

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

AT

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CORK**

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Our Reference

227501.0122WMR01

Date of Issue

17 May 2022

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Document History

Document Reference		Original Issue Date	
227501.0122WMR01		17 May 2022	
Revision Level	Revision Date	Description	Sections Affected

Record of Approval

Details	Written by	Approved by
Signature		
Name	David Doran	Chonaill Bradley
Title	Environmental Consultant	Principal Environmental Consultant
Date	17 May 2022	17 May 2022

CONTENTS		Page
1.0	INTRODUCTION	4
2.0	OVERVIEW OF WASTE MANAGEMENT IN IRELAND	4
2.1	National Level	4
2.2	Regional Level	6
2.3	Legislative Requirements	7
2.3.1	Cork City Council Waste Bye-Laws	7
2.4	Regional Waste Management Service Providers and Facilities	8
3.0	DESCRIPTION OF THE PROJECT	8
3.1	Location, Size and Scale of the Development	8
3.2	Typical Waste Categories	9
3.3	European Waste Codes	10
4.0	ESTIMATED WASTE ARISING	10
5.0	WASTE STORAGE AND COLLECTION	11
5.1	Waste Storage – Apartment Units	12
5.2	Waste Storage – Office	13
5.3	Waste Storage – Crèche Unit	14
5.4	Waste Collection	15
5.5	Additional Waste Materials	15
5.6	Waste Storage Area Design	17
6.0	CONCLUSIONS	17
7.0	REFERENCES	19

1.0 INTRODUCTION

AWN Consulting Ltd. (AWN) has prepared this Operational Waste Management Plan (OWMP) on behalf of Hibernia Star Limited for a proposed residential development at the Jacob's Island, Co. Cork. The proposed development will consist of 489 no. apartments, creche and offices in 5 no. buildings and all ancillary works on a site at Jacob's Island, Ballinure, Mahon, Cork.

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 ¹, *Environmental Protection Agency Act 1992* as amended ², *Litter Pollution Act 1997* as amended ³, the '*Southern Region Waste Management Plan 2015 – 2021*' ⁴ and Cork City Council (CCC) Bye-Laws for *the Segregation, Storage and Presentation of Household and Commercial Waste (2019)* ⁵. In particular, this OWMP aims to provide a robust strategy for storing, handling, collection and transport of the wastes generated at site.

This OWMP aims to ensure maximum recycling, reuse and recovery of waste with diversion from landfill, wherever possible. The OWMP also seeks to provide guidance on the appropriate collection and transport of waste to prevent issues associated with litter or more serious environmental pollution (e.g. contamination of soil or water resources). The plan estimates the type and quantity of waste to be generated from the proposed development during the operational phase and provides a strategy for managing the different waste streams.

At present, there are no specific guidelines in Ireland for the preparation of OWMPs. Therefore, in preparing this document, consideration has been given to the requirements of national and regional waste policy, legislation and other guidelines.

2.0 OVERVIEW OF WASTE MANAGEMENT IN IRELAND

2.1 National Level

The Government issued a policy statement in September 1998 titled as '*Changing Our Ways*' ⁶ which identified objectives for the prevention, minimisation, reuse, recycling, recovery and disposal of waste in Ireland. A heavy emphasis was placed on reducing reliance on landfill and finding alternative methods for managing waste. Amongst other things, *Changing Our Ways* stated a target of at least 35% recycling of municipal (i.e. household, commercial and non-process industrial) waste.

A further policy document '*Preventing and Recycling Waste – Delivering Change*' was published in 2002 ⁷. This document proposed a number of programmes to increase recycling of waste and allow diversion from landfill. The need for waste minimisation at source was considered a priority.

This view was also supported by a review of sustainable development policy in Ireland and achievements to date, which was conducted in 2002, entitled '*Making Irelands Development Sustainable – Review, Assessment and Future Action*' ⁸. This document also stressed the need to break the link between economic growth and waste generation, again through waste minimisation and reuse of discarded material.

In order to establish the progress of the Government policy document *Changing Our Ways*, a review document was published in April 2004 entitled '*Taking Stock and Moving Forward*' ⁹. Covering the period 1998 – 2003, the aim of this document was to assess progress to date with regard to waste management in Ireland, to consider developments since the policy framework and the local authority waste management

plans were put in place, and to identify measures that could be undertaken to further support progress towards the objectives outlined in *Changing Our Ways*.

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

In September 2020, the Irish Government published a new policy document outlining a new action plan for Ireland to cover the period of 2020-2025. This plan 'A Waste Action Plan for a Circular Economy'¹⁰ (WAPCE), was prepared in response to the 'European Green Deal' which sets a roadmap for a transition to a new economy, where climate and environmental challenges are turned into opportunities, replacing the previous national waste management plan "A Resource Opportunity" (2012).

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

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

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

Since 1998, the Environmental Protection Agency (EPA) has produced periodic 'National Waste (Database) Reports'¹² detailing, among other things, estimates for household and commercial (municipal) waste generation in Ireland and the level of recycling, recovery and disposal of these materials. The 2019 National Waste Statistics, which is the most recent study published, along with the national waste statistics web resource (November 2021) reported the following key statistics for 2019:

- **Generated** – Ireland produced 3,085,652 t of municipal waste in 2019. This is almost a 6% increase since 2018. This means that the average person living in Ireland generated 628 kg of municipal waste in 2019.
- **Managed** – Waste collected and treated by the waste industry. In 2019, a total of 3,036,991 t of municipal waste was managed and treated.
- **Unmanaged** – Waste that is not collected or brought to a waste facility and is, therefore, likely to cause pollution in the environment because it is burned, buried or dumped. The EPA estimates that 48,660 t was unmanaged in 2019.
- **Recovered** – The amount of waste recycled, used as a fuel in incinerators, or used to cover landfilled waste. In 2019, around 83% of municipal waste was recovered – a decrease from 84% in 2018.
- **Recycled** – The waste broken down and used to make new items. Recycling also includes the breakdown of food and garden waste to make compost. The recycling rate in 2019 was 37%, which is down from 38% in 2018.
- **Disposed** – Less than a sixth (15%) of municipal waste was landfilled in 2019. This is an increase from 14% in 2018.

2.2 Regional Level

The proposed development is located in the Local Authority area of Cork City Council (CCC).

The *Southern Region Waste Management Plan 2015 – 2021* is the regional waste management plan for the CCC area which was published in May 2015. Currently the Southern 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 that are relevant to the proposed development:

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

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

The *Cork City Development Plan 2015 – 2021* (2015) ¹³ sets out a number of policies for Cork City in line with the objectives of the regional waste management plan. The plan identifies the implementation and adoption of the Southern Region Waste Management Plan as the main objective of the City Council. Other waste management objectives with a particular relevance to the development are:

Objectives:

12.1 Strategic Environmental Infrastructure Objectives

h. Follow a waste hierarchy that starts with prevention, preparing for re-use, recycling, other recovery (e.g. energy recovery) and finally disposal (including landfill);

12.6 Bin Provision in City Centre

To review bin provision in the City Centre and medieval spine and develop a strategy for eliminating any gaps in infrastructure.

12.7 Litter Management Plan

To implement the Litter Management Plan, which includes provision for street cleaning, enforcement of the litter laws, and public awareness raising

The *Cork City Draft Development Plan 2022 – 2028* ¹⁴ is guided by the National Planning Framework along with several other national and regional plans, including the current regional waste management plan and the Waste Action Plan for a Circular Economy. Waste has been addressed under Chapter 9 Environmental Infrastructure and Chapter 11 Placemaking and Managing Development with the following objectives:

Objective 9.11 Waste Management

- a. To support the sustainable management of waste in line with the objectives of the Southern Region Waste Management Plan 2015-2021 and its successor.
- b. To facilitate the transition to a circular economy facilitating the value recovery and recirculation of resources in order to generate minimal waste.

Objective 11.3 Housing Quality and Standards

- e. Waste: Housing should be designed with adequate and easily accessible storage space that supports the separate collection of dry recyclables, food waste and residual waste.

With regards to operational waste strategy, 'Refuse Storage 11.266' states:

'Adequate bin storage provision shall be made for the storage, segregation, and recycling of waste in residential developments. In the case of communal refuse storage provision, the collection point for refuse should be accessible both to the external collector and to the resident and be secured against illegal dumping by non-residents. These shall be well screened from public view and adequately ventilated.'

2.3 Legislative Requirements

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

- Waste Management Act 1996 as amended;
- Environmental Protection 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 ¹⁵

These Acts and subordinate Regulations enable the transposition of relevant European Union Policy and Directives into Irish law.

One of the guiding principles of European waste legislation, which has in turn been incorporated into the *Waste Management Act 1996 as amended* and subsequent Irish legislation, is the principle of "Duty of Care". This implies that the waste producer is responsible for waste from the time it is generated through until its legal disposal (including its method of disposal.) As it is not practical in most cases for the waste producer to physically transfer all waste from where it is produced to the final disposal area, waste contractors will be employed to physically transport waste to the final waste disposal site.

It is therefore imperative that the residents, tenants and the proposed 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 IE (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 Cork City Council Waste Bye-Laws

The CCC "Cork City Council Bye-Laws for the Segregation Storage and Presentation of Household and Commercial Waste" (2019) came into use on the 1st of May 2019.

The Bye-Laws set a number of enforceable requirements on waste holders with regard to storage, separation and presentation of waste within the CCC functional area. Key requirements under these Bye-Laws of relevance to the development include the following:

- Outside of Cork City Centre: Kerbside waste presented for collection shall not be presented for collection earlier than 6.00 pm on the day immediately preceding the designated waste collection day;
- Outside of Cork City Centre: 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 7:00pm on the day following the designated waste collection day;
- Documentation, including receipts, are to be obtained and retained for a period of no less than one year to provide proof that waste has been disposed of in accordance with the bye-laws; and
- Waste containers shall be stored within the curtilage of the premise where the waste is produced and they shall not be stored on a road, footway, footpath or any other public place unless expressly authorised, in writing, by Cork City Council.

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

2.4 Regional Waste Management Service Providers and Facilities

Various contractors offer waste collection services for the residential sector in the CCC region. Details of waste collection permits (granted, pending and withdrawn) for the region are available from the NWCPO.

There is only one active landfill in the region, at Powerstown in Co. Carlow, which is also now a civic amenity centre. There are two other landfills in the region with capacity for landfilling waste but neither are carrying out landfilling activity. Both sites, however, operate as recycling facilities.

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 is a proposed thermal treatment facility in Ringaskiddy, Co. Cork which was approved by An Bord Pleanála in 2018. However, a legal challenge in the high court has overturned this decision and the project is now in limbo.

A Civic Amenity - Recycling Centre is located 6km west of the development on the Kinsale Road. This centre can be used to dispose of a wide-range of materials. There is also a bring bank located adjacent to Mahon Point Shopping Centre located 500m northeast of the proposed development. Clear, green and brown glass, and aluminium cans can be deposited at this bring bank.

A copy of all CORs and waste permits issued by the Local Authorities are available from the NWCPO website and all waste/IE licenses issued are available from the EPA.

3.0 DESCRIPTION OF THE PROJECT

3.1 Location, Size and Scale of the Development

The development will consist of:

- The construction of a Strategic Housing Development of 489 no. apartments, creche and offices in 5 no. buildings ranging in height from part-1 to part-8 no. storeys over lower ground and semi-basement podium levels. The development will contain 1 no. studio, 158 no. 1 bedroom apartments and 330 no. 2 bedroom apartments.
- Blocks 12 and 13 will contain ancillary commercial areas including a creche (381 sq m) and offices (4,143 sq m). The development will also contain supporting internal resident amenity spaces (576 sq m) and external communal amenity spaces.
- Block 11 is part-3 to part-6 no. storeys over semi-basement podium and lower ground levels and will contain 101 no. apartments.
- Block 12 is part-1 to part-4 no. storeys over undercroft car parking and lower ground level office building (4,143 sq m) comprising 2,934 sq m of office floor area.
- Block 13 is part-2 to part-8 no. storeys over lower ground levels and will contain a crèche over 2 no. levels (381 sq m) and 39 no. apartments.
- Block 14 is part-3 to part-6 no. storeys over lower ground level and contains 130 no. apartments.
- Block 15 is part-3 to part-6 no. storeys over semi-basement podium and lower ground level and contains 219 no. apartments and ancillary resident amenity spaces (576 sq m).
- The proposed development also provides for hard and soft landscaping, boundary treatments, public realm works, car parking, bicycle parking, bin stores, signage, lighting, PV panels, sprinkler and water tank, substations, plant rooms and all ancillary site development works above and below ground.

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 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 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 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
Fluorescent tubes and other mercury containing waste *	20 01 21*
Bulky Wastes	20 03 07

* Individual waste type may contain hazardous materials

Table 3.1 Typical Waste Types Generated and LoW Codes

4.0 ESTIMATED WASTE ARISING

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

The estimated quantum/volume of waste that will be generated from the residential units has been determined based on the predicted occupancy of the units. The waste generation for the commercial units is based on waste generation rates per m² floor area for the area uses.

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

Waste type	Waste Volumes in m ³ per week			
	Residential Block 11	Residential Block 13	Residential Block 14	Residential Block 15
Organic Waste	1.56	0.65	1.91	3.30
DMR	10.69	4.47	13.05	24.16
Glass	0.30	0.13	0.37	0.64
MNR	6.22	2.60	7.59	11.50
Total	18.77	7.85	22.92	39.59

Table 4.1 Estimated waste generation for the Residential Units.

Waste type	Waste Volumes in m ³ per week	
	Office Block 12	Crèche Block 13
Organics	0.26	0.04
Paper (Confidential)	2.32	-
Paper & Cardboard	1.96	-
Plastics	1.68	-
Glass	0.05	<0.01
DMR	2.27	1.40
MNR	2.23	0.76
Total	10.76	2.21

Table 4.2 Estimated waste generation for the Commercial Units.

*BS5906:2005 Waste Management in Buildings – Code of Practice*²⁰ has been considered in the calculations of residential 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.

It has been assumed the office unit(s) and crèche will operate over a five-day period.

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 CCC. In particular, consideration has been given to the following documents:

- BS 5906:2005 Waste Management in Buildings – Code of Practice;
- Southern Region Waste Management Plan 2015 – 2021;
- Cork City Development Plan 2015 – 2021 (2015);
- Cork City Draft Development Plan 2022 – 2028 (2021);
- Cork City Council Bye-Laws for the Segregation Storage and Presentation of Household and Commercial Waste" (2018); and
- DoHLGH, Sustainable Urban Housing: Design Standards for New Apartments, Guidelines for Planning Authorities (December 2020)²¹.

6 no. dedicated Waste Storage Areas (WSAs) have been allocated within the development design for the residents (4) and commercial tenants (2).

Further information on waste storage can be found in Section 5.1, 5.2 and 5.3 below.

Using the estimated waste generation volumes in Tables 4.1 and 4.2 the waste receptacle requirements for MNR, DMR, organic waste and glass have been established the residential units. These are presented in Tables 5.1.

Area/Use	Bins Required					Equipment
	MNR*	DMR**	Organic	Glass	Bales (Plastic & Carboard)	
Residential Block 11	6 x 1100L	10 x 1100L	7 x 240L	2 x 240L	-	-
Residential Block 13	3 x 1100L	5 x 1100L	3 x 240L	1 x 240L	-	-
Residential Block 14	7 x 1100L	12 x 1100L	8 x 240L	2 x 240L	-	-
Residential Block 15	11 x 1100L	22 x 1100L	14 x 240L	3 x 240L	-	-
Office Block 12	2 x 1100L	3 x 1100L	2 x 240L	1 x 240L	4	Bramidan B3 Baler 2 no. Roll Cages
Crèche Block 13	1 x 1100L	2 x 1100L	1 x 120L	1 x 120L	-	-

Table 5.1 Bin requirements for the Residential and Commercial Units

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

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 (240L and 1100L)

5.1 Waste Storage – Apartment Units

Residents in the apartment and duplex units will be required to segregate waste into the following main waste streams:

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

Provision will be made in the apartments to accommodate 3 no. bins to facilitate waste segregation at source.

4 no. WSAs have been provided for the use of residents in Blocks 11, 13, 14 and 15, respectively. The Block 11 residential WSA is located at level G2 (below ground floor level). The Block 13 residential WSA is located at ground floor level. The Block 14 residential WSA is located at level G1 (below ground floor level). The Block 15 residential WSA is located at level G2 (below ground floor level).

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

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

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

It is anticipated that DMR, MNR, glass and organic waste will be collected on a weekly basis.

Other waste materials such as textiles, batteries, printer toner/cartridges 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 – Office

The office tenants will segregate waste into the following main waste streams:

- DMR;
- MNR;
- Organic waste;
- Glass;
- Cardboard (for baling);
- Plastic packaging (for baling); and
- Confidential Paper

The office units 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 DMR and a bin for MNR. 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.

It is proposed to bale suitable cardboard and plastic packaging using a small baler located in the WSA. Cages or bins should be used to temporarily store and segregate suitable cardboard and plastic, mainly generated from incoming deliveries, for baling.

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.

Personnel nominated by the office tenants will empty the bins in the AWSs, as required, and bring the segregated waste using trolleys/carts/bins via lifts to the WSA located at ground floor level (G2). The location of the WSA is illustrated in the drawings submitted with the planning application.

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. 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.

Other waste materials such as textiles, batteries, lightbulbs, WEEE and printer toner / cartridges will be generated less frequently. Space has been allocated within the WSA for the storage of WEEE. The tenant will need to find an appropriate space within their own unit to store the alternative waste streams. Collections of this items will be arranged as required by the tenant or facilities management depending on the agreement. Further details on additional waste types can be found in Section 5.5.

5.3 Waste Storage – Crèche Unit

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 crèche WSA located externally adjacent to the crèche unit at ground floor level. The location of the WSA is illustrated in the drawings submitted with the planning application.

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 childcare facility staff and facilities management by means of a key or electronic fob access.

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

Other waste materials such as textiles, batteries, printer toner/cartridges and WEEE may be generated infrequently by the crèche tenants. Crèche tenants will be required to identify suitable temporary storage areas for these waste items within their own units and dispose of them appropriately. Further details on additional waste types can be found in Section 5.5.

5.4 Waste Collection

There are numerous private contractors that provide waste collection services in the Cork 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/licensed facilities only.

Bins from the WSAs will be conveyed by facility management personnel (or the waste contractor, depending on arrangement) to the designated bin staging areas. From these locations the bins will be brought to the waste collection vehicle for emptying. Following this, the bins will be promptly return to their respective WSAs.

The staging areas 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 locations of all bin staging areas can be viewed on drawings (ref: 1730D-OMP-00-SPG3-DR-A-1000) submitted with the planning application.

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

5.5 Additional Waste Materials

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

Green waste

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

Batteries

A take-back service for waste batteries and accumulators (e.g. rechargeable batteries) is in place in order to comply with the Waste Management Batteries and Accumulators Regulations 2014 as amended. In accordance with these regulations consumers are able to bring their waste batteries to their local 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 office and crèche units 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 held with the tenant.

Waste Electrical and Electronic Equipment (WEEE)

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

As noted above, the office and crèche units 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 held with the tenant.

Printer Cartridge/Toners

It is recommended that a printer cartridge/toner bin is provided in the office and crèche units, where appropriate. These units will be required to store this waste within their respective units and arrange for return to retailers or collection by an authorised waste contractor, as required. The crèche facility may also store waste this within their WSA, if an appropriate waste container is installed.

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 office and crèche units that are classed as hazardous (if they arise) will be appropriately stored within the tenant's own space. Facilities Management may arrange collection depending on the agreement held with the tenant.

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 (Fluorescent Tubes, Long Life, LED and Filament bulbs)

Waste light bulbs may be generated by lighting in the office and crèche units. It is anticipated that the staff in these commercial units will be responsible for the off-site removal and appropriate recovery/disposal of these wastes. Facilities Management may arrange collection depending on the agreement held with the tenant.

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.

Waste Cooking Oil

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

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

Furniture (and other bulky wastes)

Furniture and other bulky waste items (such as carpet etc.) may occasionally be generated in the office and crèche units. The collection of bulky waste will be arranged as required by the tenant. If residents wish to dispose of furniture, this can be brought a civic amenity centre.

5.6 Waste Storage Area Design

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

- Be fitted with a non-slip floor surface;
- Provide ventilation to reduce the potential for generation of odours 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.

The building management company, tenants and residents will be required to maintain the resident bins and storage areas in good condition as required by the *CCC 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 *Southern 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 *CCC 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.
3. Litter Pollution Act 1997 (Act No. 12 of 1997) as amended.
4. Southern Waste Region, Southern Region Waste Management Plan 2015 – 2021 (2015)
5. Cork City Council (CCC), Cork City Council Bye-Laws for *the Segregation, Storage and Presentation of Household and Commercial Waste* (2019).
6. Department of Environment and Local Government (DoELG) *Waste Management – Changing Our Ways, A Policy Statement* (1998).
7. Department of Environment, Heritage and Local Government (DoEHLG) *Preventing and Recycling Waste - Delivering Change* (2002)
8. DoELG, *Making Ireland's Development Sustainable – Review, Assessment and Future Action (World Summit on Sustainable Development)* (2002)
9. DoEHLG, *Taking Stock and Moving Forward* (2004)
10. Department of Communications, Climate Action and Environment (DCCAE), *Waste Action Plan for the Circular Economy - Ireland's National Waste Policy 2020-2025* (2020).
11. DCCAE, *Whole of Government Circular Economy Strategy 2022-2023 'Living More, Using Less'* (2021).
12. Environmental Protection Agency (EPA), *National Waste Database Reports 1998 – 2012*.
13. CCC, Cork City Development Plan 2015 – 2021 (2015)
14. CCC, Draft Cork City Development Plan 2022 – 2028 (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)
19. EPA, *Waste Classification – List of Waste & Determining if Waste is Hazardous or Non-Hazardous* (2015)
20. BS 5906:2005 *Waste Management in Buildings – Code of Practice*.
21. DoHLGH, *Sustainable Urban Housing: Design Standards for New Apartments, Guidelines for Planning Authorities* (2020).
22. Department of Transport, Tourism and Sport and the Department of Housing, Planning and Local Government, *Design Manual for Urban Roads and Streets* (2019)