

**OPERATIONAL WASTE
MANAGEMENT PLAN FOR
A PROPOSED STRATEGIC
HOUSING DEVELOPMENT**

‘THE ARBOURY’

**BELGARD ROAD,
TALLAGHT,
DUBLIN 24**

The Tecpro Building,
Clonshaugh Business & Technology Park,
Dublin 17, Ireland.

T: + 353 1 847 4220
F: + 353 1 847 4257
E: info@awnconsulting.com
W: www.awnconsulting.com

Report Prepared For

**Landmarque Belgard
Development Company Limited**

Report Prepared By

Niamh Kelly, Environmental Consultant

Our Reference

NK/217501.0264WMR01

Date of Issue

10 May 2022

Cork Office

Unit 5, ATS Building,
Carrigaline Industrial Estate,
Carrigaline, Co. Cork.
T: +353 21 438 7400
F: +353 21 483 4606

AWN Consulting Limited
Registered in Ireland No. 319812
Directors: F Callaghan, C Dilworth,
T Donnelly, E Porter
Associate Director: D Kelly

Document History

Document Reference		Original Issue Date	
NK/217501.0264WMR01		10 May 2022	
Revision Level	Revision Date	Description	Sections Affected

Record of Approval

Details	Written by	Approved by
Signature		
Name	Niamh Kelly	Chonaiil Bradley
Title	Environmental Consultant	Principal Environmental Consultant
Date	10 May 2022	10 May 2022

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1.0 INTRODUCTION

AWN Consulting Ltd. (AWN) has prepared this Operational Waste Management Plan (OWMP) on behalf of Landmarque Belgard Development Company Limited. The proposed development comprises the demolition of all existing structures on site (with a combined gross floor area of c. 3625 sqm) and the construction of a mixed-use residential development set out in 3 No. blocks including a podium over a basement, ranging in height from 2 to 13 storeys (with core access above to roof terrace), comprising 334 no. residential units, 4 no. commercial units and 3 no. commercial units associated with the 3 no. live-work units (723 sqm combined), and childcare facility (144 sqm).

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 Regulations¹, *Environmental Protection Agency Act 1992* as amended², *Litter Pollution Act 1997* as amended³, the '*Eastern-Midlands Region (EMR) Waste Management Plan 2015 – 2021*'⁴ and South Dublin County Council (SDCC) *County of South Dublin (Segregation, Storage and Presentation of Household and Commercial Waste) Bye-laws (2018)*⁵. In particular, this OWMP aims to provide a robust strategy for the storage, 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 entitled '*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 Irelands*

*Development Sustainable – Review, Assessment and Future Action*⁸. This document also stressed the need to decouple 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 proposed development is located in the Local Authority area of South Dublin County Council (SDCC).

The *EMR Waste Management Plan 2015 – 2021* is the regional waste management plan for the SDCC area 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 early 2022.

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

- A 1% reduction per annum in the quantity of household waste generated per capita over the period of the plan;
- Achieve a recycling rate of 50% of managed municipal waste by 2020; and
- Reduce to 0% the direct disposal of unprocessed residual municipal waste to landfill (from 2016 onwards) in favour of higher value pre-treatment processes and indigenous recovery practices.

Municipal landfill charges in Ireland are based on the weight of waste disposed. In the Leinster Region, charges are approximately €130 - €150 per tonne of waste which includes a €75 per tonne landfill levy specified in the *Waste Management (Landfill Levy) Regulations 2015*.

The *South Dublin County Council Development Plan 2016 – 2022*¹³ sets out a number of objectives and actions for the South Dublin area in line with the objectives of the waste management plan.

Waste objectives and actions with a particular relevance to the proposed development are as follows:

Objectives:

- **IE5 Objective 1:** To support the implementation of the Eastern–Midlands Region Waste Management Plan 2015-2021 by adhering to overarching performance targets, policies and policy actions.
- **IE5 Objective 2:** To support waste prevention through behavioural change activities to de-couple economic growth and resource use.

- **IE5 Objective 3:** To encourage the transition from a waste management economy to a green circular economy to enhance employment and increase the value recovery and recirculation of resources.
- **IE5 Objective 8:** To secure appropriate provision for the sustainable management of waste within developments, including the provision of facilities for the storage, separation and collection of such waste.

Actions:

- Support and facilitate the separation of waste at source into organic and non-organic streams or other waste management systems that divert waste from landfill and maximise the potential for each waste type to be re-used and recycled or composted and divert organic waste from landfill, in accordance with the National Strategy on Biodegradable Waste (2006).
- Implement the objectives of the National Waste Prevention Programme at a local level with businesses, schools, householders, community groups and within the Council's own activities.
- Promote an increase in the amount of waste re-used and recycled consistent with the Regional Waste Management Plan and Waste Hierarchy and facilitate recycling of waste through adequate provision of facilities and good design in new developments.
- Implement the South Dublin Litter Management Plan 2015 - 2019.

The *Draft South Dublin County Development Plan 2022 – 2028*¹⁴ will supersede the current development plan and is due to be complete and come into effect in August 2022. The following policy and objectives have thus far been incorporated into the draft plan:

Policy and Objectives

Policy IE6: Waste Management

Implement European Union, National and Regional waste and related environmental policy, legislation, guidance and codes of practice to improve management of material resources and wastes.

- **IE6 Objective 1**
To encourage a just transition from a waste management economy to a green circular economy to enhance employment and increase the value, recovery and recirculation of resources through compliance with the provisions of the Waste Action Plan for a Circular Economy 2020 – 2025 and to promote the use of, but not limited to, reverse vending machines and deposit return schemes or similar to ensure a wider and varying ways of recycling.
- **IE6 Objective 2**
To support the implementation of the Eastern Midlands Region Waste Management Plan 2015-2021 or as amended by adhering to overarching performance targets, policies and policy actions.
- **IE6 Objective 4**
To provide for and maintain the network of bring infrastructure (e.g. civic amenity facilities, bring banks) in the County to facilitate the recycling and recovery of hazardous and non-hazardous municipal wastes.
- **IE6 Objective 7**

To require the appropriate provision for the sustainable management of waste within all developments, ensuring it is suitably designed into the development, including the provision of facilities for the storage, separation and collection of such waste.

- **IE6 Objective 8**

To adhere to the recommendations of the National Hazardous Waste Management Plan 2014-2020 and any subsequent plan, and to co-operate with other agencies including the EPA in the planning, organisation and supervision of the disposal of hazardous waste streams, including hazardous waste identified during construction and demolition projects.

2.3 Legislative Requirements

The primary legislative instruments that govern waste management in Ireland and applicable to the proposed development 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 transpose the 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, commercial tenants, creche tenants and the proposed facilities management company undertake on-site management of waste in accordance with all legal requirements and that the facilities management company 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 Industrial Emissions (IE) 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 South Dublin County Council Waste Management Bye-Laws

The SDCC “*County of South Dublin (Storage, Presentation and Segregation of Household and Commercial Waste) Bye-Laws (2018)*” came into effect in December 2018. These Bye-laws repeal the previous SDCC bye-laws; *South Dublin County Council Household Waste Bye-Laws 2012* and *South Dublin County Council (Storage, Separation at Source, Presentation and Collection of Commercial Waste) Bye-Laws 2007*. The Bye-Laws set a number of enforceable requirements on waste holders and collectors with regard to storage, separation, presentation and collection of waste within the SDCC functional area. Key requirements under these Bye-laws are:

- Kerbside waste presented for collection shall not be presented for collection earlier than 8.00pm 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 8:00am on the day following the designated waste collection day;
- Neither recyclable household kerbside waste nor food waste arising from households shall be contaminated with any other type of waste before or after it has been segregated; and
- A management company, or another person if there is no such company, who exercises control and supervision of residential and/or commercial activities in multi-unit developments, mixed-use developments, flats or apartment blocks, combined living/working spaces or other similar complexes shall ensure that:
 - separate receptacles of adequate size and number are provided for the proper segregation, storage and collection of recyclable household kerbside waste and residual household kerbside waste;
 - additional receptacles are provided for the segregation, storage and collection of food waste where this practice is a requirement of the national legislation on food waste;
 - the receptacles referred to in paragraphs (a) and (b) are located both within any individual apartment and at the place where waste is stored prior to its collection;
 - any place where waste is to be stored prior to collection is secure, accessible at all times by tenants and other occupiers and is not accessible by any other person other than an authorised waste collector,
 - written information is provided to each tenant or other occupier about the arrangements for waste separation, segregation, storage and presentation prior to collection; and
 - an authorised waste collector is engaged to service the receptacles referred to in this section of these bye-laws, with documentary evidence, such as receipts, statements or other proof of payment, demonstrating the existence of this engagement being retained for a period of no less than two years. Such evidence shall be presented to an authorised person within a time specified in a written request from either that person or from another authorised person employed by South Dublin County Council.

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

2.4 Regional Waste Management Service Providers and Facilities

Various contractors offer waste collection services for the residential sector in the SDCC 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 all are 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 in Poolbeg in Dublin.

The Ballymount Waste Recycling Centre, Ballymount Avenue, Greenhills, located c. 2.65km north east of the development site, can be utilised by residents of the proposed development for other household waste streams. This centre can accept small electrical items, Tetrapak, batteries, scrap metal, clothes, cardboard and polystyrene. There is also a bring bank located c. 317m south west of the development at Tallaght Civic Centre, 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 / Industrial Emissions Licenses issued are available from the EPA.

3.0 DESCRIPTION OF THE DEVELOPMENT

3.1 Location, Size and Scale of the Development

The site of c.0.898 ha is located at the former ABB Site, Belgard Road, Tallaght, Dublin 24, D24 KD78. The site is bound by Belgard Road (R113) to the east, Belgard Square North to the North and Belgard Square East to the west and Clarity House to the south.

The proposed development will consist of:

1. Demolition of all existing structures on site (with a combined gross floor area of c. 3625 sqm)
2. The construction of a mixed-use residential development set out in 3 No. blocks including a podium over a basement, ranging in height from 2 to 13 storeys (with core access above to roof terrace), comprising:
 - 334 no. residential units of which 118 No. will be Build to Rent (BTR) residential units, with associated amenities and facilities across the development,
 - 4 No. retail/café/restaurant units and 3 no. commercial spaces associated with the 3 no. live-work units (723 sqm combined),
 - Childcare facility (144 sq.m.),
 - 670 No. bicycle parking spaces including 186 visitor spaces; 117 car parking spaces (including 6 disabled spaces) are provided at ground floor and basement level.
 - The overall development has a Gross Floor Area of 29,784 sq.m.
 - Two (2) podium residential courtyards and three (3) public accessible pocket parks, two (2) to the North & one (1) to the South.

- Linear Park (as a provision of the Tallaght Town Centre LAP) providing safe public pedestrian and cycling access between Belgard Rd and Belgard Square East

3. Of the total 334 residential units proposed, unit types comprise:

Block A (Build-to-Rent)

- 91 no. 1 bed units
- 1 no. 2 bed 3 person units
- 26 no. 2 bed 4 person units

Blocks B & C

- 2 no. live-work studio units
- 102 no. 1-bed units
- 12 no. 2-bed 3 person units
- 88 no. 2-bed 4 person units including 5 no. duplex units
- 1 no. 2-bed 4 person live-work unit
- 11 no. 3-bed units

4. All associated works, plant, services, utilities, PV panels and site hoarding during construction

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 less frequently / in smaller 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;
- Waste cooking oil (if any generated by the residents, commercial tenants or creche 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 since the 1st June 2015. This waste classification system applies across the EU and is the basis for all national and international waste reporting, such as those associated with waste collection permits, CORs, permits and licences and the 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 (EWC)) for typical waste materials expected to be generated during the operation of the proposed development are provided in Table 3.1, below.

Table 3.1 Typical Waste Types Generated and LoW Codes

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

* Individual waste type may contain hazardous materials

4.0 ESTIMATED WASTE ARISING

A waste generation model (WGM) developed by AWN has been used to predict waste types, weights and volumes expected to arise 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 commercial units and creche unit.

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

The estimated waste generation for the proposed development for the main waste types is presented in Tables 4.1 and 4.2.

Table 4.1 *Estimated Waste Generation for Residential Units*

Waste Type	Waste Volume (m ³ / week)	
	Block A (Combined)	Blocks B & C (Combined)
Organic Waste	1.53	3.14
Dry Mixed Recyclables	8.98	18.38
Glass	0.30	0.61
Mixed Non-Recyclables	8.45	17.30
Total	19.26	39.43

Table 4.2 *Estimated Waste Generation for Commercial Units and Creche Unit*

Waste Type	Waste Volume (m ³ / week)	
	Commercial Units (Combined)	Creche
Organic Waste	0.72	0.02
Dry Mixed Recyclables	1.87	0.88
Glass	0.03	<0.01
Mixed Non-Recyclables	1.87	0.48
Total	4.49	1.39

*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 proposed 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 proposed site layout as well as best practice standards, local and national waste management requirements, including those of SDCC. 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;*
- *South Dublin County Council Development Plan 2016 – 2022;*

- SDCC County of South Dublin (Segregation, Storage and Presentation 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

Two (2 no.) Waste Storage Areas (WSAs) have been allocated in the design of this development for residential use. Both WSAs are located at ground floor level. One (1 no.) WSA will only be accessible by facilities management and will be used for the storage of compactor waste bags and additional bins.

One (1 no.) WSA has been allocated in the design of this development for commercial use. This WSA is located at ground floor level and is for use by all commercial units and the creche.

Using the estimated waste generation volumes in Tables 4.1 and 4.2, above, the waste receptacle requirements for MNR, DMR, organic waste and glass have been established. It is envisaged that MNR, DMR, organic waste and glass waste will be collected weekly.

Waste Storage Requirements

Estimated waste storage requirements for the operational phase of the proposed development are detailed in Tables 5.1 and 5.2, below.

Table 5.1 Waste storage requirements for the proposed development for residential units

Area/Use	Compactor	Bins Required			
		Compacted Waste Containers (c. 2m ³ each) MNR ¹	Compacted Waste Containers (c. 3m ³ each) DMR ²	Glass (240 L)	Organic (240 L)
Residential WSA (Shared)	1 no. for MNR ¹ 1 no. for DMR ²	3	2	4	20

Table 5.2 Waste storage requirements for the proposed development for commercial units

Area/Use	Bins Required			
	MNR ¹	DMR ²	Glass	Organic
Commercial WSA (Commercial Units and Creche) (Shared)	2 x 1100 L	3 x 1100 L	1 x 120 L	3 x 240 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 estimate into the holding capacity of each receptacle type. Waste storage receptacles as per Tables 5.1 and 5.2, above, (or similar appropriate

approved containers) will be provided by the facilities management company in the WSAs.

It is proposed that facilities management will avail of a commercially available mini compactor for the DMR and MNR waste streams in the residential WSA, referred to as an Epac compactor in this OWMP.

This option will significantly reduce the volume of waste and as such the number of bins stored on site and the number of bins that will need to be transported for collection. It compresses/compacts the waste into 2m³ and 3m³ bags.

Alternative options can be considered in future by the facilities management company, as technologies are developed. Solely for the purpose of ensuring the residential WSA is sufficiently sized, this plan assumes that the Epac option will be utilised.

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)

The Epac compactor referred to in the list of bins/equipment in the residential WSA is a compactor that compresses/compacts the waste into 2m³ and 3m³ skip bags (also called Flexible Intermediate Bulk Containers or FIBCs). A photo of the Epac mini compactor is provided as Figure 5.2.

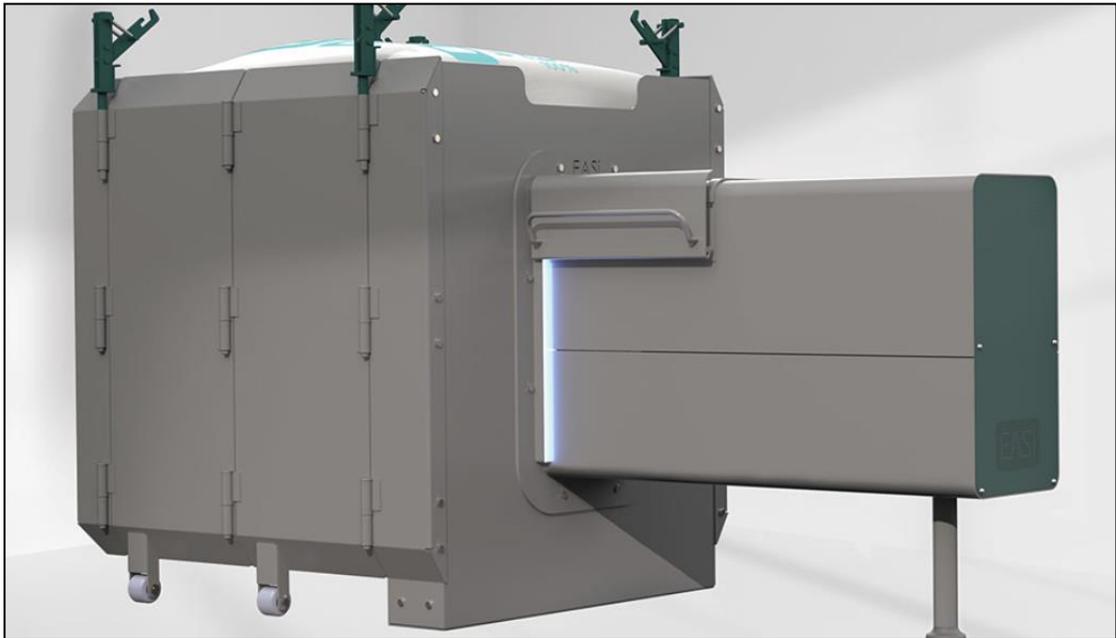


Figure 5.2 Photo of an Epac Mini Compactor (Source: bnmrecycling Website)

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 being occupied.

This Plan will be provided to each resident from first occupation of the development i.e. once the first residential unit 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 Units

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

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

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

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

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

Access to the shared residential WSA 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, light bulbs 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 5.5.

5.2 Waste Storage – Commercial Units

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

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

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

Suppliers for the commercial 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 commercial tenants' 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.

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 5.5.

5.3 Waste Storage – Creche Unit

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

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

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

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

Access to the WSA will be restricted to authorised commercial tenants, childcare facility staff and facilities management by means of a key or electronic fob access.

Other waste materials such as textiles, batteries, printer toner/cartridges and WEEE may be generated infrequently by the creche tenants. Creche 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 5.5.

5.4 Waste Collection

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

Bins/FIBCs will be brought to a collection area on Belgard Square East by facilities management or the waste contractor. Bins/FIBCs will be returned to their designated WSAs by facilities management or the waste contractor immediately following collection. The collection 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.

The ground floor and basement level car park is insufficient in height for a waste truck to access, therefore all waste will be collected at grade, from the curtilage. The location for collection can be viewed in Appendix 1 of this report.

A trolley / tug or suitable vehicle may be required to convey the bins/FIBCs to and from the collection areas. Suitable access and egress has been provided to enable the bins/FIBCs to be moved easily from the WSAs to the waste collection vehicles on the appropriate days. Waste will be collected at agreed days and times by the nominated waste contractors.

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

It is recommended that bin collection times are staggered to reduce the number of bins/FIBCs required to be emptied at once and the time the waste vehicle is on-site. 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 Waste

Green waste may be generated from internal plants / flowers. Green waste generated from internal plants / flowers can be placed in the organic waste bins. If substantial green waste is produced by the commercial tenants or creche 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 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 and creche 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 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 commercial tenants and creche 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 commercial units and creche unit, where appropriate. The commercial tenants and creche tenants will be required to store this waste within their units 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

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 commercial units or creche unit that is classed as hazardous (if they arise) will be appropriately stored within the tenants' own space. Facilities management may arrange collection, depending on the agreement.

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

Light Bulbs

Waste light bulbs (fluorescent, incandescent and LED) may be generated by lighting at the commercial units or creche unit. It is anticipated that commercial tenants and creche 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 centre for appropriate storage and recovery / disposal.

Textiles

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

Waste Cooking Oil

If the commercial tenants or creche tenants use cooking oil, waste cooking oil will need to be stored within their 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 centre or placed in the organic bin.

Furniture & Other Bulky Waste Items

Furniture and other bulky waste items (such as carpet, etc.) may occasionally be generated by the commercial tenants or creche tenants. The collection of bulky waste will be arranged, as required by the commercial tenants or creche tenants. If residents wish to dispose of furniture, this can be brought a civic amenity 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 or facilities management may arrange collection by a licensed waste contractor.

COVID-19 Waste

Any waste generated by the commercial tenants, creche tenants or residents who 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.

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 proposed 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 *SDCC 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. Environmental Protection Agency Act 1992 (Act No. 7 of 1992) as amended.
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9. DoEHLG, *Taking Stock and Moving Forward* (2004)
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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. SDCC, *South Dublin County Council Development Plan 2016 – 2022* (2016).
14. SDCC, *Draft South Dublin County Council Development Plan 2016 – 2022* (2021).
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)
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20. BS 5906:2005 *Waste Management in Buildings – Code of Practice*.
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22. Department of Transport, Tourism and Sport and Department of Housing, Planning and Local Government, *Design Manual for Urban Roads and Streets* (2019).

8.0 APPENDIX 1: WASTE COLLECTION AREA AND WASTE COLLECTION ROUTE

