



CONSTRUCTION & DEMOLITION WASTE MANAGEMENT PLAN

PROPOSECT HOUSE RESIDENTIAL

DEVELOPMENT

PROJECT NO. S627

20th MAY 2022



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**CONSTRUCTION & DEMOLITION WASTE
MANAGEMENT PLAN**

**for
PROSPECT HOUSE RESIDENTIAL
DEVELOPMENT,
at Stocking Lane, Co. Dublin.**



OCSC

O'CONNOR | SUTTON | CRONIN

Multidisciplinary
Consulting Engineers

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1 INTRODUCTION

1.1 Appointment

OCSC were commissioned by MSJA Ltd. to prepare a Construction & Demolition Waste Management Plan (CDWMP) in respect of the development of a site at Stocking Lane, Rathfarnham, County Dublin.

1.2 Administrative Jurisdiction

The proposed development site is located within the administrative jurisdiction of South Dublin County Council.

1.3 Overview and Purpose of CDWMP

This report sets out the Construction & Demolition Waste Management (CDWMP) for the proposed development site. This CDWMP is a preliminary plan written by OCSC multidisciplinary design engineers and will be subject to detailed development by the main contractor on appointment.

The purpose of this plan is to provide information necessary to outline the final management of Construction and Demolition (C&D) waste at the site and that this is undertaken in accordance with current legal and industry standards including the *Waste Management Acts 1996 - 2013* and associated Regulations 1, *Protection of the Environment Act 2003* as amended with EPA Acts 1992 to 2013 2, *Litter Pollution Act 1997* as amended 3 and the *relevant Waste Management Plans and to provide information necessary to ensure that the management of waste produced by the site is carried out in accordance with all current legal and environmental standards. This report has been prepared in accordance with the 'Best Practice Guidelines for the Preparation of Resource & Waste Management Plans for Construction and Demolition Projects'* document produced by the Environmental Protection Agency.

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. Subordinate legislation includes: o European Communities (Waste Directive) Regulations 2011 (SI 126 of 2011) as amended
- Waste Management (Collection Permit) Regulations (S.I No. 820 of 2007) as amended
- Waste Management (Facility Permit and Registration) Regulations 2007, (S.I No. 821 of 2007) as amended
- Waste Management (Licensing) Regulations 2004 (S.I. No. 395 of 2004) as amended
- Waste Management (Packaging) Regulations 2014 (S.I. 282 of 2014) as amended
- Waste Management (Planning) Regulations 1997 (S.I. No. 137 of 1997)
- Waste Management (Landfill Levy) Regulations 2015 (S.I. No. 189 of 2015)
- European Union (Waste Electrical and Electronic Equipment) Regulations 2014 (S.I. No. 149 of 2014)
- European Union (Batteries and Accumulators) Regulations 2014 (S.I. No. 283 of 2014) as amended
- Waste Management (Food Waste) Regulations 2009 (S.I. 508 of 2009), as amended
- European Union (Household Food Waste and Bio-waste) Regulation 2015 (S.I. No. 191 of 2015)
- Waste Management (Hazardous Waste) Regulations, 1998 (S.I. No. 163 of 1998) as amended
- Waste Management (Shipments of Waste) Regulations, 2007 (S.I. No. 419 of 2007) as amended
- Waste Management (Movement of Hazardous Waste) Regulations, 1998 (S.I. No. 147 of 1998)
- European Communities (Transfrontier Shipment of Waste) Regulations 1994 (SI 121 of 1994)
- European Union (Properties of Waste which Render it Hazardous) Regulations 2015 (S.I. No. 233 of 2015) as amended

- Environmental Protection Act 1992 (No. 7 of 1992) as amended.
- Litter Pollution Act 1997 (No. 12 of 1997) as amended.
- Planning and Development Act 2000 (No. 30 of 2000) as amended

One priority of the CDWMP shall be to promote recycling, reuse and recovery of waste and diversion from landfill wherever possible. Guidance will also be given to ensure appropriate method of transportation of waste is used to prevent littering or other serious environmental pollution. This plan aims to ensure maximum recycling, reuse and recovery of waste with diversion from landfill, wherever possible. It also seeks to provide guidance on the appropriate collection and transport of waste from the site to prevent issues associated with litter or more serious environmental pollution (e.g. contamination of soil and/or water).

In preparation of the CDWMP, the following publications have been used as references:

- BEST PRACTICE GUIDELINES for the preparation of resource & waste management plans for construction & demolition projects. Environmental Protection Agency 2021.
- Construction and Demolition waste management - A handbook for contractors and site managers, FAS and the construction industry federation 2002.
- In tandem with the launch of the National Construction and Demolition waste council, the Department of the Environment, Heritage and Local Government published the "Guidelines for preparation of waste management plans for construction and demolition projects".
- BS 10175:2011+A2:2017, Investigation of potentially contaminated sites, Code of Practice.
- EPA, 2015, Waste Classification, List of Waste & Determining if Waste is Hazardous or Non-hazardous.
- EPA 2013, Guidance on the Management of Contaminated Land and Groundwater at EPA Licensed Sites.
- EPA 2007, Code of Practice, Environmental Risk Assessment for Unregulated Waste Disposal Sites.

- EA, 2015, Guidance on the classification and assessment of waste, Technical Guidance WM3.
- EA, 2019, Land Contamination: Risk Management (CLRM).

These guidelines cover issues to be addressed at the preplanning stage right through to completion. These include:

- Predicted Construction and demolition wastes;
- Classification of material;
- Waste disposal/recycling of construction & demolition wastes at the site;
- List of sequence of operations to be followed;
- Provision of training for waste managers and site crew;
- Details of proposed record keeping system;
- Details of waste audit procedures and plans;
- Details of consultation with relevant stakeholders.

1.4 Overview of C&D Waste Management in Ireland

Directive 2006/12/EC (repealed with effect from 12th of December 2010) of the European parliament and of the council of 19th November 2008 on waste and directive 2008/98/EC which is transposed into Irish law by the Waste Management Acts and the European Communities (Waste Directive) Regulations 2011 (the "Waste Directive Regulations") in addition the national legislation are relevant.

The European council of ministers has adopted the revised waste framework directive, a decision that means member states will now be expected to reach a 70% recycling rate for non-hazardous construction and demolition by 2020. The Waste Directive 2008/98, which is transposed into Irish law by the Waste Management Acts and the European Communities (Waste Directive) Regulations 2011 (the "Waste Directive Regulations") states that uncontaminated soil and other naturally occurring material excavated in the course of construction activities where it is certain that the material will be used for the purposes of construction in its natural state on the site from which it was excavated will not be deemed to be waste. If it is used on a site elsewhere, it may or may not be

waste depending on the individual circumstances of the case. It will not be waste if there is no intention to discard it.

The Third Schedule to the Waste Management Acts lists activities commonly regarded as disposal activities while common recovery activities are listed in the Fourth Schedule. Broadly, disposal means getting rid of waste forever by, for example, landfilling it or burning it without recovering the energy from it.

Directive 2008/98/EC lays down the five-step hierarchy of waste management options, with waste prevention as the preferred option, followed by re-use, recycling, recovery and safe disposal, in descending order.

The five-stage waste hierarchy, which is designed to prevent and reduce waste production, is made more certain and comprehensive and moved to a more prominent place in the Waste Directive 98/2008. Article 7 of the Waste Directive Regulations 2011, which came into force on March 31, 2011, transposes the waste hierarchy into Irish law. It is understood that it is not proposed to reuse any material on site with the possible exception of rubble from the demolition works. These will be confirmed by the Contractor and completed in accordance with all legislation. In addition, the directive also deals with the issue of "end of waste" and "by-products" and clarifies the definitions of recovery, disposal and by-product.

The Irish Government issued a policy statement in September 1998 known as '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 report was to recycle at least 50% of C&D waste within a five-year period (by 2003), with a progressive increase to at least 85% over fifteen years (i.e. 2013). In response to the Changing Our Ways report, a task force (Task Force B4) representing the waste sector of the already established Forum for the Construction Industry, released a report entitled 'Recycling of Construction and Demolition Waste' concerning the development and implementation of a voluntary construction industry programme to meet the Government's objectives for the recovery of C&D waste.

The most recent national policy document was published in July 2012, entitled 'A Resource Opportunity - Waste Management Policy in Ireland'. This document stresses the environmental and economic benefits of better waste management, particularly in relation to waste prevention. The document sets out a number of actions in relation to C&D waste and commits to undertake a review of specific producer responsibility requirements for C&D projects over a certain threshold.

The Environmental Protection Agency published a guidance document in 2021 BEST PRACTICE GUIDELINES for the preparation of resource & waste management plans for construction & demolition projects. These guidelines outline the issues that need to be addressed at the pre-planning stage of a development all the way through to its completion. These guidelines have been followed in the preparation of this document and include the following elements:

- Predicted C&D wastes and procedures to prevent, minimise, recycle and reuse wastes;
- Waste disposal/recycling of C&D wastes at the site;
- Provision of training for waste manager and site crew;
- Details of proposed record keeping system;
- Details of waste audit procedures and plan; and
- Details of consultation with relevant bodies i.e. waste recycling companies

These guidance documents are considered to define best practice for C&D projects in Ireland and describe how C&D projects are to be undertaken such that environmental impacts and risks are minimised and maximum levels of waste recycling are achieved.

1.5 Legislative Requirements

Waste management acts, 1996 as amended and regulations made under the acts

Waste management in Ireland is subject to EU, national and regional waste legislation which defines how waste materials must be managed, transported and treated. The overarching EU legislation is the Waste Framework Directive (2008/98/EC) which is transposed into national legislation in Ireland. The cornerstone of Irish waste legislation is the Waste Management Act 1996 (as amended).

In addition, the Irish government issues policy documents which outline measures aimed to improve waste management practices in Ireland and help the country to achieve EU targets in respect of recycling and disposal of waste. The most recent policy document A Resource Opportunity – Waste Management Policy in Ireland was published in 2012 and stresses the environmental and economic benefits of better waste management, particularly in relation to waste prevention.

The strategy for the management of waste from the construction phase is in line with the requirements of the Best Practice Guidelines for the Preparation of Waste Management Plans for Construction and Demolition Projects published in 2021. The guidance document Construction and Demolition Waste Management: A handbook for Contractors and Site Managers was also consulted in the preparation of this assessment.

The Waste Management Act, 1996 (as amended) sets out the responsibilities and functions of various persons in relation to waste. In summary the act:

- Prohibits and person from holding, transporting, recovering or disposing of waste in a manner which causes or is likely to cause environmental pollution.
- Requires any person who carries out activities of an agricultural, commercial or industrial nature to take all such reasonable steps as are necessary to prevent or minimise the production of waste.

- Prohibits the transfer of waste to any person other than an authorised person (i.e. a holder of a waste collection permit or a local authority.)
- Requires the environmental protection agency (EPA) to make a national plan in relation to hazardous waste.
- Requires local authorities to make waste management plans in relation to non-hazardous waste.
- Imposes certain obligations on local authorities to ensure that a service is provided for collection of household waste and to provide facilities for the recovery and disposal of such waste;
- Enables the minister of the environment and local government to make regulations for various purposes to promote better waste management and provides for substantial penalties for offences including fines, imprisonment and/or liability for clean-up measures.

There are currently no Irish guidelines on the assessment of operational waste generation and guidance is taken from industry guidelines, plans and reports including the EMR Waste Management Plan 2015 – 2021 and BS 5906:2005 Waste Management in Buildings – Code of Practice.

Waste management (collection Permit) Regulations, 2007 as amended

Waste from the proposed development may only be collected by the holder of a waste collection permit or a local authority. The effect of s.34 of the Waste Management Acts is that waste (whether hazardous or not) should only be given to a haulier or collector who has the correct permit under the Waste Management (Collection Permit) Regulations 2008 (the “Waste Collection Permit Regulations”), or whatever regulations amend or replace them, to collect and transport the particular waste in question, or to a local authority.

Waste storage and collection areas on site should be designed to prevent environmental pollution.

Waste management (shipments of Waste) regulations 2007 S.I. No. 419

Where waste from the proposed development is exported outside of Ireland for recovery or disposal the national TFS office within South Dublin City Council must be notified. Certain financial guarantees must be in place and certified issued by the national TFS officer prior to the waste movement taking place. If the waste involved is hazardous, the contractor must ensure that it complies with the Waste Management (Hazardous Waste) Regulations 1998 (as amended) and the European Communities (Shipments of Hazardous Waste exclusively within Ireland) Regulations 2011, unless it is exempted from compliance with those Regulations under art.35 of the Collection Permit Regulations. Hazardous waste can only be given to a collector or haulier with a collection permit under the Waste Collection Permit Regulations and the collector or haulier must bring the waste to a licensed hazardous waste management facility and ensure that it is shipped within Ireland in accordance with the stringent requirements of the European Communities (Shipments of Hazardous Waste exclusively within Ireland) Regulations 2011 and/or exported from Ireland in accordance with the Waste Management (Shipments of Waste) Regulations 2007 (as amended) and Council Regulation (EC) No. 1013/2006 on shipments of wastes, as amended (the "TFS Regulations").

1.6 Policies and Guidance – a history

DoEHLG – Waste Management Changing Our Ways (September 1998)

The October 1998 policy statement on waste management – “changing our ways” – outlines the government’s policy objectives in relation to waste management and suggests some key issues and considerations that must be addressed in order to achieve these objectives. In particular, it focuses on the need to give clear and particle expression to the requirements of the hierarchy, by developing and pursuing integrated solutions, which combine progressive policies with a suitable and cost-effective waste infrastructure.

Changing our ways set the following ambitions targets for achievement over a fifteen-year time scale.

- A diversion of 50% of overall household waste away from landfill
- A minimum 65% reduction in biodegradable municipal wastes consigned to landfill
- The development of composting and other feasible biological treatment facilities capable of treating up to 300,000 tonnes of organic waste annually.
- Materials recycling of 35% of municipal waste.
- Recovery of at least 50% of construction and demolition waste within a five-year period, with a progressive increase to at least 85% over fifteen years.
- Rationalisation of municipal waste landfills with progressive and sustained reductions in numbers, leading to an integrated network of some 20 or so state of the art facilities incorporating energy recovery and high standards of environmental protection.

DoEHLG – Preventing and Recycling waste – delivering change – a policy statement (2002)

The government added to the messages presented in waste management “changing our ways” with the publication of preventing and recycling waste – delivering change 2002. In addition to setting objectives the policy statement set out how these might be achieved through investment from the national development plan in waste infrastructure. Key objectives of the policy statement are:

- The setting up of a market development group focusing on markets for recyclables.
- Formulating a national strategy on biodegradable waste policy.
- Expansion of the network of civic amenity sites and materials recycling facilities.

DoEHLG – Waste Management – Taking Stock and Moving Forward (2004)

Waste management – taking stock and moving forward reviews progress of implementation key policies including the national waste prevention to 2004. It sets up a framework for implementing key policies including the national waste prevention programme and the setting up of a market development group. It also sets an objective date of 1st January 2005 for implementation of user-based sharing for waste collection.

DoEHLG – national strategy on biodegradable waste (2021)

The national strategy on biodegradable municipal waste published by the DoEHLG in 2021 sets out measures to progressively divert biodegradable municipal waste from landfill in accordance with the agreed targets in EU Directive 1999/31/EC on the landfill of waste (landfill Directive). By 2016, in the region of 1.8 million tonnes of biodegradable municipal waste will need to be diverted annually in order to meet the directives targets.

The strategy is based on the integrated waste management approach established as government policy since the publication of “change our ways” in 1998. The preferred options for dealing with biodegradable municipal waste (BMW) are:

- Prevention and minimisation – avoiding generating waste.
- Recycling – mainly of paper and cardboard but also of textiles.
- Biological treatment – mainly of kitchen and garden waste including composting.
- Residual treatments – thermal treatment with energy recovery of by way of mechanical biological treatment.

Waste management Plan for the Dublin Region 2005-2010

The Dublin Waste Management Plan 2005-2010 aims towards achieving 59% recycling, 25% incineration and 16% landfill. The 2011 annual progress report shows waste management rates are improving year on year. The household

recycling rate is up 3%- 44%, municipal waste recovery is up 1% to 47% and landfilling has decreased by 1% to 53%. The region remains overly reliant on landfill with 49% of commercial waste sent for disposal. These remains a need to develop recovery alternatives for residual waste.

Eastern - Midlands Draft Regional Waste Management Plan 2015 – 2021

The Eastern Midlands Regional Waste Management Plan 2015-2021 identified the following targets:

- Preparing for reuse and recycling rate of 60-70% of Municipal Waste by the end of 2030.
- Eliminate the use of landfilling of all major waste streams including municipal, industrial and construction and demolition wastes in favour of recovery of residual wastes.

National Waste Prevention Programme (NWPP)

A National Waste Prevention Programme (NWPP) operated by the EPA, focuses on reporting on the prevention and minimization of waste. It produces annual progress reports. A Resource Efficiency Unit (formerly known as the Core Prevention Team), within the EPA, promotes waste minimization. A Prevention Programme Steering Group also known as the NWPP Steering Committee was established to "liaise with public authorities, monitor the overall thrust of the NWPP, and provide strategic direction to the CPT." A new National Waste Prevention Plan entitled "Towards a Resource Efficient Ireland, A National Strategy to 2020" was published in 2014. A report on the Overview of progress made on waste prevention projects during 2014 was published by the EPA in 2015 and is available on its website.

2 PROJECT DESCRIPTION

2.1 Site Location

The site is located at Prospect House, Stocking Lane, Dublin 16 and can be accessed via Stocking Lane by driving, walking or public transport. Refer to figure below for site location context. The site is immediately bound by:

- **North:** Greenfield that is an open area.
- **South:** Prospect View, Residential developments.
- **East:** Prospect Drive, Residential developments.
- **West:** The road Stocking Lane that gives access to the site.

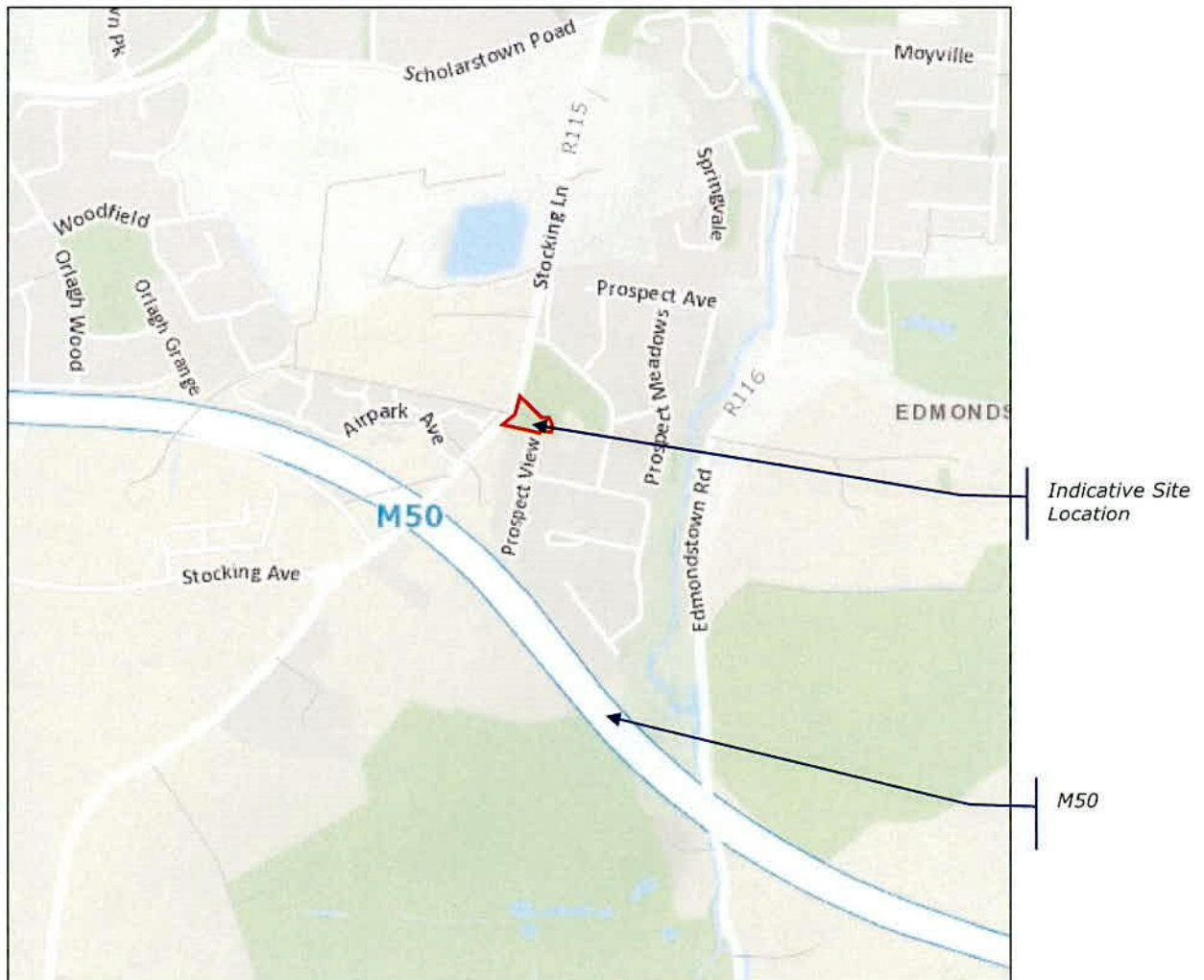


Figure 2.1: Site Location

2.2 Site Overview

The subject site comprises approximately 0.507ha and is accessed from the public road on the western boundary. The levels across the site vary with the ground generally sloping from 108.5mAOD in the southwest to 105.5mAOD in the north. The site is currently private property, containing a single house located on the southeast of the site, a road which runs from northeast to northwest of the site, connecting the property to Stocking Lane and the greenfield area to the north of the site.

2.3 Development Overview

The proposed development will comprise of the construction of a 4-storey apartment block over single storey basement (3 storeys plus setback penthouse level) comprising 22 no. apartments; The internal and external modification, refurbishment and extension of Prospect House, including the demolition of later outhouses and renovation of the coach house; The refurbishment and extension of the existing Gate House to accommodate a single residential unit; Removal of a portion of the western boundary wall to provide a new vehicular and pedestrian access from Stocking Lane; All associated landscaping including the provision of a play area; and, all engineering and site development works necessary to facilitate the development.

The proposed development layout can be seen in figure 2.2



Figure 2.2: Proposed Development Layout

3 KEY MATERIALS & QUANTITIES

3.1 Demolition

Site demolition works, is projected to require the breakup and removal of approximately 25 tonnes of reinforced concrete and 25 tonnes of masonry.

3.2 Construction Phase Waste

There will be no wastage of soil and stone as part of the C&D activities as it will be recovered and reused as a by-product for fill operations during construction of the proposed development. This is both economically and environmentally beneficial and facilitates the circular economy.

Additional waste as part of construction activities is expected. This waste will be produced from surplus materials such as broken or cut-offs of concrete blocks, bricks, tiles, timber, steel reinforcement etc. Waste from packaging and oversupply of materials is also expected and should be recycled where possible.

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

In addition, WEEE (containing hazardous components), printer toner/cartridges, batteries (Lead, Ni-Cd or Mercury) and/or fluorescent tubes and other mercury containing waste may be generated from C&D activities or temporary site offices. These wastes (if encountered) will be stored in appropriate receptacles in designated areas of the site pending collection by an authorised waste contractor.

3.3 Categories of Construction Waste Generated

The European Waste Catalogue (EWC) classifies waste materials and categories them according to what they are and how they are produced. It is referred to in several European Union directives and commission decisions regarding waste management.

In 1994, the first European waste catalogue and hazardous waste list was published as two separate documents. The lists were used by the environment protection agency for the compilation of waste data from 1995 and were adopted into Irish legislation by the Waste Management Act 1996. In 1996 the Environmental Protection Agency published a single list incorporated both the European Waste Catalogue and the Hazardous waste list. The European Waste Catalogue and the hazardous waste list are used for the classification of all wastes and hazardous wastes and are designed to form a consistent waste classification system across the EU. They form the basis of all national and international waste reporting obligations, such as those associated with waste licences and permits, the national waste database and the transport of waste. The EPA published a more concise guide of these in January 2002.

Correct classification is the foundation for ensuring that the collection, transportation, storage and treatment of waste is carried out in a manner that provides protection for the environment and human health and in compliance with legal requirements.

The waste classification system applies across the EU and is the basis for all national and international waste reporting obligations. From 1 June 2015, waste classification is based on:

- Commission Decision of 18 December 2014, amending Decision 2000/532/EC on the list of waste pursuant to Directive 2008/98/EC of the European parliament and of the Council (2014/955/EEC) [referred to hereafter as 'The List of Waste (LoW)'].

- Commission Regulation (EU) No 1357/2014 of 18 December 2014, replacing Annex III to Directive 2008/98/EC of the European Parliament and of the Council on waste and repealing certain Directives.

The aforementioned document consolidates the legislation and allows the generators of waste to classify the waste as hazardous or non-hazardous and in the process assigning the correct List of Waste entry. It also replaces the 2002 European Waste Catalogue and the Hazardous Waste List.

A non-exhaustive List of Waste expected for typical waste materials to be generated for this site are as follows and available online Waste Classification List of Waste & Determining if Waste is Hazardous or Non-hazardous APPLICABLE FROM 5 JULY 2018:

17 CONSTRUCTION AND DEMOLITION WASTES (INCLUDING EXCAVATED SOIL FROM CONTAMINATED SITES)	
17 01 01	concrete
17 01 02	bricks
17 01 03	tiles and ceramics
17 01 06*	mixtures of, or separate fractions of concrete, bricks, tiles and ceramics containing hazardous substances
17 01 07	mixtures of concrete, bricks, tiles and ceramics other than those mentioned in 17 01 06
17 02 01	wood
17 02 02	glass
17 02 03	plastic
17 02 04*	glass, plastic and wood containing or contaminated with hazardous substances
17 05 03*	soil and stones containing hazardous substances
17 05 04	soil and stones other than those mentioned in 17 05 03*
17 06 01*	insulation materials containing asbestos
17 06 03*	other insulation materials consisting of or containing hazardous substances
17 06 04	insulation materials other than those mentioned in 17 06 01* and 17 06 03*
17 06 05*	construction materials containing asbestos
17 09 04	mixed construction and demolition wastes other than those mentioned in 17 09 01, 17 09 02 and 17 09 03

Table 3.1: Construction & Demolition Wastes

3.4 Anticipated Construction Hazardous Waste

Fuels used during construction will be classed as hazardous and this will be stored for site machinery etc., in suitable tanks with the draw-off points bunded. Where this is the case, it is not expected that there will be any fuel wastage.

Waste mixtures contain dangerous substances classified as hazardous waste. This will not be used as fill on the site and will only be disposed of in a licensed hazardous waste facility.

3.5 Estimated Construction Waste Generated

Taken from the Irish EPA figures, the following is the breakdown of construction and demolition waste type expected to be generated from a typical site such as this per m².

Waste Types	%
Soil & Stones	83
Concrete, Bricks, tiles, plastics etc	13
Asphalt, tar/tar products	1
Metals	1
Others	2
Total Waste	100

Table 3.2: Waste materials generated from a typical Irish construction site

However, there is not expected to be any wastage of soil and stone, as noted previously, so C&D waste will only include other materials. It should be noted that until final materials and detailed construction methodologies have been confirmed, it is difficult to predict with a high level of accuracy the construction waste that will be generated from the proposed works as the exact materials and quantities may be subject to some degree of change and variation during the construction process.

If the material is deemed to be waste, then removal and reuse/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. Once all available beneficial reuse options have been exhausted, the options of recycling and recovery at waste permitted and licensed sites will be considered.

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

Category	Qualifying Criteria
Category A	Inert Material, suitable for disposal at a waste permitted site in Ireland
Category B	Inert Material, suitable for disposal at inert waste landfill in Ireland. Note this can be subdivided into B1 and B2
Category C	Non-hazardous material, suitable for disposal at a landfill facility in Ireland or for disposal/recovery in continental Europe
Category D	Hazardous material as defined by the application of the 'Hazardous Waste Classification Tool' ⁵ suitable for disposal/recovery Continental Europe.

Table 3.3: Waste categories

The following table shows typical target values for the management of waste at the site, to be completed by the contractor prior to start on site.

Waste Types	Waste	Reuse/Recover		Recycle		Disposal	
	tonnes	%	tonnes	%	tonnes	%	tonnes
Soil & Stones	4,000	5	200	-	-	95	3,800
Concrete, Bricks, tiles, plastics etc	100	-	-	75	75	25	25
Asphalt, tar/tar products	75	-	-	25	19	75	56
Metals	40	5	2	80	32	15	6
Others	40	10	4	40	16	50	20
Total	4,255		206		142		3,907

Table 3.4: Predicted construction waste targets for the proposed development

4 PROPOSED WASTE MANAGEMENT OPERATION

Collections for these will be as usage requires. Each material for recycling will be segregated into suitable containers which have adequate access for collection vehicles. There will be skips and receptacles provided to facilitate segregation at source where feasible. All waste receptacles leaving site will be covered or enclosed. All waste arisings will be handled by an approved waste contractor holding a current waste collection permit. All waste arisings requiring disposal off-site will be reused, recycled, recovered or disposed of at a facility holding the appropriate registration, permit or licence, as required.

4.1 Soil/Subsoil/Bedrock

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. The excavations are required to facilitate construction works so the preferred option (prevention and minimisation) cannot be accommodated for the excavation phase. There is not expected to be any soil/subsoil requiring disposal from site, however, if material is removed off-site it could be reused as a by-product (and not as a waste), if this is done, it will be done in accordance with Article 27 of the *European Communities (Waste Directive) Regulations 2011*. Article 27 requires that certain conditions are met and that by-product notifications are made to the EPA via their online notification form. Excavated material should not be removed from site until approval from the EPA has been received. If the material is deemed to be a waste, then removal and reuse/recovery/disposal of the material will be carried out in accordance with the Waste Management Act 1996 – 2011 as amended, the Waste Management (Permit) Regulations of 2007 as amended and the Waste Management (Collection Permit) Regulations of 2007 as amended. All soil will be classified in accordance with Council Decision 2003/33/EC and disposed of in accordance with its hazard category in fully EPA /local authority licensed disposal facilities.

The EPA recently (2020) published 'Guidance on waste acceptance criteria at authorised soil recovery facilities. This document identifies waste management acceptance procedures for unlined landfills and provides clarity on permitted concentrations of naturally occurring parameters.

4.2 Plastics / Timber / Scrap Metals / Plaster / Glass / Cardboard

These highly reusable and /or recyclable materials, if uncontaminated, will be cleaned, segregated and stored in suitable covered skip for collection by licensed contractor.

Every effort will be made in the management of the site to minimize the oversupply of these materials.

4.3 Hazardous Material

On-site storage of any hazardous wastes produced (i.e. contaminated soil if encountered 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 until a construction contractor is appointed it is not possible to provide information on the specific destinations of each construction waste stream. Prior to commencement of construction and removal of any construction waste offsite, details of the proposed destination of each waste stream will be provided to DCC. Where required a specialist contractor will be employed to carry out environmental clean-up to remove traces of contaminated materials from the site. These should be licensed under Waste Management (Collection Permit) regulations 2007 as amended. This will be disposed of in a facility licensed under the Waste Management Act 1996 -2011 as amended and waste management (Facility Permit) regulations of 2007 as amended.

5 SITE MANAGEMENT

5.1 Resource Manager

A dedicated Resource manager will be appointed to ensure commitment, efficiency and site protocols upheld during construction stage.

The role of the Resource manager will be to record, oversee and manage everyday handling of waste on the site.

Their training will be in setup and maintaining record keeping systems and how to produce an audit to ensure waste management targets are being met.

They shall also be trained in the best methods for segregation and storage of recyclables. They will also be familiar with the suitability of material reuse and know how to implement the CDWMP.

South Dublin City Council will be consulted throughout the Construction phase to ensure that all available waste reduction, reuse and recycling options are being explored and utilised and that compliant Waste Management is being carried out at the site.

5.2 Site Crew

This shall be the responsibility of resource manager and a training programme will be organised, incorporated into typical onsite inductions to give an awareness of waste segregation on the site.

This will outline the types and treatment that should be given to different materials and hazardous materials.

5.3 Documentation

All waste will be weighed and documented prior to leaving site. Records will be kept at the site and at the relevant waste facility.

All movement of waste and the use of waste contractors will be undertaken in accordance with the *Waste Management Acts 1996 - 2011*, *Waste Management (Collection Permit) Regulations 2007* as amended and *Waste Management (Facility Permit & Registration) Regulations 2007* and amended. This includes the requirement for all waste contractors to have a waste collection permit issued by the NWCPO. If the waste is being transported to another site, a copy of the Local Authority waste COR/permit or EPA Waste/IE Licence for that site will be provided to the nominated project waste manager.

Construction and Demolition municipal waste will be separated and stored wherever possible and monitored / inspected by the site foreperson prior to removal to ensure that site protocol for recycling is being adhered to.

5.4 Record Keeping

Specialist companies, where required, will be contacted to determine their suitability and each company's record reviewed to ensure relevant current collection permits / licenses are held.

Companies will also be contacted to gather information regarding treatment of hazardous materials, if required costs of handling and the best methods of transportation for recycling or reuse when hauling off site.

Records shall be kept for each material leaving the site for all types of use or disposal. This shall take the following basic outline form:

- Waste taken for reuse off site
- Waste taken for recycling
- Waste taken for disposal
- Reclaimed waste materials brought to site for reuse.

For any movement of waste, a docket shall be signed and recorded by the waste manager, detailing the type and weight of material and source or destination.

This will be readily comparable with all delivery records to site, so a waste generation percentage for each material can be determined.

This will allow ease of comparison of figures with targets established for the recovery, reuse and recycling of Construction waste. It will also highlight the source of failure in meeting these targets.

5.5 Waste Audits

The resource manager shall perform audits at the site during the complete construction phase of the works.

This shall ensure that all records are being maintained for all movements of all materials.

Records shall also be readily available for comparison with the sites targets.

At completion of the Construction phase a final report will be prepared outlining the results of the Resource Management process and the total reuse, recycling and recovery figures for the site.

5.6 Signage

The resource manager shall ensure that appropriate signage is in place.

5.7 Storage

The resource manager shall ensure that appropriate storage is provide for the different waste streams including:

- Dedicated skips
- Hazardous materials storage
- Stockpile management

6 PREDICTED IMPACTS OF THE PROPOSED DEVELOPMENT

Assuming all the proposed mitigation measures are implemented, the following impacts are expected to arise as a result of the proposed development.

6.1 Construction phase

Although there aren't significant volumes of waste expected to be produced on site - careful management of waste, including segregation at source, will help to ensure maximum recycling, reuse and recovery is achieved, in accordance with current local national waste targets.

It is expected that a certain amount of waste will need to be disposed of to landfill. Assuming appropriate facilities are provided, 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 demolition (and construction) waste containing contaminated or hazardous materials. The use of suitably licenced waste contractors will ensure compliance with relevant legal requirements and appropriate off-site management of waste.

In summary, if the final CDWMP is implemented and a high level of due diligence is carried out at the site, it is envisaged that the environmental impact of the construction phase of the proposed development will be short term and slight, with respect to waste management.

6.2 Operation phase

As with the construction phase, waste materials will be generated during the operational phase of the proposed development. Again, careful management of these, including segregation at source, will help ensure acceptable local and national waste targets are met. It is expected that some waste, for example, mixed non-recyclables will still be required to be disposed of to landfill.

Assuming appropriate on-site storage is provided, environmental impacts (e.g. litter and to a lesser extent contamination of soil and water etc.) arising from waste storage are expected to be minimal. Bin stores will be located throughout the development. The use of suitable licenced waste contractors will ensure compliance with the relevant legal requirements and appropriate off-site managements of waste.

In summary, if the operational phase management plan is implemented and a high level of due diligence is carried out at the site, it is envisaged that the environmental impact of the operation phase of the proposed development will be long term and slight, with respect to waste management.

Joshua Tai (BE, MIEI)

Civil Engineer

O'Connor Sutton Cronin & Associates

