

**CONSTRUCTION DEMOLITION
WASTE MANAGEMENT PLAN**

**Ratoath South SHD
For Beo Properties Limited**

Project No. L308

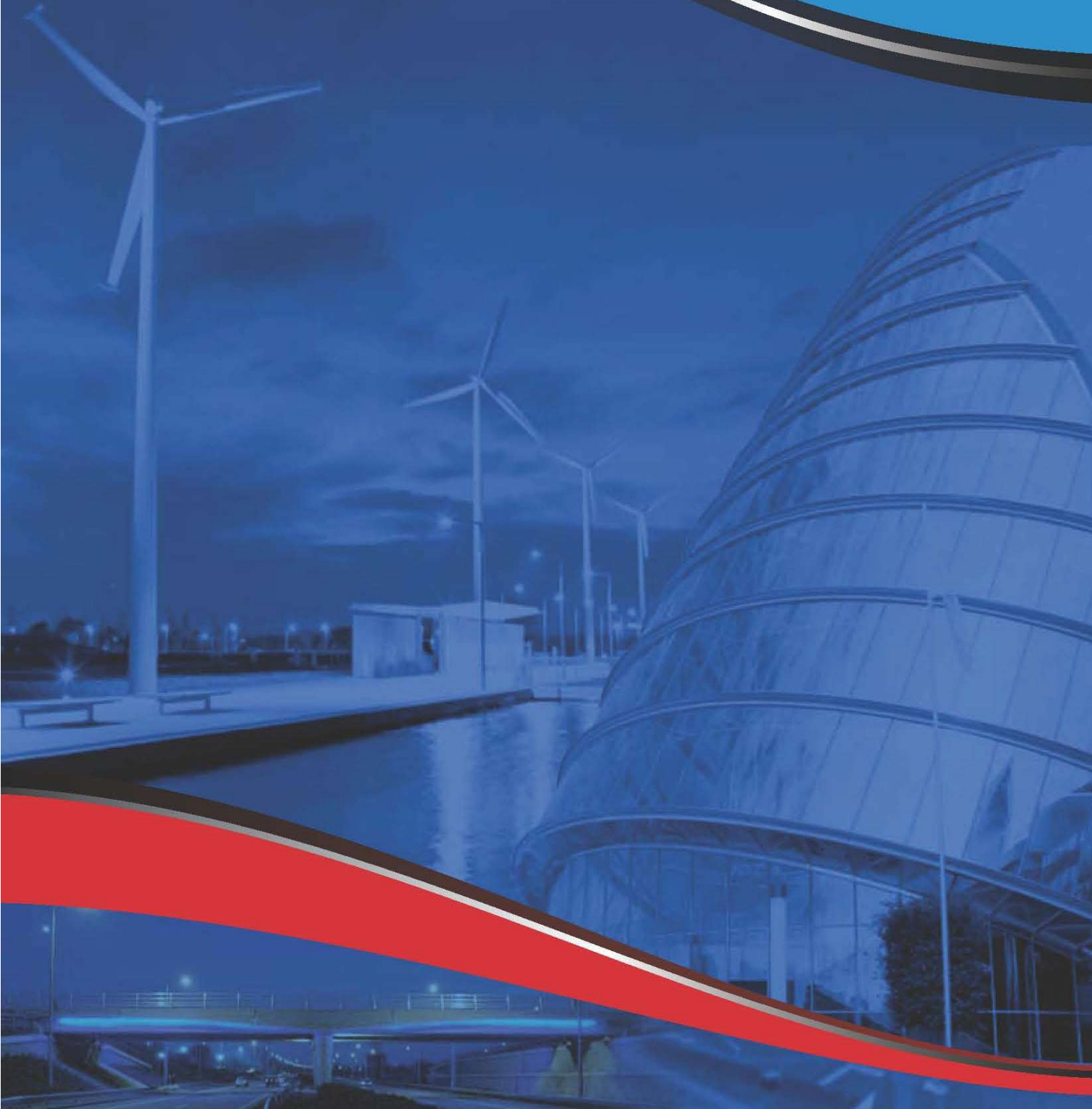
25 May 2022



OCSC

O'CONNOR | SUTTON | CRONIN

Multidisciplinary
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At Ratoath,

Co. Meath



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1 INTRODUCTION

O'Connor Sutton Cronin & Associates (OCSC) have been appointed by *Beo Properties Ltd.* to prepare a *Construction Demolition Waste Management Plan* for a proposed Strategic Housing Development (SHD) located on Fairyhouse Road, Ratoath, Co. Meath as seen below *Figure 1*.



Figure 1: Site Location Map

The development will principally consist of the construction of 452 no. residential units which are located in 12 neighbourhoods. Building heights ranging from 2-3 storey terraced houses and 3-4-storey duplex buildings (1 storey ground floor units and 2 storey first and second floor units; 2 storey ground and first floor units and 2 storey second and third floor units) and 6-storey apartment blocks. Private open space associated with the residential units is provided in the form of rear gardens, balconies, terraces and winter gardens. The development includes a crèche with associated outdoor play areas at ground floor and at roof level; 4 no. commercial/retail units; a landscaped public open space which includes a civic plaza; communal open space in the form of communal courtyards for each

neighbourhood; associated car and cycle parking serving the full development and uses therein; solar PV panels; a second phase of the Ratoath Outer Relief Road (RORR), that will run along the southern boundary of the application site join up to the existing constructed section of the RORR, with two priority controlled junctions; a series of pedestrian and cycle connections from the Fairyhouse Road (R155), Cairn Court, Glascarn Lane and the new RORR; internal road and shared surface networks including pedestrian and cycle paths; public lighting and all associated site development and infrastructural works, services provision, ESB substations, foul and surface water drainage, extension to the foul network, access roads/footpaths, lighting, landscaping and boundary treatment works and all ancillary works necessary to facilitate the development. Please refer to the development description within the statutory notices for a complete description of the proposed development.

The second phase of the Ratoath Outer Relief Road (RORR) is proposed as part of this development. The section of the RORR proposed as part of this development runs from a new junction with the R155 east for approximately 1100m to the end of the site boundary. It is proposed to have two access for the site off the RORR.

The subject site is located approximately 1.0 km south from Ratoath town centre and is immediately bounded by Fairyhouse Road to the west, Glascarn Lane to the north and agricultural lands to the east and south. The subject site is currently greenfield and used for agricultural purposes and can be accessed from Glascarn Lane to the east and Fairyhouse Road to the west of the site.

This CDWMP has been prepared with reference to the following legislation and plans:

- Best Practice Guidelines on the Preparation of Waste Management Plans for Construction & Demolition Projects 2006;

- The Waste Management Act 1996 – 2008, as amended & associated regulations;
- The Litter Pollution Act 1997;
- The Waste Management Plan for the Dublin Region 2015 – 2021.

The CDWMP is designed to ensure the highest possible levels of waste reduction, waste reuse and waste recycling are achieved for the proposed development. Specifically, the CDWMP aims to achieve waste prevention, maximum recycling, and recovery of waste. The plan has as a central tenet, the diversion of waste from landfill wherever possible.

The CDWMP describes the applicable legal and policy framework for C&D waste management in Ireland (both nationally and regionally). It also estimates the category and quantity of waste generated by the proposed development and makes recommendations for the bespoke management of the various waste streams. The plan also provides guidance on collection and transport of waste to prevent issues associated with litter or more serious environmental pollution (e.g., contamination of soil or water resources).

The Contractor shall be required to take on board this CDWMP when preparing their Construction Stage CDWMP and Environmental Management Plan which shall specify the details of all Waste Hauliers, Waste Receivers and Waste Shipment details (if required).

2 PREDICTED WASTE ARISING

2.1 WASTE CATEGORISATION

Typical non-hazardous and hazardous waste streams generated by construction at typical sites are shown below in Table 1 along with their accompanying European Waste Code (EWC) Classification as per the EPA's Waste Classification document (EPA 2015).

Table 1: C&D Waste Categories

Waste Materials Categorisation		
Category	Description	Code
Non-Hazardous	Metals	17 04
	Wood, glass, plastic	17 02
	Soil, stones, dredged soils	17 05
	Gypsum based materials	17 08
	Cardboard	15 01 01
	Glass	17 02 02
	Bituminous mixtures, coal tar, tar products	17 03
	Concrete, bricks, tiles, ceramics	17 01
Hazardous	Electrical and Electronic Components	16 02
	Oil/water separator contents	13 05
	Liquid Fuels	13 07
	Wood Preservatives	03 02
	Batteries	16 06
	Soil and stones containing dangerous substances	17 05 03*
	Waste construction material containing asbestos	17 06 05*
	Other construction and demolition wastes containing dangerous substances	17 09 03*
	Wastes from soil and groundwater remediation	19 13

2.2 NON-HAZARDOUS ARISING

During the construction phase there will be some building materials waste generated. This will include excess ready-mix concrete and mortars, timber off-cuts, damaged concrete blocks, plastics, metals off-cuts, cladding off-cuts and tiles. There may also be excess concrete during construction which will need to be disposed of. Plastic and cardboard waste from packaging and oversupply of materials will also be generated.

The classification of waste soil material as non-hazardous and/or hazardous will be based on the www.hazwasteonline.com web-based tool. This tool is recognised by the EPA as an acceptable method for classifying material in accordance with the Waste Directive Regulations and Waste Packaging Regulations (see Section 4). Waste soil will be further classified using Waste Acceptance Criteria as set out in the European Communities (EC) Council Decision 2003/33/EC, in addition to Waste Receiver's licence specific acceptance criteria.

2.3 HAZARDOUS ARISING

2.3.1 Contaminated Soil & Groundwater

It is noted that any soil generated as part of the construction works will be managed to ensure appropriate handling and disposal in accordance with Irish and EU legislative requirements. It is proposed that prior to any bulk excavation that a suitably qualified professional will be engaged to take samples of the subject area for the excavation to test for contamination and a suitable strategy will be drawn up and submitted to detailing the method of dealing with any contaminated material found.

2.3.2 Fuels/Oils

Due to the existing nature of the development site, it is not expected that large volumes of fuel or oil will be encountered.

If there are to be any on site storage of fuels or oils during works then all storage tanks and draw-off points will be bunded and located in a dedicated,

secure area of the site. Provided that these requirements are adhered to, and site crew are trained in the appropriate refuelling techniques, it is not expected that there will be any fuel/oil wastage at the site.

2.3.3 Other Hazardous Substances

Paints, glues, adhesives, and other known hazardous substances will be stored in designated areas. They will generally be present in small volumes only and associated waste volumes generated will be kept to a minimum.

3 WASTE MANAGEMENT IN IRELAND

3.1 OVERARCHING LEGISLATION

The overarching legislative instruments governing waste management in Ireland are as follows:

- Waste Management Act 1996 (S. I. No. 10 of 1996) as amended by the Waste Management (Amendment) Act 2001;
- Sub-ordinate legislation includes:
 - European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018 S.I. No. 296 of 2018 -
 - European Communities (Waste Directive) Regulations 2011 (S. I. 126 of 2011) as amended 2011 (S. I. No. 323 of 2011).
 - EC Commission Decision (2014/955/EC) and associated Commission Regulation No. 1357/2014 as detailed in the EPA document List of Waste & Determining if Waste is Hazardous or Non-Hazardous;
 - European Union (Properties of Waste which render it Hazardous) Regulations 2015 (S.I. No. 233 of 2015);
 - EC Classification, Labelling & Packaging Regulations (No. 1272/2008)
 - Waste Management (Collection Permit) Regulations 2007 (S.I. No. 820 of 2007) as amended 2008 (S. I. No. 87 of 2008);
 - Waste Management (Facility Permit and Registration) Regulations, (S.I. No. 821 of 2007) as amended 2008 (S.I No. 86 of 2008) as amended 2014 (S.I No. 320 and No. 546 of 2014) and as amended 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), as amended 2010 (S. I. No. 350 of 2010);
 - Waste Management (Packaging) Regulations 2003 (S. I. No. 61 of 2003) as amended 2004 (S. I. No. 871 of 2004), 2006 (S. I. No. 308 of 2006) and 2007 (S. I. No. 798 of 2007);
 - 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 2011;
 - Waste Management (Registration of Brokers and Dealers) Regulations 2008 (S. I. No. 113 of 2008);
 - 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).
- Planning and Development Act 2000 (Number 30 of 2000), as amended (S.I. No. 310 of 2015)
 - Protection of Environment Acts 1992 and 2003 as 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 Protection of the Environment (amendment) Act 2003 as amended.

The above Acts and Regulations transpose European Union policy and Directives into Irish law. The over-riding 'Duty of Care' principle implies that the producer is responsible for waste from the time it is generated through until its legal disposal (including its method of disposal.) As it is not practical in most cases for the waste producer to physically transfer all waste from where it is produced to the final disposal area, waste contractors will be employed to transport waste to the final waste disposal site. In addition, the 'Polluter Pays' principle means that 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 (for transportation and disposal/recovery/recycling of waste).

It is imperative that the developer ensures that waste companies engaged by construction contractors, are legally compliant with respect to waste transport and disposal/recovery/recycling. 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. In this regard, a waste collection permit, issued by the National Waste Collection Permit Office (NWCPO), must be held by every waste contractor engaged on the project. Waste receiving facilities must also be appropriately permitted or licensed to accept waste. Operators of such facilities cannot receive any waste, unless in possession of a waste permit granted by the relevant Local Authority under the Waste Management (Facility Permit & Registration) Regulations 2007 and Amendments or a waste licence granted by the Environmental Protection Agency (EPA). The permit/licence held will specify the type and quantity of waste able to be received, stored, sorted, recycled and/or disposed of at the specified site.

Where waste is to be transported out of the state it must be done in accordance with the Transfrontier Shipment of Waste (TFS) Regulations and must meet the approval of the National TFS office operated by Dublin City Council.

Article 27 of the European Communities (Waste Directive) Regulations, 2011, allows an "economic operator" to decide, under certain circumstances, that a material is a by-product and not a waste. Article 27 was introduced into Irish law to implement article 5 of the 2008 Waste Framework Directive (2008/98/EU).

Article 28 of the European Communities (Waste Directive) Regulations, 2011, transposes article 6 of the 2008 Waste Framework Directive (2008/98/EC). Article 28 sets out the grounds by which a material which is

recovered, or recycled, from waste can be deemed to be no longer a waste. The article provides for development of end-of-waste criteria in accordance with the following as set out in article 28(1) of the Regulations and article 6 of the Directive.

Certain specified waste shall cease to be waste when it has undergone a recovery, including recycling, operation and complies with specific criteria to be developed in accordance with the following conditions:

- the substance or object is commonly used for specific purposes;
- a market or demand exists for such a substance or object
- the substance or object fulfils the technical requirements for the specific purposes and meets the existing legislation and standards applicable to products; and
- the use of the substance or object will not lead to overall adverse environmental or human health impacts.

In accordance with Article 27 (by-product) and Article 28(end of waste), if a beneficial use for surplus material can be found in advance of construction commencing then it should be taken in accordance with waste prevention hierarchy.

Inclusion of materials in the overall figures presented in this CWMP should not prevent surplus materials from being later declared as a by-product or end of waste at a later date, if the circumstances allow.

3.2 NATIONAL WASTE MANAGEMENT POLICY

The 1998 '*Changing Our Ways*' policy document by the Irish Government 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 an initial five-year period. A waste industry task force of the *Forum for the Construction Industry* released '*Recycling of Construction and Demolition Waste*' recommending the development of a voluntary construction industry programme to meet Government objectives for the recovery of C&D waste.

'*A Resource Opportunity - Waste Management Policy in Ireland*' published in 2012 stresses the environmental and economic benefits of better waste management, particularly in relation to waste prevention. In respect of C&D waste, the report commits to undertaking a review of specific producer responsibility requirements for C&D projects above a certain threshold.

The National Construction and Demolition Waste Council (NCDWC) published '*Best Practice Guidelines for the Preparation of Waste Management Plans for Construction and Demolition Projects*' in 2006 in conjunction with the Department of the Environment, Heritage, and Local Government (DoEHLG). 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. 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, Meath County Council etc.

Section 3 of the Best Practice Guidelines identifies thresholds above which there is a requirement for the preparation of a C&D Waste Management Plan. The proposed project requires a CDWMP under the following two criteria:

- New residential development of 10 houses or more;
- Demolition/renovation/refurbishment projects generating in excess of 100m³ in volume, of waste.

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 in 2002.

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

3.3 REGIONAL WASTE MANAGEMENT PLANS

The Eastern Midlands Region Waste Management Plan 2015-2021 applies to the local authorities: Dublin City, Dún Laoghaire-Rathdown, Fingal, South Dublin, Kildare, Louth, Laois, Longford, Meath, Offaly, Westmeath, and Wicklow.

The Eastern-Midlands Region (EMR) Waste Management Plan 2015-2021 provides a framework for the prevention and management of waste in a sustainable manner in Meath and the other local authority areas. Following a public consultation stage, the final Regional Waste Management Plan was made on 12th May 2015.

The three key objectives of the Eastern-Midlands Region Waste Management Plan are:

- Prevent waste: a reduction of one per cent per annum in the amount of household waste generated over the period of the plan;
- More recycling: increase the recycle rate of domestic and commercial waste from 40 to 50 per cent by 2020;
- Further reduce landfill: eliminate all unprocessed waste going to landfill from 2016.

The Plan states that Construction and Demolition Waste (C&D) consists of all wastes that arises from C&D activities which includes excavated soil from

contaminated sites. This type of waste is generally collected by authorised collectors and its recovery is managed by placing it in a variety of land uses such as backfilling. Sites chosen for backfilling are generally considered to be of marginal agricultural land but these can include wetlands and associated habitats. The Regional Waste Management Plan recognises that at many of these sites it is deposition rather than improvement that is the primary activity and this can have complications for habitats. Also given the move away from landfill which is a significant outlet for C&D waste, alternative recovery options will be required to facilitate C&D Waste in future years.

The bulk of the C&D waste collected is waste materials such as rubble, metals, timber, plastic, glass, wood, contaminated soils and mixed C&D waste, accounting for approximately 59% of all C&D waste collected with the remaining 41% consisting of soil and stones. The soil and stone waste collected within the Eastern & Midlands Region is primarily managed at Local Authority permitted infill sites, with the other C&D waste types primarily managed at EPA licensed facilities. Contaminated soils are treated at appropriately licensed hazardous waste sites in the region.

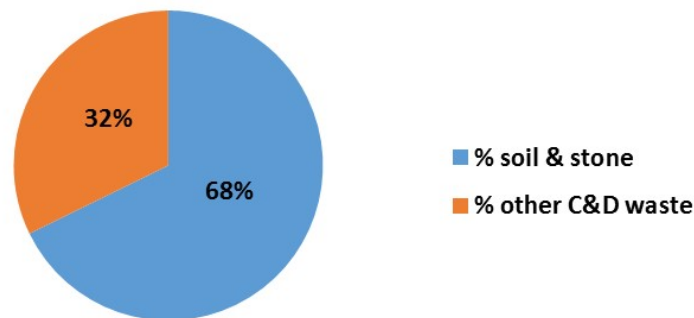


Figure 3: C&D Wastes Collected in the Eastern-Midlands Region in 2012

The EC (Waste Directive) Regulations 2011, set a 70% target for the re-use, recycling and recovery of man-made C&D waste in Ireland by 2020. The EPA reported that Ireland has achieved this target, with a recovery rate of 97% being reported. Backfilling activities account for a significant portion of the recovery rate, with recycling of C&D wastes not as prevalent. The

quantification of the different treatment options for C&D wastes is important to show if higher recovery activities, i.e., preparing for reuse and recycling, are growing.

By virtue of the Waste Management Act, as amended, the objectives of the Waste Management Plan are deemed to be included in the County Development Plan. Where the objectives of the Development Plan and the Waste Management Plan are in conflict, the objectives in the Waste Management Plan shall prevail. The adoption of the Waste Management Plan is an executive function of the Council.

According to the EMRWMP 2015-2021, it defines the Construction and Demolition Waste (C&D) consists of all wastes that arises from C&D activities which includes excavated soil from contaminated sites. This type of waste is generally collected by authorised collectors and its recovery is managed by placing it in a variety of land uses such as backfilling.

The CDP outlines several policies and objectives, the most relevant of which, in the context of C&D waste are:

Plan Objectives:

- Objective WM18:
 - Ensure that Construction and Demolition Waste Management Plans meet the relevant recycling / recovery targets for such waste in accordance with the national legislation and regional waste management policy.
- Objective WM19:
 - Protect floodplains and biodiversity where construction and demolition waste is to be recovered by land reclamation.
- Objective RF93:
 - Encourage the recycling of construction and demolition waste to reduce the need for extraction.

- Objective DMS149: Require that Construction and Demolition Waste Management Plans be submitted as part of any planning application for projects in excess of any of the following thresholds:
 - New residential development of 10 units or more;
 - New developments other than above, including institutional, educational, health and other public facilities, with an aggregate floor area in excess of 1,250 m²;
 - Demolition/renovation/refurbishment projects generating in excess of 100 m³ in volume, of C&D waste;
 - Civil engineering projects in excess of 500 m³ of waste materials used for development of works on the site.

4 PROPOSED SITE WASTE MANAGEMENT PLAN

4.1 DEMOLITION WASTE

There will be minimal, if any, demolition works on the site.

4.2 CONSTRUCTION WASTE

The Environmental Protection Agency (EPA) produce figures on the amounts of waste generated by various developments. These figures are contained in EPA databases. The percentage split between individual C&D waste categories is shown in Table 2.

Table 2: Breakdown of C&D Waste Materials at a Typical Site

Waste Types	%
Soil & Stones	51
Concrete, Bricks, Tiles, Ceramics, Plasterboard	39
Asphalt, Tar and Tar products	2
Metals	2
Other	6
Total Waste	100

Further figures are available for typical overall waste generation figures for construction sites based on the type and scale of development. Therefore by using the EPA category split figures and the industry standard overall waste generation figures, the C&D waste arisings for the subject site can be estimated. The estimated arisings under the various EPA categories are set out in Table 3.

Table 3: Construction Waste Reuse, Recycle & Disposal Amounts

Construction Waste: Reuse, Recovery, Recycle & Disposal							
Waste Type	tonnes	Reuse/Recover		Recycle		Disposal	
		%	tonnes	%	tonnes	%	tonnes
Soil & stone	105,262*	20	21,052	0	0	80	84,205
Concrete, brick, tiles	25	0	0	80	20	20	5
Asphalt, tars	288*	0	0	20	58	80	230
Metals	5	5	0.25	90	4.5	5	0.25
Miscellaneous	25	10	2.5	40	10	50	12.5
Total:	105,605	-	21,054.75	-	92.5	-	84,452.75

*Cubic metres to tonnes multiply by 1.6

4.3 SITE WASTE MANAGEMENT OPERATIONS

Waste materials generated will be segregated on site where practical. An Outline Layout Plan for a site-based waste segregation compound is shown in Figure 4. Where on-site segregation of certain wastes types is not practical, off-site segregation will be carried out. There will be skips and receptacles provided to facilitate segregation at source. All waste receptacles leaving site will be covered or enclosed.

The appointed waste contractor will collect and transfer the wastes as receptacles are filled. Any soil removed off-site will be carried by contractors licensed under the Waste Management Acts 1996 - 2008, the Waste Management (Collection Permit) Regulations 2007 and Amendments and the Waste Management (Facility Permit & Registration) Regulations 2007 and Amendments.

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 disposed of at a facility holding the appropriate licence or permit, as required. Written records will be maintained by the contractor(s) detailing the waste arising throughout 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 and waste facility permit or licence number for all waste removed and disposed off-site.

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

The management of the main waste streams are detailed in figure 4 following:



4.4 Soil/Subsoil:

Any soil removed off-site will be carried by contractors licensed under the Waste Management Acts 1996 - 2011, the Waste Management (Collection Permit) Regulations 2007 and Amendments and the Waste Management (Facility Permit & Registration) Regulations 2007 and Amendments.

If any of the excavated spoil is found to be clean/inert, the site manager will investigate whether nearby construction sites may require clean fill material, to both minimise the costs of transport and to reuse as much material as possible. Any soil/subsoil deemed to be contaminated will be stored separately to the clean and inert soil/subsoil. The material will be appropriately classified as non-hazardous or hazardous in accordance with the www.hazwasteonline.com application and EC Council Decision 2003/33/EC, which establishes the criteria for the acceptance of waste at landfills, before being transported to an appropriately permitted/licensed facility by permitted contractors.

4.5 Concrete, Bricks, Tiles & Ceramics:

The majority of concrete, bricks, tiles and ceramics generated as part of the construction works is expected to be clean, inert material and should be recycled, where possible.

4.6 Hard Plastic:

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

4.7 Timber:

Timber that is uncontaminated, i.e., free from paints, preservatives, glues etc., will be segregated and stored in skips.

4.8 Metal:

Metals will be segregated into mixed ferrous, cladding, aluminium, high grade stainless steel, low grade stainless steel etc. categories, where practical. Metal is highly recyclable and there are numerous companies that will accept these materials. Metals will be segregated and stored in skips.

4.9 Plasterboard:

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

4.10 Glass:

Glass materials will be segregated for recycling, where possible.

4.11 Organic (Food) Waste:

An on-site canteen will be provided to allow workers to prepare and eat food. This facility will incorporate provisions so that organic waste will be segregated for separate collection. Segregation at source and separate collection of organic waste is required in accordance with the Waste Management (Food Waste) Regulations 2009 (if food is prepared on site).

4.12 Waste Electrical and Electronic Equipment (WEEE):

WEEE that does not contain hazardous components will be stored in dedicated covered cages/receptacles/pallets pending collection for recycling. There is not expected to be any significant amounts of such materials as there are little by way of existing buildings on the subject site.

4.13 Non-Recyclable Waste:

C&D waste which is not suitable for reuse or recovery will be placed in separate skips or other receptacles. This will include polystyrene, some cardboard and plastic which are deemed unsuitable for recycling.

Prior to removal from site, a member of the waste team will examine the non-recyclable waste skip/receptacle to determine if recyclable materials have been misplaced. 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.

4.14 Hazardous Wastes:

On-site storage of any hazardous wastes produced (i.e., contaminated soil 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.

4.15 MANAGEMENT & CONTROL SYSTEMS

It will be the role of an appointed Waste Manager to try to find alternative options for waste before sending it to landfill. Waste materials will be stored in the specifically designated compound. All waste collected from the site will be by a permitted waste contractor, under the Waste Management (Collection Permit) Regulations 2007 as amended. The contractor will provide the Waste Manager on site with documentation of the waste to be removed and a copy of the waste collection permit. Prior to the waste leaving the site, the Waste Manager will have documentation to show where the waste is being taken to, and that the facility is licensed to accept the particular waste. A receipt will be issued for each load that leaves the site.

All waste will be documented prior to leaving the site. Waste will be weighed by the contractor, either by weighing mechanism on the truck or at the receiving facility. These waste records will be maintained on site by the Contractor. All movement of waste and the use of waste contractors will be undertaken in accordance with the Waste Management Acts 1996 - 2008, Waste Management (Collection Permit) Regulations 2007 and Amendments and Waste Management (Facility Permit & Registration) Regulations 2007 and Amendments. 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.

Some wastes may be transported to another site for reuse on that site. The Waste Manager will be in contact with other sites to ensure that as much waste is reused as possible, such as concrete for fill purposes etc. All wastes leaving the site will be placed in appropriate containers. Any concrete, soil, gravel, or broken stone transported off site will be covered to prevent dust or particle emissions from the load.

If the waste is being transported to another site, a copy of the Local Authority waste permit or EPA Waste Licence for that site will be provided to the nominated project Waste Manager. If the waste is being shipped abroad, a copy of the Transfrontier Shipping (TFS) document will be obtained from Dublin City Council (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.

5 FINANCIAL ISSUES OF WASTE

An outline of the costs associated with various aspects of waste management is provided below. The total cost of implementation of this CDWMP will be measured and will take into account handling costs, storage costs, transportation costs, revenue from rebates and disposal costs.

5.1 REUSE/RECOVERY

By reusing materials on site, there will be a reduction in the transport and disposal costs associated with the requirement for a waste contractor to take the material away to landfill. Clean and inert soils, gravel, stones, crushed concrete etc. which cannot be reused on site may be used as capping material for landfill sites, or for the reinstatement of quarries etc. This material is often taken free of charge for such purposes, reducing final waste disposal costs.

5.2 RECYCLING

Salvageable metals will earn a rebate which can be offset against the cost of collection and transportation of the skips. Clean uncontaminated cardboard and certain hard plastics can be recycled. Waste contractors will charge considerably less to take segregated wastes such as recyclable waste from a site than mixed waste. Timber can be recycled as chipboard. Again, waste contractors will charge considerably less to take segregated wastes such as timber from a site than mixed waste.

5.3 DISPOSAL

Landfill charges in the Leinster region are currently at around €120/tonne (includes a €75 per tonne landfill levy introduced under the Waste Management (Landfill Levy) (Amendment) Regulations 2015). In addition to disposal costs, waste contractors will also charge a collection fee for skips. Collection of segregated C&D waste usually costs less than municipal waste. Specific C&D waste contractors take the waste off-site to a licensed or permitted facility and, where possible, remove salvageable items from the waste stream before disposing of the remainder to landfill. Clean soil, rubble, etc. is also used as fill/capping material wherever possible.

6 TRAINING PROVISIONS

6.1 Training Provisions for Waste Manager and Site Crew

One of the construction team or the foreperson will be appointed as a Waste Manager to ensure commitment, operational efficiency, and accountability. The 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 on the site. The Waste Manager will have overall responsibility to oversee record and provide feedback to the client on everyday waste management at the site. Authority will be given to the 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 salvage on site.

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 the waste management on site. He/she will be also trained in the best methods for segregation and storage of recyclable materials, have information on the materials that can be reused on site and know how to implement the CDWMP.

Training of the site crew is the responsibility of the Waste Manager. A waste training program will be organised. A basic awareness course will be held for all site crew to outline the CDWMP and to detail the segregation of waste materials at source. This may be incorporated into the induction course or the safety-training course. This basic course will describe the materials to be segregated, the storage methods and the location of the waste storage areas. A subsection on hazardous wastes will be incorporated and the particular dangers of each hazardous waste will be explained.

7 RECORD KEEPING, AUDITING & CONSULTATION

7.1 RECORD KEEPING

Records will be kept for each waste material, which leaves the site, either for reuse on another site, recycling or disposal. A system will be put in place to record the construction waste arisings on site.

The Waste Manager or a member of his team will record the following:

- Waste taken for Reuse off-site (i.e., for capping of landfill cells or at another site);
- Waste taken for Recycling;
- Waste taken for Disposal;
- Reclaimed waste materials brought on-site for reuse.

For each movement of waste on- or off-site, the Waste Manager will obtain a signed docket from the 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. This system will also be linked with the delivery records. In this way, the percentage of construction waste generated for each material can be determined.

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

7.2 OUTLINE WASTE AUDIT PROCEDURE

The appointed Waste Manager on site will be responsible for conducting a waste audit at the site. A review of all the records for the waste generated and transported on- or off-site will be undertaken. If waste movements are not accounted for, the reasons for this should be established in order to see if and why the record keeping system has not been maintained.

A Summary Report will be prepared and compared with the established recovery/reuse/recycling targets for the site. Each material type will be examined,

in order to see where the largest percentage waste generation is occurring. The waste management methods for each material type will be reviewed in order to highlight how the targets can be achieved. Waste management costs will also be reviewed.

7.3 CONSULTATION

Ongoing consultation with waste contractors, recycling/salvage companies and Meath County Council will be pursued in order to ensure that the best practicable option is being followed for waste management on site.

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