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Resource and Waste Management Plan for Construction

Proposed Development at City West

Saggart, County Dublin

Client: Cape Wrath Hotel Unlimited

Job No. T058

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RESOURCE AND WASTE MANAGEMENT PLAN FOR CONSTRUCTION

PROPOSED DEVELOPMENT AT CITY WEST, SAGGART, COUNTY DUBLIN

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1.0 INTRODUCTION

Cronin & Sutton Consulting Engineers (CS Consulting) have been commissioned by Cape Wrath Hotel Unlimited to prepare a Resource and Waste Management Plan for Construction (RWMP) for a proposed development on a site at Garters Lane, Saggart, County Dublin.

The purpose of this RWMP is to ensure that waste generated during the construction phase of the development shall be managed and disposed of in a way that ensures the provisions of the *Waste Management Acts 1996 to 2013,* and the *Eastern-Midlands Region (EMR) Waste Management Plan 2015-2021* are compiled with. It shall also ensure that optimum levels of waste reduction, re-use and recycling are achieved.

2.0 CONSTRUCTION AND DEMOLITION WASTE MANAGEMENT IN IRELAND

2.1 National Policy

The Irish Government issued a policy statement in September 1998 titled *Changing Our Ways*, which identified objectives for the prevention, minimisation, reuse, recycling, recovery, and disposal of waste in Ireland. The target for C&D waste in this policy document was to recycle at least 50% of construction and demolition waste within a five-year period (by 2003), with a progressive increase to at least 85% over fifteen years (i.e. by 2013).

In response to the *Changing Our Ways* document, a task force (Task Force B4) representing the waste sector of the already established Forum for the Construction Industry, released a report titled *Recycling of Construction and Demolition Waste*, which concerned the development and implementation of a voluntary construction industry programme to meet the Government's objectives for the recovery of construction and demolition waste.

The most recent national policy document was published in September 2020, titled *A Waste Action Plan for a Circular Economy - Ireland's National Waste Policy 2020-2025*. This document sets out a range of aims and targets for the State and the measures by which these will be achieved, including increased regulation and measures across various waste areas including Construction and Demolition.

The National Construction and Demolition Waste Council (NCDWC) was launched in June 2002, as one of the recommendations of the Forum for the Construction Industry in the Task Force B4 final report. The NCDWC subsequently produced *Best Practice Guidelines for the Preparation of Waste Management Plans for Construction and Demolition Projects* in July 2006 in conjunction with the then Department of the Environment, Heritage and Local Government (DoEHLG). This document was subsequently revised and reissued by the Environmental Protection Agency (EPA) in 2021 as the *Best Practice*

Guidelines for the Preparation of Resource & Waste Management Plans for Construction & Demolition Projects.

The Guidelines outline the issues that need to be addressed at the pre-planning stage of a development all the way through to its completion. Section 3 of the Guidelines identifies the following thresholds above which there is a requirement to prepare a bespoke Resource & Waste Management Plan (RWMP) for a proposed development:

New residential development of 10 dwellings or more.

Retrofit of fewer than 20 dwellings.

New commercial, industrial, infrastructural, institutional, educational, health and other developments with an aggregate floor area of 1,250m^2 or more.

Retrofit of commercial, industrial, infrastructural, institutional, educational, health and other developments with an aggregate floor area of 2,000m^2 or more.

Demolition projects generating in total 100m^3 or more of C&D waste.

These Guidelines have been followed in the preparation of this document and include the following elements:

- Predicted construction and demolition wastes.
- Procedure to prevent and minimise wastes.
- Options for the reuse/recycling/recovery/disposal of construction and demolition wastes.
- Provision of training for Resource Manager and site crew.
- Details of proposed record keeping system.
- Details of waste audit procedures and plan.
- Details of proposed consultation with relevant bodies (i.e. waste recycling companies, South Dublin County Council, 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.

The Environmental Protection Agency (EPA) issues an annual "*National Waste (Database) Report*" that details the levels of waste generation and the rates of recycling, recovery, and disposal of various waste streams (including C&D wastes).

2.2 Regional Policy

The proposed development is located in the Local Authority area 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 2015-2021* (currently under review) 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.

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) [13]
- 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.

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 demine 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 2002 European Landfill Directive [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 proposed development site is located in City West, Saggart, County Dublin. The site is located in the administrative jurisdiction of South Dublin County Council and has a total area of circa 13.45 ha.

Figure 1 – Location of proposed development site
(map data and imagery: EPA, OSi, OSM Contributors, Google)

The location of the proposed development site is shown in **Figure 1** above; the indicative extents of the development site, as well as relevant elements of the surrounding road network, are shown in more detail in **Figure 2**.

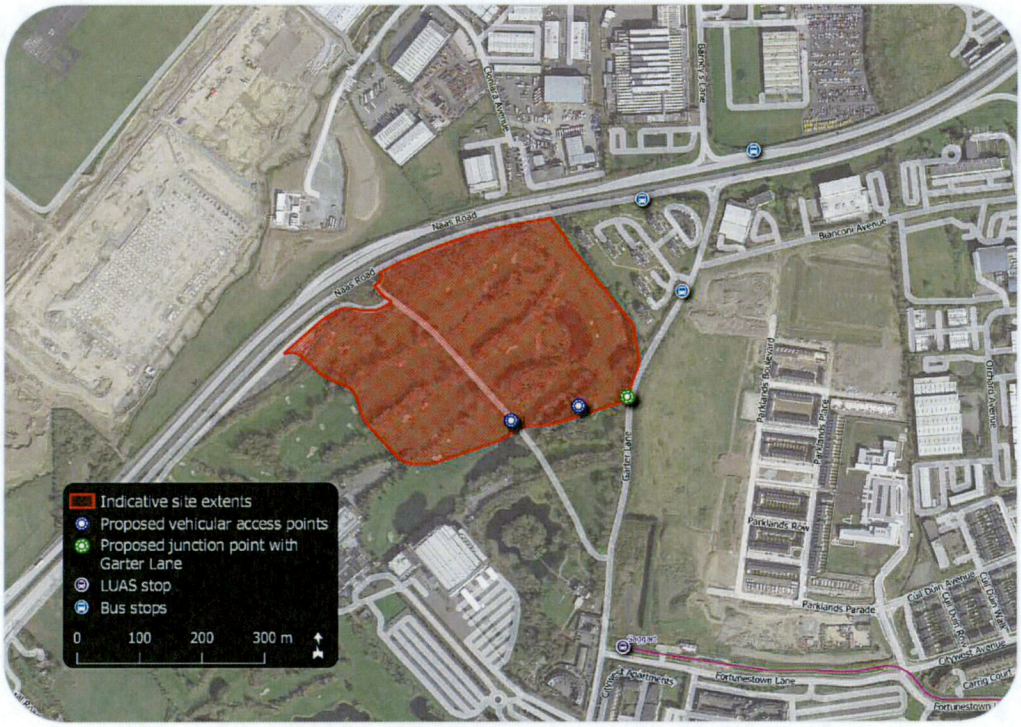

Figure 2 – Site extents and context
(map data and imagery: NTA, EPA, OSM Contributors, Google)

The site is bounded by the N7 motorway to the north and north-west, Garters Lane to the east, and an existing City West Complex to the south and south-west.

3.2 Existing Land Use

The subject site is currently configured to be a golf course, with associated water courses and golf relief features.

3.3 Description of the Project

The development will consist of a cemetery including: 8,047 No. traditional burial plots; Columbarium walls; 1 No. single storey reception building (214.7m^2 Gross Floor Area (GFA)) comprising a reception, 1 No. office, 1 No. reception

store, WC, kitchenette with photovoltaic (PV) solar panels at roof level; and the provision of an ancillary maintenance shed, bin and battery storage structures.

The development includes a new vehicular access road from Garters Lane to the N7/M7 Naas Road, with 2 No. vehicular access points serving the proposed cemetery; 110 No. car parking spaces (25 No. spaces to the east of the reception building and 85 No. within overflow car park areas to the south of the development); 8 No. bicycle parking stands; and all associated hard and soft landscape and boundary treatment works including the reshaping of an existing lake and provision of a footbridge; provision of SUDS measures, associated lighting, associated signage, site services (foul and surface water drainage and water supply); and all other associated site excavation, infrastructural and site development works above and below ground.

Refer to Tom Philips & Associates submission with this application for a detailed breakdown of 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.

4.2 Responsibilities for Operational Phase Waste Management

Upon completion of the development, a Management Company shall prepare an Operational Waste Control Strategy for the development, which shall detail operational management.

4.3 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 specialize 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/licenses 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 waste will be collected and transported off-site, and the recycling/reclamation process each material will undergo off site.

The appointed C&D waste contractor(s) shall determine the most suitable licensed facilities to which C&D waste materials shall be transferred for recycling, recovery, or disposal.

5.0 CONSTRUCTION WASTE GENERATED BY THE PROPOSED DEVELOPMENT

5.1 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 wastes 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 and this system is used to classify all wastes and hazardous wastes according to a consistent EU-wide system. The EWC for typical waste materials to be expected to be generated during the construction of the subject development 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 Construction 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 2013, the Litter Pollution Act of 1997, and the Eastern-Midlands Region (EMR) Waste Management Plan 2015-2021, achieving optimum levels of waste reduction, re-use and recycling.

5.3 Waste Management Options

5.3.1 Waste Management Options for Excavated Materials

The Waste Management Hierarchy states that the preferred option for waste management is prevention and minimization 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 minimization) 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 materials 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 materials 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 27 of the European Communities (Waste Directive) Regulations 2011. Article 27 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 27.

If the material is deemed to be waste, then removal and reuse/recycling/disposal of the materials 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 the 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 licenced 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).

5.3.2 Waste Management Options for other Construction and 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.

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 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. If the rock is to be reused on another site as a by-product (and not as a waste), this will need to be done so in accordance with Article 27 of the EC (Waste Directive) Regulations 2011.

- Concrete Blocks, Bricks, Tiles & Ceramics

  The majority of concrete blocks, bricks, tiles, and ceramics generated as part of the C&D works are expected to be clean, inert material and should be recycled where possible. Clean concrete can be crushed and reused as a sub base 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 C&D 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

  C&D 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.

5.4 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 Waste 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.

6.0 COST IMPACT 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.

6.1 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.

6.2 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.

6.3 Disposal

C&D 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.

7.0 TRAINING PROVISIONS

A Waste Manager shall be appointed 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.

7.1 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 them 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 the provisions of this RWMP.

7.2 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 shall describe the materials to be segregated, the storage methods, and the location of the waste storage areas. A sub-section on hazardous wastes shall be incorporated into the training programme, and the particular dangers of each hazardous waste type shall be explained.

8.0 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 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.

9.0 OUTLINE WASTE AUDIT PROCEDURE

9.1 Responsibilities for Waste Audit

The appointed Waste Manager shall be responsible for auditing the site during the project.

9.2 Review of Record and Identification of Corrective Actions

A review of all the records for the waste generated and transported on or 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 whether and/or why the record keeping system has not been maintained. The waste records will be compared with the established reuse/recovery/recycling/disposal 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. Where appropriate, options for increasing segregation of bonded or integrated demolition materials will be explored.

Waste management costs will also be reviewed. Upon completion of the project, a final report will be prepared, summarising the outcomes of waste management processes adopted and the total reuse, recycling, recovery and disposal figures for the project.

10.0 CONSULTATION WITH RELEVANT BODIES

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 South Dublin County Council (SDCC) for their approval.

SDCC 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.