Document Title

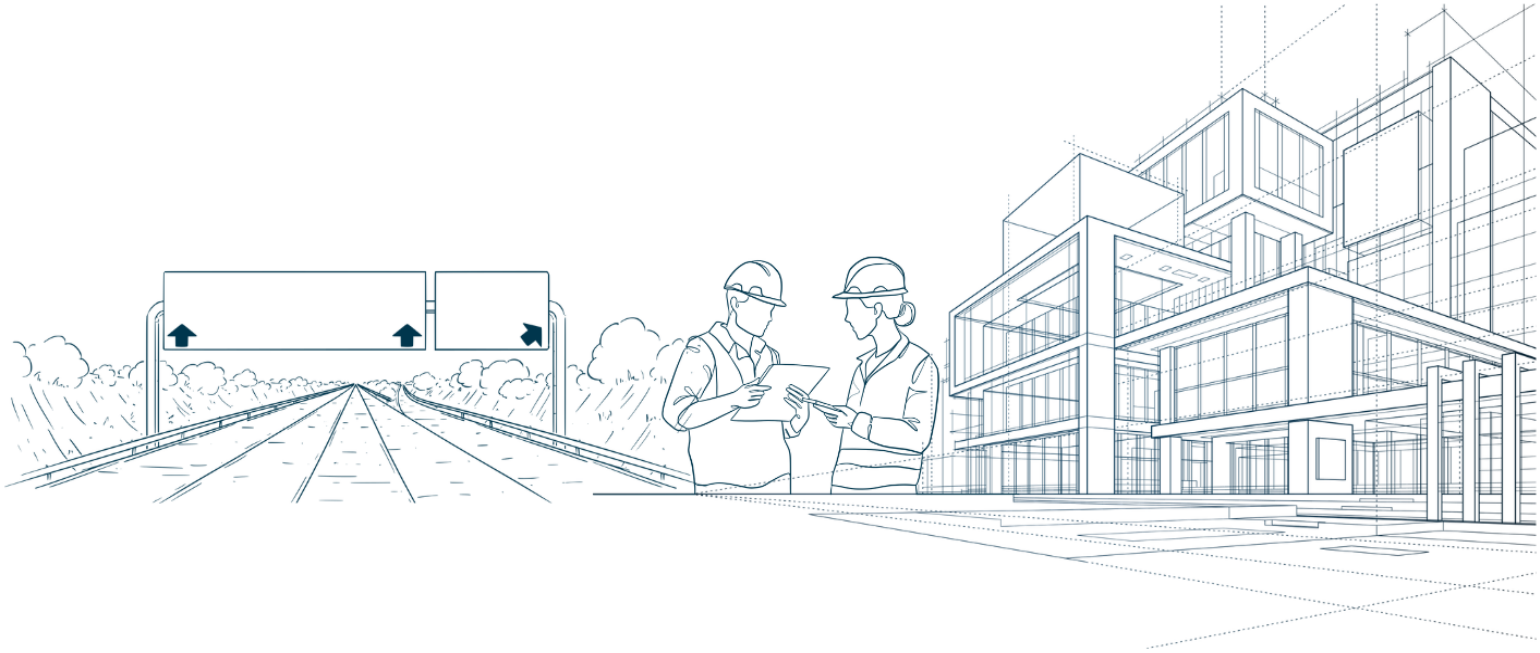
Resource and Waste Management Plan

Project

Kishoge/Clonburris, Lot 2, Site 4

Client

South Dublin County Council



KSG4-CSC-ZZ-XX-RP-C-0007

Job No. D116

31 March 2025

CS CONSULTING
Civil, Structural & Traffic Engineering

DOCUMENT STATUS					
File Location: J:\D_JOBS\Job-D116\B_DOCUMENTS\1.0 Planning\2.7 RWMP					
BS 1192	KSG4-CSC-ZZ-XX-RP-C-0007				
Version	**Purpose of Document**	**Author**	**Reviewed by**	**Approved by**	**Issue Date**
P1	Planning	AD	FB	NB	31.03.2025

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RESOURCE AND WASTE MANAGEMENT PLAN

KISHOGE/CLONBURRIS, LOT 2, SITE 4

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1.0 INTRODUCTION

Cronin & Sutton Consulting Engineers (CS Consulting) have been commissioned by South Dublin County Council (SDCC) to prepare a Resource & Waste Management Plan (RWMP) in support of a Part 10 Planning Application for a residential development at Kishoge/Clonburris, Lot 2, Site 4, County Dublin.

The purpose of this RWMP is to ensure that waste generated during the proposed development's construction stage will be managed and disposed of in accordance with the provisions of the Waste Management Acts 1996 to 2024 (as amended) and the National Waste Management Plan for a Circular Economy 2024-2030. It will also ensure that the following relevant legislation and best practice guidelines are complied with:

- Industrial Emissions (Integrated Pollution Prevention and Control) Directive (2010/75/EU)
- The Waste Framework Directive (EU) (2018/851)
- 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)
- Environmental Protection Agency (EPA) – Best Practice Guidelines for the Preparation of Resource & Waste Management Plans for Construction & Demolition Projects (2021)

The RWMP is to be read in conjunction with the engineering drawings and documents submitted by CS Consulting and with all other documentation submitted by other members of the project design team, that any environmental impacts (noise, vibration, dust, water) of project construction work activities on receptors and properties located adjacent to the project work areas, and on the local receiving environment, are managed and controlled.

2.0 POLICY AND GUIDELINES

2.1 National Policy

The National Construction and Demolition Waste Council (NCDWC) was launched in June 2002 and subsequently produced 'Guidelines for the preparation of Waste Management for Construction and Demolition Projects' in July 2006. These guidelines set out the following thresholds above which a CDWMP is required:

- New residential developments of 10 houses or more.
- New developments, including institutional, educational, health, and other public facilities with an aggregate floor area exceeding 1.250m^2.

The new NCDWC guidelines were superseded in 2021 by the 'Best Practice Guidelines for the preparation of Resource & Waste Management Plans for Construction and Demolition Projects', published by the Environmental Protection Agency (EPA). The replacement guidelines reflect current waste legislation and policy including 'A Waste Action Plan for a Circular Economy – Ireland's National Waste Policy 2020-2025', published in September 2020. Since the publication of the 2006 guidelines, waste management legislation and policy have evolved towards prioritising waste prevention and life cycle thinking as follows:

- An increased emphasis on waste prevention through established principes such as designing out waste and the use of green procurement.
- The promotion of more circular design and construction principles in line with the EU Circular Economy Action Plan under the EU Green Deal.

The guidelines outline the issue that needs to be addressed at the pre-planning stage of a development all the way through to its completion. The guidelines include the following:

- Predicted demolition & construction wastes and procedures to prevent, minimise, recycle, and reuse the wastes.
- Waste disposal/recycling of C&D wastes at the site.
- List of sequence of demolition operations to be followed.
- Provision of training for a waste manager and site crew.

- Details of proposed record keeping system.
- Details of waste audit procedures and plan.
- Details of consultation with relevant bodies, i.e. waste recycling companies, Local authorities, etc.

Other guidelines followed in the preparation of this Report include Construction and Demolition Waste Management – a handbook for Contractors and Site Managers published by FÁS and the Construction Industry Federation (CIF) in 2002. These guidance documents are considered to define best practice for construction and demolition projects in Ireland and describe how projects are to be undertaken such that environmental impacts and risks are minimised and maximum levels of waste recycling are achieved.

2.2 Regional Level

The proposed development is located in the Local Authority of South Dublin County Council.

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 Plan provides a framework for the prevention and management of waste in a sustainable manner in these 12 Local Authority areas.

The *Eastern-Midlands Region Waste Management Plan 2022-2028* reflects changing national policy as set out in *A Resource Opportunity: Waste Management Policy in Ireland* and changes being enacted by the Waste Framework Directive (WFD) (2008/98/EC). The Plan sets out the strategic targets for waste management in the region and also specifies a mandatory target of 70% of C&D wastes to be prepared for reuse, recycling, and material recovery (excluding soil and stones) by 2020, in line with the requirements of the Waste Directive.

Beyond this, the three overall performance targets of the *Eastern-Midlands Region Waste Management Plan 2015-2021* are as follows:

- 1% reduction per annum in the quantity of household waste generated per capita over the period of the plan.
- Achieve a recycling rate of 50% of managed municipal waste by 2020.
- Reduce to 0% the direct disposal of unprocessed municipal waste to landfill (from 2016 onwards) in favour of higher value pre-treatment processes and indigenous recovery practices.

The Plan's implementation is led by the Eastern-Midlands Regional Waste Office based in Dublin City Council.

Under the Waste Framework Directive (2008/98/EC), member states must achieve 70% of material recovery of non-hazardous, non-soil and stone C&D waste by 2020. Ireland achieved 84% material recovery of such waste in 2019 and therefore surpassed the 2020 target. This represents an improvement on the recovery rate of 71% achieved in 2016 and 77% achieved in 2018. One of the primary objectives of the *Eastern-Midlands Region Waste Management Plan 2015-2021* is to achieve more sustainable waste management practices in the C&D sector. This requires the following actions:

- The development company must employ best practice at the design, planning and construction stage to ensure waste prevention and recycling opportunities are identified and implemented.
- Waste Collectors are required to introduce source-separation of recyclables and introduce graduated charges to incentivise better site practices.

Local Authorities shall ensure the voluntary industry code is applied to development control, to regulate the collection and treatment of waste to meet the Plan objectives and shall also work to develop markets for recycled materials.

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.

- A site-specific Construction Demolition Waste Management Plan is required for all developments of 10 or more residential units.

- IE7 Objective 1: To encourage a just transition from a waste management economy to a green circular economy to enhance employment and increase the value, recovery and recirculation of resources through compliance with the provisions of the Waste Action Plan for a Circular Economy 2020-2025 and to promote the use of, but not limited to, reverse vending machines and deposit return schemes or similar to ensure a wider and varying ways of recycling.

- IE7 Objective 2: To support the implementation of the Eastern Midlands Region Waste Management Plan 2015-2021 or as amended by adhering to overarching performance targets, policies and policy actions.

- IE7 Objective 3: To provide for, promote and facilitate high quality sustainable waste recovery and disposal infrastructure / technology in keeping with the EU waste hierarchy and to adequately cater for a growing residential population and business sector.

- QDP11 Objective 3: To promote the reuse and recycling of materials to promote the circular economy and reduce construction and demolition waste.

- 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, as updated together with The Whole of Government Circular Economy Strategy 2022-2023.https://www.gov.ie/en/publication/b542dwhole-of-government-circular-economy-strategy-2022-2023-living-moreusing-less.

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 2001 (No. 36 of 2001), 2003 (No. 27 of 2003) and 2011 (No 20 of 2011). Sub-ordinate and associated legislation include: European Communities (Waste Directive) Regulations 2011 (S.I. No. 126 of 2011) as amended 2011 (S.I. No. 323 of 2011)

    - Waste Management (Collection Permit) Regulations 2007 (S.I No. 820 of 2007) as amended 2008 (S.I. No. 87 of 2008) and 2016 (S.I. No. 24 of 2016)

- Waste Management (Facility Permit and Registration) Regulations 2007 (S.I. No. 821 of 2007) as amended 2008 (S.I. No. 86 of 2008), 2014 (S.I. No. 310 and S.I. No. 546 of 2014) and 2015 (S.I. No. 198 of 2015)
- Waste Management (Licensing) Regulations 2000 (S.I. No. 185 of 2000) as amended 2004 (S.I. No. 395 of 2004) and 2010 (S.I. No. 350 of 2010)
- Waste Management (Packaging) Regulations 2014 (S.I. No. 282 of 2014)
- Waste Management (Planning) Regulations 1997 (S.I. No. 137 of 1997)
- Waste Management (Landfill Levy) Regulations 2015 (S.I. No. 189 of 2015)
- European Communities (Waste Electrical and Electronic Equipment) Regulations 2014 (S.I. No. 149 of 2014)
- Waste Management (Batteries and Accumulators) Regulations 2014 (S.I. No. 283 of 2014) as amended 2014 (S.I. No. 349 of 2014) and 2015 (S.I. No. 347 of 2015)
- Waste Management (Food Waste) Regulations 2009 (S.I. No. 508 of 2009) as amended 2015 (S.I. No. 190 of 2015)
- European Union (Household Food Waste and Bio-waste) Regulations 2015 (S.I. No. 191 of 2015)
- Waste Management (Hazardous Waste) Regulations 1998 (S.I. No. 163 of 1998) as amended 2000 (S.I. No. 73 of 2000)
- Waste Management (Shipments of Waste) Regulations 2007 (S.I. No. 419 of 2007)
- Waste Management (Movement of Hazardous Waste) Regulations 1998 (S.I. No. 147 of 1998)
- The European Communities (Transfrontier Shipment of Hazardous Waste) Regulations 1988 (S.I. No. 248 of 1988)
- European Communities (Shipments of Hazardous Waste exclusively within Ireland) Regulations 2011 (S.I. No. 324 of 2011)
- European Union (Properties of Waste which Render it Hazardous) Regulations 2015 (S.I. No. 233 of 2015)

- Planning and Development Act 2000 (S.I. No. 30 of 2000) as amended 2010 (S.I. No. 30 of 2010) and 2015 (S.I. No. 310 of 2015).
- Environmental Protection Act 1992 (S.I. No. 7 of 1992) as amended by the Protection of the Environment Act 2003 (S.I. No. 27 and S.I. No. 413 of 2003) and amended by the Planning and Development Act 2000 (S.I. No. 30 of 2000) as amended.
- Litter Pollution Act 1997 (S.I. No. 12 of 1997) as amended by the Protection of the Environment Act 2003 (S.I. No. 27 of 2003) as amended.

These Acts and subordinate Regulations enable the transposition of relevant European Union Policy and Directives into Irish law.

One of the guiding principles of European waste legislation, which has in turn been incorporated into the Waste Management Acts 1996 - 2011 and associated 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 reuse, recycling, recovery or disposal (including its method of reuse, recycling, recovery or 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 project developer ensures that the waste contractors engaged by the Main Contractor are legally compliant with respect to waste transportation, reuse, recycling, recovery, and disposal. This includes the requirement that a contactor handle, transport, and reuse/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* as amended or a waste licence or Industrial Emissions (IED) Licence granted by the Environmental Protection Agency (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 SITE LOCATION AND PROPOSED DEVELOPMENT

3.1 Site Location

The proposed development site is situated within Lot 2 Site 4 within the Clonburris Strategic Development Zone in Co. Dublin. The area enclosed by the application boundary extends to approx. 11.6ha. The subject site is located within the operational area of South Dublin County Council.

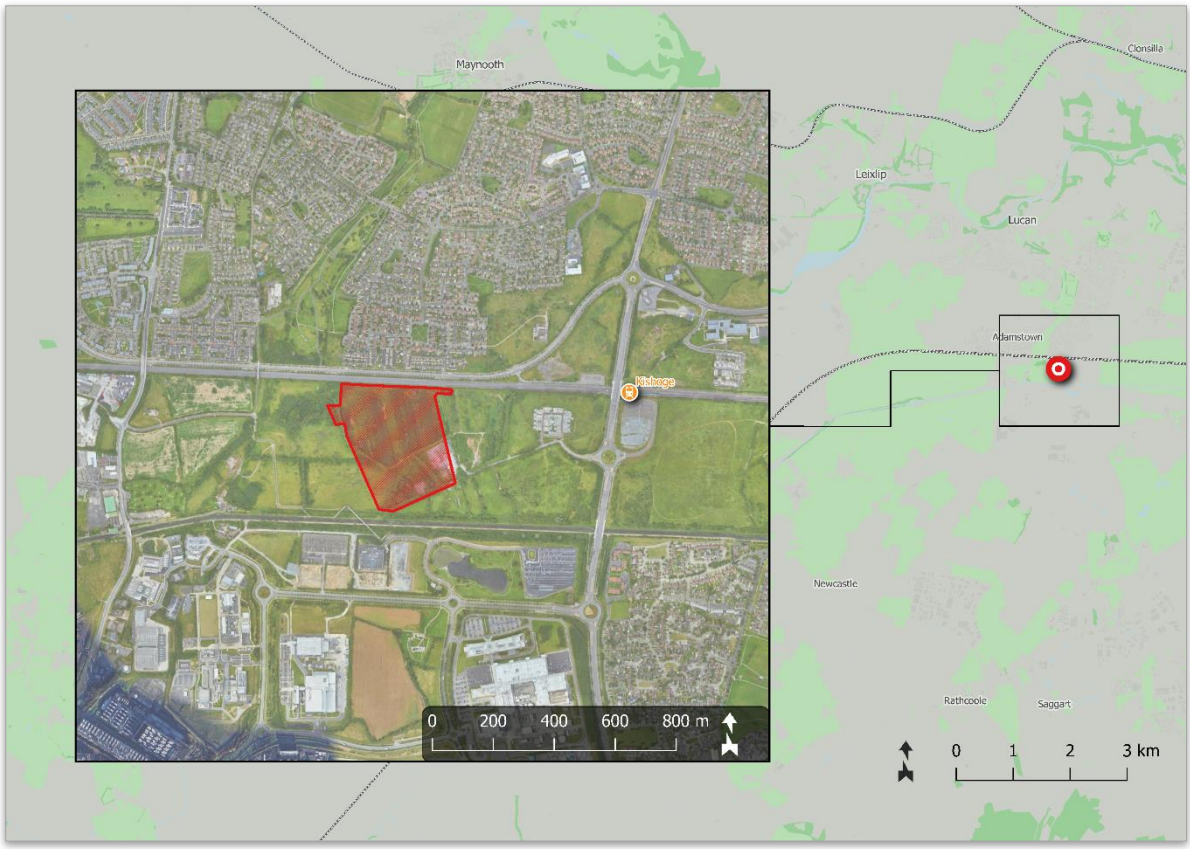

Figure 1 – Location of subject lands
(sources: EPA, OSi, OSM Contributors, Google)

The location of the subject lands is shown in **Figure 1**; their extents and environs are shown in more detail in **Figure 2**.

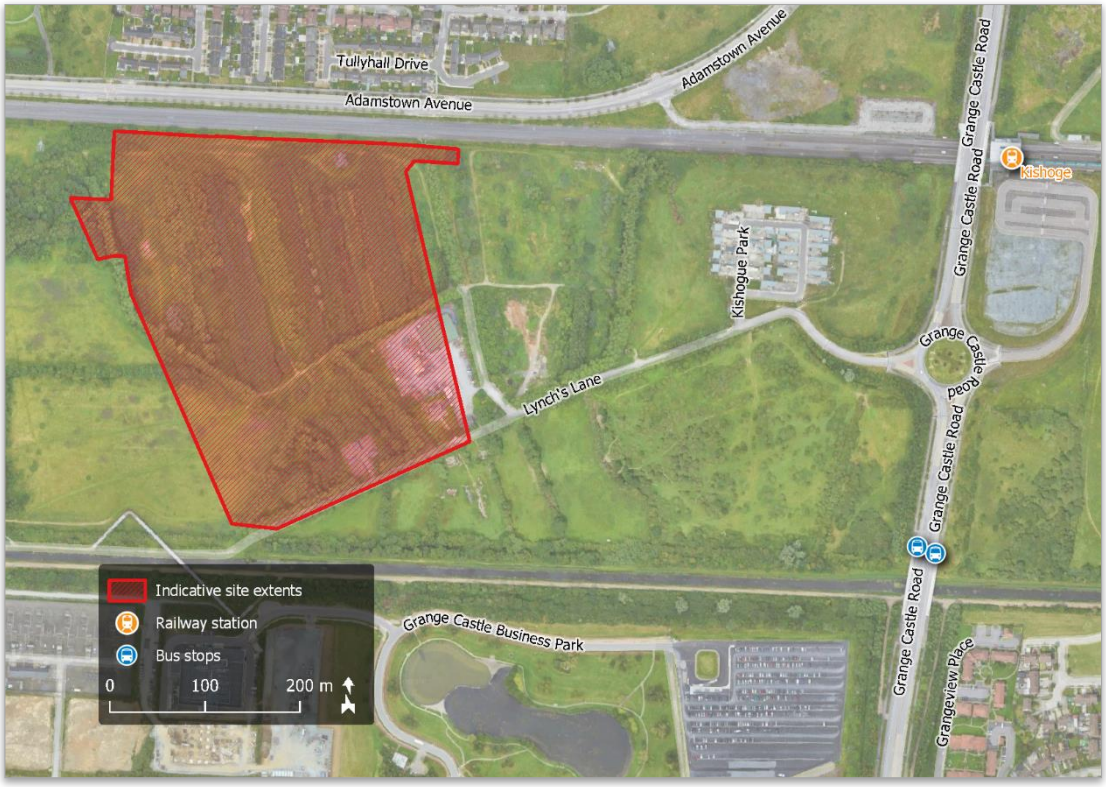

Figure 2 – Subject lands extents and environs
(sources: NTA, OSi, OSM Contributors, Microsoft)

The development site extends to approximately 11.6ha and is bounded to the north by the Irish Rail Railway line and to the south, east and west by lands zoned for development. The site is bisected by the permitted Southern Link Street (reg ref. SDZ20A/0021) from which vehicular, cycle and pedestrian access shall be provided.

3.2 Existing Land Use

The subject development site is currently primary greenfield and is partly in use as an SDCC parks depot. The site does not generate significant volumes of vehicular traffic.

3.3 Proposed Development

The proposed development comprises 436no. residential units in a mix of house, apartment, duplex and triplex units comprising 141no. houses (133no. 3-bedroom and 8no. 4-bedroom), 124no. apartments units (62no. 1-bedroom and 62no. 2-bedroom), 106no. duplex units (53no. 2-bedroom and 53no. 3-bedroom), 57no. triplex units (57no. 2-bedroom), 3no. age-friendly apartment units (3no. 1-bedroom), and 5no. garden apartment units (5no. 2-bedroom). Non-residential accommodation proposed (c. 1,550 m2 total) includes: A childcare facility (c. 544sqm), retail unit (c. 150sqm), employment use within the existing Grange House (c. 173 sq

m) and a community building/ pavilion (c. 683 sq m) fronting Griffeen Valley Park. All associated and ancillary site development and infrastructural works including 408no. surface level car parking, 793no. bicycle parking (591no. long term and 202no. short term spaces), hard and soft landscaping and boundary treatment works, including public, communal and private open space, public lighting, substations, bin stores and foul and water services.

4.0 WASTE MANAGEMENT ORGANISATION

4.1 Responsibility for Construction Phase Waste Management

A suitably competent and experienced representative of either the client or the lead contractor will be nominated as Resource Waste Manager for the project. The function of the Resource Waste Manager is to communicate effectively the aims and objectives of the Waste Management programme for the project to all relevant parties and contractors involved in the project, for the duration of demolition and construction works on site.

The Resource Waste Manager will be assisted in this role by the external Safety Consultant. Site Inspections will be carried out on a weekly basis and will incorporate inspection and monitoring of the requirements of the Waste Management Plan.

4.2 Appointed Waste Contractor(s) and Disposal Locations

One or more C&D waste contractors shall be appointed by the principal construction contractor, prior to commencement of any site clearance and construction activity. Companies that specialise in C&D waste management shall be contacted to determine their suitability for engagement.

Where waste contractor(s) are engaged, each company shall be audited in order to ensure that relevant and up-to-date waste collection permits, and facility COR/permits/licences are held. In addition, information regarding individual waste materials shall be obtained where possible, including the feasibility of recycling each material, the costs of recycling/reclamation, the means by which the wastes shall be collected and transported off-site, and the recycling/reclamation process each material shall undergo off site.

The appointed C&D waste contractor(s) shall determine the most suitable licenced facilities to which C&D waste materials shall be transferred for recycling, recovery, or disposal. Error! R eference source not found. shows the locations of EPA-licenced waste facilities in the region surrounding the development site.

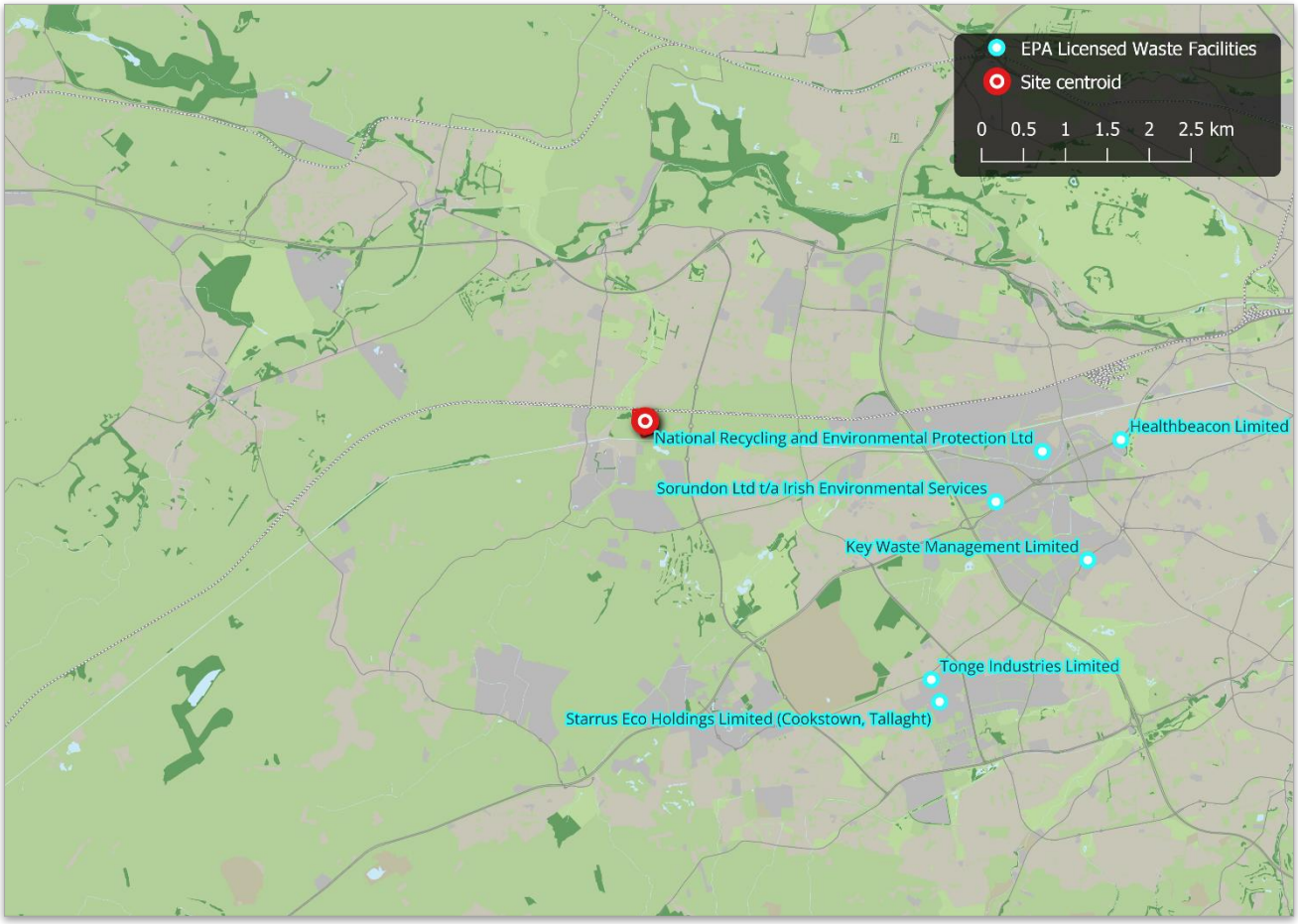

Figure 3 – Nearby waste disposal/recovery facilities
(sources: EPA, OSM Contributors)

5.0 DEMOLITION WASTE GENERATED BY THE PROPOSED DEVELOPMENT

Demolition waste will be generated during development. The management of spoil generated by excavation on site is described within the following section of this document.

The typical types of waste can be summarised as follows:

- Soil and stones
- Concrete (including blocks)
- Timber
- Glass
- Mixed metals
- Gypsum-based materials
- Tiles/ceramics
- Insulation materials
- Waste electrical and electronic equipment
- Fixtures and fittings, etc.

5.1 Estimated Waste Arisings

The EPA issued the European Waste Catalogue (EWC) in January 2002 and this system is used to classify all wastes and hazardous wastes according to a consistent EU-wide system. The EWC classification for typical waste materials to be expected to be generated during the demolition of the existing buildings is given in **Table 1**.

Table 1 - European Waste Catalogue

Waste Material	EWC Code
Non-Hazardous	
Concrete, bricks, tiles, ceramics	17 01
Wood, glass and plastic	17 02
Bituminous mixtures, coal tar and tarred products	17 03
Metals (including their alloys)	17 04
Soil, stones and dredged spoil	17 05
Gypsum-based construction material	17 08
Hazardous	
Electrical and Electronic Components	16 02
Batteries	16 06
Wood Preservatives	03 02
Liquid Fuels	13 07
Soil and stones containing dangerous substances	17 05 03
Insulation materials containing asbestos	17 06 01
Other insulation materials consisting of or containing dangerous substances	17 06 03
Construction materials containing asbestos	17 06 05
Construction and demolition waste containing mercury	17 09 01
Construction and demolition waste containing PCBs	17 09 02
Other construction and demolition wastes containing dangerous substances	17 09 03

5.2 Demolition Waste Estimates

It is proposed to demolish the existing South Dublin County Council Park Depot buildings and tree existing commercial buildings to the south of the site boundary. The total area to be demolished as part of the proposed development equates to 1830m^2.

Table 2 - BRE Waste Benchmark

Project Type	Number of projects data relates to	Average Tonnes/100m²	Number of projects data relates to	Average Tonnes/€100k
Residential	256	16.8	260	12.3
Public Buildings	23	22.4	24	11.2
Leisure	21	21.6	20	10.5
Industrial Buildings	23	12.6	24	5.7
Healthcare	22	12.0	22	9.9
Education	60	23.3	60	11.8
Commercial Other	4	7.0	2	3.6
Commercial Offices	14	23.8	11	6.3
Commercial Retail	48	27.5	47	11.6
Total number of projects	**471**		**470**	

The BRE Waste Benchmark Data as of June 2012, given in **Table 2**, provides guidance on the demolition waste estimates based on the gross internal floor area.

Table 3 - Calculated Demolition Waste

Building Type	Area to be Demolished	Waste
Commercial	800sqm (approx.)	56 tonnes

Demolition of the existing buildings on the development site is therefore expected to generate demolition waste in the order of circa 56 tonnes.

It should also be noted that at present the site contains areas of hardstanding which shall be excavated and removed from site prior to construction.

The breakdown of demolition waste produced on a typical construction site is classified in **Table 4**.

Table 4 – Typical Breakdown of Demolition Waste

Waste Type	Proportion of Total
Glass	3%
Concrete, Bricks, Tiles, Ceramics	64%
Plasterboard	4%
Asphalt, Tar, and Tar Products	6%
Metals	2%
Slate	8%
Timber	13%
Total	**100%**

Table 5 presents the EPA statistics on the final treatment methods of construction and demolition waste streams in Ireland for the year 2019.

Table 5 – Final Treatment of C&D Waste in Ireland - 2019

Waste Type	Final Treatment Proportion			
	Recycling	Energy Recovery	Backfilling	Disposal
Soil & Stones	0%	0%	91%	9%
Concrete, Brick, Tile & Gypsum	45%	0%	52%	2%
Bituminous Mixtures	64%	0%	36%	0%
Metal	100%	0%	0%	0%
Segregated Wood, Glass & Plastic	39%	54%	7%	0%
Other Mixed C&D Waste	13%	1%	60%	26%
Total	**6.8%**	**0.2%**	**84.0%**	**9.0%**

The development's predicted construction waste generation is given in **Table 6.**

Table 6 – Predicted Waste Generation

Waste Type	Predicted Tonnage Produced	Re-Use		Recyclable		Disposal	
		Tonnage	%	Tonnage	%	Tonnage	%
Mixed C&D	300	30	10	240	80	30	10
Timber	200	80	40	110	55	10	5
Plasterboard	100	30	30	60	60	10	10
Metals	50	4	5	42	90	4	5
Concrete	50	14	30	32	65	4	5
Mixed Waste	200	40	20	120	60	40	20
Total	**900**	**198**	**22**	**604**	**67**	**98**	**11**

5.3 Demolition Waste Management and Mitigation Measures

Construction of the proposed development will be under the control of a lead contractor, who will be appointed following a grant of planning permission. Upon appointment, once familiar with the site and having developed final detailed methodologies for demolition and construction, the lead contractor will expand upon the present RWMP and agree specific mitigation measures with South Dublin County Council (SDCC) prior to commencement of works. These measures will ensure effective waste management and recycling of waste generated at the site.

General mitigation measures proposed are summarised below:

- On-site segregation of all waste materials into appropriate categories including:
    - made ground, soil, subsoil, bedrock
    - concrete, bricks, tiles, ceramics, plasterboard metals
    - dry recyclables e.g. cardboard, plastic, timber
- All waste materials will be stored in skips or other suitable receptacles in a designated area of the site.
- An asbestos survey will be carried out in each extant structure on the development site, prior to its demolition.
- Wherever possible, left-over materials (e.g. timber off cuts) and any suitable demolition materials shall be re-used on-site.
- Any potentially contaminated soil to be removed from site will be tested to confirm its contamination status and subsequent management requirements.

- All waste leaving site will be recycled, recovered or reused where possible, with the exception of those waste streams where appropriate facilities are currently not available.
- All waste leaving the site will be transported by suitable permitted contractors and taken to suitably licensed or permitted facilities.
- All waste shall be tracked to its destination and a log be drawn up and left on site. The log shall include the haulier employed, the respective driver, receiving gate receipts for all waste (both demolition and excavation material) etc.

These mitigation measures will ensure the waste arising from the demolition and construction of the development is dealt with in compliance with the provisions of the Waste Management Act 1996 to 2013(as amended), and associated Regulations, the Litter Act of 1997, and the Easter-Midlands Region (EMR) Waste Management Plan 2015-2021, and achieve optimum levels of waste reduction, re-use and recycling.

6.0 CONSTRUCTION WASTE GENERATED BY THE DEVELOPMENT

6.1 Construction Waste Classification

Waste generated during construction at a typical site includes the following:

- Concrete, bricks, tiles, and cement
- Wood
- Glass
- Plastics
- Bituminous mixtures, coal tar, and tarred products
- Metals (including their alloys)
- Soil and stones
- Insulation materials (possibly including asbestos-containing materials)
- Gypsum-based construction material
- Materials containing mercury
- PCB-containing materials (e.g., sealants, resin-based floorings, capacitors, etc.)
- Waste electrical and electronic equipment
- Oil wastes and a waste of liquid fuels
- Batteries and accumulators
- Packaging (paper/cardboard, plastic, wood, metal, glass, textile, etc.)

Classification of wastes will follow **Table 1** previously provided in Section **5.0**.

6.2 Waste Management and Mitigation Measures

The following measures are proposed to ensure effective management of construction waste at the development site, to maximise recycling of construction waste, and to minimise the environmental impact of construction waste.

- On-site segregation of all waste materials into appropriate categories, including:
    - top-soil, sub-soil, bedrock;
    - concrete, bricks, tiles, ceramics, plasterboard;
    - asphalt, tar, and tar products;
    - metals;
    - dry recyclables (e.g. cardboard, plastic, timber).
- All waste material will be stored in skips or other suitable receptacles in a designated waste storage area on the site.
- Wherever possible, left-over material (e.g. timber cut-offs) and any suitable demolition materials shall be reused on or off site.
- Uncontaminated excavated material (top-soil, sub-soil) will be reused on site in preference to the importation of clean fill, as soil to be reused or removed from site must be tested to confirm its contamination status and subsequent management requirements.
- All waste leaving the site will be transported by a suitably licensed/permitted contractor and taken to a licensed/permitted facility.
- All waste leaving the site will be recorded and copies of relevant documentation retained.

These measures are intended to ensure that the waste arising from construction of the proposed development is dealt with in compliance with the provisions of the Waste Management Act 1996 (as amended), the Litter Act of 1997, and the Eastern-Midlands Region (EMR) Waste Management Plan 2015-2021, achieving optimum levels of waste reduction, re-use and recycling.

6.3 Predicted Impacts of the Proposed Development

Waste materials shall be generated during the construction of the proposed development, including the initial site clearance and excavation. Careful management of these, including segregation at source, shall help to ensure maximum recycling, reuse and recovery is achieved, in accordance with current local and national waste targets. It is possible, however, that a certain amount of waste shall still need to be disposed of at landfill.

Given the provision of appropriate facilities, environmental impacts (e.g., litter, contamination of soil or water, etc.) arising from waste storage are expected to be minimal. Particular attention must be given to the appropriate management of any construction waste

containing contaminated or hazardous materials. The use of suitably licensed waste contractors shall ensure compliance with relevant legal requirements and appropriate off-site management of waste.

In summary, with a high level of due diligence carried out at the site, it is envisaged that the environmental impact of the construction phase of the proposed development shall be of small scale and short duration, with respect to waste management.

6.4 Waste Management Options

6.4.1 Waste Management Options for Excavated Materials

The Waste Management Hierarchy states that the preferred option for waste management is prevention and minimisation of waste, followed by preparing for reuse and recycling/recovery, energy recovery (i.e. incineration) and, least favoured of all, disposal. Onsite excavation is required to facilitate the new construction works, so the preferred option (prevention and minimisation) cannot be pursued for the excavation phase.

The next option (beneficial reuse) may be appropriate for some of the excavated material, subject to environmental testing and classification of the material as hazardous or non-hazardous in accordance with the EPA Waste Classification. Clean material may be used as fill material in other construction projects or as engineering fill for waste licensed sites. Beneficial reuse of surplus material as engineering fill may be subject to further testing to determine whether materials meet the specific engineering standards for their proposed end use (e.g. in respect of sulphate content, pyrites, etc.).

Any nearby sites requiring clean fill/capping material will be contacted to investigate reuse opportunities for clean and inert material. If any of the material is to be reused on another site as a by-product (and not as a waste), this will be done in accordance with Article 15 of the European Union (Waste Directive) Regulations 2020. Article 15 requires that certain conditions be met and that by-product decisions are communicated to the EPA via their online notification form.

Similarly, if any soils/stones are imported onto the site from another construction site as a by-product, this will also be done in accordance with Article 15. If the material is deemed to be a waste, then removal and reuse/recycling/recovery/disposal of the material will be carried out in accordance with:

- the Waste Management Acts 1996–2011 (as amended),
- the Waste Management (Collection Permit) Regulations 2007 (as amended), and
- the Waste Management (Facility Permit & Registration) Regulations 2007 (as amended).

The volume of waste to be removed will dictate whether a COR, permit or licence is required by the receiving facility. Once all available beneficial reuse options have been exhausted, the options of recycling and recovery at waste permitted and licensed sites will be considered.

It is anticipated that soil and stone excavated at the site will be below the inert threshold for acceptance of waste at landfill, although environmental soil sampling during site investigation works will be required to confirm this. Inert non-hazardous soils would be suitable for acceptance at inert landfills in the region, but acceptance would be subject to the approval of the waste facility operator.

In the event that contaminated material is encountered and subsequently classified as hazardous, this material will be stored separately to any non-hazardous material. This would require off-site treatment at a suitable facility or disposal abroad via the Transfrontier Shipment of Wastes (TFS).

6.4.2 Waste Management Options for other Construction & Demolition Wastes

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

All waste arisings will be handled by an approved waste contractor holding a current waste collection permit. All waste arisings requiring reuse, recycling, recovery or disposal off-site will be transferred to a facility holding the appropriate COR, permit or licence, as required.

Written records will be maintained by the contractor detailing the waste arising during the construction phase, the classification of each waste type, the contact details and waste collection permit number of all waste contactors who collect waste from the site, and the end destination details for all waste removed and disposed of off-site.

Dedicated storage containers will be provided for hazardous wastes which may arise, such as batteries, paints, oils, chemicals etc., as required. The containers used for storing hazardous liquids will be appropriately bunded or will be stored on suitably sized spill pallets.

The management of the main waste streams from the construction phase is detailed as follows:

- Bedrock

  It is not anticipated that bedrock will be encountered during excavations and site clearance works at the site. In the event that bedrock is encountered and requires excavation, the material will be tested and its suitability for reuse on-site will be investigated. Where the material is deemed to be not suitable for on-site reuse or where there are no opportunities for reuse of excavated bedrock on-site, it will be removed off-site for appropriate reuse, recovery or disposal.

- 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. Clean concrete can be crushed and reused as a subbase in road construction, subject to performance testing.

- Hard Plastic

  Hard plastic is a highly recyclable material, and all clean recyclable plastic will be segregated and removed from site for recycling, where possible.

- Timber

  Timber that is uncontaminated (i.e. free from paints, preservatives, glues, etc.) will be placed into a dedicated skip and recycled off-site. Clean timber is typically recycled as chipboard.

- Metals

  Metals will be segregated into mixed ferrous, stainless steel, copper, and cabling, etc. 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 segregated from other materials where possible and stored in a separate skip, pending collection for recycling.

- Glass

  Any glass materials from windows or other fixtures will be segregated for recycling, where possible.

- Waste Electric and Electronic Equipment (WEEE)

  WEEE will be stored in dedicated covered cages, receptacles or pallets pending collection for recycling off-site.

- 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

  Construction waste which is not suitable for reuse or recycling, 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 to determine whether 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.

- Other Hazardous Wastes

  On-site storage of any hazardous wastes produced (e.g. chemicals, oils, and/or 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.

It should be noted that a construction contractor has not yet been appointed and, until the contractor is in place, it is not possible to provide information on the preferred destinations of

each waste stream. Prior to commencement of site clearance, excavation and construction activities and removal of any waste off-site, details of the proposed end destination of each waste stream will be provided to SDCC.

6.5 Tracking and Documentation Procedures for Off-Site Waste Transfer

All waste will be documented prior to leaving the site. Waste will be weighed by the waste contractor, either by weighing mechanism on the truck or at the receiving facility. These waste records will be maintained on site by the contractor.

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

If waste is being transported to another site, a copy of the Local Authority COR, waste permit, or EPA Waste/IED Licence for that site will be provided to the nominated project Resource Manager. If the waste is being shipped abroad, a copy of the TFS 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 (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.

7.0 OPERATIONAL WASTE GENERATED BY THE PROPOSED DEVELOPMENT

For details of the estimated operational waste arisings of the proposed development, as well as the operational waste storage and collection measures to be implemented, please refer to the Operational Waste Management Plan prepared by AWN Consulting submitted under separate cover in support of this planning application.

8.0 COST IMPACTS OF WASTE MANAGEMENT

An outline of the cost impacts associated with different aspects of waste management is provided below. The total cost of the management of the construction waste material will be measured and will take into account handling costs, storage costs, transportation costs,

revenue from rebates and disposal costs. These costs will be used to inform waste management for subsequent stages of the project.

8.1 Reuse

By salvaging material for reuse on site, there will be a reduction in the transport and off-site recycling/recovery/disposal costs associated with the requirement for a waste contractor to take the material away to landfill.

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 typically charge less to take segregated wastes, such as recyclable waste, from a site than mixed waste.

8.3 Disposal

Construction waste materials not suited to reuse, recycling, or recovery shall generally be disposed of at landfill. This entails costs for both material transport and disposal, with no return or rebate. This therefore represents the most costly option, providing an incentive to minimise the quantities of waste materials disposed of in this way.

9.0 TRAINING PROVISIONS

An individual from the main contractor's team will be appointed as the Waste Manager for the project to ensure commitment, operational efficiency and accountability during the excavation and construction phases of the project. The main contractor or project managers for the overall development should ensure that each contractor engaged throughout the project has a suitable person nominated as a point of contact for waste management.

9.1 Waste Manager Training and Responsibilities

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 him/her in the organisation, operation and recording of the waste management system implemented on site. The Waste Manager will have overall responsibility to oversee, record and provide feedback to the Project Manager on everyday waste management at the site associated with project works. Authority will be given to the Waste Manager 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 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 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 site and be knowledgeable in how to implement this.

9.2 Site Crew Training

Training of the site crew is the responsibility of the Waste Manager and, as such, a site induction waste management brief will be organised. A basic awareness course will be held for all site crew to outline the RWMP and to detail the segregation methods 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. 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 RECORD KEEPING

Records will be kept for all waste material which leaves the site, either for reuse on another site, recycling, recovery or disposal. A recording system will be put in place to record the C&D waste arisings on site. A copy of the Waste Collection Permits, CORs, Waste Facility Permits and Waste/IED Licences will be maintained on site at all times.

The Waste Manager or delegate will record the following;

- Waste taken for reuse off-site;
- Waste taken for recycling; and
- Waste taken for disposal.

For each movement of waste off-site, a signed docket will be obtained by the Waste Manager from the waste contractor, detailing the weight and type of the material and the source and destination of the material. This will be carried out for each material type removed from site.

The Waste Manager will ensure that all records include:

- Full details of the haulier(s) engaged to transport each of the resources/wastes offsite.
- Waste Transfer Forms for any shipments of hazardous waste material offsite.
- The destination of every resource/waste transfer off-site.
- End-of-waste and by-product notifications to the EPA, where required.

The system will allow the comparison of these figures with targets established for the recovery, reuse and recycling of construction waste and to highlight the successes or failures against these targets.

Full records of all resources (including wastes) will be maintained for the duration of the project. The Waste Manager will be required to prepare a CDWMP Implementation Review Report at project handover.

11.0 CONSULTATION WITH RELEVANT BODIES

11.1 Local Authority

Once the main contractor has been appointed and prior to removal of any waste materials off-site, details of the proposed destination of each waste stream will be provided to the local authority for their approval.

South Dublin County Council will also be consulted, as required, throughout the 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.

11.2 Recycling/Salvage Companies

Companies that specialise in C&D waste management will be contacted to determine their suitability for engagement. Where waste contractor(s) are engaged, each company will be audited in order to ensure that relevant and up-to-date waste collection permits, and facility COR/permits/licences are held. In addition, information regarding individual waste materials will be obtained where possible, including 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.

12.0 CONCLUSION

This document outlines the principles and measures by which the waste generated during the demolition and construction phases of the proposed development will be managed and disposed of in compliance with the provisions of the Waste Management Acts 1996 to 2013, Best Practice Guidelines for the Preparation of Waste Management Plans for Construction and Demolition Projects July 2006, and the Eastern-Midlands Region (EMR) Waste Management Plan 2015-2021. It describes the measures by which optimum levels of waste reduction, re-use and recycling shall be achieved.