

**OPERATIONAL WASTE
MANAGEMENT PLAN FOR
A STUDENT
ACCOMMODATION
DEVELOPMENT**

AT

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| CONTENTS | | Page |
|-----------------|--|-------------|
| 1.0 | INTRODUCTION | 4 |
| 2.0 | OVERVIEW OF WASTE MANAGEMENT IN IRELAND | 4 |
| 2.1 | National Level | 4 |
| 2.2 | Regional Level | 5 |
| 2.3 | Legislative Requirements | 7 |
| 2.3.1 | Dún Laoghaire-Rathdown County Council Waste Bye-Laws | 8 |
| 2.4 | Local Authority Guidelines | 9 |
| 2.5 | Regional Waste Management Service Providers and Facilities | 9 |
| 3.0 | DESCRIPTION OF THE PROJECT | 10 |
| 3.1 | Location, Size and Scale of the Development | 10 |
| 3.2 | Typical Waste Categories | 10 |
| 3.3 | European Waste Codes | 11 |
| 4.0 | ESTIMATED WASTE ARISING | 11 |
| 5.0 | WASTE STORAGE AND COLLECTION | 12 |
| 5.1 | Waste Storage – Student Accommodation | 13 |
| 5.2 | Waste Collection | 14 |
| 5.3 | Additional Waste Materials | 14 |
| 5.4 | Waste Storage Area Design | 15 |
| 5.5 | Facility Management Responsibilities | 16 |
| 6.0 | CONCLUSIONS | 16 |
| 7.0 | REFERENCES | 18 |

1.0 INTRODUCTION

AWN Consulting Ltd. (AWN) has prepared this Operational Waste Management Plan (OWMP) on behalf of Colbeam Limited, for a proposed student development on a site located on lands at Our Lady's Grove, Goatstown Road, Goatstown, Dublin 14. The proposed development will consist of the partial demolition of a dilapidated afterschool building and the construction of a student accommodation buildings, amenity space, hard and soft landscaping along with resident amenities.

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 ¹, *Protection of the Environment Act 2003* as amended ², *Litter Pollution Act 2003* as amended ³, the '*Eastern-Midlands Region (EMR) Waste Management Plan 2015– 2021*' ⁴, *The Dún Laoghaire Rathdown County Council (Segregation, Storage and Presentation of Household and Commercial) Bye-Laws 2019* ⁵ and the *Guidance Notes for Waste Management Residential and Commercial Developments (2020)* ⁶. 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*' ⁷ 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 ⁸. 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*' ⁹. 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*' ¹⁰. 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 government released a new 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'¹¹ 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. This plan replaces the previous Irish waste management plan "A Resource Opportunity".

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 (Single Use Plastics Directive). 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.

Since 1998, the Environmental Protection Agency (EPA) has produced periodic 'National Waste (Database) Reports'¹² 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 five percent increase since 2017. This means that each person living in Ireland generated 600kg 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 2018;
- **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, this is an increase from 77% in 2018;
- **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 2018; and
- **Disposed** – Less than a quarter (15%) of municipal waste was landfilled in 2018, this is a decrease from 23% in 2018.

2.2 Regional Level

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

The *EMR Waste Management Plan 2015 – 2021* is the regional waste management plan for the DL RCC area which was published in May 2015.

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*¹³ 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).

In addition, Planning Scheme Objective PD15 states *“To promote the strategic design and location of bin-stores, service boxes and similar ancillary provision, including meter boxes, into the curtilage of developments or as positive design features that enhance the local streetscape and do not register as visual clutter”*.

2.3 Legislative Requirements

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

- Waste Management Act 1996 (No. 10 of 1996) as amended 2001 (No. 36 of 2001), 2003 (No. 27 of 2003) and 2011 (No 20 of 2011). Sub-ordinate and associated legislation 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 (S.I. No. 149 of 2014)
 - 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 (S.I. No. 7 of 1992) as amended;
- Litter Pollution Act 1997 (Act No. 12 of 1997) as amended and
- Planning and Development Act 2000 (S.I. No. 30 of 2000) as amended ¹⁴

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 and the student/facility management company 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.

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 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.

There is a bring bank near the development in the Goat Grill Pub carpark on Kilmacud Road, Goatstown, which accepts glass and cans. The closet recycling centre to the

site is the Ballyogan Recycling Park c. 5km to the southwest which can take a wide range of household wastes (including glass bottles and jars, textiles, batteries, electronic and electrical waste, light bulbs, green garden waste, waste oil, kitchen appliances, aerosols, print cartridges, bulky items, wood, household hazardous waste).

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 development will principally consist of: the construction of a Student Accommodation development containing 698 No. bedspaces with associated facilities located in 8 No. blocks, which range in height from part 3 No. storeys to part 6 No. storeys over part lower ground floor level (7 No. storeys as viewed from an internal courtyard). Some 679 No. bedspaces are provided in 99 No. clusters ranging in size from 5 No. bedspaces to 8 No. bedspaces, each with a communal Living/Kitchen/Dining room. The remaining 19 No. bedspaces are accessible studios. The includes the provision of communal residential amenity space at lower ground floor level (349 sq m) including the provision of a movie room (108 sq m), a music room (42 sq m) and a laundry (37 sq m); communal residential amenity space (1,356 sq m) at ground floor level including the provision of a gym (228 sq m), reception desk and seating area (173 sq m), a common room (338 sq m), a study space (104 sq m), a library (64 sq m), a yoga studio (74 sq m), a prayer room (33 sq m) and group dining (33 sq m).

The development also includes staff and administrative facilities (195 sq m); 9 No. car parking spaces; 4 No. motorcycle parking spaces; 860 No. cycle parking spaces; refuse stores; signage; an ESB substation and switchroom; boundary treatments; green roofs; PV panels; hard and soft landscaping; plant; lighting; and all other associated site works above and below ground. The development includes the demolition of part of the Goatstown Afterschool building (558 sq m) and the construction of a new external wall to the remaining ope, in addition to the demolition of a prefabricated structure adjacent to the Afterschool building (161 sq m).

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 wastepaper (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 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);
- 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* ¹⁶ and *Hazardous Waste List* ¹⁷ were published by the European Commission. In 2002, the EPA published a document titled the *European Waste Catalogue and Hazardous Waste List* ¹⁸, 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' ¹⁹ 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, CORs, 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.

| 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 |
| Bulky Wastes | 20 03 07 |

* Individual waste type may contain hazardous materials

Table 3.1 Typical Waste Types Generated and LoW Codes

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 waste generation rates.

The estimated quantum/volume of waste that will be generated from the student accommodation has been determined based on the predicted occupancy of the units.

The estimated waste generation for the development for the main waste types is presented in Table 4.1.

| Waste type | Waste Volume (m ³ /week) |
|---------------|-------------------------------------|
| Organic Waste | 3.80 |
| DMR | 26.01 |
| Glass | 0.74 |
| MNR | 15.12 |
| Total | 45.68 |

Table 4.1 Estimated waste generation for the proposed development for the main waste types

It has been assumed that the student accommodation areas will generate similar waste volumes over a seven-day period. This is considered to be a 'worst case' scenario as the student accommodation areas may not always be fully occupied on weekends. Additionally, it is considered that waste generation quantities per person for students would typically be less than domestic dwellings.

The DLR *Guidance Notes for Waste Management in Residential and Commercial Developments* recommends calculating residential waste using Section 4.7 of the guidance document *BS5906:2005 Waste Management in Buildings – Code of Practice*²⁰, however these guidelines do not accommodate for student developments. 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 arisings 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, Segregation, Storage and Presentation of Household and Commercial Waste) Bye-laws (2020);
- EMR Waste Management Plan 2015 – 2021; and
- DoEHLG, Sustainable Urban Housing: Design Standards for New Apartments, Guidelines for Planning Authorities (Section 4.8-4.9) (2018)²¹.

Two dedicated communal Waste Storage Areas (WSA) have been allocated within the development design for the student accommodation. The main WSA is located on ground level, adjacent to the carpark, while the second WSA is located on the northern side of the development at lower ground level. The WSAs can be viewed on the drawings submitted with the planning application.

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 WSA. These are presented in Table 5.1.

| Area/Use | Bins Required | | | |
|-----------------------|---------------|------------|-----------|----------|
| | MNR* | DMR** | Organic | Glass |
| Student Accommodation | 14 x 1100L | 23 x 1100L | 16 x 240L | 4 x 120L |

Note: * = Mixed Non-Recyclables

** = Dry Mixed Recyclables

Table 5.1 Waste storage requirements for the proposed development

The waste receptacle requirements have been established from distribution of the total weekly waste generation estimate into the holding capacity of each receptacle type. Additional allowance has been provided for glass storage in the student accommodation WSA to account for student specific lifestyles.

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

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 WSA are shown in Figure 5.1. All waste receptacles used will comply with the IS EN 840 2012 standard for performance requirements of mobile waste containers, where appropriate.



Figure 5.1 Typical waste receptacles of varying size (240L and 1100L)

5.1 Waste Storage – Student Accommodation

Students in the accommodation will be required to segregate waste into the following main waste streams:

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

Segregated bins for DMR, MNR, organic waste and glass will be provided within the kitchens of the student cluster units by the building management company. Additional bins for segregation of DMR and MNR will also be provided in the common areas, where appropriate. Students will be required to segregate their waste as above into the provided receptacles in accordance with the terms of the letting agreements of the Operator (The Student Housing Company).

No food macerators will be installed within any area of the student accommodation building.

All bins/containers will be clearly labelled 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 bin.

As required, the students will bring waste from within their clusters to the dedicated WSAs. Students on the floors above ground level will use the lifts or stairs of their building to bring waste to the ground floor. Students will be provided with access fobs/key/code by the Operator to access the WSA. Building cleaning staff will bring waste from within the common areas to the WSA as required.

Larger segregated waste receptacles (as per Table 5.1) will be provided by the building management company in the WSA. Receptacles will also be labelled, and colour coded to avoid cross contamination.

Other waste materials such as batteries, printer toner/cartridges and WEEE may be generated infrequently in the student accommodation areas. Students will be required to identify suitable temporary storage areas for these waste items themselves and dispose of them appropriately. The DLRCC Ballyogan Recycling Park is located approximately 5 km to the south west of the development and can be used by student residents to dispose of these wastes.

Using the estimated figures in Table 4.1, DMR, MNR, organic waste will be collected on a weekly basis, while glass waste be collected as required.

5.2 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/permited/licensed facilities only.

All waste requiring collection by the appointed waste contractor will be collected from the WSA by waste contractors nominated by the building management company and taken to the waste collection vehicle in the front courtyard carpark for emptying.

The waste contractor along with facilities management will ensure that empty bins are promptly returned to the WSA after collection/emptying.

It is recommended that bin collection times/days are staggered to reduce the number of bins required to be emptied at once and the time the waste vehicle is onsite. This will be determined during the process of appointment of a waste contractor.

5.3 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.

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.

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.

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 or residents can use the one-for-one return scheme at any EEE retailer.

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.

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 a recycling centre.

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.

5.4 Waste Storage Area Design

The shared WSAs should be designed and fitted-out to meet the requirements of relevant design standards where appropriate, 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 management company will be required to maintain bins and storage areas in good condition as required by the DLRCC *Waste Bye-Laws*, and Draft *Waste Bye-Laws*.

5.5 Facility Management Responsibilities

It shall be the responsibility of the The Student Housing 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 Student Housing Company should provide the following items in accordance with the DLR *the 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 (S.I. No. 10 of 1996) as amended 2001 (S.I. No. 36 of 2001), 2003 (S.I. No. 27 of 2003) and 2011 (S.I. No. 20 of 2011). 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 (S.I. No. 149 of 2014)
 - 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. 191 of 2015)
 - Waste Management (Hazardous Waste) Regulations 1998 (S.I. No. 163 of 1998) as amended 2000 (S.I. No. 73 of 2000)
 - Waste Management (Shipments of Waste) Regulations 2007 (S.I. No. 419 of 2007) 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 (2020).
6. DLRCC, Guidance Notes for Waste Management in Residential & Commercial Developments (2020)
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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 (DCCAE), *Waste Action Plan for the Circular Economy - Ireland's National Waste Policy 2020-2025* (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. DoEHLG, *Sustainable Urban Housing: Design Standards for New Apartments, Guidelines for Planning Authorities* (2018).