Digital Netherlands VIII B.V. (Netherlands)

INXN DUB15/16

Construction and Demolition Resource Management Plan

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Ove Arup & Partners Ireland Ltd

50 Ringsend Road
Dublin 4
D04 T6X0
Ireland

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		Name	David Horgan & Elsie O'Gorman	Janet Lynch	Tom Blake
		Signature			
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1 Introduction

This report sets out the Construction and Demolition Resource Management Plan (CDRMP) for a proposed data centre development, in Profile Business Park, Nangor Road, Dublin 22 (hereafter referred to as the 'proposed development'). The proposed development is being undertaken by Digital Netherlands VII B.V. (Netherlands), who are planning to expand their facilities on their existing site in Profile Business Park. The campus development will consist of two, two-storey 20MW data centre buildings (DUB15 and DUB16) an energy centre, external plant compounds, roads, and landscape features. This existing site is detailed in **Section 2.1** and the proposed development is described in **Section 2.2**.

The two data centre buildings will be based on a prototype design, consisting of 8 data halls of 2.5MW each over two levels, with a total building load of 26MVA each, including the non-IT loads. The new buildings will be located next to the existing DUB14 and DUB13 buildings.

The content presented in this RWMP has regards to the guidance outlined in the following documents:

- the EPA Best Practice Guidelines for the Preparation of Resource Management Plans for Construction and Demolition Projects – Draft for Public Consultation, April 2021 (Tier 2 development guidance applied);
- the Department of the Environment, Heritage and Local Government Best Practice Guidelines on the Preparation of Waste Management Plans for Construction & Demolition Projects (DEHLG 2006); and
- The EU Construction & Demolition Waste Management Protocol (EC 2016).

Waste management objectives, policy and legislation are outlined in **Section 0** and detailed further in **Section 1.2**.

Sections are included in this report which address roles and responsibilities of relevant personnel (**Section 3**), details regarding wastes arising (**Section 4.2 - Section 4.4**), the costs of waste management (**Section 4.5**), waste collection (**Section 5.3**), waste recovery/disposal off site (**Section 5.4**), and record keeping (**Section 5.5**).

Following appointment, the Contractor will be responsible for detailing and maintaining this report and updating it as appropriate. The responsibilities as set out in the EPA Guidelines are included in **Appendix A** of this report.

1.1 Waste Management Objectives

The principal objective of sustainable resource and waste management is to use material resources more efficiently, to re-use, recycle and recover material and to reduce the amount of waste requiring final disposal. The value of products, material and resources is maintained in the economy for as long as possible such that the generation of waste is minimised.

To achieve resource efficiency there is a need to move from a traditional linear economy to a circular economy (refer to **Figure 1**).

A Waste Action Plan for a Circular Economy – Ireland's National Waste Policy 2020 – 2025 (Department of Communications, Climate Action and Environment (DCCAE) 2020) notes that:

> *"In a circular economy the value of products and materials is maintained for as long as possible; waste and resource use are minimised, and resources are kept within the economy when a product has reached the end of its life, to be used again and again to create further value."*

The EU Circular Economy Action Plan (European Commission 2020) notes that:

> *"the EU needs to accelerate the transition towards a regenerative growth model that gives back to the planet more than it takes, advance towards keeping its resource consumption within planetary boundaries, and therefore strive to reduce its consumption footprint and double its circular material use rate in the coming decade."*

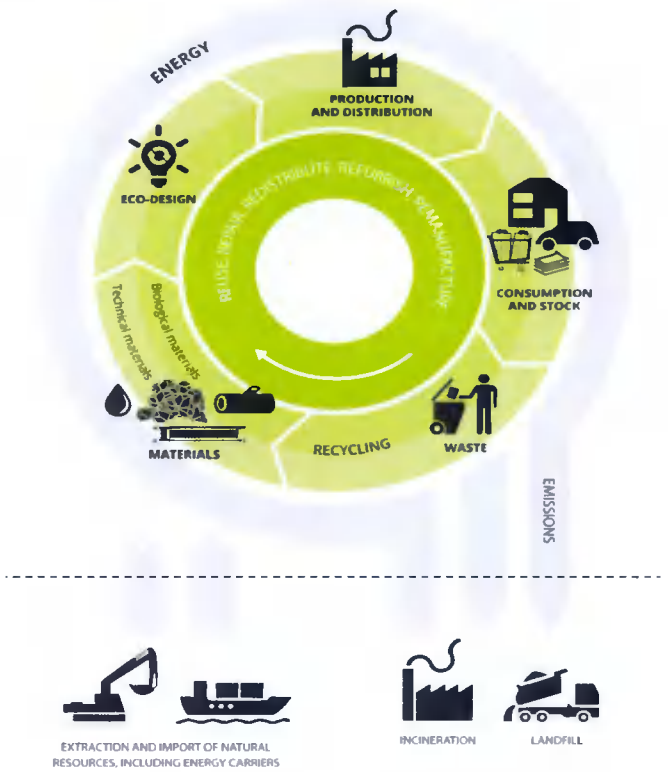

Figure 1: Circular Economy (Source: European Environment Agency, 2016)

However, where residual waste is generated, it should be dealt with in a way that follows the waste hierarchy (refer to **Figure 2** and set out in the European Communities (Waste Directive) Regulations 2011 (S.I. No. 126/2011). It is the intention that this would actively contribute to the economic, social and environmental goals of sustainable development.

The European Commission (2020) has adopted a new Circular Economy Action Plan - one of the main blocks of the European Green Deal, Europe's new agenda for sustainable growth. The Circular Economy Action Plan identifies buildings and construction as a key area where there are opportunities for resource efficiency and circularity.

The Department of the Environment, Climate and Communications published the Irish Waste Action Plan for a Circular Economy in September 2020. The Plan outlines the commitment in the new Programme for Government to implement a new National Waste Action Plan providing new waste policy and giving direction to waste planning and management in Ireland.

The policy document contains over 200 measures across various waste areas including Circular Economy, Municipal Waste, Consumer Protection and Citizen Engagement, Plastics and Packaging, Construction and Demolition, Textiles, Green Public Procurement and Waste Enforcement.

The Plan includes the target of preparing for reuse, recycling and other material recovery (including beneficial backfilling operations using waste as a substitute) of 70% by weight of Construction and Demolition non-hazardous waste (excluding natural soils & stone).

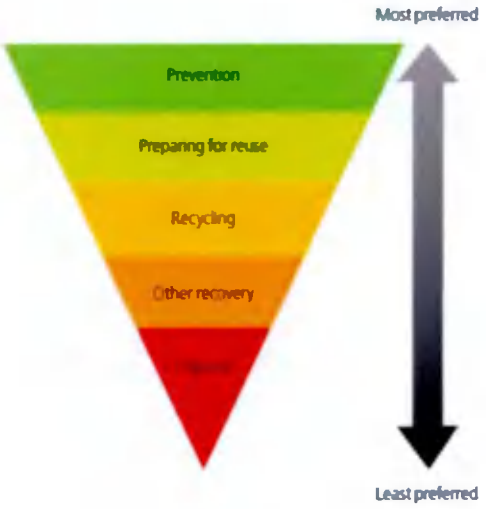

Figure 2: Waste Hierarchy

In April 2021 the Department of Environment Climate and Communications published a pre-consultation draft "Whole-of-Government Circular Economy Strategy". The draft Strategy aims to support and implement measures that significantly reduce Ireland's circularity gap, so that Ireland's rate is above the EU average by 2030.

This was followed in June 2021 with publication by Government of the heads of a circular economy bill entitled the "Circular Economy Bill 2021". This Bill, when enacted, aims to place the Strategy, and the commitment to a circular economy, on a clear statutory footing.

It also aims to streamline the statutory mechanisms for construction and demolition material reuse which are known as "Article 27" and "Article 28".

The objectives of this Plan will facilitate reuse and recycling and divert waste from landfill. The content and headings used in this Plan comply with the Department of the Environment, Heritage and Local Government Best Practice Guidelines on the Preparation of Waste Management Plans for Construction & Demolition Projects.

Following appointment, the Contractor will be responsible for detailing and maintaining this Plan and updating it as appropriate.

1.2 Waste Management Legislation, Policy and Guidance

Resource and waste management takes place in a legislative and policy framework. Applicable legislation, policy and best practice guidance was reviewed during preparation of this Plan.

The key components of EU, national and local policy, legislation and guidance relevant to proposed demolition and construction are summarised as follows:

- prevention and minimisation of waste is the preferred option;
- where construction and demolition waste is generated it should be source separated to facilitate reuse and recycling and to maximise diversion of waste from landfill;
- where waste may not be prevented or recycled it should be transported and disposed of in accordance with applicable legislation and without causing environmental pollution; and
- waste may only be transferred by a waste collection permit holder and delivered to an authorised waste facility.

An overview of relevant legislation, policy and best practice guidance related to waste management is presented in **Appendix B**, with a summary of key documents provided below.

1.2.1 The Eastern Midlands Region Waste Management Plan 2015-2021

The Eastern-Midlands Region for waste planning purposes consists of 12 no. local authorities, stretching from Dublin in the east, to Louth in the north and Wicklow in the south. The Region includes Dublin City Council in which the proposed development will be located.

The Eastern-Midlands Region Waste Management Plan 2015-2021 came into force in May 2015 and emphasises the need to move from a linear to a circular economy to make better use of resources and for the region to become more resource efficient.

The report sets a target for managed municipal waste, which is household and commercial waste combined of 50% by 2020.

The plan sets the roles and responsibilities of business and industry in the region as follows:

- Implementing best waste management practices in the workplace with an emphasis on waste prevention and resource efficiency;
- Segregation of waste produced into appropriate waste streams;
- Adhere to and comply with all Producer Responsibility Initiatives and Associated Compliance Schemes;
- Promote waste awareness and resource efficiency best practice among employees;
- Implement green procurement policies;
- Implement where appropriate Environmental Management Systems; and
- Ensure that all waste collectors have valid Waste Collection Permits.

1.2.2 Construction and Demolition Waste Soil and Stone Recovery / Disposal Capacity Update Report 2020

The Regional Waste Management Planning Offices (RWMPOs) appointed RPS on behalf of the Eastern – Midlands, Connacht-Ulster and Southern Waste Management Planning Regions to quantify and analyse national capacity within the market for the management of soil and stone waste arisings , including hazardous, based on 2018 data. This report updates the Soil and Stone Recovery / Disposal Capacity report published in 2016.

The report shows that the Covid19 crisis has significantly impacted development and construction. The forecast for 2020 reflects this with a 37.7% decrease in output forecast. The forecast for 2021 and 2022 predicts a gradual return to normal economic activity (although this is a fluid situation with an uncertain outlook). By the end of 2029 it is forecast that CDW will grow to a total of 10.1m tonnes. The corresponding forecast data for soil and stone waste is 8.7m tonnes by end of 2029. The report indicates that there is sufficient capacity at licenced facilities, with a concentration to the south of the Eastern-Midlands Region (EMR). There are 15 soil recovery facilities in the EPA licensing system for the EMR. The annual active licenced capacity for the EMR, at end-2018, is 2,411,400 tonnes, whilst the annual authorised capacity is 3,951,400 tonnes. The authorised capacity includes the capacity of active and uncommenced sites.

1.2.3 South Dublin County Development Plan 2016-2022

The South Dublin City Development Plan 2016 - 2022 sets out South Dublin County Council's policies and objectives for the development of South Dublin over the Plan period. South Dublin County Council have started drafting the South Dublin County Development Plan 2022-2028.

The policies and objectives in relation to waste management in South Dublin as set out in the Plan are reflective of overarching EU, National and Regional policy and legislation. The Plan includes a number of objectives and actions to improve

management of material resources and waste in line with this policy and legislation. These policies are predicated on the waste hierarchy of prevention, preparing for re-use, recycling, energy recovery and sustainable disposal.

1.2.4 European Commission (2016) EU Construction & Demolition Waste Management Protocol

This protocol was published by the European Commission in September 2016. The overall aim of the protocol is to increase confidence in the Construction and Demolition (C&D) waste management process and the trust in the quality of C&D recycled materials. This will be achieved by:

a) Improved waste identification, source separation and collection;

b) Improved waste logistics;

c) Improved waste processing;

d) Quality management; and

e) Appropriate policy and framework conditions.

1.2.5 Best Practice Guidelines for the Preparation of Resource Management Plans for Construction and Demolition Projects – Draft for Public Consultation (EPA, 2021)

These guidelines were published in draft form for public consultation in April 2021 and supersede the guidelines published by the Government in 2006.

The replacement guidelines reflect current waste legislation and policy including 'A Waste Action Plan for a Circular Economy Ireland's National Waste Policy 2020-2025' (DCCAE 2020). Since the publication of the 2006 guidelines, waste management legislation and policy have evolved towards prioritising waste prevention and life-cycle thinking through an increased emphasis on waste prevention and the promotion of ore circular design and construction principles in line with the EU Circular Economy Action Plan under the EU Green Deal.

The guidelines address the best practice approach for the following phases of a project:

- Prior to Construction – including the stages of design, planning and procurement in advance of works on site; and
- During Construction – relating to the effective management of resources and wastes during construction or demolition operations.

2 Description of the Proposed Development

2.1 Existing site

The site is located within the Profile Business Park, Nangor Road, Dublin 22. Profile Business Park is located between the N4 and the N7 national roads and to the south of Lucan town. The site location is shown in **Figure 3**.

The north-west part of the site is already occupied by 2 no. data centres (DUB13 and DUB14). The south-west part of the site is a former construction compound for the data centres. The site is subdivided in half by a new access road, constructed in 2012, which bisects the site. The site area located to the east of the access road is a greenfield site, bordered by a ditch and hedgerow along the west boundary.

There is public golf course (Grange Castle Golf Course) to the east, behind the hedge. The site is adjoined by the agricultural land to the south. To north and west, the site is adjoined by the vacant business park sites. Further to the south there is Baldonnel Casement Aerodrome, approximately 200m from the site boundary.

The site is located on what was historically agricultural land prior to the development of Profile Park. There is an existing drainage channel (a rerouted original channel, down the centre of the site). A disused sewage treatment farm (or treatment works) is located on the east side of the site.

The site is generally flat, with a gentle downward slope from south to north. Topographic surveys completed in 2011 GI show a steep drop off on the east edge of the site just to the north of the sewage farm.

Figure 3: Proposed Site location

2.2 Proposed Development

Digital Netherlands VII B.V. (Netherlands)is planning to expand their facilities on their site in Profile Business Park, Co. Dublin.

The proposed development will consist of the removal of an existing unused wastewater treatment facility on site and the erection of two data centre buildings, gas powered energy generation compound, and all other associated ancillary buildings and works. The two data centre buildings, DUB 15 and DUB 16, will comprise a total floor area of c. 33,577m^2 over two storeys. The first two storey data centre building (DUB15), located to the south west of the site, will comprise 16,865m^2 data storage use, ancillary office use and associated electrical and mechanical plant rooms. loading bays, maintenance and storage space. A second two storey data centre building (DUB16), located to the south east of the site, will comprise 16,712m^2 data storage areas, ancillary office use and associated electrical and mechanical plant rooms, loading bays, maintenance and storage space. Both data centre buildings will reach a height of 20m.

Emergency generators and associated emission flues and plant are proposed in compounds adjacent to each data centre building. Gas powered energy generation is proposed to the north east corner of the site to provide electricity for the proposed development. The application proposes to re-route and widen an existing watercourse constructed following an earlier planning permission. It is proposed to reroute this watercourse along the eastern and southern boundary of the site. Landscaping is proposed to the south of the site to screen the buildings. Fencing and security gates are proposed around the site.

New access roads within the site are proposed along with 71 car parking spaces and 26 cycle spaces, bin stores, site lighting, and all associated works including underground foul and storm water drainage attenuation and utility cables and all other ancillary works.

The energy centre is only likely to be in operation until 2025 at which stage it will converted for reuse with the generators returned to the operator.

2.3 Receiving Environment

In 2018, the latest year for which there are published statistics available, 6.2 million tonnes of Construction and Demolition (C&D) waste was generated according to EPA data (EPA 2020), an increase of 1.5 million tonnes from 2017. In addition, a total of 3.6 million tonnes of construction and demolition material was notified as being reused under Article 27 in 2018.

The EPA reports that Ireland achieved 77% material recovery of construction and demolition waste in 2018 (EPA 2020). 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.

A breakdown of the composition of C&D waste in Ireland in 2018 is set out in **Table 1**. These figures should be considered as a guide only as C&D waste can vary significantly from one project to another, depending on the nature of the development and the waste management practices employed on-site.

4.8 million tonnes of this C&D waste was comprised of soil and stones, making up 77% of the material waste stream. **Table 1** shows the quantity (tonnes) of waste materials collected by authorised waste collectors.

Table 1: Material Categories of C&D Waste treated in Ireland (EPA, 2018)

Material from C&D Sources	Quantity (tonnes)	% of material stream in reference to total
Soil and stone	4,794,821	76.7%
Mixed C&D waste	437,598	7%
Concrete, bricks, tiles and similar	750,167	12%
Metals	187,542	3%
Bituminous mixtures	62,514	1%
Segregated wood, glass and plastic	25,005	0.4%
Material from C&D sources	**Quantity (tonnes)**	**% of material stream in reference to total**

Total	**6,251,396**	**100%**

Data issued by the EPA demonstrates that final treatment operations (recycling, backfilling, use as a fuel, disposal) of C&D waste materials varied greatly between material streams. By far the largest quantity of C&D waste was used for backfilling (a recovery operation), which mainly reflects the dominance of soil and stones in the overall composition mix.

The EPA reports that a total of 500,000 tonnes of hazardous waste was managed and treated in Ireland in 2018. Hazardous waste types include contaminated soils, motor oil, asbestos and chemical waste. 73% of hazardous waste was exported for treatment in 2018.

3 Roles and Responsibilities

Copies of the Project Resource and Waste Management Plan will be made available to all relevant personnel on site. All site personnel and sub-contractors will be instructed about the objectives of the Project Resource and Waste Management Plan and informed of their responsibilities.

The nominated Resource Manager (RM) responsible for implementation of this Resource and Waste Management Plan will be identified prior to construction commencement. The RM will be responsible for informing contractor staff and sub-contractors of content of the Plan and for maintaining and keeping the Records set out in **Section 5**. In the event of the RM leaving the project team the contractor will nominate a suitable replacement.

The RM will be responsible for conducting ongoing resource audits at the site during construction. The RM shall ensure that where training is required regarding the handling and management of wastes on site that this is provided to staff as required.

4 Key Materials, Quantities and Costs

4.1 Introduction

Construction and Demolition (C&D) waste is defined as waste which arises from construction, renovation and demolition activities.

Also included within the definition are surplus and damaged products and materials arising in the course of construction work or used temporarily during the course of on-site activities.

Typical construction and demolition waste types which are likely to arise during the proposed demolition and construction works are set out in **Appendix C** including EPA List of Wastes (LOW) codes.

The Contractor will ensure that waste generation on site is minimised and that waste removed from site for recovery or disposal is reduced where feasible.

4.2 Site Clearance and Demolition

The first stage of the construction works will involve site preparation and clearance. Clearance of the site will include the removal of any vegetation, soil and stone or other materials from the permitted construction activities. The former construction compound area (124m x108m in area) contains some debris and construction waste and is bordered with wire fencing and panelling. Some mounds of excavation material are present within the site. Clearance of these stockpile mounds will take place prior to commencement of construction.

The disused sewage treatment plant area is approximately 75m x 40m and surrounded in mesh fencing. It contains overgrown vegetation/shrubs, two partially buried disused open-top attenuation tanks both approximately 13m in diameter, a buried storage tank approximately 12mx4m and a single stone hut approximately 2.5m x4.5m in area. The attenuation tanks consist of brick and two metal agitators. The attenuation tanks have been infilled with clinker ash which will be removed prior to construction. This will be delivered to an authorised waste recovery or disposal activity. The storage tank consists of brick and a metal mesh top. The hut consists of stone brick and small sheet of metal. The demolition of the stone hut will consist of approximately 20 tonnes of stone brick.

In accordance with Section 4.3.1.3 of the EPA *Best Practice Guidelines for the Preparation of Resource Management Plans for Construction and Demolition Projects* the proposed demolitions works will be carefully planned to ensure the reuse and recovery of deconstructed components is maximised where feasible, in compliance with regulatory and performance requirements.

Material will be removed from the former construction compound area and the disused sewage treatment facility including mesh fencing, concrete, metals, brick and stone. The disused waste-water treatment plant will require removal of the tanks and associated utilities.

The contractor will arrange for removal of this material to a waste facility which has been authorised for recycling, recovery or disposal in accordance with the provisions of the Waste Management Act, 1996 as amended.

Organic waste (such as trees and vegetation) will be removed from site by a waste collection permit holder and delivered to an authorised composting or organic waste facility. The extent of vegetation clearance will not be significant. The vegetation clearance will be kept to the minimum required to facilitate construction.

4.3 Excavation Waste Arisings

It is estimated that approximately 165,000 tonnes of excavated material will be generated from the proposed development. All excavated earthworks material will be removed from the site to a suitably licensed facility for recovery or disposal.

There was no asbestos detected on site as part of the ground investigation.

From the ground investigations it can be estimated that approximately 130,000 tonnes of material is inert, approximately 28,000 tonnes of excavated material is non-hazardous and approximately 7,000 tonnes of excavated material is hazardous. These numbers are indicative and subject to further testing.

Additional possibilities for re-use of naturally occurring or inert material as fill or for engineering uses in the works will be considered following appropriate testing to ensure material is suitable for its proposed end use where required.

Where clean, non-hazardous or inert excavation material may not be re-used within the proposed works the Contractor will endeavour to send the material to authorised facilities for beneficial re-use, recovery or recycling so far as is reasonably practicable.

Excavated material that is deemed hazardous will be treated at an authorised facility either in Ireland or abroad.

Further details on the management of excavation waste is provided in **Section 5.1**.

4.4 Construction Waste Arisings

A description of typical wastes from construction projects including their respective LoW Codes are outlined in **Table 2**.

Table 2: Typical Construction Waste LoW Codes and Corresponding Waste Descriptions (Environmental Protection Agency)

LoW Code	Waste Categories
17 01*	Concrete, bricks, tiles and ceramics
17 02*	Wood, Glass and Plastic
17 03*	Bituminous mixtures, coal tar and tarred products
17 04*	Metals
17 05*	Soil (incl. excavated soil from contaminated sites), stones and degrading spoil
17 08*	Gypsum-based construction materials
17 09*	Other Construction and Demolition Waste
16 02*	WEEE
16 06*	Batteries
03 02*	Wood Preservatives
17 05 03**	Contaminated Soils
13 07*	Liquid Fuels

*May include hazardous wastes

**Hazardous

These figures should be considered as a guide only as C&D waste can vary significantly from one project to another, depending on the nature of the development and the waste management practices employed on-site.

The UK Department of the Environment, Food and Rural Affairs and the Building Research Establishment (BRE) published benchmark construction waste figures which are suitable for use for planning purposes[1]. These figures have been compiled from over 100 projects that entered waste data in the BRE SMARTwaste construction waste tool.

The total floor area of the proposed development is c. 37,060m², the breakdown of which can be seen in **Table 3**. Using the BRE benchmark for waste generation, a tonnage of waste per square metre has been assumed in the calculation of the total proposed waste arising from the construction phase of the proposed development. It was found that the total estimated waste from the new build phase of the proposed development is approximately 4,670 tonnes.

Table 3: Breakdown of total proposed floor areas

Land Use	Total Area (GFA)	BRE Benchmark (Tonnes/100m²)	Total Tonnage of Waste
Industrial*			
Dub15	16,865m²	12.6	2,125
Dub16	16,712m²	12.6	2,106
Energy Centre	3,483m²	12.6	439
Total	**37,060 m²**	-	**4,670 tonnes**

*Industrial benchmark is used as indicative guide. It should be noted these are high level estimates.

The contractor will ensure that waste generation on site is minimised and that waste removed from site for recovery or disposal is reduced where feasible.

The contractor will ensure that waste generation on site is minimised and that waste removed from site for recovery or disposal is reduced where feasible.

4.5 Costs of Waste Management

As required by the *Department of the Environment, Heritage and Local Government Best Practice Guidelines on the Preparation of Waste Management Plans for Construction & Demolition Projects* this section addresses costs of waste management.

While landfill disposal has been the most commonly used method for waste management in Ireland in the past, waste to energy incinerators are also now in operation at Poolbeg, Dublin 4 and in Carranstown, County Meath.

Typically, the current cost of disposal of waste to landfill in Ireland exceeds €170 per tonne. From 1st July 2013 in accordance with the Waste Management (Landfill Levy) (Amendment) Regulations 2013 the 'landfill levy' increased to €75 per tonne for waste disposed to landfill. Disposal of hazardous waste can cost from €350.

In addition to landfill operator fees and landfill levies there are additional costs included in the 'true cost of waste management' including:

- The purchase cost of waste materials (including imported soil);

- Handling costs;
- Storage and transportation costs; and
- Revenue generated from sales.

Therefore, in order to reduce costs associated with waste management, surplus materials should be reused and recycled where possible and materials should be carefully stored and handled to minimise risk of damage.

5 Site Management

The Contractor will ultimately be responsible for the management of resources on a project and agreeing and revising as necessary any commitments or targets included in the RWMP developed at design/planning with the Client for acceptance and adoption in the RWMP for construction.

The Contractor will allocate responsibility for resource management to one or more individuals of sufficient seniority to put the relevant procedures into practice. Nominate a suitably qualified Resource Manager (RM) with expertise in waste and resource management to implement the RWMP.

The nominated Resource Waste Manager (RM) responsible for implementation of this Resource and Waste Management Plan will be identified prior to construction commencement. The nominated waste manager will be responsible for implementation of this Plan will be identified prior to the commencement of works.

Copies of the Plan will be made available to all relevant personnel on site.

All site personnel and sub-Contractors will be provided with a copy of the Plan and will be informed of the objectives of the Plan and their responsibilities in relation to compliance with the Plan.

The waste manager shall ensure that where training is required regarding the handling and management of wastes on site that this is provided to staff as required and that the RWMP is included in site induction training.

The waste manager will be responsible for informing Contractor staff and sub-Contractors of content of the Plan and for maintaining and keeping the Records set out below.

In the event of the waste manager leaving the project team the Contractor will nominate a suitable replacement.

5.1 Excavation Waste Management

Site investigations have been undertaken. It was determined that a significant proportion of the surplus excavation material from the construction of the proposed development will consist of uncontaminated soil, stone and naturally occurring material.

Possibilities for re-use of clean non-hazardous excavation material as fill on the site or in landscaping works will be considered following appropriate testing to ensure material is suitable for its proposed end use.

Excavated material, which is not suitable for reuse on site, or surplus to requirements, will be stockpiled, tested and classified. Where feasible classification for reuse on other construction site(s), for example as a "by product" under Article 27, will be considered. Where the material is not suitable for reuse it will be categorised in accordance with the EPA (2018) *List of Waste and Determining if Waste is Hazardous or Non-hazardous.*

Waste may only be transferred from site by a waste collection permit holder and delivered to an authorised waste facility (i.e. a facility which holds a Certificate of Registration, Waste Facility Permit or Waste Licence) for the specific waste types it receives.

Where removal from site of construction by-products for further use is proposed this will take place in compliance with Article 27 of the European Communities (Waste Directive) Regulations, 2011, where appropriate. The contractor will be responsible for ensuring compliance with this article where appropriate.

Excavated material that is deemed hazardous will be treated at an authorised facility either in Ireland or abroad. Export of hazardous waste from the proposed development outside of the State is subject to a Europe-wide control system founded on EU Regulation 1013/2006 on the Shipments of Waste (known as the Transfrontier Shipment Regulations), as amended. This legislation is supplemented by the Waste Management (Shipments of Waste) Regulations 2007, as amended, which makes Dublin City Council responsible for the enforcement of this regulatory system throughout Ireland. In 2019 in Ireland, 580,977 tonnes of hazardous waste was generated and of this 333,195 tonnes was exported for treatment. The above procedures will be applied to any hazardous waste generated during the construction phase. Export of hazardous waste from site outside the state will comply with the procedures set out in this legislation.

As noted in **Section 1** above following appointment, the Contractor will be responsible for detailing and updating this Plan. The detailed Plan will include a description of how excavation material from the proposed development will be managed. A full list of all facilities to which uncontaminated excavation soil and stones will be sent will be provided in the detailed Plan.

5.1.1 Article 27

Surplus excavation material may be declared a by-product under (under Article 27 of the EC Waste Directive Regulations, 2011-2020) for reuse in one or more known construction projects.

By-product notifications to the EPA provide an opportunity for reuse of surplus clean soil and stone material arising from construction activity. This can apply to locations other than authorised recovery facilities e.g. quarries operating under planning permission, parks or other developments requiring earthworks and importation of clean soil and stone. This option can bring significant economic benefits while facilitating beneficial re-use of by-products. This plays a role in Ireland's implementation of Circular Economy principles.

An Article 27 notification to the EPA under Article 27 (S.I. No. 323/2020) European Union (Waste Directive) Regulations 2020 is required to achieve by-product status for soil and stones. It is noted that the use of Article 27 is limited to clean soil and stone, and it must be demonstrated to the EPA that the following four conditions are met:

- further use of the soil and stone is certain;

- the soil and stone can be used directly without any further processing other than normal industrial practice;
- the soil and stone is produced as an integral part of a production process; and
- further use is lawful in that the soil and stone fulfil all relevant requirements for the specific use and will not lead to overall adverse environmental or human health impacts.

Where it is proposed to use an Article 27 EPA notification in relation to excavation material from the proposed development, the Contractor is responsible for submission of the Article 27 notification to the EPA. Where it is proposed to use soil from off-site with an Article 27 notification, the Contractor is responsible for carrying out any necessary due diligence regarding the material and ensuring that all EPA guidelines relating to that Article 27 notification have been complied with before the soil is imported into the site. Where feasible, appropriate and available Article 27 materials arising from other sites will be used in the development of this site.

The Contractor is responsible for ensuring all applicable regulatory requirements under waste, planning and other laws are complied with prior to movement of excavation material.

5.1.2 Soil Recovery at Sites Holding Waste Facility Permits or EPA Licences

Where removal of wastes from the proposed development is unavoidable it will be delivered by the contractor only to facilities which are authorised under the Waste Management Act, 1996 as amended and which hold the appropriate certificate of registration, waste facility permit or EPA licence.

The Waste Management (Facility Permit and Registration) Regulations 2007, as amended sets out the classes of waste activity requiring waste facility permits and certificate of registration. The most relevant class of activity in relation to soil recovery facilities is:

Class 5 (Third Schedule, Part 1 of the Regulations) for the *"Recovery of excavation or dredge spoil, comprising natural materials of clay, silt, sand, gravel or stone and which comes within the meaning of inert waste, through deposition for the purposes of the improvement or development of land, where the total quantity of waste recovered at the facility is less than 100,000 tonnes."*

For waste facility permits and certificate of registration the capacity is typically a lifetime capacity, and when reached, the facility typically closes. Waste facility permits and certificates of registration are granted to private operators by local authorities.

EPA licensed waste activities authorised to accept soil and stones for recovery and disposal include soil recovery sites, landfills, transfer stations and materials recovery facilities. These typically handle a larger tonnage of wastes than facilities holding certificates of registration of waste facility permits.

EPA licences typically include an annual maximum intake capacity and a maximum lifetime capacity for the licenced facility.

Where the contractor proposes to deliver excavated materials from the proposed development to facilities holding a certificate of registration, waste facility permit or EPA waste licence the contractor is responsible for ensuring the authorisation is valid and allows acceptance of the relevant List of Waste Code.

A copy of the authorisation will be included in the Plan and evidence will be provided that the proposed facility will have capacity to accept the required quantity of waste from the proposed development.

5.2 Construction Waste Management

The Contractor shall take the following measures to prevent waste, facilitate recycling and minimise waste disposal during the construction phase:

- Source Segregation: Where possible, metal, timber, glass and other recyclable material will be segregated and removed off site to a permitted/licensed facility for recycling. Waste stream colour coding and photographs will be used to facilitate segregation.
- Office and food waste arising on site will be source separated at least into dry mixed recyclables, biodegradable residual wastes.
- Waste bins, containers, skip containers and storage areas will be clearly labelled with waste types which they should contain, including photographs as appropriate.
- The site will be maintained to prevent litter and regular litter picking will take place throughout the site.
- Excessive temporary works will be avoided, existing facilities will be reused as appropriate.
- Material Management: 'Just in time' delivery will be used so far as is reasonably practicable to minimise material wastage.
- Waste Auditing: The Contractor will record the quantity in tonnes and types of waste and materials leaving the site during the demolition works. The name, address and authorisation details of all facilities and locations to which waste and materials are delivered will be recorded along with the quantity of waste in tonnes delivered to each facility. Records will show material which is recovered and disposed of.
- Paints, sealants and hazardous chemicals etc. will be stored in secure, bunded locations.
- All hazardous waste will be separately stored in appropriate lockable containers prior to removal from site by an appropriate waste collection holder.
- Waste generated on site will be removed as soon as practicable following generation for delivery to an authorised waste facility.

- The contractor will ensure that any off site interim storage facilities for excavated material have the appropriate waste licences or waste facility permits in place.

The appointed Contractor will be required to produce a detailed Construction and Demolition Resource Management Plan prior to commencement of the proposed works. This will include the names, addresses and authorisation details of the facilities to which waste from the proposed development will be delivered. **Appendix D** provides further details of the information which shall be contained in the Detailed Construction and Demolition Waste Management Plan.

5.3 Waste Collection

Waste from construction will be transported by authorised waste collectors in accordance with the *Waste Management (Collection Permit) Regulations, 2007 as amended.*

A list of currently authorised waste collectors is available on the following website: https://www.nwcpo.ie/permitsearch.aspx

An up to date list of all waste collectors used to transport waste from site during the proposed development will be maintained on site and updated by the Contractor.

Copies of valid appropriate waste collection permits will be held on site by the contractor.

5.4 Waste Recovery and Disposal Offsite

Waste from construction will be delivered to authorised waste facilities in accordance with the Waste Management Acts 1996 to 2011 as amended.

The following authorisations are applicable:

- Certificates of Registration (CoR) from the Local Authority (issued to private sector);
- Certificates of Registration (CoR from the EPA (issued to Local Authority);
- Waste Facility Permit (WFP) from the Local Authority;
- Waste or Industrial Emissions Licence from the EPA.

A list of currently authorised (CoR or WFP) waste sites in each Local Authority is available on the following website: http://facilityregister.nwcpo.ie/

A list of sites currently licensed by the EPA (Industrial Emissions or Waste Licence) is available on the following websites:

- http://www.epa.ie/terminalfour/waste/ (for Waste Licensed sites);
- http://www.epa.ie/terminalfour/ippc/ (for Industrial Emission Licensed waste facilities).

An up to date list of all waste facilities to which waste from the site will be delivered will be maintained on site and updated by the Contractor. Kedcoreping

Copies of valid facility Certificates of Registration, Waste Facility Permits, and Waste Licences will be held on site by the Contractor.

5.5 Record Keeping and Auditing

The Contractor will record the quantity in tonnes and types of waste and materials leaving the development site during demolition and construction of the proposed development.

The name, address and authorisation details of all facilities and locations to which waste and materials from the proposed development are delivered will be recorded along with the quantity of waste in tonnes delivered to each facility and the date of the waste movement. Records will show material which is recovered and disposed of.

The waste manager will arrange for a waste audit of the project once demolition has fully commenced on site and of any facilities to which demolition waste from the project is delivered as required. The waste manager will also arrange for a waste audit of the project once construction has fully commenced on site and of any facilities to which construction waste from the project is delivered as required.

A sample resource and waste inventory as included in the EPA Guidance is included in **Appendix E**.

5.6 Site Infrastructure

The following infrastructure requirements that must be adopted by the Contractor at construction stage:

- While earthworks are underway sufficient space will be available for wastes, by-products and material storage as necessary.
- Waste storage areas may include stockpiles (for soil and stone, aggregates, etc.), skips (for metals, wood, glass, etc.) or secure containers for hazardous materials. All waste storage areas should be assessed as fit for purpose and should be suitably contained, bunded or defined as required.
- The waste storage areas should be set out to reduce any potential for impact on sensitive human (e.g. residential) or natural (water courses, ecological sites, etc.) and a suitable buffer should be applied to mitigate any impact.
- Labelling and signage shall be used on site to inform personnel of key waste storage area requirements and restrictions with clear signage provided.
- Signage is also required to provide information to assist good resource practice across the site.

- In relation to resource storage, the Waste Management Act 1996, as amended, allows for the temporary storage of resources defined as 'waste' at the site where it was produced. The Act defines the phrase 'the temporary storage of waste' limiting it to having a six-month duration. As such, it is acceptable to store waste on the site of generation for up to six months without the need for any further waste permit/licence.

6 References

Department of Communications, Climate Action and Environment (DCCAE), 2020. A Waste Action Plan for a Circular Economy - Ireland's National Waste Policy 2020-2025

Department of the Environment, Heritage and Local Government (DoEHLG), 2006. Best Practice Guidelines on the Preparation of Waste Management Plans for Construction & Demolition Projects.

Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives.

Dublin City Development Plan 2016-2022

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EPA Best Practice Guidelines for the Preparation of Waste Management Plans for Construction Projects, Draft for Public Consultation, April 2021(EPA 2021).

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EPA, 2014. Guidance on Assessing and Costing Environmental Liabilities. Unit Cost Rates for Verification

European Commission (EC), 2020. EU Circular Economy Action Plan. A new Circular Economy Action Plan for a Cleaner and More Competitive Europe

European Commission, 2018. Guidelines for the waste audits before demolition and renovation works of buildings.

European Commission, 2016. Construction and Demolition Waste Management Protocol.

European Communities (2011) Waste Directive Regulations 2011 (S.I. No. 126/2011)

European Union (2011) Waste Directive Regulations 2020 (S.I. No. 323/2020)

Government of Ireland, Circular Economy Act 2021

RPS, 2020. Construction and Demolition Waste Soil and Stone Recovery / Disposal Capacity. Eastern Midlands Region / Connacht Ulster Region / Southern Region. Waste Management Plans 2015 – 2021.

Smartwaste, 2012, Waste Benchmarks for new build projects by project type. Available at: http://www.smartwaste.co.uk/filelibrary/benchmarks%20data/Waste_Benchmarks_for_new_build_projects_by_project_type_31_May_2012.pdf [accessed June 2021].

Waste Management Acts, 1996 to 2011 and regulations made under the acts.

Waste Management (Collection Permit) Regulations, 2007 as amended.

Waste Management (Shipments of Waste) Regulations 2007 (S.I. No. 419 of 2007)

Appendix A

Responsibilities as set out in EPA Guidelines

The Contractor procured by the Client to undertaker the construction operations is responsible for the following:

- Preparing, implementing and reviewing the Construction and Demolition Resource Management Plan (CDRMP) through construction (including the management of all suppliers and sub-contractors) as per the requirements of these guidelines;
- Identifying a designated and suitably qualified Resource Manager (RM) who will be responsible for implementing the CDRMP;
- Identifying all hauliers to be engaged to transport each of the resources / wastes off-site. Note that any resource that is legally a 'waste' must only be transported by a haulier with a valid Waste Collection Permit (refer to Appendix F of the Guidelines for a resource to find a suitably permitted local haulier);
- Identifying all destinations for resources taken off site. As above, any resource that is legally a 'waste' must only be transported to a facility a valid Cert of Registration, Waste Permit or Waste/Industrial Licence (refer to Appendix F of the Guidelines for a resource to find a suitably authorised facility);
- Maintaining full records of all resources (both wastes and other resources) should be maintained for the duration of the project; and
- Preparing a CDRMP Implementation Review Report at project handover.

Appendix B

Waste Management Legislation, Policy and Best Practice Guidance – Review

European Legislation

Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives

Directive 2008/98/EC, known as the "Waste Framework Directive" came into force on 12th December 2008. It provides for a general framework of waste management requirements and sets the basic waste management definitions for the EU.

The Directive 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. In addition, the Directive deals with the issue of 'end of waste' and clarifies the definitions of recovery, disposal and by-product. The directive states that, *"The recovery of waste and the use of recovered material as raw materials should be encouraged in order to conserve natural resources."*

Directive (EU) 2018/851 of the European Parliament and of the Council of 30 May 2018 amending Directive 2008/98/EC on waste

This Directive amends Directive 2008/98/EC. It provides a number of updated waste management definitions. The Directive allows Member States to use economic instruments including taxes and levies as an incentive for the application of the waste hierarchy. The Directive was transposed into Irish law in August 2020 by S.I. No. 322 of 2020.

The Directive sets targets for the preparing for re-use and the recycling of municipal waste as follows:

- By 2025, at a minimum 55% (by weight) will be prepared for re-use or recycling;
- By 2030, at a minimum 60% (by weight) will be prepared for re-use or recycling;
- By 2035, at a minimum 65% (by weight) will be prepared for re-use or recycling.

With regard to construction and demolition waste, Member States must take measures to promote selective demolition in order to enable removal and safe handling of hazardous substances, facilitate re-use and high-quality recycling. The Directive obliges Member States to take measures to prevent waste generation including reduction of waste generation in processes related to construction and demolition, taking into account best available techniques.

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) and 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.

This decision (referred to as 'the List of Waste' (LoW)) and regulation consolidate the legislation relating to waste classification and allow the generators of waste to classify the waste as hazardous or non-hazardous and in the process assign the correct List of Waste entry codes. Each list of waste entry is a six digit code which is closely linked to the list of the main characteristics which render waste hazardous contained in Annex III to the Waste Framework Directive. It is noted that *Council Regulation (EU) 2017/997 of 8 June 2017 amending Annex 111 to Directive 2008/98//EC of the European parliament and of the Council as regards the hazardous property HP 14 'Ecotoxic'* provides additional criteria in relation to determining whether the ecotoxicity of wastes would result in a hazardous classification.

National Legislation

Circular Economy Bill 2021

The draft Whole-of-Government Circular Economy Strategy provides a national policy framework for Ireland's transition to a circular economy. The Circular Economy Bill 2021, when enacted, aims to place that Strategy, and the commitment to a circular economy, on a clear statutory footing.

The Circular Economy Bill is a key step in the successful transition of Ireland's economy to a circular economy and is evidence of Government's commitment to the achievement of that goal.

Note: This Bill has not yet been enacted and the Circular Economy Strategy is still at draft stage. This is provided for informational purposes only.

Waste Management Acts, 1996 as amended and Regulations Made under the Acts

The Waste Management Act, 1996 sets out the responsibilities and functions of various persons in relation to waste. The 1996 Act has been amended by a number of subsequent acts including the Waste Management (Amendment) Act 2001 and the Protection of the Environment Act 2003. The Act:

- Prohibits any 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 on 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 for Environment, Climate and Communications to make regulations for various purposes to promote better waste management.
- Provides for substantial penalties for offences including fines, imprisonment and/or liability for clean-up measures.

Waste Management (Collection Permit) Regulations, 2007, S.I. No 820 of 2007, as amended

A waste collection permit is required by anyone collecting waste on a commercial basis to ensure that the waste is gathered, sorted and transported correctly. Waste collection permits are granted in accordance with the Waste Management (Collection Permit) Regulations, 2007 as amended. All Waste Collection Permits are issued by the National Waste Collection Permit Office (NWCPO).

Waste Management (Shipments of Waste) Regulations 2007, S.I. No. 419 of 2007

Where waste is exported from Ireland for recovery or disposal the National Transfrontier Shipment (TFS) Office within Dublin City Council must be notified. Certain financial guarantees must be in place and a certificate issued by the National TFS Office prior to the waste movement taking place.

European Communities (Waste Directive) Regulations 2011, S.I. 126 of 2011

These regulations significantly changed the provisions of the Waste Management Acts, 1996 to 2008. The Regulations define "waste disposal" and "waste recovery", as well as setting out tests which must be complied with in order for material to be described as a "by-product" or achieve "end of waste" status.

The Regulations formally set out the following waste hierarchy which must be applied as a priority order in waste prevention and management legislation and policy:

(a) prevention;

(b) preparation for re-use;

(c) recycling;

(d) other recovery (including energy recovery); and

(e) disposal

The Regulations require that all waste management plans and hazardous waste management plans in existence at the commencement of the Regulations to be evaluated by 31 December 2012 and where appropriate, be revised to be brought into line with Directive 2006/12/EC on Waste.

The Regulations also require the Environment Agency to establish a waste prevention programme by December 2013.

European Union (Waste Directive) Regulations 2020 S.I. No. 323 of 2020

These regulations give effect to Directive 2018/851/EC of the European Parliament and of the Council of 30 May 2018 amending Directive 2008/98/EC on waste. Directive 2018/851/EC provides new definitions for a number of key terms including "waste" and "non-hazardous waste", "bio-waste", "waste management", "waste prevention", "backfilling" and "construction and demolition waste".

The Regulations give partial effect to the following: Directive 2006/66/EC on batteries and accumulators and waste batteries and accumulators as amended by Directive (EU) 2018/849, Directive 2000/53/EC on end-of-life vehicles as amended by Directive (EU) 2018/849, Directive 2012/19/EU on waste electrical and electronic equipment as amended by Directive (EU) 2018/849, Directive (EU) 2018/852 amending Directive 94/62/EC on packaging and packaging waste and Directive (EU) 2018/850 amending Directive 1999/31/EC on the landfill of waste. The Regulations set out additional measures to protect the environment and human health by preventing or reducing the generation of waste, the adverse impacts of the generation and management of waste and by reducing overall impacts of resource use and improving the efficiency of such use, which are crucial for the transition to a circular economy and long-term competitiveness.

European Policy

7th Environmental Action Programme, European Commission (2014)

The 7th Environmental Action Programme came into force in January 2014 and will guide European environment policy until 2020. A key objective of the programme is to turn the Union into a resource-efficient, green and competitive low carbon economy. There is a special focus on turning waste into a resource, with more prevention, re-use and recycling, and phasing out wasteful and damaging practices like landfilling. By 2020 the European Union and member states are to ensure that:

- The environment and human health are protected by preventing or reducing the adverse impacts of the generation and management of waste.
- Per capita waste generation and waste generation in absolute terms are reducing.
- Landfilling is phased out for recyclables and recoverable wastes and limiting energy recovery to non- recyclable materials.

The European Commission published a proposal for an 8th Environmental Action Programme on 14th October 2020. The proposal supports the environment and climate action objectives of the European Green Deal and will form the EU's basis for achieving the United Nation's 2030 Agenda and its Sustainable Development Goals. It is expected that the 8th Environmental Action Programme will be adopted in 2021 – however, a date is yet to be confirmed.

European Commission Circular Economy Strategy (2015; 2018; 2020)

In December 2015 the European Commission adopted an ambitious Circular Economy Package, which includes revised legislative proposals on waste to stimulate Europe's transition towards a circular economy.

The Circular Economy Package consists of an EU Action Plan for the Circular Economy that establishes a programme of action, with measures covering the whole cycle: from production and consumption to waste management and the market for secondary raw materials. The annex to the action plan sets out the timeline when the actions will be completed.

The proposed actions will contribute to "closing the loop" of product lifecycles through greater recycling and re-use and bring benefits for both the environment and the economy.

The revised legislative proposals on waste set clear targets for reduction of waste and establish an ambitious and credible long-term path for waste management and recycling. Key elements of the revised waste proposal include:

- An EU target for recycling 65% of municipal waste by 2030;
- An EU target for recycling 75% of packaging waste by 2030;
- A target to reduce landfill to maximum of 10% of all waste by 2030;
- A ban on landfilling of separately collected waste;
- Promotion of economic instruments to discourage landfilling;
- Simplified, improved definitions and harmonised calculation methods for recycling rates throughout the EU;
- Concrete measures to promote re-use and stimulate industrial symbiosis - turning one industry's by-product into another industry's raw material;
- Economic incentives for producers to put greener products on the market and support recovery and recycling schemes (e.g. for packaging, batteries, electric and electronic equipment, vehicles).

The Circular Economy Package was updated in 2018 to comprise a new set of measures including:

- A Europe-wide EU Strategy for Plastics in the Circular Economy;
- A Communication on options to address the interface between chemical, product and waste legislation;
- A Monitoring Framework on progress towards a circular economy at EU and national level; and

- A Report on Critical Raw Materials and the circular economy.

Key legislative measures adopted to date under the plan include:

- Directive (EU) 2018/851 amending Directive 2008/98/EC on waste;
- Directive (EU) 2018/850 amending Directive 1999/31/EC on the landfill of waste;
- Directive (EU) 2018/852 amending Directive 94/62/EC on packaging and packaging waste; and
- Directive (EU) 2018/849 amending Directives 2000/53/EC on end-of-life vehicles, Directive 2006/66/EC on batteries and accumulators and waste batteries and accumulators, and Directive 2012/19/EU on waste electrical and electronic equipment.

European Commission, 2020. Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions – A new Circular Economy Action Plan For a cleaner and more competitive Europe. COM (2020).

The European Commission has adopted a new Circular Economy Action Plan, which is one of the main blocks of the European Green Deal, Europe's new agenda for sustainable growth.

The new Action Plan announces initiatives along the entire life cycle of products, targeting for example their design, promoting circular economy processes, fostering sustainable consumption, and aiming to ensure that the resources used are kept in the EU economy for as long as possible.

The new Action Plan introduces legislative and non-legislative measures targeting areas where action at the EU level brings real added value.

The new Circular Economy Action Plan presents measures to:

- Make sustainable products the norm in the EU;
- Empower consumers and public buyers;
- Focus on the sectors that use most resources and where the potential for circularity is high such as: electronics and ICT; batteries and vehicles; packaging; plastics; textiles; construction and buildings; food; water and nutrients;
- Ensure less waste;
- Make circularity work for people, regions and cities; and
- Lead global efforts on circular economy.

European Commission (2019) European Green Deal

The European Green Deal, published by the European Commission in December 2019, provides an action plan to boost the efficient use of resources by moving to a clean, circular economy while cutting pollution and restoring biodiversity.

The plan outlines investments needed and financing tools available. It explains how to ensure a just and inclusive transition.

National Policy

Introduction

The first national waste policy statement was published by the Department of Environment and Local Government in 1998. A number of statements have been published since, each of which builds on the objectives of the previous policy statements to improve how waste is managed in Ireland and move waste away from landfill and towards a more sustainable option. The statements published in the past include:

- Department of the Environment and Local Government (1998). 'Waste Management - Changing Our Ways' – A Policy Statement.
- Department of the Environment and Local Government (2002). Preventing and Recycling Waste – Delivering Change – A Policy Statement.
- Department of the Environment, Heritage and Local Government (2004). Waste Management - Taking Stock and Moving Forward.
- Department of the Environment, Heritage and Local Government (2006). National Strategy on Biodegradable Waste Management.
- Department of the Environment, Heritage and Local Government (2012). A Resource Opportunity- Waste Management Policy in Ireland.

More recent policy documents and reports are summarised below.

EPA National Waste Statistics and Bulletins

The EPA publishes national statistics and bulletins relating to waste generation, management and disposal in Ireland. The published data provide information on key statistics and trends in waste as well as information on Ireland's progress in meeting EU waste collection, recovery and disposal targets. Key topics include municipal waste generation and management, packaging waste, waste electronic and electrical equipment, end of life vehicles, tyres, hazardous waste, construction and demolition waste and waste infrastructure. The data are available on the EPA website at *http://www.epa.ie/nationalwastestatistics/.*

Environmental Protection Agency (2014). National Hazardous Waste Management Plan, 2014-2020

The Third National Hazardous Waste Management Plan was published by the Environmental Protection Agency in 2014.

This Plan set out priority actions to be taken over the six-year life of the plan in relation to:

- Prevention of hazardous waste.
- Improved collection rates for certain categories of hazardous waste.

- Steps required to improve Ireland's self-sufficiency in hazardous waste management.
- Identification and management of certain legacy hazardous wastes such as historic unregulated waste disposal sites and contaminated soil.

The plan included eight key environmental objectives, as follows:

1. To protect water quality (rivers, lakes, marine and groundwater) from hazardous waste;
2. To protect air quality from hazardous waste and/or reduce air pollution or limit to levels that do not damage the natural environment or human health;
3. To minimise greenhouse gas emissions associated with hazardous waste management (including transport);
4. To safeguard soil quality and quantity from hazardous waste and reduce soil contamination;
5. To maximise use of material assets including the built environment, energy and raw materials;
6. To minimise the export of hazardous waste for treatment and/or disposal and reduce emissions due to transportation;
7. To conserve and enhance biodiversity, including flora and fauna, and integrate biodiversity considerations into actions relating to or arising out of any of the recommendations in the National Hazardous Waste Management Plan; and
8. To protect human health from hazardous waste.

EPA (2019) Waste Classification – List of Waste and Determining if Waste is hazardous or Non-Hazardous.

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);
- 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; and
- Council Regulation (EU) 2017/997 of 8 June 2017 amending Annex 111 to Directive 2008/98//EC of the European parliament and of the Council as regards the hazardous property HP 14 'Ecotoxic'.

This waste classification system applies across the EU and is the basis for all national and international waste reporting obligations. This document consolidates the Decision and Regulations and provides guidance on how to follow them.

There are two main elements:

- List of Waste (LoW) (Appendix 1);
- Determining if waste is hazardous or non-hazardous (Appendix 2).

Government of Ireland (2020) A Waste Action Plan for a Circular Economy Ireland's National Waste Policy 2020-2025.

The 'Waste Action Plan for a Circular Economy' is an action focused plan that reflects the 2020 Circular Economy Action Plan 'For a cleaner and more competitive Europe' from the European Commission (see above).

The Waste Action Plan for a Circular Economy fulfils the commitment in the Programme for Government (2020) to publish and start implementing a new National Waste Action Plan. This new national waste policy will inform and give direction to waste planning and management in Ireland over the coming years.

The previous national waste policy, A Resource Opportunity – Waste management policy in Ireland, drove delivery on national targets under EU legislation, but the Irish and international waste context has changed in the years since its launch. The need to embed climate action in all strands of public policy aligns with the goals of the European Green Deal.

The policy document shifts focus away from waste disposal and moves it back up the production chain. To support the policy, regulation is already being used (Circular Economy Legislative Package) or in the pipeline (Single Use Plastics Directive). The policy document contains over 200 measures across various waste areas including Circular Economy, Municipal Waste, Consumer Protection and Citizen Engagement, Plastics and Packaging, Construction and Demolition, Textiles, Green Public Procurement and Waste Enforcement.

The overarching objectives of this action plan are to:

- Shift the focus away from waste disposal and treatment to ensure that materials and products remain in productive use for longer thereby preventing waste and supporting reuse through a policy framework that discourages the wasting of resources and rewards circularity;
- Make producers who manufacture and sell disposable goods for profit environmentally accountable for the products they place on the market;
- Ensure that measures support sustainable economic models (for example by supporting the use of recycled over virgin materials);
- Harness the reach and influence of all sectors including the voluntary sector, R&D, producers / manufacturers, regulatory bodies, civic society; and
- Support clear and robust institutional arrangements for the waste sector, including through a strengthened role for Local Authorities (LAs).

The plan identifies opportunities for the application of circular economy principles across a range of areas in Ireland including:

- Municipal waste;
- Consumer Protection;
- Food waste;
- Plastic and packaging waste;

- Construction and demolition waste;
- Textiles; and
- Procurement.

Department of the Environment, Climate and Communications (2019) Climate Action Plan

The Government published its Climate Action Plan (to tackle Climate Breakdown) in 2019. The Plan sets out the actions the Government intends to take to address climate breakdown across sectors such as electricity, transport, built environment, industry and agriculture.

The Climate Action Plan provides that the Government will lead the transformation from waste management to circular economy practice through delivery of a new national policy.

It is also intended that waste legislation will be revised to incorporate new circular economy requirements, including legally binding waste/recycling targets.

The implementation plan for actions by Government and other actors in relation to waste and the circular economy are as follows:

- Lead the transformation from waste management to circular economy practice through delivery of a new national policy;
- Revise waste legislation to incorporate new circular economy requirements, including legally binding waste/recycling targets;
- Develop a new National Waste Prevention Programme, and Regional Waste Management Plans that will guide our transition to a circular economy by EPA and Local Authorities;
- Support the development of eco-design and circular economy opportunities for Irish enterprises to reduce waste over the full lifecycle of products;
- Develop and implement a suite of measures to reduce the impact of single-use plastics Maintain Government leadership in taking responsibility for own resource consumption, particularly single use plastics, energy, waste and water;
- Identify opportunities to strengthen the regulatory and enforcement frameworks and structures for the waste collection and management system, to maximise the collection of clean, segregated materials for reuse and/or recycling from all households and businesses, and to incentivise consumers to reduce, reuse and recycle;
- Regulate and incentivise producers of waste, particularly packaging, to ensure the prevention of waste and the use of recycled materials in packaging products;
- Scope a number of possible environmental levies, including a possible levy on single use plastics, as part of the review of the Environment Fund. Further detailed research would be required prior to the introduction of any new levy;

- Identify and commence delivery of measures to address the key regulatory barriers to the development of the bioeconomy, including exploring opportunities to establish "*End of Waste*" criteria for certain bio-wastes.

Regional Policy

The Eastern Midlands Region Waste Management Plan 2015-2021

For the purposes of waste management planning, Ireland is now divided into three regions: Southern, Eastern-Midlands, Connacht-Ulster. The Eastern-Midlands Region comprises the 12 local authority areas of Dublin City, Fingal, Dublin South, Dún-Laoghaire Rathdown, Kildare, Laois, Longford, Louth, Meath, Offaly, Westmeath and Wicklow.

The Eastern Midlands Region Waste Management Plan 2015-2021 was launched in 2015. The strategic approach of the plan places a stronger emphasis on preventing wastes and material reuse activities. Three strategic targets have been set in the plan which include:

- 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 residual municipal waste to landfill in favour of higher value pre-treatment processes and indigenous recovery practices.

The plan looks to 2030 and includes a long-term goal of reaching a recycling rate of 60%.

Dublin City Development Plan 2016-2022

The Dublin City Development Plan 2016 - 2022 sets out Dublin City Council's policies and objectives for the development of the city over the Plan period. The Council includes four waste management policies and five waste management objectives as part of Chapter 9, Sustainable Environmental Infrastructure. These policies are predicated on the waste hierarchy of prevention, preparing for re-use, recycling, energy recovery and sustainable disposal.

RPS (2020) Construction and Demolition Waste Soil and Stone Recovery/Disposal Capacity Eastern Midlands Region / Connacht Ulster Region / Southern Region Waste Management Plans 2015 – 2021.

This report was undertaken on behalf of the Irish regional waste management offices to analyse the national waste capacity market for safe treatment of waste soils. A review was undertaken of soil waste generation and available capacity to accept soil waste in authorised facilities within the three waste regions.

The report identifies that the future authorised capacity available to recover soil and stones is an issue in each waste region in the context of likely strong construction activity. Possible options recommended include expanding capacities at existing sites and the use of Article 27 By-Product notifications.

Guidance

Environmental Protection Agency (EPA) (2021) Best Practice Guidelines for the Preparation of Resource Management Plans for Construction and Demolition Projects – Draft for Public Consultation, April 2021.

These guidelines supersede the 'Best Practice Guidelines on the Preparation of Waste Management Plans for Construction and Demolition Waste Projects' which were published by the Government in July 2006. The replacement guidelines reflect current waste legislation and policy including *'A Waste Action Plan for a Circular Economy Ireland's National Waste Policy 2020-2025'* published in September 2020. Since the publication of the 2006 guidelines, waste management legislation and policy have evolved towards prioritising waste prevention and life-cycle thinking as follows:

- An increased emphasis on waste prevention, in line with the waste hierarchy, through established principles such as designing out waste and the use of green procurement.
- The guidelines have also been prepared to promote more circular design and construction principles in line with the EU Circular Economy Action Plan under the EU Green Deal. The circular economy model tries to avoid using unnecessary resources in the first place and keep resources 'in flow' by means of effective and smart reuse and recycling strategies reducing the use of virgin materials.

The guidelines provide a practical and informed mechanism to document the prevention and management of C&D wastes and resources from design to construction or demolition of a project. They provide clients, developers, designers, practitioners, contractors, sub-contractors and competent authorities with a common approach to preparing and determining Resource and Waste Management Plans (RWMP) for the construction and demolition sector in Ireland.

The guidelines address the best practice approach for the following phases of a project:

- Prior to Construction – including the stages of design, planning and procurement in advance of works on site; and
- During Construction – relating to the effective management of resources and wastes during construction or demolition operations.

Best Practice Guidelines on the Preparation of Waste Management Plans for Construction and Demolition Projects

These guidelines were published by the DoEHLG in July 2006. The guidelines were developed in conjunction with the National Construction and Demolition Waste Council (NCDWC) as part of the Voluntary Construction Industry Initiative and to give advice on planning for construction and demolition (C&D) waste management.

The guidelines also give guidance on source separation of waste and the diversion of waste from landfill and encourage construction companies to work towards achieving the national recycling target of 85% as outlined in the Government Policy Document Changing Our Ways (DoEHLG, 1998).

European Commission (2016) EU Construction & Demolition Waste Management Protocol

This protocol was published by the European Commission in September 2016.

The overall aim of the protocol is to increase confidence in the C&D waste management process and the trust in the quality of C&D recycled materials. This will be achieved by:

a) Improved waste identification, source separation and collection;

b) Improved waste logistics;

c) Improved waste processing;

d) Quality management; and

e) Appropriate policy and framework conditions.

EPA (2019) Guidance on Soil and Stone By-products in the context of Article 27 of the European Communities (Waste Directive) Regulations 2011

Article 27 of the European Communities (Waste Directive) Regulations, 2011, as substituted by article 15 of the European Communities (Waste Directive) Regulations, 2020, S.I. No. 323 of 2020, states the following:

> *"27. (1) the Agency shall take appropriate measures to ensure that a substance or object resulting from a production process the primary aim of which is not the production of that substance or object is considered not to be waste, but to be a by-product if the following conditions are met:*
>
> *(a) further use of the substance or object is certain;*
>
> *(b) the substance or object can be used directly without any further processing other than normal industrial practice;*
>
> *(c) the substance or object is produced as an integral part of a production process; and*
>
> *(d) further use is lawful in that the substance or object fulfils all relevant product, environmental and health protection requirements for the specific use and will not lead to overall adverse environmental or human health impacts.*
>
> *(2) (a) Where a natural or legal person holds a substance or object in accordance with paragraph (1) which he or she believes is to be considered as a by-product, he or she shall notify the Agency and seek a determination on the matter from the Agency*
>
> *(b) He or she shall comply with relevant Agency guidance and submit information in a form and format as may be prescribed by the Agency in order to establish that the conditions in paragraph (1) are met.*

(c) Where there is no notice given to the Agency under subparagraph (a) in respect of a substance or object and the substance or object, as the case may be, is discarded or otherwise dealt with as if it were waste, the substance or object, as the case may be, shall be presumed to be waste until the contrary is proved.

(3) The Agency—

(a) may determine, in consultation with the relevant local authority and the natural or legal person concerned, whether a substance or object notified to it as a by-product in accordance with paragraph (2)(a) should be considered as a by-product or as a waste, and

(b) shall notify the local authority and the natural or legal person concerned of the determination made.

(c) may attach reporting conditions to a determination, pursuant to regulation 31a.

(4) Nothing in this Regulation shall relieve a natural or legal person from his or her responsibilities under the Act of 1992 or the Act of 1996.

(5) The Agency shall establish and maintain a register of by-products to record substances or objects notified to it as by-products under paragraph (2)(a).

(6) Where the Agency makes a determination in accordance with paragraph (3) that a substance or object should be considered as waste and not as a by-product, the determination shall be final.

(7) Where criteria have not been set at Union level , the Agency may establish detailed criteria on the application of the conditions laid down in paragraph 1 to specific substances or objects. The Agency shall notify the Commission of those detailed criteria in accordance with Directive (EU) 2015/153513 of the European Parliament and of the Council where so required by that Directive."

Economic operators, who hold a substance, which they believe to be a by-product under Article 27, must notify the Environmental Protection Agency. Conditions (1) (a) to (1)(d) must be satisfied for an Article 27 notification to be successful.

The EPA has produced guidance on the notification process. The purpose of the guidance is to inform economic operators how to prevent waste soil and stone by classifying it as a by-product in accordance with the legislation and the EPA's regulatory approach to determinations on soil and stone by-products. This guidance document covers soil and stone only.

The guidance is aimed at local authorities, developers, the construction sector, the waste management sector and consultants.

Its environmental objective is that, by making certain excess uncontaminated soil and stone is beneficially used with no overall adverse impacts on the environment or human health, a material producer will ensure that the material is regarded as a by-product rather than a waste.

Environmental Protection Agency (2020) Draft End of Waste Guidance Part 1 and Part 2

The EPA has published guidance on the 'end-of-waste' concept under Article 28 of the European Communities (Waste Directive) Regulations, 2011. Part 1 of the guidance describes the context and benefits, and introduces the end-of-waste test, under Article 28, to potential applicants. Part 2 provides guidance for applicants on how to address the requirements of the end-of-waste test.

FÁS and CIF (2002) Construction and Demolition Waste Management – A Handbook for Contractors & Site Managers

This handbook was produced in conjunction with Fás and the CIF in 2002. It provides advice for contractors and site managers on how to manage construction and demolition waste to make financial savings in purchasing material and disposal costs in a sustainable manner.

Appendix C

EPA Waste Classification

Relevant Waste EWC Codes and Corresponding Waste Descriptions

03	**WASTES FROM WOOD PROCESSING AND THE PRODUCTION OF PANELS AND FURNITURE, PULP, PAPER AND CARDBOARD**
03 02	**wastes from wood preservation**
03 02 01*	non-halogenated organic wood preservatives
03 02 02*	organochlorinated wood preservatives
03 02 03*	organometallic wood preservatives
03 02 04*	inorganic wood preservatives
03 02 05*	other wood preservatives containing hazardous substances
03 02 99	wood preservatives not otherwise specified

13	**OIL WASTES AND WASTES OF LIQUID FUELS (except edible oils, and those in chapters 05, 12 and 19)**
13 07	**wastes of liquid fuels**
13 07 01*	fuel oil and diesel
13 07 02*	petrol
13 07 03*	other fuels (including mixtures)

15	**WASTE PACKAGING; ABSORBENTS, WIPING CLOTHS, FILTER MATERIALS AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED**
15 01	**packaging (including separately collected municipal packaging waste)**
15 01 01	paper and cardboard packaging
15 01 02	plastic packaging
15 01 03	wooden packaging
15 01 04	metallic packaging
15 01 05	composite packaging
15 01 06	mixed packaging
15 01 07	glass packaging
15 01 09	textile packaging

16	WASTES NOT OTHERWISE SPECIFIED IN THE LIST
16 02	**wastes from electrical and electronic equipment**
16 02 09*	transformers and capacitors containing PCBs
16 02 10*	discarded equipment containing or contaminated by PCBs other than those mentioned in 16 02 09
16 02 11*	discarded equipment containing chlorofluorocarbons, HCFC, HFC
16 02 12*	discarded equipment containing free asbestos
16 02 13*	discarded equipment containing hazardous components[1] other than those mentioned in 16 02 09 to 16 02 12
16 02 14	discarded equipment other than those mentioned in 16 02 09 to 16 02 13
16 02 15*	hazardous components removed from discarded equipment
16 02 16	components removed from discarded equipment other than those mentioned in 16 02 15
16 06	**batteries and accumulators**
16 06 01*	lead batteries
16 06 02*	Ni-Cd batteries
16 06 03*	mercury-containing batteries
16 06 04	alkaline batteries (except 16 06 03)
16 06 05	other batteries and accumulators
16 06 06*	separately collected electrolyte from batteries and accumulators

17	CONSTRUCTION AND DEMOLITION WASTES (INCLUDING EXCAVATED SOIL FROM CONTAMINATED SITES)
17 01	**concrete, bricks, tiles and ceramics**
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	**wood, glass and plastic**
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 03	**bituminous mixtures, coal tar and tarred products**
17 03 01*	bituminous mixtures containing coal tar
17 03 02	bituminous mixtures other than those mentioned in 17 03 01
17 03 03*	coal tar and tarred products
17 04	**metals (including their alloys)**
17 04 01	copper, bronze, brass
17 04 02	aluminium
17 04 03	lead
17 04 04	zinc
17 04 05	iron and steel
17 04 06	tin
17 04 07	mixed metals
17 04 09*	metal waste contaminated with hazardous substances
17 04 10*	cables containing oil, coal tar and other hazardous substances
17 04 11	cables other than those mentioned in 17 04 10
17 05	**soil (including excavated soil from contaminated sites), stones and dredging spoil**
17 05 03*	soil and stones containing hazardous substances
17 05 04	soil and stones other than those mentioned in 17 05 03
17 05 05*	dredging spoil containing hazardous substances
17 05 06	dredging spoil other than those mentioned in 17 05 05
17 05 07*	track ballast containing hazardous substances
17 05 08	track ballast other than those mentioned in 17 05 07
17 06	**insulation materials and asbestos-containing construction materials**
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 08	**gypsum-based construction material**
17 08 01*	gypsum-based construction materials contaminated with hazardous substances
17 08 02	gypsum-based construction materials other than those mentioned in 17 08 01
17 09	**other construction and demolition wastes**
17 09 01*	construction and demolition wastes containing mercury

20	**MUNICIPAL WASTES (HOUSEHOLD WASTE AND SIMILAR COMMERCIAL, INDUSTRIAL AND INSTITUTIONAL WASTES) INCLUDING SEPARATELY COLLECTED FRACTIONS**
20 01	**separately collected fractions (except 15 01)**
20 01 01	paper and cardboard
20 01 02	glass
20 01 08	biodegradable kitchen and canteen waste
20 01 11	textiles
20 01 21*	fluorescent tubes and other mercury-containing waste
20 01 25	edible oil and fat
20 01 27*	paint, inks, adhesives and resins containing hazardous substances
20 01 33*	batteries and accumulators included in 16 06 01, 16 06 02 or 16 06 03 and unsorted batteries and accumulators containing these batteries
20 01 36	discarded electrical and electronic equipment other than those mentioned in 20 01 21, 20 01 23 and 20 01 35
20 01 39	plastics
20 01 40	metals
20 03	**other municipal wastes**
20 03 01	mixed municipal waste
20 03 07	bulky waste

Appendix D

Information to be Contained in a Construction and Demolition Resource Management Plan

The detailed Construction and Demolition Resource Management Plan and the requirements to be adopted by the Contractor will include the following:

- A named Resource Manager (RM) of the CDRMP with responsibility for implementation at construction phase must be identified by the Contractor;
- The CDRMP must be included in the site induction training;
- Tool box talks and all other training on the CDRMP must be provided in line with EPA Guidance Section 5.4;
- There must be appropriate procedures for identifying suitably permitted waste collection operators and waste destination sites implemented – a resource for this task is included in Appendix F of the EPA Guidance;
- Resource efficient supply chains should be implemented as appropriate in line with EPA Guidance Section 5.5;
- There must be appropriate procedures for record keeping and reporting of all off site export of resources implemented;
- There must be procedures for record keeping and reporting of all on site resource uses – this may include measures such as the use of an on-site a mobile crusher for producing aggregate from suitable residual concrete (subject to the appropriate waste consent) – in line with EPA Guidance Section 5.7;
- There must be appropriate procedures for audits and inspections of resource management practices in line with EPA Guidance Section 5.6;
- There must be appropriate procedures for engagement with the Local authority and other stakeholders in line with EPA Guidance Section 5.8;
- There must be a final report prepared summarising the outcomes of resource management processes adopted and the final inventory and cost for the project in line with EPA Guidance Section 5.8;
- Procedures for audits and inspections of resource management practices.
- There should be appropriate site signage on resource management put in place;
- There should be appropriate resource storage implemented on site (i.e. dedicated skips, hazardous materials storage, stockpile management, etc.). Note there are specific requirements on stockpiling more than 50kg of certain persistent organic pollutants (from a construction perspective these may include some chlorinated hydrocarbon contaminants in ground contamination, EPS/XPS insulation building material containing brominated flame retardant (HBCDD) or polychlorinated biphenyls from removal of electrical equipment) under Article 5 of EU Regulation (EU) 2019/1021;
- There must be appropriate procedures for handling and export of resources in line with EPA Guidance Section 5.3.

Appendix E

Resource and Waste Inventory Template

LoW Code	Description	Volume Generated (tonnes)	Prevention (tonnes) (non-waste)	Reused (tonnes (non-waste)	Recycled (tonnes) (waste)	Recovered[6] (tonnes) (waste)	Disposed (tonnes) (waste)	Unit Cost Rate (€/tonne)	Total Cost (€)
17 01 01	Concrete								
17 01 02	Bricks								
17 01 03	Tiles and Ceramics								
17 02 01	Wood								
17 02 02	Glass								
17 02 03	Plastic								
17 03 02	Bituminous mixtures								
17 04 01	Copper, Bronze, Brass								
17 04 02	Aluminium								
17 04 03	Lead								
17 04 04	Zinc								
17 04 05	Iron and Steel								
17 04 06	Tin								
17 04 07	Mixed Metals								
17 04 11	Cables								
17 05 04	Soil and Stone								
17 06 04	Insulation Material								
17 08 02	Gypsum								
17 09 04	Mixed C&D Waste								
*17 01 06**	*Mixtures of, or separate fractions of concrete, bricks, tiles and ceramics containing hazardous substances*								

LoW Code	Description	Volume Generated (tonnes)	Prevention (tonnes) (non-waste)	Reused (tonnes (non-waste)	Recycled (tonnes) (waste)	Recovered[6] (tonnes) (waste)	Disposed (tonnes) (waste)	Unit Cost Rate (€/tonne)	Total Cost (€)
*17 02 04**	*Glass, plastic and wood containing or contaminated with hazardous substances*								
*17 03 01**	*Bituminous mixtures containing coal tar*								
*17 04 09**	*Metal waste contaminated with hazardous substances*								
*17 05 03**	*Soil and stones containing hazardous substances*								
*17 06 05**	*Construction materials containing asbestos*								
	Other resources (non-waste materials) (specify as needed)								
	Other Wastes (specify as needed)								