruirside Development Limited**

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Report Prepared By

**Chonail Bradley**, Principal Environmental  
Consultant

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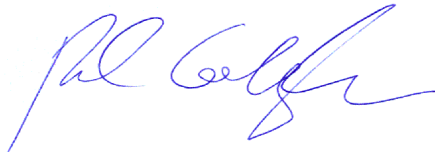
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Signature		
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Title	Principal Environmental Consultant	Director
Date	14 February 2025	14 February 2025

This report considers the specific instructions and requirements of our client. It is not intended for third-party use or reliance, and no responsibility is accepted for any third party. The provisions in this report apply solely to this project and should not be assumed applicable to other developments without review and modification.

<b>CONTENTS</b>	<b>Page</b>
1.0 INTRODUCTION .....	4
2.0 C&D RESOURCE AND WASTE MANAGEMENT IN IRELAND .....	4
2.1 National Level .....	4
2.2 Regional Level .....	6
2.3 Legislative Requirements .....	8
3.0 DESIGN APPROACH .....	9
3.1 Designing For Prevention, Reuse and Recycling .....	9
3.2 Designing for Green Procurement.....	9
3.3 Designing for Off-Site Construction.....	10
3.4 Designing for Materials Optimisation During Construction.....	10
3.5 Designing for Flexibility and Deconstruction.....	10
4.0 DESCRIPTION OF THE DEVELOPMENT .....	10
4.1 Location, Size and Scale of the Development .....	10
4.2 Details of the Non-Hazardous Wastes to be Produced .....	11
4.3 Potential Hazardous Wastes Arising .....	12
5.0 ROLES AND RESPONSIBILITIES.....	13
5.1 Role of the Client .....	13
5.2 Role of the Client Advisory Team.....	13
5.3 Future Role of the Contractor.....	14
6.0 KEY MATERIALS & QUANTITIES .....	14
6.1 Project Resource Targets .....	14
6.2 Main Construction and Demolition Waste Categories .....	15
7.0 RESOURCE & WASTE MANAGEMENT .....	15
7.1 Demolition Waste Generation .....	15
7.2 Construction Waste Generation .....	15
7.3 Proposed Resource & Waste Management Options .....	16
7.4 Tracking and Documentation Procedures for Off-Site Waste .....	19
8.0 ESTIMATED COST OF WASTE MANAGEMENT .....	19
8.1 Reuse .....	19
8.2 Recycling .....	19
8.3 Disposal.....	20
9.0 TRAINING PROVISIONS.....	20

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9.1	Resource Manager Training and Responsibilities .....	20
9.2	Site Crew Training .....	20
10.0	TRACKING AND TRACING / RECORD KEEPING .....	21
11.0	OUTLINE WASTE AUDIT PROCEDURE.....	21
11.1	Responsibility for Waste Audit.....	21
11.2	Review of Records and Identification of Corrective Actions.....	22
11.3	Pest Management.....	22
12.0	CONSULTATION WITH RELEVANT BODIES .....	22
12.1	Local Authority .....	22
12.2	Recycling/Salvage Companies.....	22
13.0	REFERENCES .....	23

## 1.0 INTRODUCTION

AWN Consulting Ltd. (AWN) has prepared this (C&D) Construction & Demolition, Resource Waste Management Plan (RWMP) on behalf of Ruirside Development Limited. The proposed development comprises amendments to development permitted under ABP Ref. ABP-310567-21 (as amended by DCC Reg. Ref. LRD6042/23) at No. 42A Parkgate Street, Dublin 8 to expand the footprint and façade of Block A to accommodate a 2nd fire core. As a result of the expanded footprint, Block B2 has been reconfigured to provide 8no. new 'Build-to-Sell' apartments (1no. unit per floor) and 1no. 2-bedroom apartment in place of a 1-bedroom unit at the interface of Block A and Block B2 (increases to 48no. units total). Overall, the amendments result in the combined number of apartments increasing from 238no. units to 246no. units in Block A and Block B2.

This plan provides information necessary to ensure that the management of C&D waste at the site is undertaken in accordance with the current legal and industry standards including the *Waste Management Act 1996* as amended and associated Regulations <sup>1</sup>, *Environmental Protection Agency Act 1992* as amended <sup>2</sup>, *Litter Pollution Act 1997* as amended <sup>3</sup>, the National Waste Management Plan for a Circular Economy 2024 - 2030 (NWMPCE) (2024) <sup>4</sup>. In particular, this plan aims to ensure maximum recycling, reuse and recovery of waste with diversion from landfill, wherever possible. It also provides appropriate measures in relation to the collection and transport of waste from the site to prevent issues associated with litter or more serious environmental pollution (e.g. contamination of soil and/or water).

This RWMP includes information on the legal and policy framework for C&D waste management in Ireland, estimates of the type and quantity of waste to be generated by the proposed development and prescribes measures for the management of different waste streams. The RWMP should be viewed as a live document and will be regularly revisited throughout the project's lifecycle so that opportunities to maximise waste reduction / efficiencies are exploited throughout, and that data is collected on an ongoing basis so that it is as accurate as possible.

## 2.0 C&D RESOURCE AND WASTE MANAGEMENT IN IRELAND

### 2.1 National Level

The Irish Government issued a policy statement in September 1998, *Changing Our Ways* <sup>5</sup>, which identified objectives for the prevention, minimisation, reuse, recycling, recovery and disposal of waste in Ireland. The target for C&D waste in this report was to recycle at least 50% of C&D waste within a five year period (by 2003), with a progressive increase to at least 85% over fifteen years (i.e. 2018).

In response to the *Changing Our Ways* report, a task force (Task Force B4) representing the waste sector of the already established Forum for the Construction Industry, released a report entitled '*Recycling of Construction and Demolition Waste*' <sup>6</sup> concerning the development and implementation of a voluntary construction industry programme to meet the Government's objectives for the recovery of C&D waste.

In September 2020, the Irish Government published a policy document outlining a new action plan for Ireland to cover the period of 2020-2025. This plan, '*A Waste Action Plan for a Circular Economy*' <sup>7</sup> (WAPCE), replaces the previous national waste management

plan, “*A Resource Opportunity*” (2012), and was prepared in response to the ‘European Green Deal’ which sets a roadmap for a transition to an altered economical model, where climate and environmental challenges are turned into opportunities.

The WAPCE sets the direction for waste planning and management in Ireland up to 2025. This reorientates policy from a focus on managing waste to a much greater focus on creating circular patterns of production and consumption. Other policy statements of a number of public bodies already acknowledge the circular economy as a national policy priority.

The policy document contains over 200 measures across various waste areas including circular economy, municipal waste, consumer protection and citizen engagement, plastics and packaging, construction and demolition, textiles, green public procurement and waste enforcement.

One of the first actions to be taken was the development of the *Whole of Government Circular Economy Strategy 2022-2023 ‘Living More, Using Less’* (2021) <sup>8</sup> to set a course for Ireland to transition across all sectors and at all levels of Government toward circularity and was issued in December 2021. It is anticipated that the Strategy will be updated in full every 18 months to 2 years.

The Circular Economy and Miscellaneous Provisions Act 2022 <sup>9</sup> was signed into law in July 2022. The Act underpins Ireland’s shift from a “take-make-waste” linear model to a more sustainable pattern of production and consumption, that retains the value of resources in our economy for as long as possible and that will work to significantly reduce our greenhouse gas emissions. The Act defines Circular Economy for the first time in Irish law, incentivises the use of recycled and reusable alternatives to wasteful, single-use disposable packaging, introduces a mandatory segregation and incentivised charging regime for commercial waste, streamlines the national processes for End-of-Waste and By-Products decisions, tackling the delays which can be encountered by industry, and supporting the availability of recycled secondary raw materials in the Irish market, and tackles illegal fly-tipping and littering.

The Environmental Protection Agency (EPA) of Ireland issued ‘*Best Practice Guidelines for the Preparation of Resource & Waste Management Plans for Construction & Demolition Projects*’ in November 2021 <sup>10</sup>. These guidelines replace the previous 2006 guidelines issued by The National Construction and Demolition Waste Council (NCDWC) and the Department of the Environment, Heritage and Local Government (DoEHLG) in 2006 <sup>11</sup>. The guidelines provide a practical approach which is informed by best practice in the prevention and management of C&D wastes and resources from design to construction of a project, including consideration of the deconstruction of a project. These guidelines have been followed in the preparation of this document and include the following elements:

- Predicted C&D wastes and procedures to prevent, minimise, recycle and reuse wastes;
- Design teams roles and approach;
- Relevant EU, national and local waste policy, legislation and guidelines;
- Waste disposal/recycling of C&D wastes at the site;
- Provision of training for Resource Waste Manager (RM) and site crew;
- Details of proposed record keeping system;

- Details of waste audit procedures and plan; and
- Details of consultation with relevant bodies i.e. waste recycling companies, Local Authority, etc.

Section 3 of the Guidelines identifies thresholds above which there is a requirement for the preparation of a bespoke RWMP for developments. The new guidance classifies developments on a two-tiered system. Developments which do not exceed any of the following thresholds may be classed as Tier 1 development, which require a simplified RWMP:

- New residential development of less than 10 dwellings.
- Retrofit of 20 dwellings or less.
- New commercial, industrial, infrastructural, institutional, educational, health and other developments with an aggregate floor area less than 1,250m<sup>2</sup>.
- Retrofit of commercial, industrial, infrastructural, institutional, educational, health and other developments with an aggregate floor area less than 2,000m<sup>2</sup>; and
- Demolition projects generating in total less than 100m<sup>3</sup> in volume of C&D waste.

A development which exceeds one or more of these thresholds is classed as Tier-2 projects.

This development requires a RWMP as a Tier 2 development as it is above following criterion:

- New residential development of less than 10 dwellings.

Other guidelines followed in the preparation of this report include '*Construction and Demolition Waste Management – a handbook for Contractors and Site Managers*'<sup>12</sup>, published by FÁS and the Construction Industry Federation in 2002 and the previous guidelines, 'Best Practice Guidelines for the Preparation of Waste Management Plans for Construction and Demolition Projects' (2006).

These guidance documents are considered to define best practice for C&D projects in Ireland and describe how C&D projects are to be undertaken such that environmental impacts and risks are

## 2.2 Regional Level

The proposed development is located in the Local Authority area of Dublin City Council (DCC). The Eastern-Midlands Region (EMR) Waste Management Plan 2015 – 2021 has been superseded as of March 2024 by the NWMPCE 2024 - 2030. The NWMPCE is the new national waste management plan that replaces the three regional waste management plans.

The NWMPCE does not dissolve the three regional waste areas. The NWCPCE sets the ambition of the plan to have a 0% total waste growth per person over the life of the Plan with an emphasis on non-household wastes including waste from commercial activities and the construction and demolition sector.

This Plan seeks to influence sustainable consumption and prevent the generation of waste, improve the capture of materials to optimise circularity and enable compliance with policy and legislation.

The national plan sets out the following strategic targets for waste management in the country that are relevant to the development:

### National Targets

1B. (Construction Materials) 12% Reduction in Construction & Demolition Waste Generated by 2030.

3B. (Reuse Facilities) Provide for reuse at 10 Civic Amenity Sites, minimum

Municipal landfill charges in Ireland are based on the weight of waste disposed. In the Leinster Region, charges are approximately €140 - €160 per tonne of waste which includes an €85 per tonne landfill levy introduced under the *Waste Management (Landfill Levy) (Amendment) Regulations 2015 (as amended)*.

The *Dublin City Development Plan 2022 – 2028*<sup>13</sup> sets out a number of policies and objectives for Dublin City in line with the objectives of the National climate action policy and emphasises the need to take action to address climate action across all sectors of society and the economy. In the waste sector, policy on climate action is focused on a shift towards a 'circular economy' encompassing three core principles: designing out waste and pollution; keeping products and material in use; and regenerating natural systems. Further policies and objectives can be found within the development plan.

### Policies:

- CA8 F: (New development should generally demonstrate/ provide for:) minimising the generation of site and construction waste and maximising reuse or recycling.
- CA8 G: (New development should generally demonstrate/ provide for:) the use of construction materials that have low to zero embodied energy and CO2 emissions
- CA22: The Circular economy: To support the shift towards the circular economy approach as set out in 'a Waste Action Plan for a Circular Economy 2020 to 2025, Ireland's National Waste Policy, or as updated.
- CA23: 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.
- SI27: Sustainable Waste Management: To support the principles of the circular economy, good waste management and the implementation of best practice in relation to waste management in order for Dublin City and the Region to become self-sufficient in terms of resource and waste management and to provide a waste management infrastructure that supports this objective.
- SI28: To prevent and minimise waste generation and disposal, and to prioritise prevention, recycling, preparation for reuse and recovery in order to develop Dublin as a circular city and safeguard against environmental pollution.
- SI29: Segregated Storage and Collection of Waste Streams: To require new commercial and residential developments, to include adequate and easily accessible storage space that supports the separate collection of as many waste and recycling streams as possible, but at a minimum general domestic waste, dry recyclables and food waste as appropriate.



- *SI30: To require that the storage and collection of mixed dry recyclables, organic and residual waste materials within proposed apartment schemes have regard to the Sustainable Urban Housing: Design Standards for New Apartments Guidelines for Planning Authorities 2018 (or and any future updated versions of these guidelines produced during the lifetime of this plan).*

#### Objectives:

- *SIO14 Local Recycling Infrastructure: To provide for a citywide network of municipal civic amenity facilities/ multi-material public recycling and reuse facilities in accessible locations throughout the city in line with the objectives of the circular economy and 15 minute city.*
- *SIO16 Eastern-Midlands Region Waste Management Plan: To support the implementation of the Eastern-Midlands Regional Waste Management Plan 2015–2021 and any subsequent plans in order to facilitate the transition from a waste management economy towards a circular economy.*

## **2.3 Legislative Requirements**

The primary legislative instruments that govern waste management in Ireland and applicable to the project are:

- Waste Management Act 1996 (No. 10 of 1996) as amended. Environmental Protection Act 1992 (No. 7 of 1992) as amended.
- Litter Pollution Act 1997 (No. 12 of 1997) as amended.
- Planning and Development Act 2000 (No. 30 of 2000) as amended <sup>14</sup>.
- Circular Economy and Miscellaneous Provisions Act 2022.

One of the guiding principles of European waste legislation, which has in turn been incorporated into the *Waste Management Act 1996 - 2001* and subsequent Irish legislation, is the principle of “*Duty of Care*”. This implies that the waste producer is responsible for waste from the time it is generated through until its legal recycling, recovery or disposal (including its method of disposal). As it is not practical in most cases for the waste producer to physically transfer all waste from where it is produced to the final destination, waste contractors will be employed to physically transport waste to the final destination. Following on from this is the concept of “*Polluter Pays*” whereby the waste producer is liable to be prosecuted for pollution incidents, which may arise from the incorrect management of waste produced, including the actions of any contractors engaged (e.g. for transportation and disposal/recovery/recycling of waste).

It is therefore imperative that the client ensures that the waste contractors engaged by construction contractors are legally compliant with respect to waste transportation, recycling, recovery and disposal. This includes the requirement that a contractor handle, transport and recycle/recover/dispose of waste in a manner that ensures that no adverse environmental impacts occur as a result of any of these activities.

A collection permit to transport waste must be held by each waste contractor which is issued by the National Waste Collection Permit Office (NWCPO). Waste receiving facilities must also be appropriately permitted or licensed. Operators of such facilities cannot receive any waste, unless in possession of a Certificate of Registration (COR) or waste permit granted by the relevant Local Authority under the *Waste Management (Facility*

*Permit & Registration) Regulations 2007 and Amendments* or a waste or IE licence granted by the EPA. The COR/permit/licence held will specify the type and quantity of waste able to be received, stored, sorted, recycled, recovered and/or disposed of at the specified site.

### **3.0 DESIGN APPROACH**

The client and the design team have integrated the '*Best Practice Guidelines for the Preparation of Resource & Waste Management Plans for Construction & Demolition Projects*' guidelines into the design workshops, to help review processes, identify and evaluate resource reduction measures and investigate the impact on cost, time, quality, buildability, second life along with management post construction. Further details on these design principals can be found within the aforementioned guidance document.

The design team have undertaken the design process in line with the international best practice principles to firstly prevent wastes, reuse where possible and thereafter sustainably reduce and recover materials. The below sections have been the focal point of the design process and material selections and will continued to be analysed and investigated throughout the design process and when selecting material.

As noted in the EPA guidelines, the approaches presented are based on international principles of optimising resources and reducing waste on construction projects through:

- Prevention;
- Reuse;
- Recycling;
- Green Procurement Principles;
- Off-Site Construction;
- Materials Optimisation; and
- Flexibility and Deconstruction.

#### **3.1 Designing For Prevention, Reuse and Recycling**

Undertaken at the outset and during project feasibility and evaluation the Client and Design Team considered:

- Establishing the potential for any reusable site assets (buildings, structures, equipment, materials, etc.);
- The potential for refurbishment and refit of existing structures or buildings rather than demolition and new build;
- Assessing any existing buildings on the site that can be refurbished either in part or wholly to meet the Client requirements; and
- Enabling the optimum recovery of assets on site.

#### **3.2 Designing for Green Procurement**

Waste prevention and minimisation pre-procurement have been discussed and will be further discussed in this section. The Design Team will discuss proposed design solutions, encourage innovation in tenders and incentivise competitions to recognise sustainable approaches. They should also discuss options for packaging reduction with the main Contractor and subcontractors/suppliers using measures such as 'Just-in-Time' delivery

and use ordering procedures that avoid excessive waste. The Green procurement extends from the planning stage into the detailed design and tender stage and will be an ongoing part of the long-term design and selection process for this development.

### **3.3 Designing for Off-Site Construction**

Use of off-site manufacturing has been shown to reduce residual wastes by up to 90% (volumetric building versus traditional). The decision to use offsite construction is typically cost led but there are significant benefits for resource management. Some further considerations for procurement which are being investigated as part of the planning stage design process are listed as follows:

- Modular buildings as these can displace the use of concrete and the resource losses associated with concrete blocks such as broken blocks, mortars, etc.;
  - Modular buildings are typically pre-fitted with fixed plasterboard and installed insulation, eliminating these residual streams from site.
- Use of pre-cast structural concrete panels which can reduce the residual volumes of concrete blocks, mortars, plasters, etc.;
- The use of prefabricated composite panels for walls and roofing to reduce residual volumes of insulation and plasterboards;
- Using pre-cast hollow-core flooring instead of in-situ ready mix flooring or timber flooring to reduce the residual volumes of concrete/formwork and wood/packaging, respectively; and
- Designing for the preferential use of offsite modular units.

### **3.4 Designing for Materials Optimisation During Construction**

To ensure manufacturers and construction companies adopt lean production models, including maximising the reuse of materials onsite.. This helps to reduce the environmental impacts associated with transportation of materials and from waste management activities. This includes investigating the use of standardised sizes for certain materials to help reduce the amount of offcuts produced on site, focusing on promotion and development of off-site manufacture.

### **3.5 Designing for Flexibility and Deconstruction**

Design flexibility has and will be investigated throughout the design process to ensure that where possible products (including buildings) only contain materials that can be recycled and are designed to be easily disassembled. Material efficiency is being considered for the duration and end of life of a building project to produce; flexible, adaptable spaces that enable a resource-efficient, low-waste future change of use; durability of materials and how they can be recovered effectively when maintenance and refurbishment are undertaken and during disassembly/deconstruction.

## **4.0 DESCRIPTION OF THE DEVELOPMENT**

### **4.1 Location, Size and Scale of the Development**

The proposed development comprises amendments to development permitted under ABP Ref. ABP-310567-21 (as amended by DCC Reg. Ref. LRD6042/23) at No. 42A Parkgate Street, Dublin 8 to expand the footprint and façade of Block A to accommodate a 2nd fire core. As a result of the expanded footprint, Block B2 has been reconfigured to provide

8no. new 'Build-to-Sell' apartments (1no. unit per floor) and 1no. 2-bedroom apartment in place of a 1-bedroom unit at the interface of Block A and Block B2 (increases to 48no. units total). Overall, the amendments result in the combined number of apartments increasing from 238no. units to 246no. units in Block A and Block B2.



#### 4.2 Details of the Non-Hazardous Wastes to be Produced

There will be no demolition associated with this application as all waste materials generated from the demolition phase will take place under a separate application (Ref DCC Reg. Ref, LRD6074/24).

There will be no excavation associated with this application as all waste materials generated from the excavation phase will take place under a separate application (Ref DCC Reg. Ref, LRD6074/24).

During the construction phase there may be a surplus of building materials, such as timber off-cuts, broken concrete blocks, cladding, plastics, metals and tiles generated. There may also be excess concrete during construction which will need to be disposed of. Plastic and cardboard waste from packaging and supply of materials will also be generated. The contractor will be required to ensure that oversupply of materials is kept to a minimum and opportunities for reuse of suitable materials is maximised.

Waste will also be generated from construction workers e.g. organic / food waste, dry mixed recyclables (waste paper, newspaper, plastic bottles, packaging, aluminium cans,

tins and Tetra Pak cartons), mixed non-recyclables and potentially sewage sludge from temporary welfare facilities provided on site during the construction phase. Waste printer / toner cartridges, waste electrical and electronic equipment (WEEE) and waste batteries may also be generated infrequently from site offices.

### **4.3 Potential Hazardous Wastes Arising**

#### **4.3.1 Fuel/Oils**

Fuels and oils are classed as hazardous materials; any on-site storage of fuel / oil, and all storage tanks and all draw-off points will be bunded and located in a dedicated, secure area of the site. Provided that these requirements are adhered to and the site crew are trained in the appropriate refuelling techniques, it is not expected that there will be any fuel / oil waste generated at the site.

#### **4.3.2 Invasive Plant Species**

Ecological Site surveys have been undertaken at this site and in the surrounding area as part of the site ecological assessment. As part of this, a site walkover was undertaken for the purpose of identifying and managing any schedule 3 (*Regulations SI No. 355/2015*) invasive species such as Japanese Knotweed (*Fallopia japonica*). This included a walkover survey of the entire site and around part of the outside perimeter.

No Japanese Knotweed plant species or third schedule invasive species were recorded within the property boundary.

#### **4.3.3 Asbestos**

There is no demolition associated with this planning application and as such it is unlikely that asbestos or asbestos containing materials will be encountered.

If ACMs are required to be removed from site they will be removed by a suitably trained and competent person prior to commencement of works. ACMs will only be removed from site by a suitably permitted waste haulier and will be brought to a suitably licenced facility. Where required, the HSA should be contacted in relation to the handling of asbestos and material should be dealt with in accordance with the *Safety, Health and Welfare at Work (Exposure to Asbestos) Regulations 2006 as amended* and the *Best Practice Guidance for Handling Asbestos (2023)* and associated approved Codes of Practice. The contractor will also be required to refer to the *Construction & Demolition Management Plan* in relation to asbestos identification and removal.

#### **4.3.4 Other Known Hazardous Substances**

Paints, glues, adhesives and other known hazardous substances will be stored in designated areas. They will generally be present in small volumes only and associated waste volumes generated will be kept to a minimum. Wastes will be stored in appropriate receptacles pending collection by an authorised waste contractor.

In addition, WEEE (containing hazardous components), printer toner / cartridges, batteries (Lead, Ni-Cd or Mercury) and / or fluorescent tubes and other mercury containing waste may be generated from during C&D activities or temporary site offices. These wastes, if

generated, will be stored in appropriate receptacles in designated areas of the site pending collection by an authorised waste contractor.

## **5.0 ROLES AND RESPONSIBILITIES**

The *Best Practice Guidelines on the Preparation of Resource Waste Management Plans for Construction and Demolition Projects* promotes that a suitably qualified Resource Manager (RM) with expertise in waste and resource management to implement the RWMP should be appointed. The RM may be performed by number of different individuals over the life-cycle of the Project, however it is intended to be a reliable person chosen from within the Planning/Design/Contracting Team, who is technically competent and appropriately trained, who takes the responsibility to ensure that the objectives and measures within the Project RWMP are complied with. The RM is assigned the requisite authority to meet the objective and obligations of the RWMP. The role will include the important activities of conducting waste checks/audits and adopting construction methodology that is designed to facilitate maximum reuse and/or recycling of waste.

### **5.1 Role of the Client**

The Client are the body establishing the aims and the performance targets for the project.

- The Client has commissioned the preparation and submission of a preliminary RWMP as part of the design and planning submission;
- The Client is to commission the preparation and submission of an updated RWMP as part of the construction tendering process;
- The Client will ensure that the RWMP is agreed on and submitted to the local authority and their agreement obtained prior to commencement of works on site;
- The Client will request the end-of-project RWMP from the Contractor.

### **5.2 Role of the Client Advisory Team**

The Client Advisory Team or Design Team is formed of architects, consultants, quantity surveyors and engineers and is responsible for:

- Drafting and maintaining the RWMP through the design, planning and procurement phases of the project;
- Appointing a RM to track and document the design process, inform the Design Team and prepare the RWMP.
- Including details and estimated quantities of all projected waste streams with the support of environmental consultants/scientists. This will 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;
- Handing over of the RWMP to the selected Contractor upon commencement of construction of the development, in a similar fashion to how the safety file is handed over to the Contractor;
- Working with the Contractor as required to meet the performance targets for the project.

### 5.3 Future Role of the Contractor

The future construction Contractors have not yet been decided upon for this RWMP. However, once select they will have major roles to fulfil. They will be responsible for:

- Preparing, implementing and reviewing the RWMP throughout the construction phase (including the management of all suppliers and sub-contractors) as per the requirements of the EPA guidelines;
- Identifying a designated and suitably qualified RM who will be responsible for implementing the RWMP;
- Identifying all hauliers to be engaged to transport each of the resources / wastes off-site;
- Implementing waste management policies whereby waste materials generated on site are to be segregated as far as practicable;
- Renting and operating a mobile-crusher to crush concrete for temporary reuse onsite during construction and reduce the amount of HGV loads required to remove material from site;
- Applying for the appropriate waste permit to crush concrete onsite;
- Identifying all destinations for resources taken off-site. As above, any resource that is legally classified as a 'waste' must only be transported to an authorised waste facility;
- End-of-waste and by-product notifications addressed with the 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; and
- Preparing a RWMP Implementation Review Report at project handover.

## 6.0 KEY MATERIALS & QUANTITIES

### 6.1 Project Resource Targets

Project specific resource and waste management targets for the site have not yet been set and this information will be updated for these targets once these targets have been confirmed by the client. However, it is expected for projects of this nature that a minimum of 70% of waste is fully re-used, recycled or recovered. Target setting will inform the setting of project-specific benchmarks to track target progress. Typical Key Performance Indicators (KPIs) that will be used to set targets include (as per guidelines):

- Weight (tonnes) or Volume ( $\text{m}^3$ ) of waste generated per construction value;
- Weight (tonnes) or Volume ( $\text{m}^3$ ) of waste generated per construction floor area ( $\text{m}^2$ );
- Fraction of resource reused on site;
- Fraction of resource notified as 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.

## 6.2 Main Construction and Demolition Waste Categories

The main non-hazardous and hazardous waste streams that could be generated by the construction activities at a typical site are shown in Table 6.1. The List of Waste (LoW) code (2018) for each waste stream is also shown.

**Table 6.1** Typical waste types generated and LoW codes (individual waste types may contain hazardous substances)

Waste Material	LoW Code
Concrete, bricks, tiles, ceramics	17 01 01-03 & 07
Wood, glass and plastic	17 02 01-03
Treated wood, glass, plastic, containing hazardous substances	17-02-04*
Bituminous mixtures, coal tar and tarred products	17 03 01*, 02 & 03*
Metals (including their alloys) and cable	17 04 01-11
Gypsum-based construction material	17 08 01* & 02
Paper and cardboard	20 01 01
Mixed C&D waste	17 09 04
Green waste	20 02 01
Electrical and electronic components	20 01 35 & 36
Batteries and accumulators	20 01 33 & 34
Liquid fuels	13 07 01-10
Chemicals (solvents, pesticides, paints, adhesives, detergents etc.)	20 01 13, 19, 27-30
Insulation materials	17 06 04
Organic (food) waste	20 01 08
Mixed Municipal Waste	20 03 01

\* individual waste type may contain hazardous substances

## 7.0 RESOURCE & WASTE MANAGEMENT

### 7.1 Demolition Waste Generation

There will be no demolition associated with this application. All demolition required at this site will be undertaken under a separate planning application.

### 7.2 Construction Waste Generation

Table 7.1 shows the breakdown of C&D waste types produced on a typical site based on data from the EPA *National Waste Reports and the joint EPA & GMIT study*.

**Table 7.1:** Waste materials generated on a typical Irish construction site

Waste Types	%
Mixed C&D	33
Timber	28
Plasterboard	10



Waste Types	%
Metals	8
Concrete	6
Other	15
<b>Total</b>	<b>100</b>

Table 7.2, below, shows the estimated construction waste generation for the proposed development based on the gross floor area of construction and other information available to date, along with indicative targets for management of the waste streams. The estimated amounts for the main waste types are based on an average large-scale development waste generation rate per m<sup>2</sup>, using the waste breakdown rates shown in Table 7.1. These have been calculated from the schedule of development areas provided by the architect.

**Table 7.2:** *Predicted on and off-site reuse, recycle and disposal rates for construction waste*

Waste Type	Tonnes	Reuse		Recycle / Recovery		Disposal	
		%	Tonnes	%	Tonnes	%	Tonnes
Mixed C&D	900.6	10	90.1	80	720.5	10	90.1
Timber	764.1	40	305.7	55	420.3	5	38.2
Plasterboard	272.9	30	81.9	60	163.7	10	27.3
Metals	218.3	5	10.9	90	196.5	5	10.9
Concrete	163.7	70	114.6	25	40.9	5	8.2
Other	409.4	20	81.9	60	245.6	20	81.9
<b>Total</b>	<b>2729.0</b>		<b>685.0</b>		<b>1787.5</b>		<b>256.5</b>

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

### 7.3 Proposed Resource & Waste Management Options

Waste materials generated will be segregated on site, where it is practical. Where the on-site segregation of certain wastes types is not practical, off-site segregation will be carried out. There will be skips and receptacles provided to facilitate segregation at source where feasible. All waste receptacles leaving site will be covered or enclosed. The appointed waste contractor will collect and transfer the wastes as receptacles are filled. There are numerous waste contractors in the Dublin Region that provide this service.

All waste arising's will be handled by an approved waste contractor holding a current waste collection permit. All waste arising's requiring disposal off-site will be reused, recycled, recovered or disposed of at a facility holding the appropriate registration, permit or licence, as required.

National End-of-Waste Decision EoW-N001/2023 (Regulation 28) establishes criteria determining when recycled aggregate resulting from a recovery operation ceases to be

waste. Material from this proposed development will be investigated to see if it can cease to be a waste under the requirements of the National End of Waste Criteria for Aggregates.

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

Written records will be maintained by the contractor(s) detailing the waste arising throughout the C&D phases, the classification of each waste type, waste collection permits for all waste contactors who collect waste from the site and COR/permit or licence for the receiving waste facility for all waste removed off site for appropriate reuse, recycling, recovery and/or disposal

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

The anticipated management of the main waste streams is outlined as follows:

#### Silt & Sludge

During the construction phase, silt and petrochemical interception should be carried out on runoff and pumped water from site works, where required. Sludge and silt will then be collected by a suitably licensed contractor and removed offsite.

#### Concrete Blocks, Bricks, Tiles & Ceramics

The majority of concrete blocks, bricks, tiles and ceramics generated as part of the construction works are expected to be clean, inert material and should be recycled, where possible. If concrete is to be crushed onsite the appropriate mobile waste facility permit will be obtained from DCC.

#### Hard Plastic

As hard plastic is a highly recyclable material, much of the plastic generated will be primarily from material off-cuts. All recyclable plastic will be segregated and recycled, where possible.

#### Timber

Timber that is uncontaminated, i.e. free from paints, preservatives, glues etc., will be disposed of in a separate skip and recycled off-site.

#### Metal

Metals will be segregated where practical and stored in skips. Metal is highly recyclable and there are numerous companies that will accept these materials.

### Plasterboard

There are currently a number of recycling services for plasterboard in Ireland. Plasterboard from the construction phases will be stored in a separate skip, pending collection for recycling. The site manager will ensure that oversupply of new plasterboard is carefully monitored to minimise waste.

### Glass

Glass materials will be segregated for recycling, where possible.

### Waste Electrical and Electronic Equipment (WEEE)

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

### Other Recyclables

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

### Non-Recyclable Waste

C&D waste which is not suitable for reuse or recovery, such as polystyrene, some plastics and some cardboards, will be placed in separate skips or other receptacles. Prior to removal from site, the non-recyclable waste skip/receptacle will be examined by a member of the waste team (see Section 9.0) to determine if recyclable materials have been placed in there by mistake. If this is the case, efforts will be made to determine the cause of the waste not being segregated correctly and recyclable waste will be removed and placed into the appropriate receptacle.

### Asbestos Containing Materials

Any asbestos or ACM found onsite should be removed by a suitably competent contractor and disposed of as asbestos waste before the works begin. All asbestos removal work or encapsulation work must be carried out in accordance with *S.I. No. 386 of 2006 Safety, Health and Welfare at Work (Exposure to Asbestos) Regulations 2006-2010*.

### Other Hazardous Wastes

On-site storage of any hazardous wastes produced (i.e. waste fuels) will be kept to a minimum, with removal off-site organised on a regular basis. Storage of all hazardous wastes on-site will be undertaken so as to minimise exposure to on-site personnel and the public and to also minimise potential for environmental impacts. Hazardous wastes will be recovered, wherever possible, and failing this, disposed of appropriately.

### On-Site Crushing

It is currently not envisaged that the crushing of waste materials will occur on-site. However, if the crushing of material is to be undertaken, a mobile waste facility permit will first be obtained from DCC and the destination of the accepting waste facility or if an application under regulation 28 will be made using National End-of-Waste Decision EoW-N001/2023, will be supplied to the DCC waste unit.

It should be noted that until a construction contractor is appointed it is not possible to provide information on the specific destinations of each construction waste stream. Prior to commencement of construction and removal of any waste offsite, details of the proposed destination of each waste stream will be provided to DCC by the project team.

#### **7.4 Tracking and Documentation Procedures for Off-Site Waste**

All waste will be documented prior to leaving the site. Waste will be weighed by the contractor, either by weighing mechanism on the truck or at the receiving facility. These waste records will be maintained on site by the nominated project RM (see Section 9.0).

All movement of waste and the use of waste contractors will be undertaken in accordance with the *Waste Management Acts 1996 - 2011*, *Waste Management (Collection Permit) Regulations 2007* as amended and *Waste Management (Facility Permit & Registration) Regulations 2007* and amended. This includes the requirement for all waste contractors to have a waste collection permit issued by the NWCPO. The nominated project RM (see Section 9.0) will maintain a copy of all waste collection permits on-site.

If the waste is being transported to another site, a copy of the Local Authority waste COR/permit or EPA Waste/IE Licence for that site will be provided to the nominated project RM (see Section 9.0). If the waste is being shipped abroad, a copy of the Transfrontier Shipping (TFS) notification document will be obtained from DCC (as the relevant authority on behalf of all local authorities in Ireland) and kept on-site along with details of the final destination (COR, permits, licences etc.). A receipt from the final destination of the material will be kept as part of the on-site waste management records.

All information will be entered in a waste management recording system to be maintained on site.

### **8.0 ESTIMATED COST OF WASTE MANAGEMENT**

An outline of the costs associated with different aspects of waste management is outlined below. The total cost of C&D waste management will be measured and will take into account handling costs, storage costs, transportation costs, revenue from rebates and disposal costs.

#### **8.1 Reuse**

By reusing materials on site, there will be a reduction in the transport and recycle/recovery/disposal costs associated with the requirement for a waste contractor to take the material off-site.

#### **8.2 Recycling**

Salvageable metals will earn a rebate which can be offset against the costs of collection and transportation of the skips.

Clean uncontaminated cardboard and certain hard plastics can also be recycled. Waste contractors will charge considerably less to take segregated wastes, such as recyclable waste, from a site than mixed waste.

Timber can be recycled as chipboard. Again, waste contractors will charge considerably less to take segregated wastes such as timber from a site than mixed waste.

### **8.3 Disposal**

Landfill charges are currently at around €140 - €160 per tonne which includes a €85 per tonne landfill levy specified in the *Waste Management (Landfill Levy) Regulations 2015*. In addition to disposal costs, waste contractors will also charge a collection fee for skips.

Collection of segregated C&D waste usually costs less than municipal waste. Specific C&D waste contractors take the waste off-site to a licensed or permitted facility and, where possible, remove salvageable items from the waste stream before disposing of the remainder to landfill.

## **9.0 TRAINING PROVISIONS**

A member of the construction team will be appointed as the project RM to ensure commitment, operational efficiency, and accountability during the C&D phases of the project.

### **9.1 Resource Manager Training and Responsibilities**

The nominated RM 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 site. The RM 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 RM to delegate responsibility to sub-contractors, where necessary, and to coordinate with suppliers, service providers and sub-contractors to prioritise waste prevention and material salvage.

The RM 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 site. The RM will also be trained in the best methods for segregation and storage of recyclable materials, have information on the materials that can be reused on site and be knowledgeable in how to implement this RWMP.

### **9.2 Site Crew Training**

Training of site crew is the responsibility of the RM and, as such, a waste training program should be organised. A basic awareness course will be held for all site crew to outline the RWMP and to detail the segregation of waste materials at source. This may be incorporated with other site training needs such as general site induction, health and safety awareness and manual handling.

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

## **10.0 TRACKING AND TRACING / RECORD KEEPING**

Records should be kept for all waste material which leaves the site, either for reuse on another site, recycling or disposal. A recording system will be put in place to record the waste arising's on site.

A waste tracking log should be used to track each waste movement from the site. On exit from the site the waste collection vehicle driver should stop at the site office and sign out as a visitor and provide the security personnel or RM with a waste docket (or WTF for hazardous waste) for the waste load collected. At this time, the security personnel should complete and sign the Waste Tracking Register with the following information:

- Date
- Time
- Waste Contractor
- Company waste contractor appointed by e.g. Contractor or subcontractor name
- Collection Permit No.
- Vehicle Reg.
- Driver Name
- Docket No.
- Waste Type
- Quantity
- LoW code

The waste vehicle will be checked by security personal or the RM to ensure it has the waste collection permit no. displayed and a copy of the waste collection permit in the vehicle before they are allowed to remove the waste from the site.

The waste transfer dockets will be transferred to the RM on a weekly basis and can be placed in the Waste Tracking Log file. This information will be forwarded onto the DCC Waste Regulation Unit when requested.

Each subcontractor that has engaged their own waste contractor will be required to maintain a similar waste tracking log with the waste dockets / WTF maintained on file and available for inspection on site by the main contractor as required. These subcontractor logs will be merged with the main waste log.

Waste receipts from the receiving waste facility will also be obtained by the site contractor(s) and retained. A copy of the Waste Collection Permits, CORs, Waste Facility Permits and Waste Licences will be maintained on site at all times and will be periodically reviewed by the RM. Subcontractors who have engaged their own waste contractors, should provide the main contractor with a copy of the waste collection permits and COR / permit / licence for the receiving waste facilities and maintain a copy on file, available for inspection on site as required.

## **11.0 OUTLINE WASTE AUDIT PROCEDURE**

### **11.1 Responsibility for Waste Audit**

The appointed RM will be responsible for conducting a waste audit at the site during the C&D phase of the development. Contact details for the nominated RM will be provided to

the DCC Waste Regulation Unit after the main contractor is appointed and prior to any material being removed from site.

### **11.2 Review of Records and Identification of Corrective Actions**

A review of all waste management costs and the records for the waste generated and transported off-site should be undertaken mid-way through the project.

If waste movements are not accounted for, the reasons for this should be established in order to see if and why the record keeping system has not been maintained. The waste records will be compared with the established recovery/reuse/recycling targets for the site. Each material type will be examined, in order to see where the largest percentage waste generation is occurring. The waste management methods for each material type will be reviewed in order to highlight how the targets can be achieved.

Upon completion of the C&D phase, a final report will be prepared, summarising the outcomes of waste management processes adopted and the total recycling/reuse/recovery figures for the development.

### **11.3 Pest Management**

A pest control operator will be appointed as required to manage pest onsite during the construction phase of the project. Organic and food wastes generated by staff will not be stored in open skips, but in closed waste receptacles. Any waste receptacles will be carefully managed to prevent leaks, odours and pest problems.

## **12.0 CONSULTATION WITH RELEVANT BODIES**

### **12.1 Local Authority**

Once construction contractors have been appointed, have appointed waste contractors and prior to removal of any C&D waste materials offsite, details of the proposed destination of each waste stream will be provided to the DCC Waste Regulation Unit.

DCC will also be consulted, as required, throughout the **excavation** and construction phases in order to ensure that all available waste reduction, reuse and recycling opportunities are identified and utilised and that compliant waste management practices are carried out.

### **12.2 Recycling/Salvage Companies**

The appointed waste contractor for the main waste streams managed by the construction contractors will be audited in order to ensure that relevant and up-to-date waste collection permits and facility registrations/permits/licences are held. In addition, information will be obtained regarding the feasibility of recycling each material, the costs of recycling/reclamation, the means by which the wastes will be collected and transported off-site, and the recycling/reclamation process each material will undergo off site.

### 13.0 REFERENCES

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8. DCCAE, *Whole of Government Circular Economy Strategy 2022-2023 'Living More, Using Less' (2021)*
9. Circular Economy and Miscellaneous Provisions Act 2022.
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