

OPERATIONAL WASTE MANAGEMENT PLAN FOR A PROPOSED STRATEGIC HOUSING DEVELOPMENT

AT

**HEUSTON SOUTH
QUARTER, ST. JOHN'S
ROAD WEST, KILMAINHAM,
DUBLIN 8**

Report Prepared For

HPREF HSQ Investments Limited

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1.0 INTRODUCTION

AWN Consulting Ltd. (AWN) has prepared this Operational Waste Management Plan (OWMP) on behalf of HPREF HSQ Investments Limited. The proposed development will consist of a residential development of 399 no. 'Build To Rent' residential units and all ancillary and associated uses, development and works, and a retail unit of 120m², on a site of 1.08ha on a site at Heuston South Quarter, St. John's Road West, Kilmainham, Dublin 8.

This OWMP has been prepared to ensure that the management of waste during the operational phase of the proposed residential development is undertaken in accordance with the current legal and industry standards including, the *Waste Management Act 1996* 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, DCC Dublin City Development Plan 2016 – 2022 ⁵ DCC *'Dublin City Council (Storage, Presentation and Segregation of Household and Commercial Waste) Bye-Laws' (2018)* 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 national policy document outlining a new action plan for Ireland and its waste 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. Replacing the previous national waste management plan "*A Resource Opportunity (2012)*".

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). 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*'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 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; and
- **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 Dublin City Council (DCC).

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

The regional plan sets out the following strategic targets for waste management in the region:

- A 1% reduction per annum in the quantity of household waste generated per capita over the period of the plan;
- Achieve a recycling rate of 50% of managed municipal waste by 2020; 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 specified in the *Waste Management (Landfill Levy) Regulations 2015*.

2.3 Local Level

The *Dublin City Development Plan 2016 – 2022* sets out a number of policies and objectives for Dublin City in line with the objectives of the regional waste management plan. The plan identifies a need to further reduce the role of landfilling in favour of higher value recovery options.

Waste policies and objectives with a particular relevance to this development are:

Policies:

- *SI19: To support the principles of good waste management and the implementation of best international practice in relation to waste management in order for Dublin city and the region to become self-reliant in terms of waste management.*
- *SI20: To prevent and minimise waste and to encourage and support material sorting and recycling.*
- *SI21: To minimise the amount of waste which cannot be prevented and ensure it is managed and treated without causing environmental pollution.*
- *SI22: To ensure that effect is given as far as possible to the “polluter pays” principle.*

Objectives:

- *SIO16: To require the provision of adequately-sized-recycling facilities in new commercial and large-scale residential developments, where appropriate.*

- *SIO18: To implement the current Litter Management Plan through enforcement of the litter laws, street cleaning and education and awareness campaigns.*
- *SIO19: To implement the Eastern-Midlands Waste Management Plan 2015 - 2021 and achieve the plan targets and objectives.*

2.4 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. 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 ¹³

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, retail tenant and the facilities 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 IED (Industrial Emissions Directive) 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.

2.4.1 Dublin City Council Waste Bye-Laws

The DCC "Dublin City Council (Storage, Presentation and Segregation of Household and Commercial Waste) Bye-Laws (2018)" came into use in May 2019. These Bye-laws repeal the previous 'Bye-Laws for the Storage, Presentation and Collection of Household and Commercial'. The Bye-Laws set a number of enforceable requirements on waste holders with regard to storage, separation and presentation of waste within the DCC 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 5.00 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 2.3;
- 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.

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

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

Various contractors offer waste collection services for the residential and commercial sectors in the DCC 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 Poolbeg in Dublin and a second facility in Duleek, Co. Meath.

DCC Grangegorman Bring Centre on Grangegorman Lower is located c. 1.78km north east of the development, which can be utilised by the residents of the development for certain household waste streams. This centre can accept paper, cans, cardboard, Tetra Pak, plastics, textiles, light bulbs, glass, flat glass, cooking oil, waste engine oil, green waste and small WEEE (items no bigger than a standard microwave oven).. Glass waste generated by the residents and tenant can be placed into the glass bins in the WSA, however if needed the closest bottle bank is located at Parkgate Street, beside the bike stand, 600m to the north east of the Proposed Development. See Figure 2.1 for locations and straight line distances.

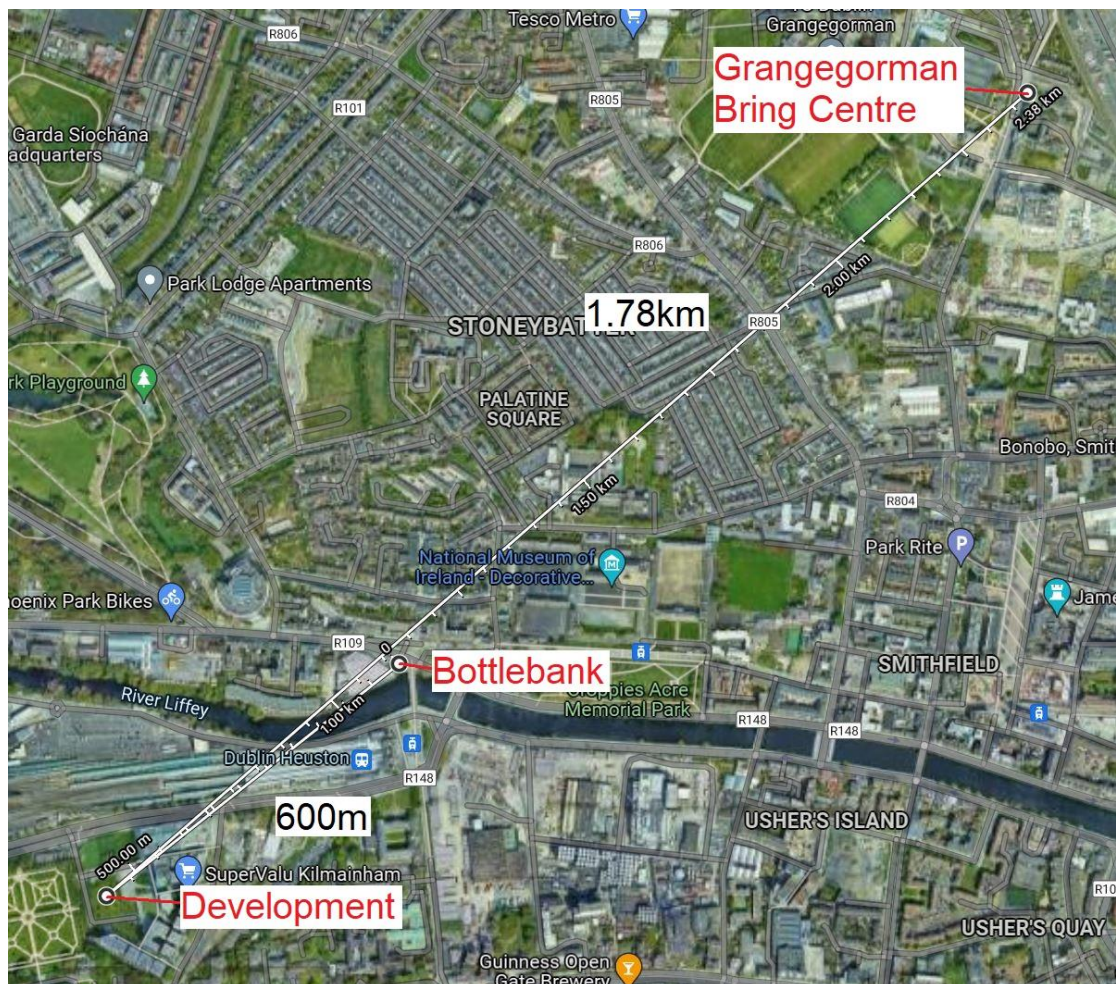


Figure 2.1 Locations and straight line distances to the nearest bottle bank and bring centre.

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 will consist of a residential development of 399 no. 'Build To Rent' residential units and all ancillary and associated uses, development and works, and a retail unit of 120 sq m, on a site of 1.08 ha. The proposed development consists of:

- Site clearance and localised demolitions to remove part of the podium and Basement Level -1 reinforced concrete slabs at the interface of the proposed Blocks A and B, together with the incorporation of part of the existing double basement level structure extending to approximately 7,613 sq.m over two levels (excluding an area of 3,318 sq.m that will be backfilled at Basement Level -1) within the proposed development.
- The construction of 5 no. buildings (Blocks A to E) ranging in height between 3- to 18-storeys over double basement level / podium level to provide a residential / mixed use development to provide 399 Specific BTR (Build to Rent) units with a total gross floor area of 29,391 sq.m, comprising 46 no. studios, 250 no. one bedroom units, 90 no. 2 bedroom / 4 person units and 13 no. 2 bedroom / 3 person units; internal communal ancillary residential services / amenities to include a shared co-working area / lounge (178 sq.m) and gym (102 sq.m) at lower ground floor level, and lounges on either side of a residential foyer at ground floor / podium level within Block A (196 sq.m), and a TV Room / lounge (57 sq.m) at ground floor / podium level within Block C.
- An independent retail unit (120 sq.m) is proposed at ground floor / podium level within Block B.
- A double basement is provided that will be integrated within the existing basement levels serving the wider HSQ development and will be accessed from the existing vehicular ramped accesses/egresses onto/off St. John's Road West and Military Road to the north and east, respectively. Basement level -1 provides: a refuse store; 80 no. car parking spaces (including 4 no. disabled spaces and 8 car club spaces); 4 no. motorcycle parking spaces; and, secure bicycle parking / storage in the form of 251 no. double stacked cycle parking spaces providing capacity for 502 no. secure bicycle storage spaces for residents. An additional 49 no. Sheffield type bicycle stands are provided at basement level -1 to provide 98 no. visitor cycle spaces (inclusive of 8 no. designated cargo bike spaces, that will also be available for the shared use with residents of the scheme) and a further 55 no. Sheffield type bicycle stands are provided at podium level to provide 110 no. cycle parking spaces (108 no. visitor cycle parking spaces (inclusive of 6 no. designated cargo bike spaces) and 2 no. cycle parking spaces in connection with the retail unit). All bicycle parking at basement level is accessed via a dedicated cycle lift from podium to basement level -1 that is situated to the south of Block B.
- Works proposed along the St John's Road West frontage include the omission of the existing left-turn filter lane to the vehicular ramped access to the HSQ development and re-configuration of the pedestrian crossings at the existing junction together with the re-configuration of the existing pedestrian crossing over the westbound lanes of St. John's Road West leading to an existing pedestrian refuge island. Re-alignment of the existing footpath along the site frontage onto St John's Road West to tie into the reconfigured junction arrangement and provision of a link to a new lift to provide wheelchair access from St John's Road West to the HSQ podium.

- Communal Outdoor Amenity space is provided for residents in the form of rooftop terraces (totalling 1,179sqm), and lower-level communal courtyards between blocks (totalling 960sqm).
- Hard and soft landscaping works are proposed at podium level which includes the extension and completion of the public plaza to the east of Block A; the provision of footpaths; a MUGA (Multi Use Games Area) and informal play areas for children (totalling 1,670sqm).
- A double ESB substation/switch room at ground / podium level within Block A, and a single substation/switch room at ground / podium level within Block B together with associated site development works, which includes the realignment / reprofiling of an existing vehicular access ramp at the southern end of the site between basement levels -1 and -2 and the closure / removal of a second vehicular access ramp between the subject site at basement level -1 and the raised basement level -1 under the Telford building.

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 internal 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 or 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.) ;
- Lightbulbs;
- Textiles (rags);
- Waste cooking oil (if any generated by the residents or retail tenant);
- 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* ¹⁴ and *Hazardous Waste List* ¹⁵ were published by the European Commission. In 2002, the EPA published a document titled the *European Waste Catalogue and Hazardous Waste List* ¹⁶, 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' ¹⁷ 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.

Waste Material	LoW Code/EWC
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

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 residential units has been determined based on the predicted occupancy of the units. The waste generation from the retail unit is based on waste generation rates per m² floor area for the proposed area uses.

The estimated waste generation for all residents and the retail unit within the development for the main waste types is presented in Table 4.1.

Waste type	Waste Volume (m ³ /week)	
	Residential units	Retail unit
Organic Waste	5.23	0.04
DMR	37.10	0.56
Glass	1.01	0.56
MNR	19.51	0.02
Total	62.86	1.15

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

The BS5906:2005 Waste Management in Buildings – Code of Practice ¹⁸ was considered in the estimations of the waste arising. The predicted total waste generated from the residential units based on the Code of Practice is c. 47.11m³ per week for the residential units. Whereas the AWN waste generation model estimates c. 62.86m³ per week from the residential units. AWN's modelling methodology is based on recently 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 DCC. In particular, consideration has been given to the following documents:

- BS 5906:2005 Waste Management in Buildings – Code of Practice,
- EMR Waste Management Plan 2015 – 2021;
- DCC *Dublin City Council (Storage, Presentation and Segregation of Household and Commercial Waste) Bye-Laws' (2018)*; and
- DoHLGH, Sustainable Urban Housing: Design Standards for New Apartments, Guidelines for Planning Authorities (section 4.8-4.9) (2020) ¹⁹.

Residential and Retail WSA

One shared Waste Storage Area (WSA) has been allocated within the development design for the residential units and the retail unit. The WSA is located at lower ground floor level. Access to the WSA will be available internally within the development. The retail units bins will be locked to avoid cross-contamination with residential waste.

The location of the WSA can be viewed on the drawings submitted with planning (drawing ref: RAU-ZZ-00-DR-A-GAP-06098 – Proposed Lower Ground Floor Level).

The waste receptacles from the WSA will be collected by facilities management, immediately prior to collection and brought via lift to be temporarily stored in the designated staging area below the WSA. See Figure 5.1 below.

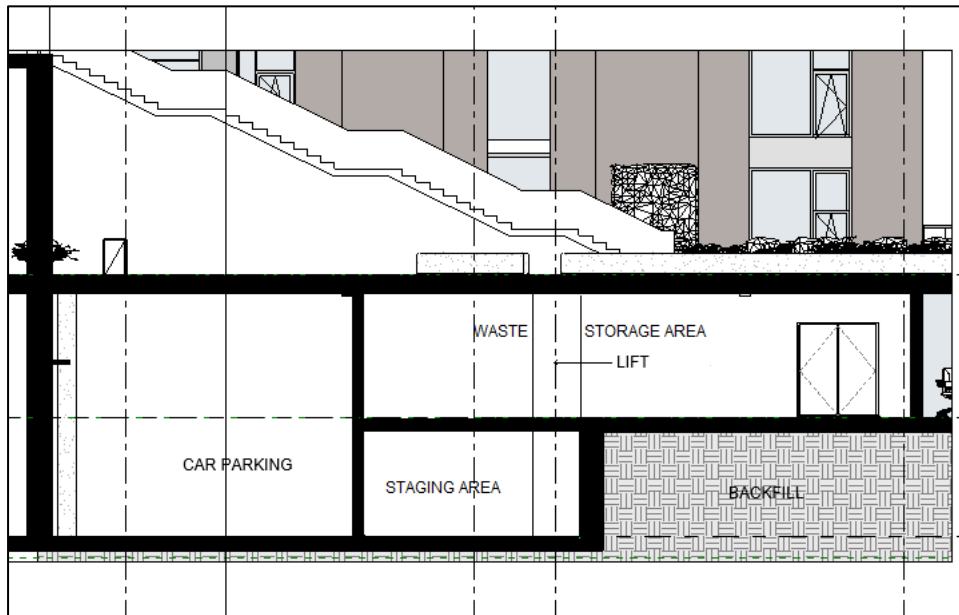


Figure 5.1 Cross section of WSA and Staging Area

Following emptying by the waste contractor, waste receptacles will be promptly returned to the staging area, where facilities management will return the waste receptacles to the WSA via lift. See section 5.3 for more details on waste collection.

Facilities management will supply all residents and 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.

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 developments WSA based on a *twice weekly collection* for residential waste and a *weekly collection* for retail waste. These are presented in Table 5.1.

Area/Use	Bins Required			
	MNR*	DMR**	Organic	Glass
Residential WSA	11 x 1100L	17 x 1100L	11 x 240L	5 x 240L
Retail WSA	1 x 1100L	1 x 1100L	1 x 120L	1 x 120L

Note: * = Mixed Non-Recyclables

** = Dry Mixed Recyclables

Table 5.1 Waste storage requirements for the proposed development

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

As outlined in the current *Dublin City Development Plan*, it is preferable to use 1,100L wheelie bins for waste storage, where practical. However, in the case of organic and glass waste, it is considered more suitable to use smaller waste receptacles due to the weight of bins when filled with organic and glass waste. The use of 240L and 120L bins, as recommended in Table 5.1, will reduce the manual handling impacts on the facilities management personnel and waste contractor employees.

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



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

5.1 Waste Storage – Residential Units

Residents will be required to segregate waste into the following main waste streams:

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

Residents of the proposed units will be responsible for segregation of waste at source.

Residents will be required to take their segregated waste materials to the WSA and dispose of their segregated waste into the appropriate bins. Access to the WSA will be available internally within the development and lower ground floor level. The location of the WSA can be found on the plans submitted with the application (drawing ref: RAU-ZZ-00-DR-A-GAP-06098 – Proposed Lower Ground Floor Level).

Each bin/container in the WSA 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 waste types can be placed in each bin.

Access to the shared WSA will be restricted to authorised residents, retail staff, facilities management and the waste contractor by means of a key or electronic fob access.

Based on the recommended bin requirements in Table 5.1, DMR, MNR, organic waste will be collected on a twice weekly basis, while glass will be collected on a weekly basis.

Other waste materials such as textiles, batteries, printer toner/cartridges, cooking oil, textiles, lightbulbs, furniture / bulk items and WEEE may be generated infrequently by the residents. Residents will be required to identify suitable temporary storage areas for these waste items within their own units and dispose of them appropriately. Further details on additional waste types can be found in Section 5.4.

5.2 Waste Storage – Retail Unit

The tenant will be required to segregate their waste into the following waste categories within their own unit:

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

The retail unit is located at ground floor level of Block B and will have dedicated bins within the WSA located at lower ground floor level.

The retail unit will be required to store waste temporarily in their respective unit and will then transport it on a daily basis or as required to the WSA.

Each bin/container in the WSA 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 waste types can be placed in each bin.

Access to the WSA will be restricted to authorised staff, facilities management and the waste contractor by means of a key or electronic fob access. The retail unit's bins will be locked to avoid cross-contamination with residential waste.

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

Other waste materials such as textiles, batteries, printer toner/cartridges, cooking oil, textiles, lightbulbs, furniture / bulk items and WEEE may be generated infrequently by the retail tenant. The retail tenant will be required to identify suitable temporary storage areas for these waste items within their own units and dispose of them appropriately. Further details on additional waste types can be found in Section 5.4.

5.3 Waste Collection

There are numerous private contractors that provide waste collection services in the DCC 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.

Waste collection will occur at carpark level -1. The waste receptacles will be brought by facilities management from the WSA at lower ground floor level via the waste lift to the staging room on carpark level -1 below (See Figure 5.1). The location of the staging area can viewed on the drawings submitted with planning (drawing ref: RAU-ZZ-00-DR-A-GAP-06097 – Proposed Car Park Level -1).

The waste collection vehicle will park outside the staging area, from which the bins will be brought for emptying. Following bin collections, all waste receptacles will be promptly returned to the staging area, where facilities management will return them to the WSA via lift. The staging area will only be used for a minimum amount of time to facilitate collection.

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.

5.4 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 waste

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

Batteries

A take-back service for waste batteries and accumulators (e.g. rechargeable batteries) is in place in order to comply with the Waste Management Batteries and Accumulators Regulations 2014 as amended. In accordance with these regulations consumers are able to bring their waste batteries to their local bring centre/civic amenity centre or can return them free of charge to retailers which supply the equivalent type of battery, regardless of whether or not the batteries were purchased at the retail outlet and regardless of whether or not the person depositing the waste battery purchases any product or products from the retail outlet.

The retail tenant cannot use bring centres/civic amenity centres. They must segregate their waste batteries and either avail of the take-back service provided by retailers or arrange for recycling/recovery of their waste batteries by a suitably permitted/licenced contractor. Facilities management may arrange collection depending on the agreement.

Waste Electrical and Electronic Equipment (WEEE)

The *WEEE Directive 2002/96/EC* and associated Waste Management (WEEE) Regulations have been enacted to ensure a high level of recycling of electronic and electrical equipment. In accordance with the regulations, consumers can bring their waste electrical and electronic equipment to their local recycling centre. In addition consumers can bring back WEEE within 15 days to retailers when they purchase new equipment on a like for like basis. Retailers are also obliged to collect WEEE within 15 days of delivery of a new item, provided the item is disconnected from all mains, does not pose a health and safety risk and is readily available for collection.

As noted above, the retail tenant cannot use bring centres/civic amenity centres. They must segregate their WEEE and either avail of the take-back/collection service provided by retailers or arrange for recycling/recovery of their WEEE by a suitably permitted/licenced contractor. Facilities management may arrange collection depending on the agreement.

Printer Cartridge/Toners

It is recommended that a printer cartridge/toner bin is provided in the retail unit, where appropriate. The retail tenant will be required to store this waste within their unit and arrange for return to retailers or collection by an authorised waste contractor, as required.

Waste printer cartridge/toners generated by residents can usually be returned to the supplier free of charge or can be brought to a bring centre/civic amenity centre.

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

Chemicals (such as solvents, 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 generated in the retail unit that is classed as hazardous (if they arise) will be appropriately stored within the tenants own space. Facilities management may arrange collection depending on the agreement.

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 bring centre/civic amenity centre.

Light Bulbs (Fluorescent Tubes, Long Life, LED and Lilament bulbs)

Waste light bulbs may be generated by lighting in the retail tenants unit. It is anticipated that retail tenant will be responsible for the off-site removal and appropriate recovery/disposal of these wastes. Facilities management may arrange collection depending on the agreement.

Waste light bulbs may be generated from building maintenance works. Such works are usually completed by external contractors or facilities management who are responsible for the off-site removal and appropriate recovery/recycling/disposal of any waste materials generated.

Light bulbs generated by residents should be taken to the nearest bring centre/civic amenity centre for appropriate storage and recovery/disposal.

Textiles

Where possible, waste textiles should be recycled or donated to a charity organisation for reuse.

Waste Cooking Oil

If the retail tenant uses cooking oil, waste cooking oil will need to be stored within the unit on a bunded area or spill pallet and regular collections by a dedicated waste contractor will need to be organised as required.

If the residents generate waste cooking oil, this can be brought to a bring centre/civic amenity centre or placed in the organic waste bin.

Furniture (and other bulky wastes)

Furniture and other bulky waste items (such as carpet etc.) may occasionally be generated by the residents and retail tenant. If residents wish to dispose of furniture, this can be brought a bring centre/civic amenity centre. If retail tenant require collection of bulky waste, it will be arranged as required by the tenant.

Abandoned Bicycles

Bicycle parking areas are planned for the development. As happens in other developments, residents 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

5.5 Waste Storage Area Design

The shared WSAs will be designed and fitted-out to meet the requirements of relevant design standards, including:

- 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 and cold water for disinfection and washing of bins;
- Be fitted with suitable power supply for power washers;
- 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 fitted with CCTV for monitoring.

The facilities company will be required to maintain the waste storage areas in good condition as required by the DCC Waste Bye-Laws.

5.6 Dublin City Development Plan Compliance

Policies and standards set out in the *Dublin City Development Plan 2016 – 2022*, specifically in relation to Section 9.5.5 - Waste Management and Appendix 10 - Guidelines for Waste Storage Facilities, have been considered throughout the design stage of the development.

The *Dublin City Development Plan 2016 – 2022* is guided by relevant legislation (Section 2.4), DCC (*Storage, Presentation and Segregation of Household and Commercial Waste*) *Bye-Laws*' (2.4.1) and the EMR Waste Management Plan. These have directed the contents of this report, as well as how the WSA is designed and how waste generation is calculated. Regional targets for different waste streams dictate waste receptacles needed. This is implemented to encourage desirable segregation of waste which allows for effective treatment of specific waste streams. An example of this is to ensure adequate recycling bins are provided to allow regional recycling targets to be met.

The WSA has been designed to ensure access for all. As standard, the WSA accommodates a 1.2m corridor between rows of bins to ensure wheelchair users can access all areas of the WSA. The WSA has been located at lower ground floor level, which is easily accessible to all residents in the development. The WSA will be brightly lit, well ventilated, contain wastewater drainage points and have ready access from carpark level -1 for the control of potential vermin, if required. As discussed in Section 5.0, 1100L bins will be used for the storage of DMR and MNR as required by DCC. 240L/120L bins will be used for storing both organic waste and glass as 1100L bins for these streams can pose a health and safety risk due to their weight.

The bins for the retail unit within the development also meets the requirements outlined in Appendix 10 of the *Dublin City Development Plan*. Namely, 2 no. 1100L bins are provided for the disposal of DMR and MNR, respectively. While 2 no. 120L bins are provided for the disposal of organic waste and glass, respectively. The bins will not be on a public street, are accessible to people with disabilities, and will be contained in the same space as residential waste receptacles and hence their WSA will have the same design features.

In addition to this, if offsite recycling and recover facilities are needed the locations of the nearest bring bank and bring centre/civic amenity centre can be found in Section 2.5.

Table 5.2 below provides information on how this OWMP contributes to the compliance of the policies, objectives and guidance in Section 9.5.5 Waste Management and Appendix 10 Guidelines for Waste Storage Facilities of the *Dublin City Development Plan 2016 - 2022*.

Dublin City Development Plan – Waste Management Policies and Objectives, and Appendix 10 Guidance	OWMP Compliance
Policy SI19: To support the principles of good waste management and the implementation of best international practice in relation to waste management in order for Dublin city and the region to become self-reliant in terms of waste management.	This OWMP, along with the design of the WSA was complete in line with best national and international practices. This contributes to effective management of waste within the Dublin City and the wider region.
Policy SI20: To prevent and minimise waste and to encourage and support material sorting and recycling.	Providing 4 no. bin types (DMR, MNR, organic waste and glass) supports sorting and recycling.
Policy SI21: To minimise the amount of waste which cannot be prevented and ensure it is managed and treated without causing environmental pollution.	Providing 4 no. bin types (DMR, MNR, organic waste and glass) contributes to the minimisation of waste and supports sorting and recycling.
Policy SI22: To ensure that effect is given as far as possible to the 'polluter pays' principle.	Not applicable.
Objective SIO15: To provide for municipal/public recycling and recovery facilities in accessible locations throughout the city.	This OWMP highlights the location and distance of the nearest bring centre/civic amenity centre and bring bank to the development.
Objective SIO16: To require the provision of adequately-sized recycling facilities in new commercial and large-scale residential developments, where appropriate.	The quantum of waste generated in operational phase of the development has been modelled and a suitable number and size of waste receptacles have been recommended.
Objective SIO17: To promote the re-use of building materials, recycling of demolition material and the use of materials from renewable sources. In all developments in excess of 10 housing units and commercial developments in excess of 1000m ² , a materials source and management plan showing type of materials/proportion of re-use/recycled materials to be used shall be implemented by the developer.	Not applicable. Please see Outline Construction and Demolition Waste Management Plan submitted with planning.
Objective SIO18: To implement the current Litter Management Plan through enforcement of the litter laws, street cleaning and education and awareness campaigns.	This OWMP suggest that the WSA have appropriate graphical and written signage placed above and on bins indicating correct use. These signs raise awareness around segregation and may also provide educational information.
Objective SIO19: To implement the Eastern-Midlands Regional Waste Management Plan 2015–2021 and achieve the plan targets and objectives.	This OWMP along with the design of the WSA was completed in line with the EMR WMP.
Appendix 10 Standards for Apartments*	
The requirements set out in the Dublin City Council Bye-Laws for the Storage, Presentation and Collection of Household and Commercial Waste, 2013 or any revision thereof, must be adhered to and, in particular, the requirement in the bye-laws to segregate waste into separate fractions to facilitate the collection of dry recyclables, organic	This OWMP, along with the design of the WSA was complete in line with the Dublin City Council Bye-Laws for the Storage, Presentation and Collection of Household and Commercial Waste, along with the regional, national and international regulations and guidance referred to. 4 no. bin types (DMR, MNR, organic waste and

Dublin City Development Plan – Waste Management Policies and Objectives, and Appendix 10 Guidance	OWMP Compliance
kitchen/garden waste and residual waste in line with Waste Management (Food Waste) Amendment Regulations 2015 (S.I. 190 of 2015) and the European Union (Household Food Waste and Biowaste) Regulations 2015 (S.I. 191 of 2015) and the Eastern-Midlands Regional Waste Management Plan 2015–2021.	glass) will be provided in the development, promoting segregation and to facilitate the waste streams mentioned.
Waste storage issues should be considered at the initial apartment design stage to ensure access for all (including people with disabilities) in a brightly lit, safe and well-signed area, spacious enough for easy manoeuvrability, good ventilation and ready access if required for the control of potential vermin. Where storage is provided in a basement area, sufficient access and egress must be provided to enable receptacles to be moved easily from the storage area to an appropriate collection point on the public street nearby.	To be implemented as described in Section 5.5.. Bins will be stored at lower ground floor level and collection will take place from carpark level -1. See Section 5.0 and 5.3 for details.
Receptacles that are designed for reuse, with the exception of a specific area designated by a local authority as being only suitable for the collection of non-reusable receptacles such as bags, ideally of 1,100 litre capacity, must be used	1100L bins will be used for the storage of DMR and MNR as required by DCC. 240L/120L bins will be used for storing both organic waste and glass as 1100L bins for these streams can pose a health and safety risk due to their weight.
To provide a three-bin collection system for residents in communal collection schemes, for each type of waste: general waste, dry recyclables and organic food/garden waste. A proposal on the three-bin system including bin quantity, type and frequency of collection must be submitted in writing to the Waste Regulation Unit in Dublin City Council for agreement.	A 4 no. bin type systems, which includes stated plus a glass bin will be provided as part of this development. This OWMP provides necessary information on bin quantities, types and frequency of collection.
Sufficient space must be provided to accommodate the collection of dry recyclables and organic kitchen waste/ garden waste.	The WSA has been sized to accommodate all DMR, MNR, organic waste and glass bins indicated in Table 5.1.
Suitable wastewater drainage points should be installed in the receptacle bin storage area for cleaning and disinfecting purposes.	To be implemented as described in Section 5.5.
Appendix 10 Standards for Commercial/Industrial Developments	
The requirements set out in the Bye-Laws for the Storage, Presentation and Collection of Household and Commercial Waste, 2013 or any revision thereof must be adhered to and, in particular, the requirement to segregate waste into separate fractions to facilitate the collection of dry recyclables, organic kitchen/garden waste and residual waste in line with Waste Management (Food Waste) Regulations 2009 (S.I. 508/2009) and the Waste Management (Food Waste) Amendment Regulations S.I. 190 of 2015, and the Eastern-Midlands Region Waste Management Plan 2015–2021.	This OWMP along with the design of the WSA was complete in line with the Dublin City Council Bye-Laws for the Storage, Presentation and Collection of Household and Commercial Waste, along with the regional, national and international regulations and guidance referred to. 4 no. bin types (DMR, MNR, organic waste and glass) will be provided in the development, promoting segregation and to facilitate the waste streams mentioned.
Receptacles that are designed for reuse, with the exception of in specific areas designated by a local authority as being only suitable for the collection of non-reusable receptacles such as bags, ideally of 1,100 Litre capacity, must be used.	1100L bins will be used for the storage of DMR and MNR as required by DCC. 240L/120L bins will be used for storing both organic waste and glass as 1100L bins for these streams can pose a health and safety risk due to their weight.

Dublin City Development Plan – Waste Management Policies and Objectives, and Appendix 10 Guidance	OWMP Compliance
Adequate storage space for a minimum of one No. 1,100 Litre receptacle.	The commercial WSA has been sized to accommodate 2 no. 1100L bins (DMR and MNR) and 2 no. 120L bins (organic waste and glass).
Sufficient space must be provided to accommodate the collection of dry recyclables and organic kitchen waste/ garden waste.	The commercial WSA has been sized to accommodate 2 no. 1100L bins (DMR and MNR) and 2 no. 120L bins (organic waste and glass).
Adequate space and height for a standard refuse collection vehicle (RCV) to access site.	It has been confirmed with architects, Reddy architecture and Urbanisation, that the RCV can access the site.
Sufficient access and egress must be provided to enable receptacles to be moved easily from the storage area to an appropriate collection point on the public street nearby	Bins will be brought from the WSA prior to collection and will be collected from carpark level -1. See Sections 5.0 and 5.3 for details.
Receptacle storage areas must not be on a public street nor be visible or accessible from there.	Receptacles are not viewable from any public street or accessible from any public street.
The receptacle storage areas should be designed so that each bin within the storage area is accessible to occupants/ employees of the development (including people with disabilities).	The WSA has been designed to ensure access for all. As standard, the WSA accommodates a 1.2m corridor between rows of bins to ensure wheelchair users can access all areas of the WSA. The WSA has been located at lower ground floor level, which is easily accessible to all employees in the development.
Suitable wastewater drainage points should be installed in the bin storage area for cleaning and disinfecting purposes.	To be implemented as described in Section 5.5.
Waste storage areas should not present any safety risks to users and should be well-lit.	To be implemented as described in Section 5.5.
Adequate ventilation of waste storage areas so as to minimise odours and potential nuisance from vermin/flies.	To be implemented as described in Section 5.5.

Table 5.2 Key compliances with the Dublin City Development Plan 2016 – 2022

* - (Sustainable Urban Housing: Design Standards for New Apartments. Guidelines for Planning Authorities, December 2020)

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 of the *DCC's Dublin City Development Plan* and *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. 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. 430 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. Dublin City Council (DCC), *Dublin City Development Plan 2016 – 2022* (2016).
6. DCC, *Dublin City Council (Storage, Presentation and Segregation of Household and Commercial Waste) Bye-Laws* (2018)
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 (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. 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).
14. European Waste Catalogue - Council Decision 94/3/EC (as per Council Directive 75/442/EC).

15. Hazardous Waste List - Council Decision 94/904/EC (as per Council Directive 91/689/EEC).
16. EPA, *European Waste Catalogue and Hazardous Waste List* (2002)
17. EPA, *Waste Classification – List of Waste & Determining if Waste is Hazardous or Non-Hazardous* (2015)
18. BS 5906:2005 Waste Management in Buildings – Code of Practice.
19. DoHLGH, *Sustainable Urban Housing: Design Standards for New Apartments, Guidelines for Planning Authorities* (2018).