

**OPERATIONAL WASTE  
MANAGEMENT PLAN FOR  
A MIXED-USE  
DEVELOPMENT**

**AT**

**LANDS AT THE FORMER  
TEDCASTLES SITE, OLD  
DUNLEARY ROAD,  
CUMBERLAND STREET,  
DUN LEARY HILL, DUN  
LAOGHAIRE, CO. DUBLIN**



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Report Prepared For

**Ted Living Limited**

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## 1.0 INTRODUCTION

AWN Consulting Ltd. (AWN) has prepared this Operational Waste Management Plan (OWMP) on behalf of Ted Living Limited, for a predominantly build to rent residential development comprising of 146 no. apartment units. The development also includes 1 no. retail unit, co-working unit, open spaces, waste storage facilities and associated car and bicycle parking provision at lands at the former Ted Castles site, Old Dun Leary Road, Cumberland Street, Dun Leary Hill, Dun Laoghaire, Co. Dublin.

This OWMP has been prepared to ensure that the management of waste during the operational phase of the proposed development is undertaken in accordance with current legal and industry standards including, the *Waste Management Act 1996 – 2011* as amended and associated Regulations <sup>1</sup>, *Protection of the Environment Act 2003* as amended <sup>2</sup>, *Litter Pollution Act 2003* as amended <sup>3</sup>, the '*Eastern-Midlands Region (EMR) Waste Management Plan 2015– 2021*' <sup>4</sup>, *The Dún Laoghaire Rathdown County Council (Segregation, Storage and Presentation of Household and Commercial) Bye-Laws 2019* <sup>5</sup> and the *Guidance Notes for Waste Management Residential and Commercial Developments (2020)* <sup>6</sup>. In particular, this OWMP aims to provide a robust strategy for storing, handling, collection and transport of the wastes generated at site.

This OWMP aims to ensure maximum recycling, reuse and recovery of waste with diversion from landfill, wherever possible. The OWMP also seeks to provide guidance on the appropriate collection and transport of waste to prevent issues associated with litter or more serious environmental pollution (e.g. contamination of soil or water resources). The plan estimates the type and quantity of waste to be generated from the proposed development during the operational phase and provides a strategy for managing the different waste streams.

At present, there are no specific guidelines in Ireland for the preparation of OWMPs. Therefore, in preparing this document, consideration has been given to the requirements of national and regional waste policy, legislation and other guidelines.

## 2.0 OVERVIEW OF WASTE MANAGEMENT IN IRELAND

### 2.1 National Level

The Government issued a policy statement in September 1998 titled as '*Changing Our Ways*' <sup>7</sup> which identified objectives for the prevention, minimisation, reuse, recycling, recovery and disposal of waste in Ireland. A heavy emphasis was placed on reducing reliance on landfill and finding alternative methods for managing waste. Amongst other things, Changing Our Ways stated a target of at least 35% recycling of municipal (i.e. household, commercial and non-process industrial) waste.

A further policy document '*Preventing and Recycling Waste – Delivering Change*' was published in 2002 <sup>8</sup>. This document proposed a number of programmes to increase recycling of waste and allow diversion from landfill. The need for waste minimisation at source was considered a priority.

This view was also supported by a review of sustainable development policy in Ireland and achievements to date, which was conducted in 2002, entitled '*Making Irelands Development Sustainable – Review, Assessment and Future Action*' <sup>9</sup>. This document also stressed the need to break the link between economic growth and waste generation, again through waste minimisation and reuse of discarded material.

In order to establish the progress of the Government policy document *Changing Our Ways*, a review document was published in April 2004 entitled '*Taking Stock and Moving Forward*' <sup>10</sup>. Covering the period 1998 – 2003, the aim of this document was to

assess progress to date with regard to waste management in Ireland, to consider developments since the policy framework and the local authority waste management plans were put in place, and to identify measures that could be undertaken to further support progress towards the objectives outlined in *Changing Our Ways*.

In particular, *Taking Stock and Moving Forward* noted a significant increase in the amount of waste being brought to local authority landfills. The report noted that one of the significant challenges in the coming years was the extension of the dry recyclable collection services.

In September 2020 the Irish Government released a policy document outlining a new action plan for Ireland to cover the period of 2020-2025. This plan 'A Waste Action Plan for a Circular Economy'<sup>11</sup> was prepared in response to the 'European Green Deal' which sets a roadmap for a transition to a new economy, where climate and environmental challenges are turned into opportunities.

It aims to fulfil the commitment in the Programme for Government to publish and start implementing a new National Waste Action Plan. It is intended that this new national waste policy will inform and give direction to waste planning and management in Ireland over the coming years. It will be followed later this year by an All of Government Circular Economy Strategy. 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. The policy document contains over 200 measures across various waste areas including Circular Economy, Municipal Waste, Consumer Protection & Citizen Engagement, Plastics and Packaging, Construction and Demolition, Textiles, Green Public Procurement and Waste Enforcement.

One of the first actions to be taken is the development of a high-level, whole of Government Circular Economy Strategy to set a course for Ireland to transition across all sectors and at all levels of Government toward circularity. This strategy was issued for public consultation in April 2021.

Since 1998, the Environmental Protection Agency (EPA) has produced periodic 'National Waste (Database) Reports'<sup>12</sup> detailing among other things estimates for household and commercial (municipal) waste generation in Ireland and the level of recycling, recovery and disposal of these materials. The 2018 National Waste Statistics, which is the most recent study published, along with national waste statistics web resource (August 2020) reported the following key statistics for 2018:

- **Generated** – Ireland produced 2,912,353 t of municipal waste in 2018. This is almost a 5% increase since 2017. This means that the average person living in Ireland generated 600 kg of municipal waste in 2018.
- **Managed** – Waste collected and treated by the waste industry. In 2018, a total of 2,865,207 t of municipal waste was managed and treated.
- **Unmanaged** – Waste that is not collected or brought to a waste facility and is, therefore, likely to cause pollution in the environment because it is burned, buried or dumped. The EPA estimates that 47,546 t was unmanaged in 2017.
- **Recovered** – The amount of waste recycled, used as a fuel in incinerators, or used to cover landfilled waste. In 2018, around 85% of municipal waste was recovered – an increase from 77% in 2017.
- **Recycled** – The waste broken down and used to make new items. Recycling also includes the breakdown of food and garden waste to make compost. The recycling rate in 2018 was 38%, which is down from 41% in 2017.
- **Disposed** – Less than a quarter (15%) of municipal waste was landfilled in 2018. This is a decrease from 23% in 2017.

## 2.2 Regional Level

The proposed development is located in the Local Authority area of Dun Laoghaire Rathdown County Council (DLRCC).

The *EMR Waste Management Plan 2015 – 2021* is the regional waste management plan for the DLRCC area which was published in May 2015. Currently the regional waste management plans are under review with new “draft” versions available for review and comment.

The regional plan sets out the following strategic targets for waste management in the region that are relevant to the proposed development:

- Achieve a recycling rate of 50% of managed municipal waste by 2020; and
- Reduce to 0% the direct disposal of unprocessed residual municipal waste to landfill (from 2016 onwards) in favour of higher value pre-treatment processes and indigenous recovery practices.

Municipal landfill charges in Ireland are based on the weight of waste disposed. In the Leinster Region, charges are approximately €130 - €150 per tonne of waste which includes a €75 per tonne landfill levy introduced under the *Waste Management (Landfill Levy) (Amendment) Regulations 2013*.

The *Dún Laoghaire-Rathdown County Development Plan 2016 – 2022*<sup>13</sup> sets out a number of policies for the Dún Laoghaire-Rathdown area in line with the objectives of the waste management plan.

Waste policies with a particular relevance to the proposed development are as follows:

### **Policy EI12: Waste Management Strategy**

*It is Council policy to conform to the European Union and National waste management hierarchy as follows:*

- waste prevention
- minimisation
- re-use
- waste recycling
- energy recovery and
- disposal

*subject to economic and technical feasibility and Environmental Assessment.*

### **Policy EI13: Waste Plans**

*It is Council policy to publish plans for the collection, treatment, handling and disposal of waste in accordance with the provisions of the Waste Management Act 1996 (as amended) and Protection of the Environment Act 2003 (as amended).*

### **Policy EI14: Private Waste Companies**

*It is Council policy to ensure that all waste that is disposed of by private waste companies is done so in compliance with the requirements of the Environmental Protection Agency and the Waste Management Legislation and in accordance with the Planning Code.*

### **Policy EI15: Waste Prevention and Reduction**

*It is Council policy to promote the prevention and reduction of waste and to co-operate with industry and other agencies in viable schemes to achieve this.*

### **Policy EI16: Waste Re-use and Re-cycling**

*It is Council policy to promote the increased re-use and re-cycling of materials from all waste streams. The Council will co-operate with other agencies in viable schemes for*

*the extraction of useful materials from refuse for re-use or re-cycling and will adopt the National targets as stated in the 'Dublin Regional Waste Management Plan 2005-2010'. (Note: the EMR Waste Management Plan 2015 - 2021 was published in 2015. It is assumed this objective is relevant to the EMR Waste Management Plan and not the Dublin Regional Waste Management Plan which is no longer valid).*

The Draft *Dún Laoghaire-Rathdown County Development Plan 2022 – 2028*<sup>15</sup> sets out a number of policies for the Dún Laoghaire-Rathdown area in line with the objectives of the waste management plan.

Proposed waste policies with a particular relevance to the proposed development are as follows:

***Policy Objective EI12: Resource Management***

*It is a Policy Objective to implement the Eastern-Midlands Region Waste Management Plan 2015-2021 and subsequent plans, in supporting the transition from a waste management economy towards a circular economy, to enhance employment and increase the value recovery and recirculation of resources. Underpinning this objective is the requirement to conform to the European Union and National Waste Management Hierarchy of the most favoured options for waste as illustrated below subject to economic and technical feasibility and Environmental Assessment.*

***Policy Objective EI13: Waste Management Infrastructure, Prevention, Reduction, Reuse and Recycling***

- To support the principles of the circular economy, good waste management and the implementation of best international practice in relation to waste management in order for the County and the Region to become self-sufficient in terms of resource and waste management and to provide a waste management infrastructure that supports this objective.
- To support the principles of the circular economy, good waste management and the implementation of best international practice in relation to waste management in order for the County and the Region to become self-sufficient in terms of resource and waste management and to provide a waste management infrastructure that supports this objective.
- To provide for civic amenity facilities and bring centres as part of an integrated waste collection system in accessible locations throughout the County and promote the importance of kerbside source segregated collection of household and commercial waste as the best method to ensure the quality of waste presented for recycling is preserved.
- To ensure any waste amenity facilities adhere to the Waste Regional Offices Waste Management Infrastructure siting guidelines.
- To develop a County wide network of multi material recycling centres, bring centres and a re-use centre and to require the provision of adequately-sized recycling facilities in new commercial and large-scale residential developments, where appropriate.
- To require the inclusion of such centres in all large retail developments to maximise access by the public. To ensure new developments are designed and constructed in line with the Council's Guidelines for Waste Storage Facilities

### ***Policy Objective EI14: Hazardous Waste***

It is a Policy Objective to adhere to the recommendations of the 'National Hazardous Waste Management Plan 2014-2020' and any subsequent plan, and to co-operate with other agencies, to plan, organise, authorise and supervise the disposal of hazardous waste streams, including hazardous waste identified during construction and demolition projects.

## **2.3 Legislative Requirements**

The primary legislative instruments that govern waste management in Ireland and applicable to the project are:

- Waste Management Act 1996 as amended. Sub-ordinate and associated legislation includes:
  - European Communities (Waste Directive) Regulations 2011 (S.I. No. 126 of 2011) as amended
  - Waste Management (Collection Permit) Regulations 2007 (S.I. No. 820 of 2007) as amended
  - Waste Management (Facility Permit and Registration) Regulation 2007 (S.I. No. 821 of 2007) as amended
  - Waste Management (Licensing) Regulations 2000 (S.I. No. 185 of 2000) as amended
  - European Union (Packaging) Regulations 2014 (S.I. No. 282 of 2014) as amended.
  - Waste Management (Planning) Regulations 1997 (S.I. No. 137 of 1997) as amended
  - Waste Management (Landfill Levy) Regulations 2015 (S.I. No. 189 of 2015)
  - European Communities (Waste Electrical and Electronic Equipment) Regulations 2014 as amended
  - Waste Management (Batteries and Accumulators) Regulations 2014 (S.I. No. 283 of 2014) as amended
  - Waste Management (Food Waste) Regulations 2009 (S.I. No. 508 of 2009) as amended
  - European Union (Household Food Waste and Bio-waste) Regulations 2015 (S.I. No. 430 of 2015)
  - Waste Management (Hazardous Waste) Regulations 1998 (S.I. No. 163 of 1998) as amended
  - Waste Management (Shipments of Waste) Regulations 2007 (S.I. No. 419 of 2007) as amended
  - *European Communities (Transfrontier Shipment of Waste) Regulations 1994 (SI 121 of 1994)*
  - European Union (Properties of Waste Which Render it Hazardous) Regulations 2015 (S.I. No. 233 of 2015) as amended
- Environmental Protection Act 1992 as amended;
- Litter Pollution Act 1997 as amended; and
- Planning and Development Act 2000 as amended <sup>14</sup>

These Acts and subordinate Regulations enable the transposition of relevant European Union Policy and Directives into Irish law.

One of the guiding principles of European waste legislation, which has in turn been incorporated into the *Waste Management Act 1996 - 2011* and subsequent Irish legislation, is the principle of “*Duty of Care*”. This implies that the waste producer is responsible for waste from the time it is generated through until its legal disposal



(including its method of disposal.) As it is not practical in most cases for the waste producer to physically transfer all waste from where it is produced to the final disposal area, waste contractors will be employed to physically transport waste to the final waste disposal site.

It is therefore imperative that the residents, commercial tenants and the proposed building management company(s) undertake on-site management of waste in accordance with all legal requirements and employ suitably permitted/licenced contractors to undertake off-site management of their waste in accordance with all legal requirements. This includes the requirement that a waste contractor handle, transport and reuse/recover/recycle/dispose of waste in a manner that ensures that no adverse environmental impacts occur as a result of any of these activities.

A collection permit to transport waste must be held by each waste contractor which is issued by the National Waste Collection Permit Office (NWCPO). Waste receiving facilities must also be appropriately permitted or licensed. Operators of such facilities cannot receive any waste, unless in possession of a Certificate of Registration (COR) or waste permit granted by the relevant Local Authority under the *Waste Management (Facility Permit & Registration) Regulations 2007* as amended or a waste or IE (Industrial Emissions) licence granted by the EPA. The COR/permit/licence held will specify the type and quantity of waste able to be received, stored, sorted, recycled, recovered and/or disposed of at the specified site.

### 2.3.1 Dún Laoghaire-Rathdown County Council Waste Bye-Laws

*The DLRCC "Dún Laoghaire-Rathdown County Council (Storage, Presentation and Segregation of Household and Commercial Waste) Bye-Laws (2019)"* were brought into force on the 1st of February 2020. These Bye-laws repeal the previous DLRCC waste Bye-laws. The Bye-laws set a number of enforceable requirements on waste holders with regard to storage, separation and presentation of waste within the DLRCC functional area. Key requirements under these Bye-laws of relevance to the proposed development include the following:

- Kerbside waste presented for collection shall not be presented for collection earlier than 6.00 pm on the day immediately preceding the designated waste collection day;
- All containers used for the presentation of kerbside waste and any uncollected waste shall be removed from any roadway, footway, footpath or any other public place no later than 10:00am on the day following the designated waste collection day, unless an alternative arrangement has been approved in accordance with bye-law 4;
- Documentation, including receipts, is obtained and retained for a period of no less than one year to provide proof that any waste removed from the premises has been managed in a manner that conforms to these bye-laws, to the Waste Management Act and, where such legislation is applicable to that person, to the European Union (Household Food Waste and Bio-Waste) Regulations 2015; and
- Adequate access and egress onto and from the premises by waste collection vehicles is maintained.

Provisions affecting Multi-user Buildings, Apartment Blocks, etc.

*A management company, or another person if there is no such company, who exercises control and supervision of residential and/or commercial activities in multi-unit developments, mixed-use developments, flats or apartment blocks, combined living/working spaces or other similar complexes shall ensure that:*

- a. *separate receptacles of adequate size and number are provided for the proper segregation, storage and collection of recyclable kerbside waste, residual kerbside waste and food waste,*
- b. *the receptacles referred to in paragraph (a) are located both within any individual apartment and at the place where waste is stored prior to its collection,*
- c. *any place where waste is to be stored prior to collection is secure, accessible at all times by tenants and other occupiers and is not accessible by any other person other than an authorised waste collector,*
- d. *written information is provided to each tenant or other occupier about the arrangements for waste separation, segregation, storage and presentation prior to collection,*
- e. *an authorised waste collector is engaged to service the receptacles referred to in this section of these bye-laws, with documentary evidence, such as receipts, statements or other proof of payment, demonstrating the existence of this engagement being retained for a period of no less than two years. Such evidence shall be presented to an authorised person within a time specified in a written request from either that person or from another authorised person employed by Dún Laoghaire-Rathdown County Council,*
- f. *receptacles for kerbside waste are presented for collection on the designated waste collection day,*
- g. *adequate access and egress onto and from the premises by waste collection vehicles is maintained.*

The full text of the Waste Bye-Laws is available from the DLRCC website.

The implementation of this Operational Waste Management Plan will ensure full compliance with the Waste Bye-Laws including all the provisions affecting apartment blocks listed above.

## **2.4 Local Authority Guidelines**

DLRCC's Waste Management Division have issued *Guidance Notes for Waste Management in Residential and Commercial Developments* (2020) which provide good practice guidance for the storage and collection of waste for new build high density developments. The guidelines include a form which is designed to be completed by (or on behalf of) the applicant for new high-density developments. The objective of the guidelines is to allow developers to demonstrate to local planning and waste management authorities that they have considered how the design and the operation of waste management services will enable the occupiers and managing agents to effectively manage their wastes arisings.

The ultimate goal of the guidelines is that the implemented waste strategy will achieve a 70% reuse and recovery target in accordance with the European Commission's proposal to introduce 70% reuse and recycling targets for municipal waste by 2030 and while also providing sufficient flexibility to support future targets and legislative requirements.

This OWMP has been prepared to demonstrate exactly that and aims to do that in a comprehensive manner.

The guidelines and form are available on the DLRCC website.

## **2.5 Regional Waste Management Service Providers and Facilities**

Various contractors offer waste collection services for the in the DLRCC region. Details of waste collection permits (granted, pending and withdrawn) for the region are available from the NWCPO.

As outlined in the regional waste management plan, there is a decreasing number of landfills available in the region. Only three municipal solid waste landfills remain operational and are all operated by the private sector. There are a number of other licensed and permitted facilities in operation in the region including waste transfer stations, hazardous waste facilities and integrated waste management facilities. There are two existing thermal treatment facilities, one in Duleek, Co. Meath and a second facility in Poolbeg in Dublin.

The closest bring centre to the development is located c. 1.5 km to the southwest at Eden Park Recycling Centre and there are bottle banks located a short distance away at Dunedin Park (c. 1 km).

A copy of all CORs and waste permits issued by the Local Authorities are available from the NWCPO website and all waste/IE licenses issued are available from the EPA.

### **3.0 DESCRIPTION OF THE PROJECT**

#### **3.1 Location, Size and Scale of the Development**

The proposed development at the former Ted Castles site and DunLeary House (a proposed Protected Structure), Old Dun Leary Road, Cumberland Street and Dun Leary Hill, Dun Laoghaire will consist of:

- The provision of 146 no. apartment units (Build to Rent) and all associated ancillary facilities (including residential amenities) in a building with an overall height ranging from 6 storeys (with set backs from 4th & 5th storey) addressing Dun Leary Hill, to 5 and 8 storeys (with set back from 7th storey) addressing Old Dun Leary Road and 6-7 storeys (with set backs at 8th storey) addressing Cumberland Street. The proposal provides for private and communal open spaces in the form of balconies and terraces throughout.
- A retail unit (c.290m<sup>2</sup>) at ground floor level addressing Old Dun Leary Road and Cumberland Street
- The refurbishment, partial removal and adaptation of a 4 storey building on site known as "DunLeary House" (a proposed Protected Structure) to provide co-working office suites (c.247m<sup>2</sup>) at Levels 01,02 and 03. The works will include partial removal of original walls and floors, removal of non original extensions to DunLeary House, repointing and repair of brickwork and granite fabric, reinstatement of timber sash windows, removal of existing roof, removal; alteration and reinstatement of internal floor layouts, reinstatement of entrance point on DunLeary Hill, removal of non original level 00 and linking the existing building to the new development from level 00 to level 03 with the construction of 3 new floors of development (with set back at roof level) above the existing building. It is proposed to repair, reinstate and improve the existing boundary treatment to DunLeary House.
- Provision of 52 no. car parking spaces in total - 44 no. car parking spaces provided at level 00. At Cumberland Street 11 no. existing on street car parking spaces will be removed and 8 no. on street car parking spaces provided. Provision of 277 bicycle parking spaces (94 no. cycle parking spaces accommodated in bicycle stands and 183 no. long term bicycle parking spaces within a secure storage area) and 4 no. motorbike parking spaces, all at Level 00. A new vehicular entrance/cycle path (off the Old Dun Leary Road), ancillary plant areas, ESB substation and storage areas.

- Extensive hard and soft landscaping throughout, green roof, public lighting, signage, boundary treatments and public realm improvements.
- The demolition of the existing open fronted shed on site and all associated ancillary site services and site development works.

### 3.2 Typical Waste Categories

The typical non-hazardous and hazardous wastes that will be generated at the proposed development will include the following:

- Dry Mixed Recyclables (DMR) - includes waste paper (including newspapers, magazines, brochures, catalogues, leaflets), cardboard and plastic packaging, metal cans, plastic bottles, aluminium cans, tins and Tetra Pak cartons;
- Organic waste – food waste and green waste generated from plants/flowers;
- Glass; and
- Mixed Non-Recyclable (MNR)/General Waste.

In addition to the typical waste materials that will be generated at the development on a daily basis, there will be some additional waste types generated in small quantities which will need to be managed separately including:

- Green/garden waste may be generated from gardens, internal plants and external landscaping;
- Batteries (both hazardous and non-hazardous);
- Waste electrical and electronic equipment (WEEE) (both hazardous and non-hazardous);
- Printer cartridges/toners;
- Chemicals (paints, adhesives, resins, detergents, etc.);
- Light bulbs;
- Textiles (rags);
- Waste cooking oil (if any generated by the residents or the commercial tenants);
- Furniture (and from time to time other bulky wastes) and;
- Abandoned bicycles.

Wastes should be segregated into the above waste types to ensure compliance with waste legislation and guidance while maximising the re-use, recycling and recovery of waste with diversion from landfill wherever possible.

### 3.3 European Waste Codes

In 1994, the *European Waste Catalogue* <sup>15</sup> and *Hazardous Waste List* <sup>16</sup> were published by the European Commission. In 2002, the EPA published a document titled the *European Waste Catalogue and Hazardous Waste List* <sup>17</sup>, which was a condensed version of the original two documents and their subsequent amendments. This document has recently been replaced by the EPA '*Waste Classification – List of Waste & Determining if Waste is Hazardous or Non-Hazardous*' <sup>18</sup> which became valid from the 1st June 2015. This waste classification system applies across the EU and is the basis for all national and international waste reporting, such as those associated with waste collection permits, COR's, permits and licences and EPA National Waste Database.

Under the classification system, different types of wastes are fully defined by a code. The List of Waste (LoW) code (also referred to as European Waste Code or EWC) for typical waste materials expected to be generated during the operation of the proposed development are provided in Table 3.1 below.

**Table 3.1** Typical Waste Types Generated and LoW Codes

Waste Material	LoW/EWC Code
Paper and Cardboard	20 01 01
Plastics	20 01 39
Metals	20 01 40
Mixed Non-Recyclable Waste	20 03 01
Glass	20 01 02
Biodegradable Kitchen Waste	20 01 08
Oils and Fats	20 01 25
Textiles	20 01 11
Batteries and Accumulators *	20 01 33* - 34
Printer Toner/Cartridges*	20 01 27* - 28
Green Waste	20 02 01
WEEE *	20 01 35*-36
Chemicals (solvents, pesticides, paints & adhesives, detergents, etc.) *	20 01 13*/19*/27*/28/29*30
Fluorescent tubes and other mercury containing waste *	20 01 21*
Bulky Wastes	20 03 07

\* Individual waste type may contain hazardous materials

#### 4.0 ESTIMATED WASTE ARISING

A waste generation model (WGM) developed by AWN, has been used to predict waste types, weights and volumes arising from operations within the proposed development. The WGM incorporates building area and use and combines these with other data including Irish and US EPA <sup>19</sup> waste generation rates.

Waste estimates for the residential apartments are based upon the predicated occupancy rates. While the retail/commercial waste generation estimates are based on floor area.

The estimated waste generation for the residential units and commercial unit for the main waste types are presented in Tables 4.1 and is based on the Schedule of Areas issued by the project architects (November 2021).

**Table 4.1** Estimated waste generation by unit type for the proposed development

Waste Type	m <sup>3</sup> per week		
	Residential Units	Retail Unit	Co-Working Unit
Organic Waste	2.07	0.41	0.02
DMR	14.12	0.97	0.45
Glass	0.40	1.26	>0.01
MNR	8.21	>0.01	0.24
Confidential Paper	-	-	0.20
<b>Total</b>	<b>24.80</b>	<b>2.65</b>	<b>0.91</b>

The DLR Pre-Planning Waste Management Form recommends calculating residential waste using Section 4.7 of *BS5906:2005 Waste Management in Buildings – Code of Practice* <sup>20</sup>. The predicted total waste generated from the residential units based on the Code of Practice is c. 18.34m<sup>3</sup> per week. Whereas the AWN waste generation model estimates c. 24.80m<sup>3</sup> per week from the residential units. AWN's modelling methodology is based on data from recent published data and data from numerous other similar developments in Ireland and based on AWN's experience it is a more representative estimate of the likely waste arising from the development.

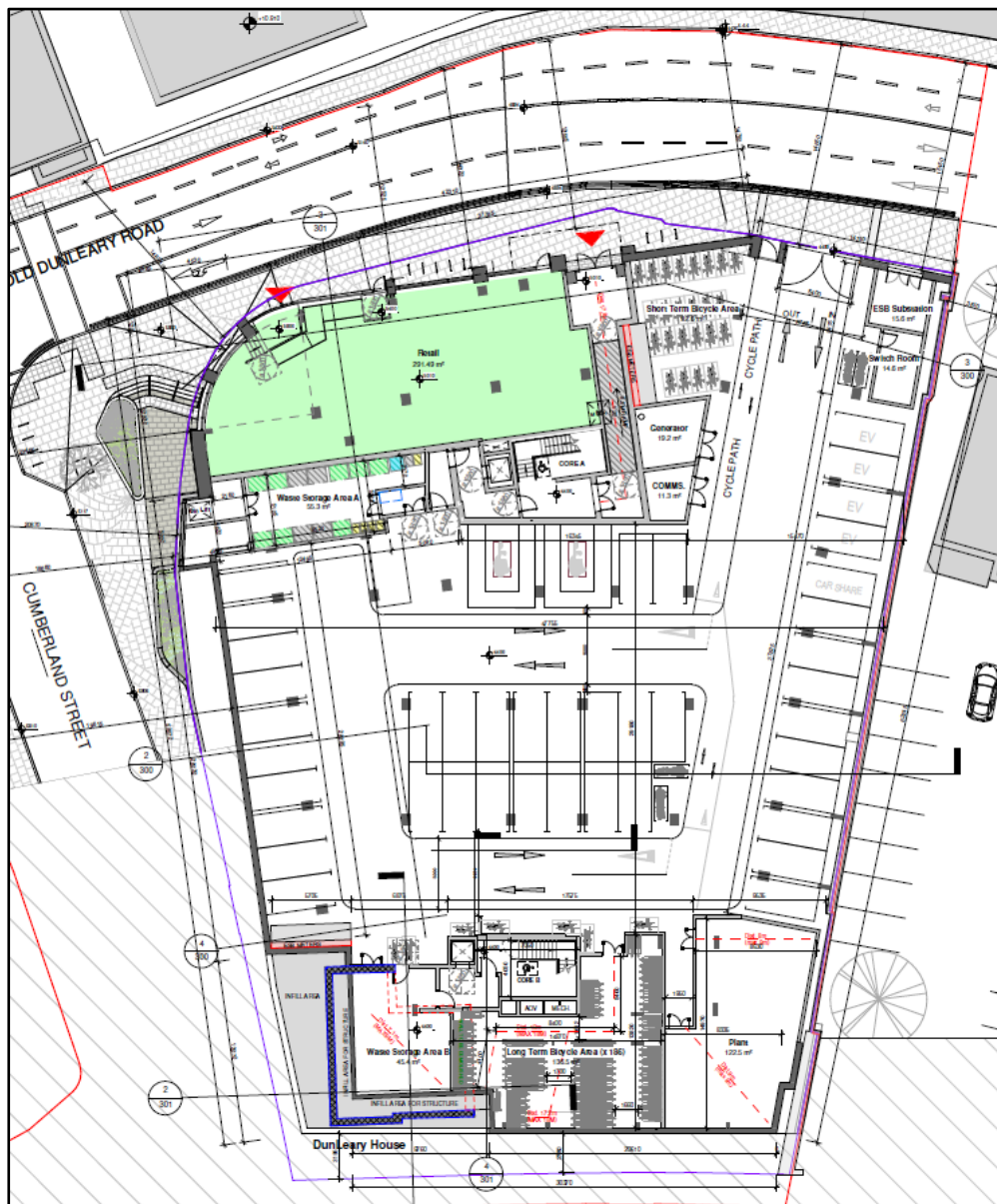
## 5.0 WASTE STORAGE AND COLLECTION

This section provides information on how waste generated within the development will be stored and how the waste will be collected from the development. This has been prepared with due consideration of the proposed site layout as well as best practice standards, local and national waste management requirements including those of DLRCC. In particular, consideration has been given to the following documents:

- BS 5906:2005 Waste Management in Buildings – Code of Practice;
- DLRCC Guidance Notes for Waste Management in Large Residential and Commercial Developments (2020);
- *DLRCC (Storage, Presentation and Segregation of Household and Commercial Waste) Bye-Laws' (2019)*;
- EMR Waste Management Plan 2015 – 2021; and
- DoHLGH, Sustainable Urban Housing: Design Standards for New Apartments, Guidelines for Planning Authorities (Section 4.8-4.9) (2020) <sup>21</sup>.

Two dedicated waste storage areas (WSAs) have been allocated at Level 00G, in the carpark, for use by the residents. The commercial tenants will be required to allocate space within their own units for the storage of waste. On collection days, bins will be transported via a waste lift to the roadside for collection for the residential units while commercial tenants will take their bins via the external path to Cumberland Street for collection. Once collected, the bins will be returned to the WSAs via the waste lift or external path. Figure 5.1 shows the plan of Level 00G the proposed development and the location of the WSAs.

*Facilities management will supply all tenants with a document that shall clearly state the methods of source waste segregation, storage, reuse and recycling initiatives that shall apply within the development.*



**Figure 5.1** Plan of Level 00G the proposed development and the location of the WSAs

Using the estimated waste generation volumes in Table 4.1, the waste receptacle requirements for MNR, DMR, organic waste and glass have been established for the development and can be viewed in Table 5.1 below.

**Table 5.1** Waste storage requirements for the proposed development

Area/Use	Bins Required			
	MNR <sup>1</sup>	DMR <sup>2</sup>	Organic	Glass
Residential Waste Requirements (Weekly)	8 x 1100L	13 x 1100L	9 x 240L	2 x 240L
Retail Unit Waste Requirements (Weekly)	1 x 1100L	1 x 1100L 1 x 240L	2 x 240L	1 x 120L
Co-Working Unit Waste Requirements (Weekly)	1 x 240L	2 x 240L	1 x 120L	1 x 120L

Note: <sup>1</sup> = Mixed Non-Recyclables

<sup>2</sup> = Dry Mixed Recyclables

The waste receptacle requirements have been established from distribution of the total weekly waste generation estimate into the holding capacity of each receptacle type.

Waste storage receptacles as per Table 5.1 above (or similar appropriate approved containers) will be provided by the building management company in the WSAs.

The types of bins used will vary in size, design and colour dependent on the appointed waste contractor. However, examples of typical receptacles to be provided in the WSAs are shown in Figure 5.2. All waste receptacles used will comply with the IS EN 840 2012 standard for performance requirements of mobile waste containers, where appropriate.



**Figure 5.2** Typical waste receptacles of varying size (240L and 1100L)

## 5.1 Waste Storage – Residential Units

Residents will be required to segregate waste within their own units into the following main waste streams:

- DMR;
- Glass;
- Organic waste; and
- MNR.

As required, the residents will need to bring these segregated waste materials from their apartments/unit via the lifts to the dedicated waste storage areas located on ground level 00. The residential units will share 2 centralised WSAs that are located on the north-western and southern sides of the ground level carpark.



Space will be provided within residential units to accommodate 3 no. bins to facilitate waste segregation.

Residential units will be designed to include for sufficient space for the storage of general domestic waste, green recyclable waste, and organic waste. These temporary individual waste storage bins shall be sized to allow for easy manual handling, to be brought to the designated waste storage areas for apartments.

All bins/containers will be clearly labelled (with images and words) and colour coded to avoid cross contamination of the different waste streams. Signage will be posted on or above the bins to show which wastes can be put in each receptacle.

Residents will be informed by the management company where they are required to deposit their waste and fobs/keys for access to their dedicated storage areas will be provided along with a waste management document/strategy for the development.

Access to the WSAs will be restricted to residents, building management and waste contractors by means of a key or electronic fob access.

Other waste materials such as batteries and WEEE will be generated less frequently. Space will have to be allowed for in the tenant's unit for storage of these waste types as required. Other waste types will be collected on an as required basis. Collection will be arranged by facilities management.

It is anticipated that DMR, MNR, glass and organic bins will be collected on a weekly basis.

## **5.2 Waste Storage – Retail Unit**

The tenants will be required to segregate waste within their unit, into the following main waste types:

- DMR;
- MNR;
- Organic waste; and
- Glass.

Tenants will be required to allocate space within their own unit for the storage of waste.

Suppliers for the tenants should be requested by the tenants to make deliveries in reusable containers, minimize packaging or to remove any packaging after delivery where possible, to reduce waste generated by the development.

If any kitchens/food preparation areas are allocated in unit areas, this will contribute a significant portion of the volume of waste generated on a daily basis, and as such it is important that adequate provision is made for the storage and transfer of waste from these areas to the WSAs.

If kitchens are required it is anticipated that waste will be generated in kitchens throughout the day, primarily at the following locations:

- Food Storage Areas (i.e. cold stores, dry store, freezer stores and stores for decanting of deliveries);
- Meat Preparation Area;
- Vegetable Preparation Area;
- Cooking Area;

Small bins will be placed adjacent to each of these areas for temporary storage of waste generated during the day. Waste will then be transferred from each of these areas to the units internal WSA.

All bins/containers in the tenant's areas as well as in the WSAs will be clearly labelled and colour coded to avoid cross contamination of the different waste streams. Signage will be posted above or on the bins to show exactly which wastes can be put in each.

Based on the recommended bin requirements in Table 5.1, DMR, MNR and organic bins will be collected on a weekly basis and the glass bin will be collected fortnightly or as required.

Other waste materials such as textiles, batteries, cooking oil, printer toner/cartridges and WEEE will be generated less frequently. Space will have to be allowed for in the tenant's unit for storage of these waste types as required. Other waste types will be collected on an as required basis. Collection may be arranged by building management or the tenant depending on the agreement. Further details on additional waste types can be found in Section 5.5.

### **5.3 Waste Storage – Office**

The office tenant(s) will segregate waste into the following main waste streams:

- DMR;
- MNR;
- Organic waste;
- Glass; and
- Confidential Paper

The office unit(s) may be occupied by a single tenant or multiple tenants. It is recommended that the office tenants implement the 'binless office' concept where employees do not have bins located under desks and instead bring their waste to Area Waste Stations (AWSs) located strategically on the office floors, at print stations/rooms and at any canteens, micro kitchens or tea stations which may be provided within the tenant's office space. Experience has shown that the maximum travel distance should be no more than 15m from the employee's desk to the AWS. This 'best in class' concept achieves maximum segregation of waste in an office setting.

Typically, an AWS would include a bin for DMR and a bin for MNR. It is recommended that a confidential paper bin with a locked lid/door should also be provided for at each AWS and/or adjacent to photocopy/printing stations, as required. In addition, it is recommended that organic and glass bins should be provided at any canteens or micro kitchens or tea stations, where appropriate.

A printer cartridge/toner bin should be provided at the print/copy stations, where appropriate.

All bins/containers will be clearly labelled and colour coded to avoid cross contamination of the different waste streams. Signage should be posted on or above the bins to show which wastes can be put in each bin.

The binless office concept, in addition to assisting in maximising recycling rates and minimising associated landfill disposal costs, also has the advantage of substantially reducing cleaning costs, as cleaners visit only the AWSs on each floor, as opposed to each desk.

Suppliers for the tenants should be requested by the tenants to make deliveries in reusable containers, minimize packaging and/or to remove any packaging after delivery where possible, to reduce waste generated by the development.

Personnel nominated by the office tenants will empty the bins in the AWSs, as required, and bring the segregated waste using trolleys/carts/bins via lifts to the internal WSA located on ground level.

It is proposed that confidential paper waste will be managed separately to non-confidential paper waste. Tenants will be required to engage with an appropriately permitted/licenced confidential waste management contractor for collection and shredding of confidential paper. It is anticipated that tenants will place locked confidential waste paper bins as required throughout their office areas. The confidential waste company will typically collect bins directly from the office areas, under agreement with the tenant, and bring the locked bin or bags of confidential waste via the lifts to their collection truck. It is envisaged that confidential paper waste will be shredded on-site in the dedicated collection truck or brought to an authorised facility for offsite shredding.

Based on the recommended bin requirements in Table 5.1, DMR, MNR and organic bins will be collected on a weekly basis and the glass bin will be collected fortnightly or as required.

Other waste materials such as textiles, batteries, cooking oil, printer toner/cartridges and WEEE will be generated less frequently. Space will have to be allowed for in the tenant's unit for storage of these waste types as required. Other waste types will be collected on an as required basis. Collection may be arranged by building management or the tenant depending on the agreement. Further details on additional waste types can be found in Section 5.5.

#### **5.4 Waste Collection**

There are numerous private contractors that provide waste collection services in the DLRCC area. All waste contractors servicing the proposed development must hold a valid waste collection permit for the specific waste types collected. All waste collected must be transported to registered/permitted/licensed facilities only.

Waste from the residential WSAs will be taken via the waste lift located in the eastern waste room to Cumberland Street for collection. The building management company in conjunction with the waste contractor will be responsible for conveying the bins to the collection point depending on the agreement. The commercial tenants will take waste directly from their internal unit WSAs to the same collection point on Cumberland Street. All waste receptacles will be returned promptly to their appropriate WSAs after emptying

Residents and commercial tenants should be made aware of the waste collection arrangements and all waste receptacles must be clearly identified as required by waste legislation and the requirements of the DLRCC *Waste Bye-Laws and Draft Waste Bye-Laws*. Waste will be presented for collection in a manner that will not endanger health, create a risk to traffic, harm the environment or create a nuisance through odours or litter.

#### **5.5 Additional Waste Materials**

In addition to the typical waste materials that are generated on a daily basis, there will be some additional waste types generated from time to time that will need to be managed separately. A non-exhaustive list is presented below.

### Green/garden waste

Green/garden waste may be generated from external landscaping and internal plants/flowers. Green/garden waste generated from landscaping of external areas will be removed by the external landscape contractor. Green waste generated from internal plants/flowers can be placed in the organic waste bins in the WSAs.

### Batteries

A take-back service for waste batteries and accumulators (e.g. rechargeable batteries) is in place in order to comply with the *European Union (Batteries and Accumulators) Regulations 2014*. A system for the free take-back of waste batteries from the household waste stream is well established through retail outlets and recycling centres. Alternatively, residents can bring batteries to recycling centres. The commercial tenants can make use of the take back system or will temporarily store batteries within their units and arrange for collection by an authorised waste contractor.

### Waste Electrical and Electronic Equipment (WEEE)

The *WEEE Directive 2002/96/EC* and associated *European Union (WEEE) Regulations 2014* have been enacted to ensure a high level of recycling of electronic and electrical equipment. It is the manufacturers' responsibility to take back the WEEE, regardless of whether a replacement product is purchased or not and retailers are required to take back WEEE where a similar product is purchased. Residents can use the one-for-one return scheme at any EEE retailer or bring WEEE waste to their local recycling centre. The commercial tenants can make use of the take back system or will be required to temporarily store WEEE within their unit and arrange for collection by an authorised waste contractor.

### Printer Cartridge/Toners

Waste printer cartridge/toners generated by residents can usually be returned to the supplier free of charge.

### Chemicals (solvents, pesticides, paints, adhesives, resins, detergents, etc)

Waste chemicals (such as solvents, pesticides, paints, etc) are largely generated from building maintenance works. Such works are usually completed by external contractors who are responsible for the off-site removal and appropriate recovery/recycling/disposal of any waste materials generated.

Any waste cleaning products or waste packaging from cleaning products that are classed as hazardous (if they arise) generated by the residents should be brought to a recycling centre.

The commercial tenants will be required to temporarily store waste chemicals within their unit and arrange for collection by an authorised waste contractor.

### Light Bulbs

Waste light bulbs will be generated by external electrical/maintenance contractors servicing the public areas of the development. Where waste light bulbs are generated, it is anticipated that maintenance contractors will be responsible for the off-site removal and appropriate recovery/disposal of these wastes.

Light bulbs generated by residents should be taken to the nearest recycling centre for appropriate storage and recovery/disposal. The commercial tenants will be required to temporarily store lightbulbs within their unit and arrange for collection by an authorised waste contractor.

### Textiles

Where possible, waste textiles should be recycled or donated to a charity organisation for reuse. Recycling centres provide for collection of waste clothes and other textiles.

### Waste Cooking Oil

If the residents generated waste cooking oil, this can be brought to a recycling centre or placed in the organic waste bin. If the commercial tenants are to produce any waste oil they will need to arrange for collection by a suitably licensed waste contractor.

### Furniture (and other bulky wastes)

Furniture and other bulky waste items (such as carpet etc.) may occasionally be generated by the residents. If residents wish to dispose of furniture, this can be brought to a recycling centre. The collection of bulky waste from the commercial units will be arranged with a suitable waste contractor as required.

### Abandoned Bicycles

Bicycle parking areas are planned for the development. As happens in other developments, tenants sometimes abandon faulty or unused bicycles and it can be difficult to determine their ownership. Abandoned bicycles should be donated to charity if they arise.

### Covid-19 Waste

Any waste generated by residents/tenants/staff that have tested positive for Covid-19 should be managed in accordance with the current Covid-19 HSE Guidelines at the time that that waste arises. At the time this report was prepared, the HSE Guidelines require the following procedure for any waste from a person that tests positive for Covid-19:

- Put all waste (gloves, tissues, wipes, masks) from that person in a bin bag and tie when almost full;
- Put this bin bag into a second bin bag and tie a knot;
- Store this bag safely for 3 days, then put the bag into the non-recyclable waste/general waste wheelie bin for collection/emptying.

## **5.6 Waste Storage Area Design**

The WSAs should be designed and fitted-out to meet the requirements of relevant design Standards, including:

- Waste Storage areas should not present any safety risks to users;
- Be fitted with a non-slip floor surface;
- Provide ventilation to reduce the potential for generation of odours;
- Provide suitable lighting – a minimum Lux rating of 220 is recommended;
- Appropriate sensor controlled lighting;
- Be easily accessible for people with limited mobility;
- Be restricted to access by nominated personnel only;
- Be supplied with hot or cold water for disinfection and washing of bins;
- Have access to suitable power supply for power washers, if required;
- Have a sloped floor to a central foul drain for bins washing run-off;
- Have appropriate graphical and written signage placed above and on bins indicating correct use;
- Have access for potential control of vermin, if required;
- Robust design of doors to bin area incorporating steel sheet covering where appropriate; and
- Be monitored by CCTV.

The building management company, residents and tenants will be required to maintain WSAs and the bins used in good condition in accordance with the requirements of the DLRCC *Waste Bye-Laws*.

## 5.7 Facility Management Responsibilities

It shall be the responsibility of the the facilities management company to ensure that all domestic waste generated by residents is managed to ensure correct storage prior to collection by an appropriately permitted waste management company.

The facilities management company should provide the following items in accordance with the DLRCC *Guidance Notes for Waste Management in Residential & Commercial Developments*:

- Provision of a Waste Management Plan document, prepared by the Facilities Management Company to all residential units, which shall clearly state the methods of source waste segregation, storage, reuse and recycling initiatives that shall apply to the management of the development;
- Provision and maintenance of appropriate graphical signage to inform residents of their obligation to reduce waste, segregate waste and in the correct bin;
- Preparation of an annual waste management report for all residential units;
- Designation of access routes to common waste storage areas to ensure safe access from the units by mobility impaired persons;
- Provision of an appropriately qualified and experienced staff member, who will be responsible for all aspects of waste management at the development;
- Daily inspection of waste storage areas and signing of a daily check list, which shall be displayed within the area; and
- Maintenance of a weekly register, detailing the quantities and breakdown of wastes collected from the development and provision of supporting documentation by the waste collector to allow tracking of waste recycling rates.

## 6.0 CONCLUSIONS

In summary, this OWMP presents a waste strategy that complies with all legal requirements, waste policies and best practice guidelines and demonstrates that the required storage areas have been incorporated into the design of the development.

Implementation of this OWMP will ensure a high level of recycling, reuse and recovery at the development. All recyclable materials will be segregated at source to reduce waste contractor costs and ensure maximum diversion of materials from landfill, thus achieving the targets set out in the *EMR Waste Management Plan 2015 – 2021*.

Adherence to this plan will also ensure that waste management at the development is carried out in accordance with the requirements outlined in the DLRCC *Guidance Notes for Waste Management in Residential & Commercial Developments* and the *DLRCC Waste Bye-Laws*.

The waste strategy presented in this document will provide sufficient storage capacity for the estimated quantity of segregated waste. The designated area for waste storage will provide sufficient room for the required receptacles in accordance with the details of this strategy.

## 7.0 REFERENCES

1. Waste Management Act 1996. Sub-ordinate and associated legislation includes:
  - European Communities (Waste Directive) Regulations 2011 (S.I. No. 126 of 2011) as amended
  - Waste Management (Collection Permit) Regulations 2007 (S.I. No. 820 of 2007) as amended
  - Waste Management (Facility Permit and Registration) Regulations 2007 (S.I. No. 821 of 2007) as amended
  - Waste Management (Licensing) Regulations 2000 (S.I. No. 185 of 2000) as amended
  - European Union (Packaging) Regulations 2014 (S.I. No. 282 of 2014)
  - Waste Management (Planning) Regulations 1997 (S.I. No. 137 of 1997)
  - Waste Management (Landfill Levy) Regulations 2015 (S.I. No. 189 of 2015)
  - European Communities (Waste Electrical and Electronic Equipment) Regulations 2014 as amended
  - Waste Management (Batteries and Accumulators) Regulations 2014 (S.I. No. 283 of 2014) as amended
  - Waste Management (Food Waste) Regulations 2009 (S.I. No. 508 of 2009) as amended 2015 (S.I. No. 190 of 2015)
  - European Union (Household Food Waste and Bio-waste) Regulations 2015 (S.I. No. 430 of 2015)
  - Waste Management (Hazardous Waste) Regulations 1998 (S.I. No. 163 of 1998) as amended 2000 (S.I. No. 73 of 2000)
  - Waste Management (Shipments of Waste) Regulations 2007 (S.I. No. 419 of 2007) as amended
  - *European Communities (Transfrontier Shipment of Waste) Regulations 1994 (SI 121 of 1994)*
  - European Union (Properties of Waste which Render it Hazardous) Regulations 2015 (S.I. No. 233 of 2015) as amended.
2. Environmental Protection Act 1992 (Act No. 7 of 1992) as amended;
3. Litter Pollution Act 1997 (Act No. 12 of 1997) as amended;
4. Eastern-Midlands Waste Region, *Eastern-Midlands Region (EMR) Waste Management Plan 2015 – 2021* (2015)
5. Dún Laoghaire Rathdown County Council (DLRCC), Dún Laoghaire Rathdown County Council Segregation, Storage and Presentation of Household and Commercial Waste) Bye-laws (2019).
6. DLRCC, Guidance Notes for Waste Management in Residential & Commercial Developments (2020)
7. Department of Environment and Local Government (DoELG) *Waste Management – Changing Our Ways, A Policy Statement* (1998)
8. Department of Environment, Heritage and Local Government (DoEHLG) *Preventing and Recycling Waste - Delivering Change* (2002)
9. DoELG, *Making Ireland's Development Sustainable – Review, Assessment and Future Action (World Summit on Sustainable Development)* (2002)
10. DoEHLG, *Taking Stock and Moving Forward* (2004)
11. Department of Communications, Climate Action and Environment (DCCA), *Waste Action Plan for the Circular Economy - Ireland's National Waste Policy 2020-2025* (Sept 2020).
12. Environmental Protection Agency (EPA), *National Waste Database Reports 1998 – 2012*.
13. DLRCC, *Dún Laoghaire Rathdown County Council Development Plan 2016 – 2022*.
14. Planning and Development Act 2000 (S.I. No. 30 of 2000) as amended 2010 (S.I. No. 30 of 2010) and 2015 (S.I. No. 310 of 2015).
15. European Waste Catalogue - Council Decision 94/3/EC (as per Council Directive 75/442/EC).

16. Hazardous Waste List - Council Decision 94/904/EC (as per Council Directive 91/689/EEC).
17. EPA, *European Waste Catalogue and Hazardous Waste List* (2002)
18. EPA, *Waste Classification – List of Waste & Determining if Waste is Hazardous or Non-Hazardous* (2015)
19. BS 5906:2005 Waste Management in Buildings – Code of Practice.
20. DoHLGH, Sustainable Urban Housing: Design Standards for New Apartments, Guidelines for Planning Authorities (2020).