

**OPERATIONAL WASTE
MANAGEMENT PLAN FOR
ALTERATIONS TO PERMITTED
REDEVELOPMENT**

AT

**PHIBSBOROUGH SHOPPING
CENTER, PHIBSBOROUGH,
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Our Reference

CB/19/11260WMR01

Date of Issue

1 December 2020

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Document History

Document Reference		Original Issue Date	
CB/19/11260WMR01		1 December 2020	
Revision Level	Revision Date	Description	Sections Affected

Record of Approval

Details	Written by	Approved by
Signature		
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Title	Senior Environmental Consultant	Associate
Date	1 December 2020	1 December 2020

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1.0 INTRODUCTION

AWN Consulting Ltd. (AWN) has prepared this Operational Waste Management Plan (OWMP) for alterations to a permitted mixed use development at Phibsborough Shopping Centre, Phibsborough, Dublin 7.

The existing Phibsborough Shopping Centre is currently comprised of a 6-story office tower above a ground floor, 11 no. retail units and associated parking.

Planning permission was previously granted by Dublin City Council (DCC Planning Reg. Ref. 2628/17) for construction of an extension to the existing Phibsborough Shopping Centre ranging in height from 3 to 7 storeys to contain new retail/restaurant and office units, student accommodation and a new civic plaza. The planning application for the permitted development was accompanied by an Operational Waste Management Plan (AWN Document Ref. CB/17/9337WMR01).

The proposed development consists of the alterations to existing permitted development at Phibsborough Shopping Centre (as permitted under DCC Reg. Ref.: 2628/17, ABP Reg. Ref.: ABP-300241-17) from student accommodation to shared accommodation. The proposed development proposes the reconfiguration and alteration of the existing permitted student development buildings layouts and arrangement to accommodate a 321 bed shared accommodation and associated facilities. This includes a minor relocation of the building footprints, a minor increase in height, proposed new roof gardens and other minor alterations in respect of the wider permitted scheme, as a result of the alteration to shared accommodation, are also included. A full description of the alterations is set out in the Statutory Notices.

This OWMP has been prepared as an update to original OWMP for the permitted development to take into the proposed alterations to the development. Implementation of this OWMP 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 – 2011* as amended and associated Regulations ¹, *Protection of the Environment Act 2003* as amended ², *Litter Pollution Act 2003* as amended ³, the '*Eastern-Midlands Region (EMR) Waste Management Plan 2015 – 2021*' ⁴ 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 WASTEMANAGEMENT IN IRELAND

2.1 National Level

The 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 2002⁷. 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 Ireland's 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.

'*A Resource Opportunity*'¹⁰ policy document was published in July 2012. The policy document stresses the environmental and economic benefits of better waste management, particularly in relation to waste prevention. The document sets out a number of actions, including the following:

- A move away from landfill and replacement through prevention, reuse, recycling and recovery.
- A Brown Bin roll-out diverting 'organic waste' towards more productive uses.
- Introducing a new regulatory regime for the existing side-by-side competition model within the household waste collection market.
- New Service Standards to ensure that consumers receive higher customer service standards from their operator.
- Placing responsibility on householders to prove they use an authorised waste collection service.
- The establishment of a team of Waste Enforcement Officers for cases relating to serious criminal activity will be prioritised.
- Reducing red tape for industry to identify and reduce any unnecessary administrative burdens on the waste management industry.
- A review of the producer responsibility model will be initiated to assess and evaluate the operation of the model in Ireland.
- Significant reduction of Waste Management Planning Regions from ten to three.

In September 2020 the government released a new policy document outlining a new action plan for Ireland to cover the period of 2020-2025. This plan '*A Waste Action Plan for a Circular Economy*' was prepared in response to the 'European Green Deal' which sets a roadmap for a transition to a new economy, where climate and environmental challenges are turned into opportunities. It aims to fulfil the commitment in the Programme for Government to publish and start implementing a new National

Waste Action Plan. It is intended that this new national waste policy will inform and give direction to waste planning and management in Ireland over the coming years. It will be followed later this year by an All of Government Circular Economy Strategy. The policy document shifts focus away from waste disposal and moves it back up the production chain. To support the policy, regulation is already being used (Circular Economy Legislative Package) or in the pipeline (Single Use Plastics Directive). The policy document contains over 200 measures across various waste areas including Circular Economy, Municipal Waste, Consumer Protection & Citizen Engagement, Plastics and Packaging, Construction and Demolition, Textiles, Green Public Procurement and Waste Enforcement.

Since 1998, the Environmental Protection Agency (EPA) has produced periodic '*National Waste (Database) Reports*'¹¹ 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 which was published in May 2015.

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

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

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

The *Dublin City Development Plan 2016 – 2022*¹² 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.*

2.3 Legislative Requirements

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

- Waste Management Act 1996 (No. 10 of 1996) as amended 2001 (No. 36 of 2001), 2003 (No. 27 of 2003) and 2011 (No 20 of 2011). Sub-ordinate and associated legislation includes:
 - European Communities (Waste Directive) Regulations 2011 (S.I. No. 126 of 2011) as amended
 - Waste Management (Collection Permit) Regulations 2007 (S.I. No. 820 of 2007) as amended
 - Waste Management (Facility Permit and Registration) Regulation 2007 (S.I No. 821 of 2007) as amended
 - Waste Management (Licensing) Regulations 2000 (S.I No. 185 of 2000) as amended
 - European Union (Packaging) Regulations 2014 (S.I. No. 282 of 2014) as amended.
 - Waste Management (Planning) Regulations 1997 (S.I. No. 137 of 1997) as amended
 - Waste Management (Landfill Levy) Regulations 2015 (S.I. No. 189 of 2015)
 - European Communities (Waste Electrical and Electronic Equipment) Regulations 2014 (S.I. No. 149 of 2014)
 - Waste Management (Batteries and Accumulators) Regulations 2014 (S.I. No. 283 of 2014) as amended
 - Waste Management (Food Waste) Regulations 2009 (S.I. No. 508 of 2009) as amended
 - European Union (Household Food Waste and Bio-waste) Regulations 2015 (S.I. No. 430 of 2015)
 - Waste Management (Hazardous Waste) Regulations 1998 (S.I. No. 163 of 1998) as amended

- Waste Management (Shipments of Waste) Regulations 2007 (S.I. No. 419 of 2007) as amended
- *European Communities (Transfrontier Shipment of Waste) Regulations 1994 (SI 121 of 1994)*
- European Union (Properties of Waste Which Render it Hazardous) Regulations 2015 (S.I. No. 233 of 2015) as amended
- Environmental Protection Act 1992 (S.I. No. 7 of 1992) as amended;
- Litter Pollution Act 1997 (Act No. 12 of 1997) as amended and
- Planning and Development Act 2000 (S.I. No. 30 of 2000) as amended 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, tenants and the building 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.

2.3.1 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 force 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.

2.4 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 Duleek, Co. Meath and a second facility in Poolbeg in Dublin.

There is a Local Authority Bring Bank at Phibsborough Shopping Centre. It can accept glass bottles and jars and beverage cans. The closest civic amenity site to the development is located c. 2 km to the southwest, at Shamrock Terrace. It can accept a wide range of household wastes including batteries, waste electrical and electronic equipment and waste cooking oil.

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 mixed-use and shared accommodation development is located on a site of 0.969 ha. at Phibsborough Shopping Centre and 345-349 North Circular Road, Dublin 7. The site is bounded by North Circular Road to the South, Connaught St to the North, Dalymount Park to the West and Phibsborough Road to the East.

The site currently comprises a 6-story office block, above a single level retail and 1st floor roof level carpark; and 11 retail units comprising of restaurants, retail and a gym.

As stated in Section 1.0, planning permission was previously granted by DCC (Planning Reg. Ref. 2628/17) for construction of an extension to the existing Phibsborough Shopping Centre ranging in height from 3 to 7 storeys to contain new retail/restaurant and office units, student accommodation and a new civic plaza.

The proposed development consists of the alterations to existing permitted development at Phibsborough Shopping Centre (as permitted under DCC Reg. Ref.: 2628/17, ABP Reg. Ref.: ABP-300241-17) from student accommodation to shared accommodation. The proposed development proposes the reconfiguration and alteration of the existing permitted student development buildings layouts and arrangement to accommodate a 321 bed shared accommodation and associated

facilities. This includes a minor relocation of the building footprints, a minor increase in height, proposed new roof gardens and other minor alterations in respect of the wider permitted scheme, as a result of the alteration to shared accommodation, are also included. A full description of the alterations is set out in the Statutory Notices.

A Schedule of Areas was prepared by the project architects (Donnelly Turpin Architects). The proposed development will comprise the following:

- 2 no. 6 storey shared accommodation blocks above the ground and first floor levels;
- 5 no. retail/restaurant/café units (Units A1 and A3 are proposed retail units, Units A2, A4 and A5 are proposed restaurant/café units) on the ground and first floors; and
- Additional commercial office space.

The 5 no. retail/restaurant/café units and the additional commercial office space were previously permitted under Planning Reg. Ref. 2628/17. There are just minor alterations proposed to these elements of the scheme.

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 commercial tenants);
- Furniture (and from time to time other bulky wastes); and
- Abandoned bicycles.

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

* Individual waste type may contain hazardous materials

Table 3.1 Typical Waste Types Generated and LoW Codes

4.0 ESTIMATED WASTE ARISING

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

The estimated quantum/volume of waste that will be generated from the shared accommodation development has been determined based on the predicted occupancy of the units. The waste generation for the new retail and restaurant/café units and offices is based on waste generation rates per m² floor area for the proposed building use.

The total estimated waste generation for the development for the main waste types is presented in Table 4.1 below and is based on the uses and areas as advised by the project Architects (Donnelly Turpin Architects).

Waste Type	Estimated Volume of Waste m ³ /week		
	Shared Accommodation	New Retail/Restaurant/Café Units	Additional Office Space
Organic	1.75	1.55	0.14
Cardboard suitable for baling		6.05	
Plastic suitable for baling		1.31	
Dry mixed recyclables	12.00	3.75	4.25
Glass	0.34	0.27	0.03
Confidential paper			1.30
Mixed non-recyclables	6.98	6.37	0.32
Total	21.07	12.94	6.04

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.

It has been assumed that the shared accommodation, retail and restaurant/café units will generate similar waste volumes over a seven-day period while the office unit will operate over a five-day period. The estimated waste quantities for the residents include for the waste generated in the community facilities and areas on a weekly basis.

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;
- Dublin City Council Development Plan 2016 – 2022 (Appendix 10);
- DCC Dublin City Council (Storage, Presentation and Segregation of Household and Commercial Waste) Bye-Laws (2018); *and*
- DoEHLG, Sustainable Urban Housing: Design Standards for New Apartments, Guidelines for Planning Authorities (2018) ¹⁹.

The shared accommodation will have a dedicated waste storage area (WSA) located on the ground floor. This will be accessible by the cleaning staff, building management personnel and nominated waste contractor(s), as required. The location and layout of the WSA is illustrated on the architectural drawings that accompany the pre-planning submission (Note: The WSA is referred to as a Bin Store on the drawings). An excerpt from the ground floor drawing showing the WSA/Bin Store is provided as Figure 5.1.

There will also be dedicated commercial WSA in the new service yard at the rear of the shopping centre which will be accessed from Connaught Street. Commercial waste arising from the new retail/restaurant/café units and additional office space will be stored in the service yard as well as commercial waste arising from the existing retail/restaurant/café units and office space. The service yard can be accessed from all the commercial units using the service paths and goods lifts that are provided in the development design. The location of the service yard is illustrated on the architectural drawings that accompany the pre-planning submission and is also shown in Figure 5.1.

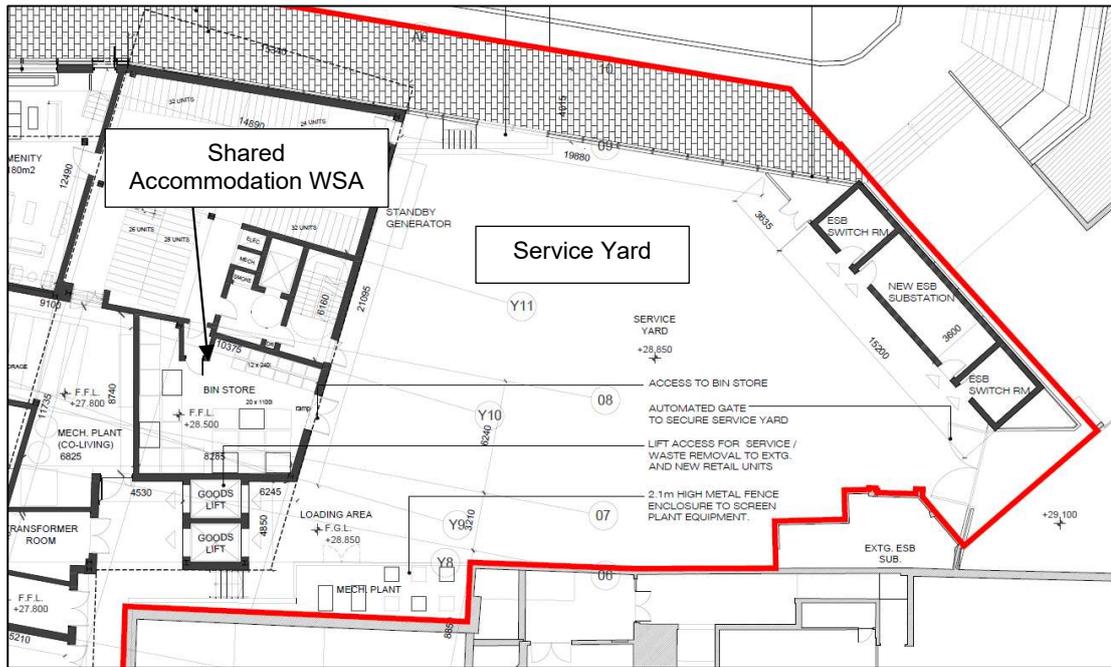


Figure 5.1 Location of the Shared Accommodation WSA and the Service Yard
 Using the estimated waste generation volumes in Table 4.1, the waste receptacle requirements for the main waste types have been established for the shared accommodation development based on weekly waste collection of each waste type. These are presented in Table 5.1.

Shared Living	No. and Type of Bins
Waste type	
Organic Waste	10 x 240 L bins
Mixed Dry Recyclables	12 x 1100 L bins
Glass	2 x 240 L bins
Mixed Municipal Waste	8 x 1100 L bins

Table 5.1 Waste storage requirements for the shared accommodation development

The waste receptacle/equipment requirements for the main waste types for the new retail/restaurant and additional office units. These are presented in Table 5.2.

New Commercial Units	No. and Type of Bins/Equipment
Organic	9 x 240 L bins
Cardboard for baling	Baler, roll cages for unbaled material, and bales
Plastic for baling	
Dry Mixed Recyclables	5 x 1100 L bins
Glass	2 x 240 L bins
Mixed Non-Recyclables	6 x 1100 L bins

Waste storage receptacles required as per Tables 5.1 and 5.2 above will vary in size, design and colour dependent on the appointed waste contractor. Also, compactors may be used for the commercial dry mixed recyclable waste and/or mixed non-recyclable waste. However, typical receptacles to be used in the WSAs are shown in Figure 5.2. All waste receptacles used will comply with the IS EN 840 2012 standard for performance requirements of mobile waste containers, where appropriate.

As outlined in the current Dublin City Development Plan, it is preferable to use 1,100 litre 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 litre bins

as recommended in Tables 5.1 and 5.2 will reduce the manual handling impacts on the building management personnel and waste contractor employees.



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

5.1 Waste Storage – Shared Accommodation

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

- Dry mixed recyclable waste;
- Mixed non-recyclable waste;
- Organic waste; and
- Glass.

Segregated bins for dry mixed recyclable waste, mixed non-recyclable waste and glass waste will be provided by the building management company in Area Waste Stations (AWSs) in each of the communal kitchen/dining areas on each floor of the shared accommodation. In addition, organic waste bins will be provided at each kitchen workstation within the communal kitchen/dining areas and/or at the AWS. The provision of the segregated bins in the kitchen/dining areas will facilitate segregation of waste at source.

Additional communal AWSs with bins for dry mixed recyclable waste, mixed non-recyclable waste, organic waste and glass waste will be provided by the building management company on each floor of the shared accommodation, where considered necessary.

Resident's bedrooms will have bins for dry mixed recyclable waste, mixed non-recyclable and organic waste segregation. Residents will be required to segregate their waste as above into the provided receptacles in accordance with the terms of the letting agreements of the Operator.

No food macerators will be installed within any area of the shared accommodation blocks.

As required, the residents will bring waste from their bedrooms to the AWSs located on each floor. Cleaning staff empty the bins in each of the AWSs and organic bins at the kitchen workstations on each floor every day (or more frequently as required) and convey the waste (in bags/bins/trolley) to the dedicated shared accommodation WSA at ground floor level. The waste will be conveyed via dedicated travel routes and lifts on each floor. It is envisaged that residents will not need to access the WSA on ground floor level. Room servicing can also be arranged with building management.

Segregated waste bins (as per Table 5.1) will be provided by the building management company in the WSA at ground floor level.

Suitable storage containers will also be provided in a dedicated storage area on the 2nd floor to store WEEE, light bulbs and waste cooking oil generated by residents with collection arranged by building management.

Other waste materials such as batteries, printer toner/cartridges and textiles may be generated infrequently by residents. Residents will be required to store these waste items within their units and dispose of them appropriately. Further details on how these waste types will be managed can be found in Section 5.5.

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

5.2 Waste Storage – Offices

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

- Dry mixed recyclable waste;
- Mixed non-recyclable waste;
- Organic waste; and
- Glass.

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

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

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

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

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

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

Nominated cleaning staff will be required to bring full waste receptacles from within the offices to the commercial WSA in the service yard. Cleaning staff will use the lifts to bring waste to the ground floor as required.

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

It is currently proposed that dry mixed recyclables, mixed non-recyclables and organic waste will be collected on a weekly to twice weekly basis, while glass will be collected as required. More frequent collections can be arranged if necessary.

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

5.3 Waste Storage –Retail/Restaurant/Café Units

The retail/restaurant/café units' tenants will be required to segregate waste within their own unit into the following main waste types:

- Dry mixed recyclable waste;
- Mixed non-recyclable waste;
- Organic waste; and
- Glass.

It is essential that adequate provision is made throughout the retail/restaurant units for storage and daily transfer of waste. It is anticipated that considerable volumes of plastic and cardboard packaging waste will be generated as a result of delivery of new stock on a regular basis. Waste will be segregated and stored in the retail/restaurant/café tenant's own unit and then as required, it will be transferred to the commercial WSA in the service yard by the tenant's staff or by building management personnel, depending on the arrangement.

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

Food preparation in the restaurant/café units 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 units.

All bins/containers in the tenant's areas as well as in the commercial 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.

It is currently proposed that dry mixed recyclables, mixed non-recyclables, organic waste and glass will be collected on a weekly to twice weekly basis. More frequent collections can be arranged if necessary.

Other waste materials such as batteries, WEEE, lightbulbs and waste cooking oil will be generated less frequently. Space will have to be allowed for in the tenant's unit for storage of these waste types as required. Other waste types will be collected on an as required basis.

5.4 Waste Collection

There are numerous private contractors that provide residential and commercial waste collection in the Dublin City area. All waste contractors servicing the proposed development must hold a valid waste collection permit for the specific waste types collected. All waste collected must be transported to registered, permitted and/or licensed facilities only.

All waste receptacles stored in the shared accommodation WSA and commercial WSA will be collected from the service yard by the nominated waste contractor. The waste contractor can easily access the service yard from Connaught St. as required. Once the bins and bales (and the compactor(s), if compactors are used) are emptied/collected, the bins will be promptly returned to the WSAs and out of public view.

All waste receptacles presented for collection will be clearly identified as required by waste legislation and the requirements of the DCC Waste Bye-Laws. Also, waste will be presented for collection in a manner that will not endanger health, create a risk to traffic, harm the environment or create a nuisance through odours or litter.

5.5 Additional Waste Materials

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

Green waste

Green waste may be generated from internal plants/flowers. Green waste generated from landscaping of external areas will be removed by external landscape contractors. Green waste generated from 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 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 commercial 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. Building management may arrange temporary storage and collection depending on the agreement.

Waste Electrical and Electronic Equipment (WEEE)

The *WEEE Directive 2002/96/EC* and associated *European Union (WEEE) Regulations 2014* have been enacted to ensure a high level of recycling of electronic and electrical equipment. It is the manufacturers' responsibility to take back the WEEE, regardless of whether a replacement product is purchased or not and retailers are

required to take back WEEE where a similar product is purchased. WEEE can be taken by the residents to the dedicated storage area for WEEE or to the nearest civic amenity centre. A receptacle for WEEE will be accommodated in the dedicated storage area for WEEE, light bulbs and waste cooking oil on the 2nd floor. Collection of WEEE will be arranged as required.

As noted above, the commercial tenant 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. Building management may arrange temporary storage and collection depending on the agreement.

Printer Cartridge/Toners

The commercial 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 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 commercial units that is classed as hazardous (if they arise) will be appropriately stored within the tenants own space. Building management may arrange temporary storage and 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 centre.

Light Bulbs (Long Life, LED and Lilament bulbs)

Waste light bulbs may be generated by lighting in the commerical units. It is anticipated that commercial tenants will be responsible for the off-site removal and appropriate recovery/disposal of these wastes. Building management may arrange temporary storage and collection depending on the agreement.

Light bulbs generated by residents can be taken to the nearest civic centre. A receptacle for WEEE will be accommodated in the dedicated storage area for WEEE, light bulbs and waste cooking oil on the 2nd floor. Collection of light bulbs will be arranged as required.

Textiles

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

Waste Cooking Oil

If the commercial 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 residents generate waste cooking oil this can be taken to the nearest civic centre. A bunded receptacle for waste cookign oil will be accommodated in the dedicated storage area for WEEE, light bulbs and waste cooking oil on the 2nd floor. Collection of waste cooking oil will be arranged as required.

Furniture (and other bulky wastes)

Furniture and other bulky waste items (such as carpet etc.) may occasionally be generated by the commercial tenants. The collection of bulky waste will be arranged as required by the tenant or by building management personnel, depending on arrangement.

The shared accommodation development will be fully furnished and residents will be restricted from bringing additional furniture to the development. If residents wish to dispose of furniture not owned by the development, this can be brought to a recycling centre that can accept this type of waste.

Abandoned Bicycles

Bicycle parking areas are planned for the development. As happens in other developments, residents and tenants sometimes abandon faulty or unused bicycles and it can be difficult to determine their ownership. Abandoned bicycles could be donated to charity if they arise. Should this circumstance arise, this will be arranged by building management, as necessary.

5.6 Waste Storage Area Design

The WSAs should 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 with a recommended 6-10 air changes per hour for a mechanical system for internal WSAs;
- Provide suitable lighting – a minimum Lux rating of 220 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, if required.

The building management company will be required to maintain the waste 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 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 Waste Bye-Laws*.

The waste strategy presented in this document will provide sufficient storage capacity for the estimated quantity of segregated waste. The designated area for waste storage

will provide sufficient room for the required receptacles in accordance with the details of this strategy.

7.0 REFERENCES

1. Waste Management Act 1996 (S.I. No. 10 of 1996) as amended 2001 (S.I. No. 36 of 2001), 2003 (S.I. No. 27 of 2003) and 2011 (S.I. No. 20 of 2011). Sub-ordinate and associated legislation includes:
 - European Communities (Waste Directive) Regulations 2011 (S.I. No. 126 of 2011) as amended
 - Waste Management (Collection Permit) Regulations 2007 (S.I. No. 820 of 2007) as amended
 - Waste Management (Facility Permit and Registration) Regulations 2007 (S.I. No. 821 of 2007) as amended
 - Waste Management (Licensing) Regulations 2000 (S.I. No. 185 of 2000) as amended
 - European Union (Packaging) Regulations 2014 (S.I. No. 282 of 2014)
 - Waste Management (Planning) Regulations 1997 (S.I. No. 137 of 1997)
 - Waste Management (Landfill Levy) Regulations 2015 (S.I. No. 189 of 2015)
 - European Communities (Waste Electrical and Electronic Equipment) Regulations 2014 (S.I. No. 149 of 2014)
 - Waste Management (Batteries and Accumulators) Regulations 2014 (S.I. No. 283 of 2014) as amended
 - Waste Management (Food Waste) Regulations 2009 (S.I. No. 508 of 2009) as amended 2015 (S.I. No. 190 of 2015)
 - European Union (Household Food Waste and Bio-waste) Regulations 2015 (S.I. No. 430 of 2015)
 - Waste Management (Hazardous Waste) Regulations 1998 (S.I. No. 163 of 1998) as amended 2000 (S.I. No. 73 of 2000)
 - Waste Management (Shipments of Waste) Regulations 2007 (S.I. No. 419 of 2007) as amended
 - European Communities (Transfrontier Shipment of Waste) Regulations 1994 (SI 121 of 1994)
 - European Union (Properties of Waste which Render it Hazardous) Regulations 2015 (S.I. No. 233 of 2015) as amended;
2. Environmental Protection Act 1992 (Act No. 7 of 1992) as amended;
3. Litter Pollution Act 1997 (Act No. 12 of 1997) as amended;
4. Eastern-Midlands Waste Region, *Eastern-Midlands Region (EMR) Waste Management Plan 2015 – 2021* (2015)
5. Dublin City Council DCC Draft *Dublin City Council (Storage, Presentation and Segregation of Household and Commercial Waste) Bye-Laws (2018)*
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9. DoEHLG, *Taking Stock and Moving Forward* (2004)
10. DoEHLG, *A Resource Opportunity - Waste Management Policy in Ireland* (2012)
11. Environmental Protection Agency (EPA), *National Waste Database Reports 1998 – 2012*.
12. DCC, *Dublin City Development Plan 2016 – 2022* (2016)
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. DoEHLG, *Sustainable Urban Housing: Design Standards for New Apartments, Guidelines for Planning Authorities* (2018).