

**OPERATIONAL WASTE
MANAGEMENT PLAN FOR
A PROPOSED STRATEGIC
HOUSING DEVELOPMENT
AT
HAROLD'S BRIDGE COURT,
HAROLD'S CROSS ROAD
AND GREENMOUNT LANE,
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1.0 INTRODUCTION

AWN Consulting Ltd. (AWN) has prepared this Operational Waste Management Plan (OWMP) on behalf of The Adroit Company. The proposed development will consist of the demolition of existing buildings on site and the construction of 194 no. dwellings comprised of studio, 1, 2 & 3 bed apartment units in 4 no. 4-9 storey blocks (Blocks A-D). The development also includes 1 no. commercial / retail unit (187.6m²) at ground floor level of Block A, 1 no. crèche (142.2m²) at ground floor level of Block C and 22 no. work studios (1,930m²) at ground & 1st floor level of Block D, all on a site area of 1.01 ha.

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 the current legal and industry standards including, the *Waste Management Act 1996* as amended and associated Regulations ¹, *Environmental Protection Agency Act 1992* as amended ², *Litter Pollution Act 1997* as amended ³, the '*Eastern-Midlands Region (EMR) Waste Management Plan 2015 – 2021*' ⁴, and the Dublin City Council (DCC) '*Dublin City Council (Storage, Presentation and Segregation of Household and Commercial Waste) Bye-Laws*' 2018 ⁵. 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 Irish Government issued a policy statement in September 1998 titled as '*Changing Our Ways*' ⁶ 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 ⁷. 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*' ⁸. 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*⁹. Covering the period 1998 – 2003, the aim of this document was to assess progress to date with regard to waste management in Ireland, to consider developments since the policy framework and the local authority waste management plans were put in place, and to identify measures that could be undertaken to further support progress towards the objectives outlined in *Changing Our Ways*.

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

In September 2020, the Irish Government published 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'¹⁰ (WAPCE), 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).

The WAPCE sets the direction for waste planning and management in Ireland up to 2025. This reorientates policy from a focus on managing waste to a much greater focus on creating circular patterns of production and consumption. Other policy statements of a number of public bodies already acknowledge the circular economy as a national policy priority.

The policy document contains over 200 measures across various waste areas including circular economy, municipal waste, consumer protection and citizen engagement, plastics and packaging, construction and demolition, textiles, green public procurement and waste enforcement.

One of the first actions to be taken was the development of the Whole of Government Circular Economy Strategy 2022-2023 'Living More, Using Less' (2021)¹¹ to set a course for Ireland to transition across all sectors and at all levels of Government toward circularity and was issued in December 2021. It is anticipated that the Strategy will be updated in full every 18 months to 2 years.

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 *2019 National Waste Statistics*, which is the most recent study published, along with the national waste statistics web resource (November 2021) reported the following key statistics for 2019:

- **Generated** – Ireland produced 3,085,652 t of municipal waste in 2019. This is almost a 6% increase since 2018. This means that the average person living in Ireland generated 628 kg of municipal waste in 2019.
- **Managed** – Waste collected and treated by the waste industry. In 2019, a total of 3,036,991 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 48,660 t was unmanaged in 2019.
- **Recovered** – The amount of waste recycled, used as a fuel in incinerators, or used to cover landfilled waste. In 2019, around 83% of municipal waste was recovered – a decrease from 84% 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 2019 was 37%, which is down from 38% in 2018.

- **Disposed** – Less than a sixth (15%) of municipal waste was landfilled in 2019. This is an increase from 14% in 2018.

2.2 Regional Level

The development is located in the Local Authority administrative area of Dublin City Council (DCC).

The *EMR Waste Management Plan 2015 – 2021* is the regional waste management plan applicable to the DCC administrative area, which was published in May 2015. Currently the EMR and other regional waste management plans are under review and the Regional Waste Management Planning Offices expect to publish the final plan in 2022.

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

- 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 introduced under the Waste Management (Landfill Levy) (Amendment) Regulations 2015.

The *Dublin City Development Plan 2016 – 2022*¹³ 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 as follows:

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.*

The Draft *Dublin City Development Plan 2022 – 2028*¹⁴ sets out a number of policies and objectives for Dublin City in line with the objectives of the National climate action policy and emphasises the need to take action to address climate action across all

sectors of society and the economy. In the waste sector, policy on climate action is focused on a shift towards a 'circular economy' encompassing three core principles: designing out waste and pollution; keeping products and material in use; and regenerating natural systems. Further policies and objectives can be found within the draft development plan.

Policies:

- *CA7 F: minimising the generation of site and construction waste and maximising reuse or recycling.*
- *CA22: The Circular economy: To support the shift towards the circular economy approach as set out in 'a Waste Action Plan for a Circular Economy 2020 to 2025, Ireland's National Waste Policy, or as updated.*
- *CA23: To have regard to existing Best Practice Guidance on Waste Management Plans for Construction and Demolition Projects as well as any future updates to these guidelines in order to ensure the consistent application of planning requirements.*
- *SI27: Sustainable Waste Management: To support the principles of the circular economy, good waste management and the implementation of best practice in relation to waste management in order for Dublin City and the Region to become self-sufficient in terms of resource and waste management and to provide a waste management infrastructure that supports this objective.*
- *SI29: Segregated Storage and Collection of Waste Streams: To require new commercial and residential developments, to include adequate and easily accessible storage space that supports the separate collection of as many waste and recycling streams as possible, but at a minimum general domestic waste, dry recyclables and food waste as appropriate.*
- *SI30: To require that the storage and collection of mixed dry recyclables, organic and residual waste materials within proposed apartment schemes have regard to the Sustainable Urban Housing: Design Standards for New Apartments Guidelines for Planning Authorities 2018 (or and any future updated versions of these guidelines produced during the lifetime of this plan).*

Objectives:

- *SIO14 Local Recycling Infrastructure: To provide for a citywide network of municipal civic amenity facilities/ multi-material public recycling and reuse facilities in accessible locations throughout the city in line with the objectives of the circular economy and 15 minute city.*
- *SIO16 Eastern-Midlands Region Waste Management Plan: To support the implementation of the Eastern-Midlands Regional Waste Management Plan 2015–2021 and any subsequent plans in order to facilitate the transition from a waste management economy towards a circular economy.*

2.3 Legislative Requirements

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

- Waste Management Act 1996 as amended;
- Environmental Protection Agency Act 1992 as amended;
- Litter Pollution Act 1997 as amended and
- Planning and Development Act 2000 as amended ¹⁵.

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* as amended 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, crèche tenants, retail tenants, work studio tenants and the proposed 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 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 Dublin City Council Waste Management Bye-Laws

The DCC “Dublin City Council (Storage, Presentation and Segregation of Household and Commercial Waste) Bye-Laws (2018)” were brought into force in May 2019. These bye-laws repeal the previous Bye-Laws for the Storage, Presentation and Collection of Household and Commercial Waste. The bye-laws set a number of enforceable requirements on waste holders with regard to storage, separation and presentation of waste within the DCC administrative area. Key requirements under these bye-laws of relevance to the operational phase of the 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 10:00 am 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 bye-laws is available from the DCC website.

2.4 Regional Waste Management Service Providers and Facilities

Various contractors offer waste collection services 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 Duleek, Co. Meath and a second facility in Poolbeg in Dublin.

The DCC Recycling Centre at Eamonn Ceannt Park, Crumlin, located c. 917m south west of the development site, can be utilised by residents of the proposed development for other household waste streams. This centre can accept Tetra Pak, metals, glass, soft plastic, paper, and rigid plastic. There is also a bring bank located c. 426m north of the development site at St. Vincent Flats, South Circular Road, where glass and aluminium cans can be deposited.

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 Adroit Company Ltd. intends to apply to An Bord Pleanála for permission for a strategic housing development on lands at 'Harold's Bridge Court', Harold's Cross Road & Greenmount Lane, Harold's Cross, Dublin 6W. The site is bounded to the north by the rear of existing residential and commercial development along Parnell Road, and by commercial development i.e. "Greenmount Office Park" and residential development i.e. "Boyne Court" to the south. The site is bounded to the east by Harold's Cross Road, to the west by Greenmount Lane and by Limekiln Lane to the south-west.

The proposed development provides for 194 no. dwellings comprised of studio, 1, 2 & 3 bed apartment units in 4 no. 4-9 storey blocks (Blocks A-D). The development also includes 1 no. commercial / retail unit (187.6m²) at ground floor level of Block A, 1 no. crèche (142.2m²) at ground floor level of Block C and 22 no. work studios (1,930m²) at ground & 1st floor level of Block D, all on a site area of 1.01 ha.

Permission is sought for the demolition of all existing buildings on site (c. 5,356m²), i.e. (a) 4 no. 3 storey duplex residential buildings (i.e. 48 no. dwellings, c. 3,542m²) and 2 no. 1 storey residential buildings (c. 40m² & 41m²) all within Harold's' Bridge Court, (b) 3 no. 2 storey houses at Clare Villas (c. 331m²) and (c) an existing warehouse (c. 1,248m²) and ancillary structures (c.154m²) fronting onto Greenmount Lane.

Vehicular access to the proposed development will be via Harold's Cross Road, utilizing the existing entrance. Vehicular traffic only associated with Block D will be allowed enter the site from Greenmount Lane with no vehicular through traffic progressing further through the development. Pedestrian and cyclist access is proposed via Greenmount Lane and Harold's Cross Road.

The proposed development consists of the following:

- Block A is a four to seven story building accommodating 56 no. dwellings comprised of 29 no. 1 bed & 27 no. 2 bed apartments. Block A also includes 1 no. commercial / retail unit (187.6m²) at ground floor level, with a communal amenity room (c.34m²) and 2 no. communal roof gardens (c.144m² & c.39m² respectively) on the 6th floor.
- Block B is a four to nine storey building accommodating 56 no. dwellings comprised of 2 no. studio units, 20 no. 1 bed, 32 no. 2 bed & 2 no. 3 bed apartments. Block B also includes a communal amenity room (c.53m²) on the 3rd floor, with a communal roof garden (c.164m²) also on the 3rd floor.
- Block C is a four to eight storey building accommodating 57 no. dwellings comprised of 15 no. 1 bed, 39 no. 2 bed & 3 no. 3 bed apartments. Block C also includes for a 1 storey crèche (142.2m²) at ground floor level, with associated outdoor play space (c.233m²), a communal amenity room (c.50m²) on the 7th floor, with a communal roof garden (c.165m²) also on the 7th floor.
- Block D is a four to five storey building accommodating 25 no. dwellings comprised of 1 no. studio unit, 16 no. 1 bed, 7 no. 2 bed & 1 no. 3 bed apartments. Block D also includes 22 no. work studios (1,930m²) at ground & 1st floor level, and communal open space (c.114m²) at 2nd floor level.
- The proposed development provides for public open space (1,355m²), hard and soft landscaping & boundary treatments. Communal residential amenity areas and open spaces are provided for in the form of communal roof gardens and communal rooms associated with the individual blocks. Additional communal open space is provided at ground level totalling 545m². Private open spaces are provided as terraces at ground floor level of each block and balconies at all upper levels.
- Car parking is to be provided in the form of surface and basement level car parking. Blocks B & C are located above the proposed basement, which accommodates 58 no. car parking spaces, 4 no. motorcycle spaces and 424 no. bicycle parking spaces (inclusive of 6 no. cargo bike spaces & 48 no. electric bicycle spaces). There are an additional 7 no. surface level car parking spaces proposed (including 4 no. club car spaces), and 50 no. surface bicycle parking spaces. Bicycle parking is also accommodated within each of the 4 no. blocks at ground floor level (128 no. spaces in total)
- The proposed development also provides for all associated site development works above and below ground, bin & bicycle storage, plant (M&E), sub-stations, public lighting, servicing, signage, surface water attenuation facilities etc.

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 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 / flowers;
- 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, crèche tenants, retail tenants or work studio tenants);
- Furniture (and from time to time other bulky wastes); and
- Abandoned bicycles.

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

3.3 European Waste Codes

In 1994, the *European Waste Catalogue* 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 applicable from 5th July 2018. 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.

Table 3.1 Typical Waste Types Generated and LoW Codes

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

* Individual waste type may contain hazardous materials

4.0 ESTIMATED WASTE ARISING

A waste generation model (WGM) developed by AWN has been used to predict waste types, weights and volumes arising from operations within the proposed development. The WGM incorporates building area and use and combines these with other data including Irish and US EPA 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, while the floor area usage (m²) has been used to estimate the waste arising from the crèche unit, retail unit and work studios.

Waste generated from the shared residential amenities has been included in the waste figures for the apartment blocks and will be stored within the residential waste bins.

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

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

Waste Type	Waste Volume (m ³ / week)			
	Block A	Block B	Block C	Block D
Organic Waste	0.80	0.84	0.90	0.34
DMR	5.64	5.92	6.35	2.39
Glass	0.15	0.16	0.17	0.07
MNR	2.97	3.11	3.34	1.26
Total	9.56	10.03	10.76	4.06

Table 4.2 Estimated waste generation for the proposed development for the main waste types

Waste Type	Waste Volume (m ³ / week)		
	Crèche	Retail Unit	Work Studios
Organic Waste	0.01	0.19	0.48
DMR	0.52	0.49	1.25
Glass	<0.01	0.01	0.02
MNR	0.29	0.49	1.25
Total	0.82	1.18	3.00

*BS5906:2005 Waste Management in Buildings – Code of Practice*²⁰ has been considered in the calculations of waste estimates. AWN's modelling methodology is based on recently published data and data from numerous other similar developments in Ireland and is based on AWN's experience, it provides 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 site will be stored and collected. This has been prepared with due consideration of the 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;*
- *Dublin City Council Development Plan 2016 – 2022 (Appendix 10);*
- *Draft Dublin City Council Development Plan 2022 – 2028*

- 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 (2020)* ²¹.

Waste Storage Areas

Residential

Five (5 no.) Waste Storage Areas (WSAs) have been allocated in the design of this development for residential use.

One (1 no.) WSA has been allocated for the use by residents of Block A, it is located at ground floor level in Block A.

Two (2 no.) WSAs have been allocated for use by residents of Block B. One (1 no.) WSA is located at ground floor level in Block B and one (1 no.) is located at basement level in Block B.

One (1 no.) WSA has been allocated for the use by residents of Block C, it is located at ground floor level in Block C..

One (1 no.) WSA has been allocated for the use by residents of Block D, it is located at ground floor level in Block D.

Crèche

One (1 no.) WSA has been allocated for use by the crèche unit. This WSA is located externally at ground floor level adjacent to Block C.

Retail Unit

One (1 no.) WSA has been allocated for use by the retail unit. This WSA is located at ground floor level in Block A.

Work Studios

One (1 no.) WSA has been allocated for use by the work studios. This WSA is located at ground floor level in Block D.

The locations of all WSAs can be viewed on the drawings submitted with the planning application under separate cover.

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.

Waste Storage Requirements

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 WSAs. These are presented in Table 5.1. The WSAs have been appropriately sized to accommodate the weekly waste requirements for waste receptacles. It is envisaged that all waste types will be collected on a weekly basis.

Table 5.1 Waste storage requirements for the proposed development

Area/Use	Bins Required			
	MNR ¹	DMR ²	Organic	Glass
Block A (Shared)	3 x 1100 L	5 x 1100 L 1 x 240 L	4 x 240 L	1 x 240 L
Block B (Shared)	3 x 1100 L	6 x 1100 L	4 x 240 L	1 x 240 L
Block C (Shared)	3 x 1100 L 1 x 120 L	6 x 1100 L	4 x 240 L	1 x 240 L
Block D (Shared)	1 x 1100 L 1 x 240 L	2 x 1100 L 1 x 240 L	2 x 240 L	1 x 120 L
Crèche	2 x 240 L	3 x 240 L	1 x 120 L	1 x 120 L
Retail Unit	3 x 240 L	3 x 240 L	1 x 240 L	1 x 120 L
Work Studios	1 x 1100 L 1 x 240 L	1 x 1100 L 1 x 240 L	2 x 240 L	1 x 120 L

Note: 1 = Mixed Non-Recyclables
2 = Dry Mixed Recyclables

The waste receptacle requirements have been established from distribution of the total weekly waste generation estimates into the holding capacity of each receptacle type. Waste storage receptacles as per Table 5.1, above, (or similar appropriate approved containers) will be provided by the facilities management company in the WSAs.

As outlined in the current *Dublin City Development Plan*, it is preferable to use 1,100 L 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 240 L and 120 L 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 SIST EN 840-1:2020 and SIST EN 840-2:2020 standards for performance requirements of mobile waste containers, where appropriate.



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

Receptacles for organic, mixed dry recyclable, glass and mixed non-recyclable waste will be provided in the WSAs prior to first occupation of the development i.e. prior to the first residential unit, crèche unit, retail unit or work studio being occupied.

This Plan will be provided to each resident and tenant from first occupation of the development i.e. once the first residential unit, crèche unit, retail unit or work studio is occupied. This Plan will be supplemented, as required, by the property management company with any new information on waste segregation, storage, reuse and recycling initiatives that are subsequently introduced.

5.1 Waste Storage – Residential Apartment Units

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

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

Provision will be made in all residential units to accommodate 3 no. bin types to facilitate waste segregation at source. An example of a potential 3 bin storage system is provided in Figure 5.2 below.



Figure 5.2 Example three bin storage system to be provided within the unit design

Residents will be required to take their segregated waste materials to their designated WSA and deposit their segregated waste into the appropriate bins. The locations of the WSAs are illustrated in the drawings submitted with the planning application under separate cover.

Each bin / container in the WSAs will be clearly labelled and colour coded to avoid cross contamination of the different waste streams. Signage will be posted above or on the bins to show exactly which waste types can be placed in each bin.

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

Other waste materials such as textiles, batteries, printer toner/cartridges, waste cooking oil 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 5.6.

5.2 Waste Storage – Crèche Unit

Staff will be required to segregate their waste into the following waste categories within their own units:

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

As required, the staff will need to bring segregated DMR, MNR, glass and organic waste to the dedicated crèche WSA.

Each bin/container in the crèche 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 crèche WSA will be restricted to authorised childcare facility staff and facilities management by means of a key or electronic fob access.

Based on the recommended bin requirements in Table 5.1, DMR, MNR and organic waste will be required to be collected weekly and glass will be collected as required.

Other waste materials such as textiles, batteries, printer toner/cartridges, waste cooking oil and WEEE may be generated infrequently by the crèche tenants. Crèche tenants 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 5.6.

5.3 Waste Storage – Retail Unit and Work Studios

The retail tenants and work studio tenants will be required to segregate waste within their own unit into the following main waste types:

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

The retail tenants and work studio tenants will be required to take their segregated waste materials to their designated WSA and deposit their segregated waste into the appropriate bins.

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

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

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

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

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

All bins / containers in the tenants' areas as well as in the retail WSA and work studio 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 wastes can be put in each.

Other waste materials such as textiles, batteries, lightbulbs, WEEE, cooking oil and printer toner / cartridges will be generated less frequently. The tenants will be required to store these waste types within their own units and arrange collection with an appropriately licensed waste contractor. Facilities management may arrange collection, depending on the agreement. Further details on additional waste types can be found in Section 5.6.

5.4 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.

All bins from the proposed development will be brought to a staging area by the waste contractor or facilities management prior to their respective collections. Bins will be returned to their respective WSAs immediately following collection. The staging area is located adjacent to the roundabout between Blocks A and B. The basement level carpark is insufficient in height for a refuse truck to access, therefore all waste will be collected at grade. The location of this staging area can be viewed on the drawings submitted with the planning application under separate cover. A tracking exercise for waste vehicles is included in Appendix 1 of this report.

The staging area is such that it will not obstruct traffic or pedestrians (allowing a footway path of at least 1.8m, the space needed for two wheelchairs to pass each other) as is recommended in the Design Manual for Urban Roads and Streets (2019)²².

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.

5.5 Additional Waste Materials

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

Green/garden waste

Green/garden waste may be generated from internal plants/flowers. Green waste generated from internal plants/flowers can be placed in the organic waste bins in the WSA. If substantial green waste is produced by the crèche tenants, retail tenants or work studio tenants it can be removed by a landscape contractor.

Batteries

A take-back service for waste batteries and accumulators (e.g. rechargeable batteries) is in place in order to comply with the S.I. No. 283/2014 - European Union (Batteries and Accumulators) Regulations 2014, as amended. In accordance with these regulations, consumers are able to bring their waste batteries to their local civic amenity / recycling 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 crèche tenants, retail tenants and work studio tenants cannot use the civic amenity centre. 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 (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 civic amenity / 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 crèche tenants, retail tenants and work studio tenants cannot use the civic amenity centre. 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 crèche unit, retail unit and work studios where appropriate. The crèche tenants, retail tenants and work studio tenants 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 civic amenity / recycling centre.

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

Chemicals (such as solvents, paints, adhesives, resins, detergents, 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 crèche unit, retail unit or work studios that is classed as hazardous (if they arise) will be appropriately stored within the tenant's 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 civic amenity / recycling centre.

Light Bulbs

Waste light bulbs (fluorescent, incandescent and LED) may be generated by lighting at the crèche unit, retail unit and work studios. It is anticipated that the crèche tenants, retail tenants and work studio tenants will be responsible for the off-site removal and appropriate recovery / disposal of these wastes. Facilities management may arrange collection, depending on the agreement.

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

Textiles

Where possible, waste textiles should be recycled or donated to a charity organisation for reuse. The residents, crèche tenants, retail tenants and work studio tenants will be responsible for disposing of waste textiles appropriately.

Waste Cooking Oil

If the crèche tenants, retail tenants or work studio tenants use 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. Under sink grease traps will be installed in any cooking space.

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

Furniture (and other bulky wastes)

Furniture and other bulky waste items (such as carpet, etc.) may occasionally be generated by the residents, crèche tenants, retail tenants and work studio tenants. The collection of bulky waste will be arranged, as required by the crèche tenants, retail tenants or work studio tenants. If residents wish to dispose of furniture, this can be brought a civic amenity / recycling centre.

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.

COVID-19 Waste

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

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

Please note that this guidance is likely to be updated by the time the proposed development is open and occupied and the relevant guidance at the time will need to be reviewed.

5.6 Waste Storage Area Design

The WSAs have been designed to meet the requirements of relevant design standards, including:

- *BS 5906:2005 Waste Management in Buildings – Code of Practice*,
- Be fitted with a non-slip floor surface;
- Provide ventilation to reduce the potential for generation of odours with a recommended 6-10 air changes per hour for a mechanical system for internal WSAs;
- Provide suitable lighting – a minimum Lux rating of 400 is recommended;
- 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;
- 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 signage placed above and on bins indicating correct use;
- Have access for potential control of vermin, if required; and
- Be fitted with CCTV for monitoring.

The facilities management company and residents will be required to maintain the resident bins and storage areas in good condition as required by the DCC Waste Bye-Laws.

6.0 CONCLUSIONS

In summary, this OWMP presents a waste strategy that addresses 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 contributing to 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 Waste Bye-Laws*.

The waste strategy presented in this document will provide sufficient storage capacity for the estimated quantity of segregated waste. The designated areas 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 as amended.
2. Litter Pollution Act 1997 (Act No. 12 of 1997) as amended;
4. Eastern-Midlands Waste Region, *Eastern-Midlands Region (EMR) Waste Management Plan 2015 – 2021* (2015)
5. Dún Laoghaire Rathdown County Council (DLRCC), Dún Laoghaire Rathdown County Council Segregation, Storage and Presentation of Household and Commercial Waste) Bye-laws (2019).
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8. DoELG, *Making Ireland’s Development Sustainable – Review, Assessment and Future Action (World Summit on Sustainable Development)* (2002)
9. DoEHLG, *Taking Stock and Moving Forward* (2004)
10. Department of Communications, Climate Action and Environment (DCCAE), *Waste Action Plan for the Circular Economy - Ireland’s National Waste Policy 2020-2025* (Sept 2020).
11. DCCAE, *Whole of Government Circular Economy Strategy 2022-2023 ‘Living More, Using Less’* (2021).
12. Environmental Protection Agency (EPA), *National Waste Database Reports 1998 – 2012*.
13. DCC, *Dublin City Development Plan 2016-2022* (2016).
14. DCC, *Draft Dublin City Development Plan 2022-2028*.
15. 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).
16. European Waste Catalogue - Council Decision 94/3/EC (as per Council Directive 75/442/EC).
17. Hazardous Waste List - Council Decision 94/904/EC (as per Council Directive 91/689/EEC).
18. EPA, *European Waste Catalogue and Hazardous Waste List* (2002)
19. EPA, *Waste Classification – List of Waste & Determining if Waste is Hazardous or Non-Hazardous* (2018).
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8.0 APPENDIX 1: ROAD SWEEP ANALYSIS FOR REFUSE TRUCK

