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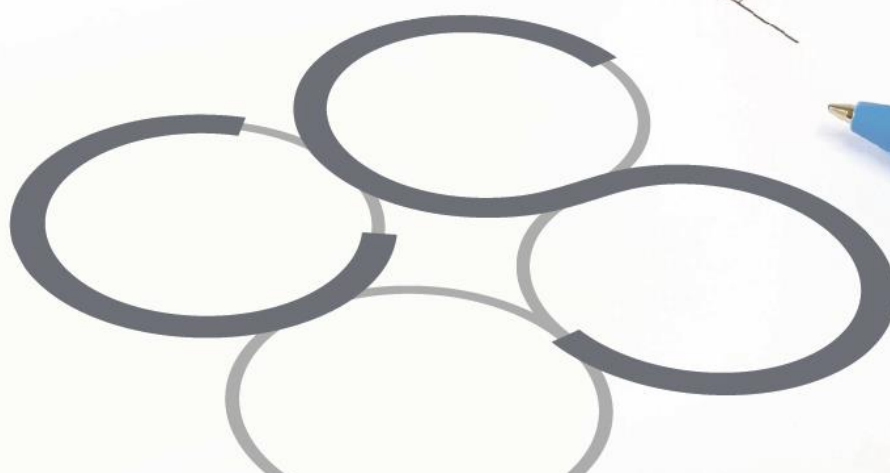
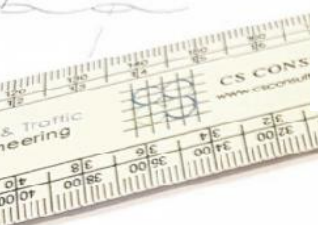
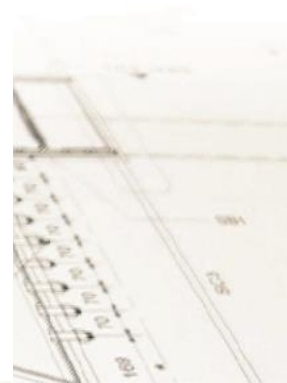
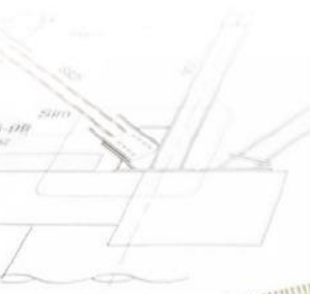
# Construction and Demolition Waste Management Plan

## Block 5 and Block 6 Clongriffin, Dublin 13

Client: The Land Development Agency

Job No. C216

August 2024





## CONSTRUCTION AND DEMOLITION WASTE MANAGEMENT PLAN

### BLOCK 5 AND BLOCK 6, CLONGRIFFIN, DUBLIN 13

#### CONTENTS

1.0	INTRODUCTION _____	1
2.0	POLICY AND GUIDELINES _____	3
3.0	SITE LOCATION AND PROPOSED DEVELOPMENT _____	8
4.0	WASTE MANAGEMENT ORGANISATION _____	11
5.0	DEMOLITION WASTE TO BE GENERATED _____	12
6.0	CONSTRUCTION WASTE TO BE GENERATED _____	13
7.0	RECORD KEEPING _____	19
8.0	TRAINING PROVISIONS _____	20
9.0	CONSULTATION WITH RELEVANT BODIES _____	22

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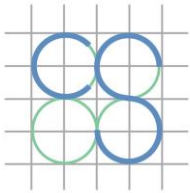


## 1.0 INTRODUCTION

Cronin & Sutton Consulting Engineers (CS Consulting) have been commissioned by the Land Development Agency (LDA) to prepare a Construction and Demolition Waste Management Plan (CDWMP) for a proposed standalone Large-scale Residential Development (LRD) at Block 5 and Block 6, Clongriffin, Dublin 13.

The purpose of this CDWMP 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 Acts 1996 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)
- National Waste Management Plan for a Circular Economy 2024-2030
- Environmental Protection Agency (EPA) – Best Practice Guidelines for the Preparation of Resource & Waste Management Plans for Construction & Demolition Projects (2021)



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The CDWMP 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.

## 2.0 POLICY AND GUIDELINES

### 2.1 National Policy

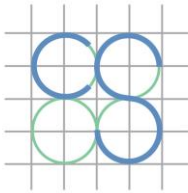
The National Construction and Demolition Waste Council (NCDWC) was launched in June 2002 and subsequently produced 'Guidelines for the Preparation of Waste Management Plans for Construction and Demolition Projects' in July 2006. These guidelines set out the following thresholds above which a CDWMP is 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<sup>2</sup>.

The NCDWC guidelines were superseded in 2021 by the 'Best Practice Guidelines for the Preparation of Resource & Waste Management Plans for Construction & 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 principles 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 existing and draft guidelines outline the issues that need 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 wastes.
- Waste disposal/recycling of C&D wastes at the site.
- List of sequence of demolition operations to be followed.
- Provision of training for 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.

A Waste Management Plan for the Dublin Region (comprising Dublin City Council, Fingal County Council, South Dublin County Council & Dun Laoghaire-Rathdown County Council) was in place from 2005-2015, with periodic revisions. This was superseded by the National Waste Management Plan for a Circular Economy 2024-2030, which came into force in February 2024 and incorporates the following key European targets for construction and demolition (C&D) waste management:

- 12% reduction in construction and demolition waste by 2030 (from a 2021 baseline of 9 million tonnes nationally).
- 70% recycling rate for non-hazardous construction waste, excluding natural soils & stone (unchanged from the previous 2020 target).

The EPA produces annual construction and demolition (C&D) waste statistics for Ireland, the most recent of which concern the year 2021 and were published in August 2023. These indicate the following key trends:

- 9 million tonnes of C&D waste were generated in Ireland in 2021.
- This consisted primarily of soil and stones (85%); the remainder comprised concrete, bricks, tiles and gypsum waste (7%) and mixed C&D waste (4%). Only approx. 4% of C&D waste was collected separately as segregated material streams (wood, paper, glass, plastic and metal).



- The vast majority (96%) of C&D waste underwent final treatment in Ireland in 2021 and only 4% was exported abroad for final treatment.
- Most of the C&D waste undergoing final treatment in Ireland was backfilled (85%), while only 8% and 7% was recycled and sent for disposal, respectively.
- Recycling was the main treatment operation for metals (100%), for segregated wood, paper, glass and plastic (77 %).
- For non-hazardous C&D waste other than soil and stone, Ireland achieved 85% material recovery, surpassing the 70% European target.

One of the primary objectives of the National Waste Management Plan 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 will ensure the voluntary industry code is applied to development control, to regulate the collection and treatment of waste to meet the Plan objectives and will also work to develop markets for recycled materials.

## **2.2 Legislative Requirements**

One of the guiding principles of European waste legislation, which has in turn been incorporated into the Waste Management Acts 1996 to 2024 (as amended) 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 to its legal disposal (including its method of disposal). 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 collection and transport of waste).

Waste contractors are typically engaged to transport waste off-site. Each contractor must comply with the provisions of the Waste Management Acts 1996 to 2024 (as amended) and associated Regulations. This includes the requirement that a contractor handle, transport and 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 the relevant 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 waste permit granted by the local authority under the Waste Management (Facility Permit and Registration) Regulations 2007 or a waste license granted by the EPA. The permit/license held will specify the type and quantity of waste able to be received, stored, sorted, recycled and/or disposed of at the specified site.

Should the initial assessment of the site indicate that material would have to be removed from site then the material will be classified in accordance with legislative requirements to determine if the material is classified as hazardous or non-hazardous. All material deemed to be non-hazardous will then be assessed under Waste Acceptance Criteria requirements for disposal to a licence landfill facility in accordance with the 1999 Council Directive 1999/31/EC on the landfill of waste and the 2002 Council Decision 2003/33/EC. Only material deemed through independent laboratory analysis to be either

inert or non-hazardous can be disposed of at landfill facilities in the Republic of Ireland at present, hazardous material having to be taken abroad for disposal.

The assessment and removal of such material will require the main contractor to employ a suitably qualified environmental specialist to develop a soil management and removal plan and ensure full compliance with statutory requirements.

### 3.0 SITE LOCATION AND PROPOSED DEVELOPMENT

#### 3.1 Site Location

The application site is located within zoned development lands to the north-west of Clongriffin railway station in Dublin 13. It is bounded to the north and west by recently completed residential developments, and to the east and south by undeveloped lands. The site has a total area of approx. 2.2ha and is in the administrative jurisdiction of Dublin City Council (DCC), adjacent to the City Council's boundary with Fingal County Council.

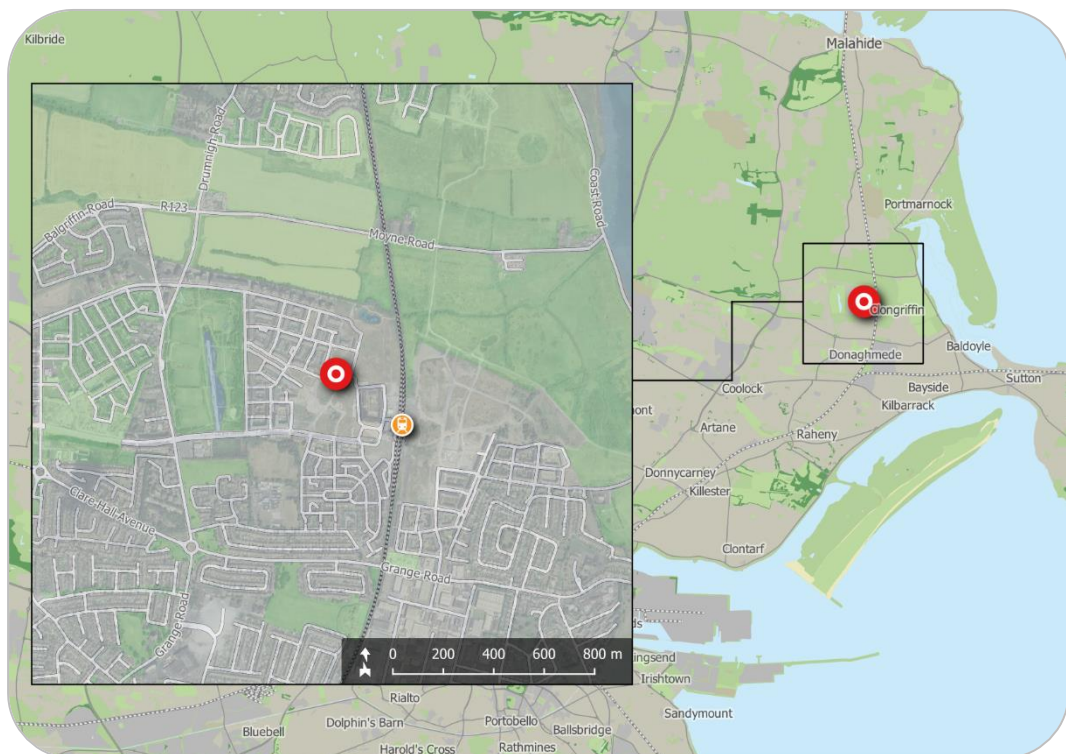


Figure 1 – Development site location  
(sources: EPA, OSi, OSM Contributors, Google)

The location of the development site is shown in **Figure 1** above; its extents and environs are shown in more detail in **Figure 2**.

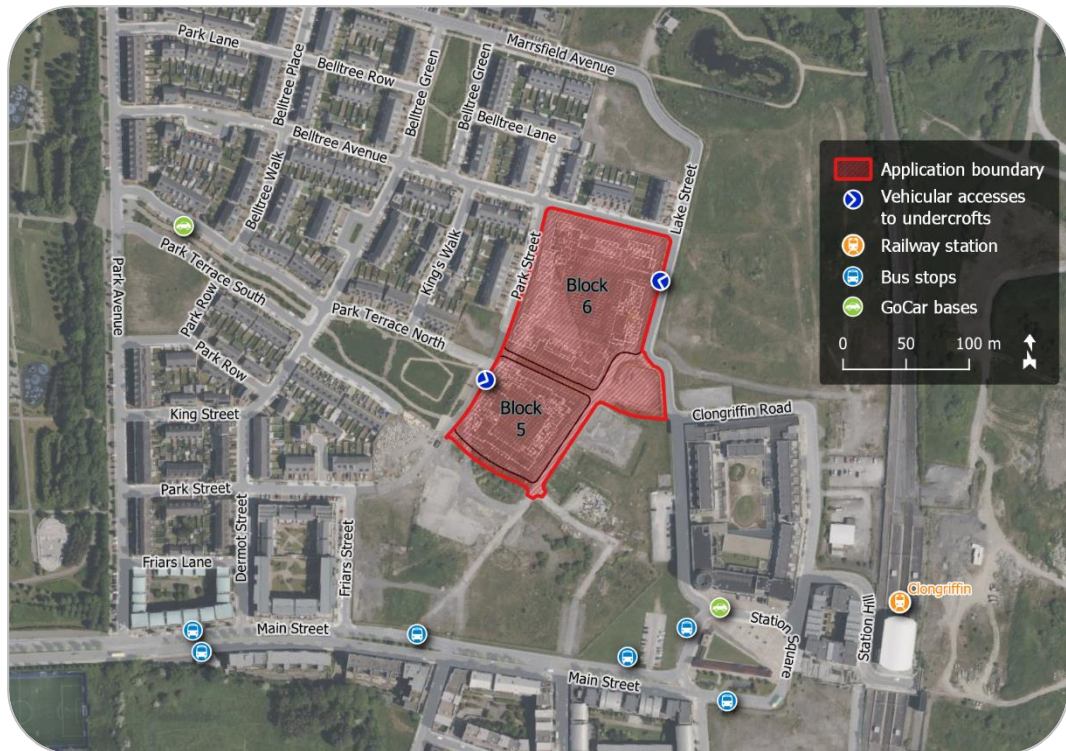


Figure 2 – Development site extents and environs  
(sources: NTA, GoCar, OSi, OSM Contributors, Microsoft)

### 3.2 Existing Subject Site Condition

The subject development site itself is generally greenfield, although parts of it have been used for access and storage to facilitate construction on adjacent lands.

### 3.3 Description of Proposed Development

The proposed development will consist of the construction of two Blocks ranging in height between 3- to 7-storeys to provide 408 no. apartments (comprising 180 x 1 bed; 226 x 2 bed and 2 x 3 bed units) together with ancillary car- ; bicycle and motorcycle parking provision. Ancillary communal amenity spaces are provided at podium level within the respective courtyards and at 4<sup>th</sup> floor roof terrace level.



At ground floor level provision is made for 1,209 sq.m Community / Arts and Cultural floorspace and a childcare facility of 413 sq.m (with an ancillary play area of 125 sq.m). Other facilities provided at ground floor level include refuse / bin stores; energy centre, plant rooms and integrated ESB substations and associated switch rooms. On-street loading bays are provided along Lake Street and Dargan Street.

Other works include the provision of road infrastructure and green infrastructure (in the form of a public open space / landscaped pocket park extending to 1,433 sq.m in area) together with street planting and public lighting throughout plus all associated engineering and site works (including an external multi-functional community / arts and cultural events space of 315 sq.m along Market Street and all underground services and utility connections) necessary to serve the proposed development.

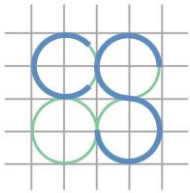


## **4.0 WASTE MANAGEMENT ORGANISATION**

### **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 Construction & Demolition (C&D) Waste Manager for the project. The function of the C&D Waste Manager is to effectively communicate 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 C&D 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.



## **5.0 DEMOLITION WASTE TO BE GENERATED**

No extant structures are present on the subject site, and no demolition works will be required. The development will therefore generate no demolition waste.



## 6.0 CONSTRUCTION WASTE TO BE GENERATED

### 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 waste of liquid fuels
- Batteries and accumulators
- Packaging (paper/cardboard, plastic, wood, metal, glass, textile, etc.)

The EPA issued the European Waste Catalogue (EWC) in January 2002; this system is used to categorise all wastes and hazardous wastes according to a consistent waste classification system across the EU. The EWC codes for waste materials potentially to be generated during construction of the proposed development are given in **Table 1**.



Table 1 – European Waste Catalogue

Waste Material	EWC Code
Non-Hazardous Wastes	
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 Wastes	
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

## 6.2 Typical Construction Waste Proportions and Treatment Processes

**Table 2** gives the typical breakdown by waste type of C&D waste in Ireland for the year 2021, as published by the EPA. **Table 3** gives the EPA's figures for the breakdown of treatment methods by C&D waste type. These figures do not distinguish between demolition-stage waste and construction-stage waste.

Table 2 – EPA 2021 C&D Waste Proportions

Waste Type	2021 Proportions	
	All Waste	Excluding Soil & Stones
Soils, stones & dredging spoil	85.1%	n/a
Concrete, brick, tile & gypsum	6.7%	45.1%
Mixed C&D waste	4.0%	26.9%
Metal	2.8%	19.1%
Bituminous mixtures	1.0%	6.5%
Segregated wood, glass & plastic	0.4%	2.4%

Table 3 – EPA 2021 C&D Waste Treatment by Waste Type

Waste Type	Treatment Method (proportion by waste type)				
	Recycling	Energy recovery	Backfilling	Disposal	TOTAL
Soils, stones & dredging spoil	0.0%	0.0%	94.2%	5.8%	100%
Concrete, brick, tile & gypsum	45.3%	0.2%	51.7%	2.9%	100%
Mixed C&D waste	0.3%	0.1%	71.8%	27.8%	100%
Metal	100.0%	0.0%	0.0%	0.0%	100%
Bituminous mixtures	48.6%	1.8%	39.5%	10.1%	100%
Segregated wood, glass & plastic	77.0%	21.3%	1.1%	0.6%	100%

### 6.3 Estimated Construction Waste Generation – Soil and Stones

As the proposed development does not include any basement level, it is not expected to generate significant quantities of waste soil and stones. Any such spoil that is generated is likely to be removed offsite and disposed of by backfilling. Should it prove possible to reuse any excavated material in developing the applicant's adjacent lands, this shall however be the preferred option.

### 6.4 Estimated Construction Waste Generation – Other Waste Types

For residential building construction, the BRE SmartWaste benchmark dataset provides a general construction waste generation rate of 16.8 tonnes per 100m<sup>2</sup> of total floor area (excluding soil and stones). Applying this rate to the proposed development's total Gross Floor Area of 43,893m<sup>2</sup> yields an estimated total construction waste generation figure of 7,375 tonnes. **Table 4** applies the waste type and treatment method proportions given in **Table 3** to this estimated total construction waste generation figure.

Table 4 – Estimated Construction Waste Generation by Type/Treatment

Waste Type	Waste by Treatment Method (tonnes)				
	Recycling	Energy recovery	Backfilling	Disposal	TOTAL
Concrete, brick, tile & gypsum	0.0	0.0	3,133.2	192.9	3,326.1
Mixed C&D waste	898.7	4.0	1,025.7	57.5	1,983.9
Metal	4.2	1.4	1,011.4	391.6	1,408.6
Bituminous mixtures	479.4	0.0	0.0	0.0	479.4
Segregated wood, glass & plastic	86.0	3.2	69.9	17.9	177.0
<b>TOTAL</b>	<b>1,468.3</b>	<b>8.6</b>	<b>5,240.2</b>	<b>659.9</b>	<b>7,375.0</b>

## 6.5 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 Acts 1996 to 2024 (as amended), the Litter Pollution Acts, 1997 and 2001, and the National Waste Management Plan for a Circular

Economy 2024-2030, achieving optimum levels of waste reduction, re-use, and recycling.

## **6.6 Predicted Impacts of the Proposed Development**

Waste materials will be generated during the construction of the proposed development, including the initial site clearance and excavation. Careful management of these, including segregation at source, will help to ensure maximum recycling, reuse and recovery is achieved, in accordance with current local and national waste targets. It is expected, however, that a certain amount of waste will 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 will be given to the appropriate management of any construction waste containing contaminated or hazardous materials. The use of suitably licensed waste contractors will ensure compliance with relevant legal requirements and appropriate off-site management of waste.

With a high level of due diligence carried out on site and with the implementation of the proposed mitigation measures, the proposed development's demolition and construction phases are not expected to have a significant environmental impact with respect to waste management. Any such environmental impact shall be limited to the period during which demolition and construction works take place on site.

## 7.0 RECORD KEEPING

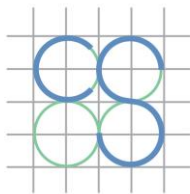
Records will be kept for all waste material which leaves the site, either for reuse on another site, recycling, recovery or disposal. A recording system will be put in place to record the C&D waste arisings on site. A copy of the Waste Collection Permits, CORs, Waste Facility Permits and Waste/IED Licences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



## **8.0 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.

### **8.1 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 CDWMP.



## 8.2 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 C&DWMP 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 programme and the particular dangers of each hazardous waste will be explained.



## **9.0 CONSULTATION WITH RELEVANT BODIES**

### **9.1 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.

Dublin City Council will also be consulted as required throughout the construction stages, to ensure that all available waste reduction, reuse and recycling opportunities are identified and used, and that compliant waste management practices are implemented.

### **9.2 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 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.