

OPERATIONAL WASTE MANAGEMENT PLAN FOR A PROPOSED MIXED-USE DEVELOPMENT

GALWAY PORT LRD

Report Prepared For

The Land Development Agency

Report Prepared By

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Our Reference

CB/247501.0271WMR02

Date of Issue



25 August 2025



Document History

Document Reference		Original Issue Date	
CB/247501.0271WMR02		25 August 2025	
Revision Level	Revision Date	Description	Sections Affected

Record of Approval

Details	Written by	Approved by
Signature		
Name	Chonaiil Bradley	Fergal Callaghan
Title	Associate	Director
Date	25 August 2025	25 August 2025

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1.0 INTRODUCTION

AWN Consulting Ltd. (AWN) has prepared this Operational Waste Management Plan (OWMP) on behalf of The Land Development Agency. The proposed mixed-use development primarily comprises: 356 No. residential apartments (172 No. 1-bed, 169 No. 2-bed and 15 No. 3-bed); crèche (255.9 sq m); 2 No. café/restaurant units (totalling 428.4 sq m) and 1 No. retail unit (156.0 sq m). The development has a total floor area of 32,096.0 sq m and is primarily proposed in 4 No. blocks (identified as A–D) that generally range in height from 6 No. to 13 No. storeys.

This OWMP has been prepared to ensure that the management of waste during the operational phase of the Proposed Development is undertaken in accordance with the current legal and industry standards including, the Waste Management Act 1996 as amended and associated Regulations ¹, Environmental Protection Agency Act 1992 as amended ², Litter Pollution Act 1997 as amended ³, the National Waste Management Plan for a Circular Economy 2024 - 2030 (NWMPCE) (2024) ⁴ and the Galway City Council (GCC) *Waste Management (Segregation, Storage and Presentation of Household & Commercial Waste Bye-Laws 2019* 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 national 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 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 Ireland's 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. There has yet to be a revision issued.

The Circular Economy and Miscellaneous Provisions Act 2022¹² was signed into law in July 2022. The Act underpins Ireland's shift from a "take-make-waste" linear model to a more sustainable pattern of production and consumption, that retains the value of resources in our economy for as long as possible and that will to significantly reduce our greenhouse gas emissions. The Act defines Circular Economy for the first time in Irish law, incentivises the use of recycled and reusable alternatives to wasteful, single-use disposable packaging, introduces a mandatory segregation and incentivised charging regime for commercial waste, streamlines the national processes for End-of-Waste and By-Products decisions, tackling the delays which can be encountered by industry, and supporting the availability of recycled secondary raw materials in the Irish market, and tackles illegal fly-tipping and littering.

Since 1998, the Environmental Protection Agency (EPA) has produced periodic 'National Waste (Database) Reports' which as of 2023 have been renamed *Circular Economy and Waste Statistics Highlight Reports*¹³ 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 2024 National Circular Economy and Waste Statistics web resource, which is the most recent study published, along with the national waste statistics web resource (2024) reported the following key statistics for 2022:

- Generated – Ireland produced 3,190,000 t of municipal waste in 2022. This is a slight increase since 2021. Of this, 55% came from households and 45% came from commercial and public service sources.

- **Managed** –In 2022, a total of 1.76 million Household waste collected and treated by the waste industry.
- **Unmanaged** – An estimated 36,970 tonnes of household waste was unmanaged waste i.e., not disposed of in the correct manner in 2022.
- **Recovered** – A rounded 1.3 million tonnes of Ireland's municipal waste went for incineration with energy recovery in 2022. This tonnage is 43% of municipal waste managed and a marginal increase on the 42% achieved in 2021.
- **Recycled** –Some 1.3 million tonnes of municipal waste generated in Ireland was recycled in 2022, resulting in a recycling rate of 41% . This indicates that we face significant challenges to meet the upcoming EU recycling targets for 2025 to 2035
- Of the municipal waste recycled in 2022, over 825,000 tonnes went for material recycling (approximately the same as 2021) and over 480,000 tonnes were treated by composting/anaerobic digestion (approximately the same as 2021 but up 37% on 2020). The large increase of composted/anaerobically digested biowaste from 2020 is mainly due to a change in our way of estimating home composting.
- **Disposed** – Ireland's landfill rate for municipal waste managed was 15% in 2022. This is a 1% decrease from 2021's rate of 16%.
- **Reuse** – 54,800 tonnes of second-hand products we estimated by the EPA to have been reused in Ireland in 2021. The average annual Reuse rate per person in Ireland is 10.6 kg per person.

2.2 Regional Level

The proposed Development is located in the Local Authority administrative area of Galway City Council (GCC).

The Connacht-Ulster Region (CUR) Waste Management Plan 2015 – 2021 has been superseded as of March 2024 by the NWMPCE 2024 - 2030. The NWMPCE is the new national waste management plan for Ireland which replaces the three previous regional waste management plans.

The NWMPCE does not dissolve the three regional waste areas. The NWCPCE sets the ambition of the plan to have a 0% total waste growth per person over the life of the Plan with an emphasis on non-household wastes including waste from commercial activities and the construction and demolition sector.

This Plan seeks to influence sustainable consumption and prevent the generation of waste, improve the capture of materials to optimise circularity and enable compliance with policy and legislation.

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

National Targets

- 1A. (Residual Municipal Waste) 6% Reduction in Residual Municipal Waste per person by 2030
- 2A. (Contamination of Materials) 90% of Material in Compliance in the Dry Recycling Bin
- 2B. (Material Compliance Residual) 10% per annum increase in Material Compliance in the residual bin. (90% by the end of 2030)

- 3A. (Reuse of Materials) 20kg Per person / year – Reuse of materials like cloths or furniture to prevent waste.

Municipal landfill charges in Ireland are based on the weight of waste disposed. In the Connacht Region, charges are approximately €220 per tonne of waste which includes a €85 per tonne landfill levy specified in the *Waste Management (Landfill Levy) Regulations 2015*.

The *Galway City Development Plan 2023 – 2029*¹⁴ sets out a number of policies for Galway City in line with the objectives of the regional waste management plan.

- Secure the provision of waste management facilities and infrastructure with appropriate provision for minimisation, recovery and recycling of waste and regulate waste operations in a manner which reflects the ‘polluter pays’ and ‘proximity’ principles with particular emphasis on large waste producers, in accordance with the objectives of the Connacht Ulster Regional Waste Plan 2015-2021, except in relation to incineration and emerging legislation on the transition to a circular economy and the National Waste Action Plan for a Circular Economy 2020-2025.
- Have a waste management system in the city in line with EU and national policies, which prioritises waste prevention, minimisation, recycling and reuse and accords with the outcomes of the Circular Economy Bill 2021 and the associated strategy.
- Support the objectives and targets of the Connacht Ulster Regional Waste Plan 2015-2021 relating to Galway City and any subsequent Waste Plans.
- Ensure that adequate recycling facilities and bring facilities are provided within the city, including where those are required in association with the layouts of new residential, industrial and commercial developments and where they comply with the requirements of the Environment Section of the Council.
- Ensure the sustainable siting of waste facilities in relation to existing and potential surrounding land-uses, transportation and environmental considerations.
- Promote the implementation of the City Council Litter Management Plan and other litter management initiatives in order to minimise and control the extent of litter pollution in the city.
- Ensure that development on contaminated lands include appropriate remediation measures.

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;
- Planning and Development Act 2000 as amended¹⁵;
- Circular Economy and Miscellaneous Provisions Act 2022.

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 proposed facilities management company and staff 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 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 Galway City Council Waste Bye-Laws

The *Galway City Council (Segregation, Storage and Presentation of Household and Commercial Waste) Bye-Laws 2019* were entered into force on February 2019. The bye-laws set a number of enforceable requirements on waste holders with regard to storage, separation and presentation of waste within the GCC functional area. Key requirements under these bye-laws of relevance to the development include the following:

- 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;
- All containers used for the presentation of kerbside waste and any uncollected waste shall be removed from any roadway, footway, footpath or any other public place no later than 10:00am on the day following the designated waste collection day, unless an alternative arrangement has been approved in accordance with bye-law;
- documentation, including receipts, is obtained and retained for a period of no less than one year to provide proof that any waste removed from the premises has been managed in a manner that conforms to these bye-laws, to the Waste Management Act 1996 and national legislation on food and bio waste;
- Adequate access and egress onto and from the premises by waste collection vehicles is maintained.

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

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

Various contractors offer waste collection services for the residential sector in the GCC 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 Ireland. There are no municipal solid waste landfills remaining in the region. 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 also no existing thermal treatment facilities in the Connacht Ulster region but there are two in the Eastern-Midlands Region; one in Duleek, Co. Meath and a second facility Poolbeg in Dublin.

The Galway Civic Amentity site is located Liosbaun Industrial Estate, Sandy Road, Galway, c. 4km north of the development site, can be utilised by the residents of the proposed development for other household waste streams. This centre can accept paper, soft plastic, food waste, garden (green) waste, glass, metals, Tetra Pak, batteries, electrical items, white goods, light bulbs, paints, varnish, gas cylinders, and books. There is also a bring bank located c. 1.10 km north of the proposed development site at Galway City Hall, 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 Licenses issued are available from the EPA.

3.0 DESCRIPTION OF THE DEVELOPMENT

3.1 Location, Size and Scale of the Development

The Land Development Agency intends to apply to Galway City Council for permission for a 'Large-Scale Residential Development' (LRD) at a site of 1.621 Ha in Galway Port at Dock Road and Lough Atalia Road, Galway City, and extending to include parts of both roads for road infrastructure works and water services infrastructure works.

The proposed development principally consists of: the demolition of the existing office / bus depot building (370.2 sq m) and ancillary building (26.0 sq m); the partial demolition of the existing ESB sub-station and ancillary building (67.4 sq m); the demolition of existing boundary walls at the south-west and north-west; and the construction of a mixed-use development.

The proposed mixed-use development primarily comprises: 356 No. residential apartments (172 No. 1-bed, 169 No. 2-bed and 15 No. 3-bed); crèche (255.9 sq m); 2 No. café/restaurant units (totalling 428.4 sq m); and 1 No. retail unit (156.0 sq m).

The development has a total floor area of 32,096.0 sq m and is primarily proposed in 4 No. blocks (identified as A–D) that generally range in height from 6 No. to 13 No. storeys: Block A ranges from 6 No. to 9 No. storeys; Block B ranges from 6 No. to 11 No. storeys; Block C is 6 No. storeys; and Block D ranges from 6 No. to 13 No. storeys.

The proposed development also includes: new internal street and pedestrian network, including a one-way vehicular route at the north-western side of the site and new junctions with Dock Road at the south-west and with the access road from Lough Atalia at the north-west; upgrades to Lough Atalia Road and the access road from it at the north-west of the site, including the provision of a new toucan pedestrian/cycle crossing at Lough Atalia Road; upgrades to the footpath and road interface with Dock Road to the south-west; 37 No. car parking spaces; 1 No. set-down/delivery bay; 741 No. cycle parking spaces; hard and soft landscaping, including as public open spaces and communal amenity spaces; private amenity spaces as balconies and terraces facing all directions; boundary treatments; public lighting; bin stores; double sub-station; plant rooms; green roofs; rooftop lift overruns and plant; rooftop telecommunications, plant and enclosure at Block C; recladding of the existing sub-station and pumping station; and all associated works above and below ground.

An Environmental Impact Assessment Report and a Natura Impact Statement have been prepared in respect of the proposed development.

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:

- Deposit Return Scheme (Drink Bottles and Cans)
- 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.);
- Light bulbs;
- Textiles;
- Waste cooking oil (if any generated by units);
- 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. List of 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 2018. This waste classification system applies across the EU and is the basis for all national and international waste reporting, such as those associated with waste collection permits, 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 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 waste generated by the commercial / non-residential units (crèche, retail and café/restaurant) is based on floor m² and their use.

The estimated waste generation for the proposed Development for the main waste types is presented in Table 4.1 & 4.2.

Table 4.1 Estimated Waste Generation for the development.

Waste type	Waste Volume (m ³ /week)			
	Apartment Block A (Combined)	Apartment Block B (Combined)	Apartment Block C (Combined)	Apartment Block D (Combined)
Organic Waste	1.18	1.52	0.95	1.51
DMR	8.35	10.78	6.73	10.70
Glass	0.23	0.29	0.18	0.29
MNR	4.39	5.67	3.54	5.62
Total	14.14	18.26	11.40	18.12

Table 4.2 *Estimated Waste Generation for the development.*

Waste type	Waste Volume (m ³ /week)			
	Crèche	Café/Restaurant 1 (Block A)	Café/Restaurant 2 (Block A)	Retail Block B
Organic Waste	0.03	0.25	0.17	0.05
DMR	0.94	0.56	0.38	1.07
Glass	0.00	0.10	0.07	0.03
MNR	0.51	0.67	0.46	0.44
Total	1.48	1.58	1.09	1.59

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

- *BS 5906:2005 Waste Management in Buildings – Code of Practice,*
- *The NWMPCE (2024);*
- *Galway City Development Plan 2023 – 2029*
- Galway City Council (Segregation, Storage and Presentation of Household & Commercial Waste) Bye-Laws' (2019); and
- *DoHLGH, Sustainable Urban Housing: Design Standards for New Apartments, Guidelines for Planning Authorities (2025)* ²¹.

Waste Storage Areas

Three (3 no.) shared Waste Storage Area (WSA) have been allocated in the design of the development for the residential units, while Two (2 no.) WSAs have been provided for the commercial units. The location of the WSAs can be viewed on the drawings submitted with the planning application under separate cover and in Appendix A of this report

The waste receptacles from the WSA will be collected by facilities management, immediately prior to collection and brought to where the bins will be staged temporarily awaiting collection. The staging area is such that it will not obstruct traffic or pedestrians (allowing a footway path of at least 1.8m, the space needed for two wheelchairs to pass each other) as is recommended in the *Design Manual for Urban Roads and Streets* (2019) ²².

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

Waste Storage Requirements

Estimated waste storage requirements for the operational phase of the proposed Development are detailed in Table 5.1, below.

Table 5.1 Waste receptacle requirements for the proposed development per week

Area/Use	Bins Required			
	MNR ¹	DMR ²	Glass	Organic
Residential Block A	4 no. 1100 L	8 no. 1100 L	1 no. 240 L	5 no. 240 L
Residential Block B	5 no. 1100 L 1 no. 240L	10 no. 1100 L	2 no. 240 L	7 no. 240 L
Residential Block C	4 no. 1100 L	6 no. 1100 L 1. No 240L	1 no. 240 L	4 no. 240 L
Residential Block D	5 no. 1100 L 1 no. 1100L	10 no. 1100 L	2 no. 240 L	7 no. 240 L
Crèche	1 no. 1100 L	1 no. 1100 L	1 no. 120 L	1 no. 120 L
Other Commercial (Combined)	2 no. 1100 L	2 no. 1100 L	1 no. 240 L	2 no. 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 Table 5.1 above (or similar appropriate approved containers) will be provided by the facilities management company in the WSA.

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 WSA 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 as the standards for performance requirements of mobile waste containers, where appropriate.

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

Receptacles for organic, MDR, glass and DMR waste will be provided in the WSAs prior to first occupation of the development i.e. prior to the first unit being occupied.

This Plan will be provided to staff from first occupation of the development i.e. once the first 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 their waste into the following main waste categories within their own units:

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

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



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

Residents will be required to take their segregated waste materials to their designated WSA and deposit their segregated waste into the appropriate bins. The locations of the shared WSAs are illustrated on the drawings submitted with the planning application under separate cover and in Appendix 1 of this report.

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

Access to the shared 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, waste cooking oil and WEEE may be generated infrequently by the residents. Residents will be required to identify suitable temporary storage areas for these waste items within their own units and dispose of them appropriately. Further details on additional waste types can be found in Section 5.4.

5.2 Waste Storage – Crèche, Retail & Café/Restaurant Units

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

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

As required, the staff will need to bring segregated DMR, MNR, glass and organic waste to their dedicated commercial WSAs as covered in section 5.0.

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

If any kitchens/food preparation areas are allocated in unit 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;

Small bins will be placed adjacent to each of these areas for temporary storage of waste generated during the day.

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 staff, facilities management and waste contractors 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 tenants. 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 5.4.

5.3 Waste Collection

There are numerous private contractors that provide waste collection services in the Galway 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 development will be brought to the temporary staging / collection points near their proposed WSA by the waste contractor or facilities management, immediately prior to collection. The locations for collection can be viewed on the drawings submitted with the planning application under separate cover and in Appendix B of this report.

Suitable access and egress has been provided to enable the bins to be moved easily from the temporary staging area 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 GCC *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 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.

5.4 Additional Waste Materials

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

Deposit Return Scheme

Most drinks containers can be recycled via the deposit return scheme, such as bottles, cans and tins made from plastic, aluminium or steel can be returned once they are between 150ml and 3 litres in size and have the Re-turn logo on them.

At the shops you can either return the containers:

- Using a Reverse Vending Machine (RVM)
- Manually in the shop

If a shop does not have a RVM but they sell containers with the Re-turn logo, the shop may allow you to manually return containers in store, unless they have a take back exemption.

Locations of RVM machines can be found via the Re-turn website (www.re-turn.ie)

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 commercail tenants cannot use the local 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 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 cannot use the local 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, where appropriate. The commercial tenants will be required to store this waste within their unit and arrange for return to retailers or collection by an authorised waste contractor, as required.

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

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

Chemicals (such as solvents, paints etc) are largely generated from building maintenance works. Such works are usually completed by external contractors who are responsible for the off-site removal and appropriate recovery/recycling/disposal of any waste materials generated.

Any waste cleaning products or waste packaging from cleaning products generated in the commercial unit that are 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 (Fluorescent Tubes, Long Life, LED and Lilament bulbs)

Waste light bulbs may be generated by lighting at the commercial tenants. It is anticipated that commercial 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.

Waste Cooking Oil

If the comercial tenant suse cooking oil, waste cooking oil will need to be stored within the units 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.

Furniture (and other bulky wastes)

Furniture and other bulky waste items (such as carpet etc.) may occasionally be generated by the commercial tenants. The collection of bulky waste will be arranged as required by the tenant. 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, it will be the responsibility of the appointed facilities management company to undertake this.

5.5 Waste Storage Area Design

The 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 400 is recommended;
- Be easily accessible for people with limited mobility;
- Be restricted to access by nominated personnel only;
- Be supplied with hot or cold water for disinfection and washing of bins;
- Be fitted with suitable power supply for power washers;
- Have a sloped floor to a central foul drain for bins washing run-off;
- Have appropriate signage placed above and on bins indicating correct use;
- Have access for potential control of vermin, if required; and
- Be fitted with CCTV for monitoring.

The operating company and staff will be required to maintain the bins and storage area in good condition as required by the GCC Waste Bye-Laws.

Access to the WSAs will be restricted to authorised staff and residents, be sufficient to allow a 1100 litre bin to pass easily into and out of the room for transfer via the walkway to the waste collection zone.

5.6 Facility Management Responsibilities

It shall be the responsibility of the Facilities Management Company to ensure that all domestic waste generated by residential units and commercial tenants is managed to ensure correct storage prior to collection by an appropriately permitted waste management company.

Facilities Management will provide the following items in accordance:

- Provision of a Waste Management Plan document, prepared by the Facilities Management Company to all residential units and commercial tenants, which

- shall clearly state the methods of source waste segregation, storage, reuse and recycling initiatives that shall apply to the management of the development;
- Provision and maintenance of appropriate graphical signage to inform residents and tenants of their obligation to reduce waste, segregate waste and in the correct bin;
 - Preparation of an annual waste management report for all residential units and commercial tenants;
 - Designation of access routes to common waste storage areas to ensure safe access from the units;
 - Provision of an appropriately qualified and experienced staff member, who will be responsible for all aspects of waste management at the development;
 - Daily inspection of waste storage areas and signing of a daily check list, which shall be displayed within the area; and
 - Maintenance of a weekly register, detailing the quantities and breakdown of wastes collected from the development and provision of supporting documentation by the waste collector to allow tracking of waste recycling rates.

5.7 Pest Management

A pest control operator will be appointed as required to manage pests onsite during the operational phase of this development. All waste generated within the development will be stored in closed waste receptacles both within units and within the WSA. Any waste receptacles will be carefully managed to prevent leaks, odours and pest problems.

The WSA will have access for potential control of vermin, if required, be supplied with hot or cold water, drainage point and will be regularly inspected by facilities management to deter pests.

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 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 NWMPCE*.

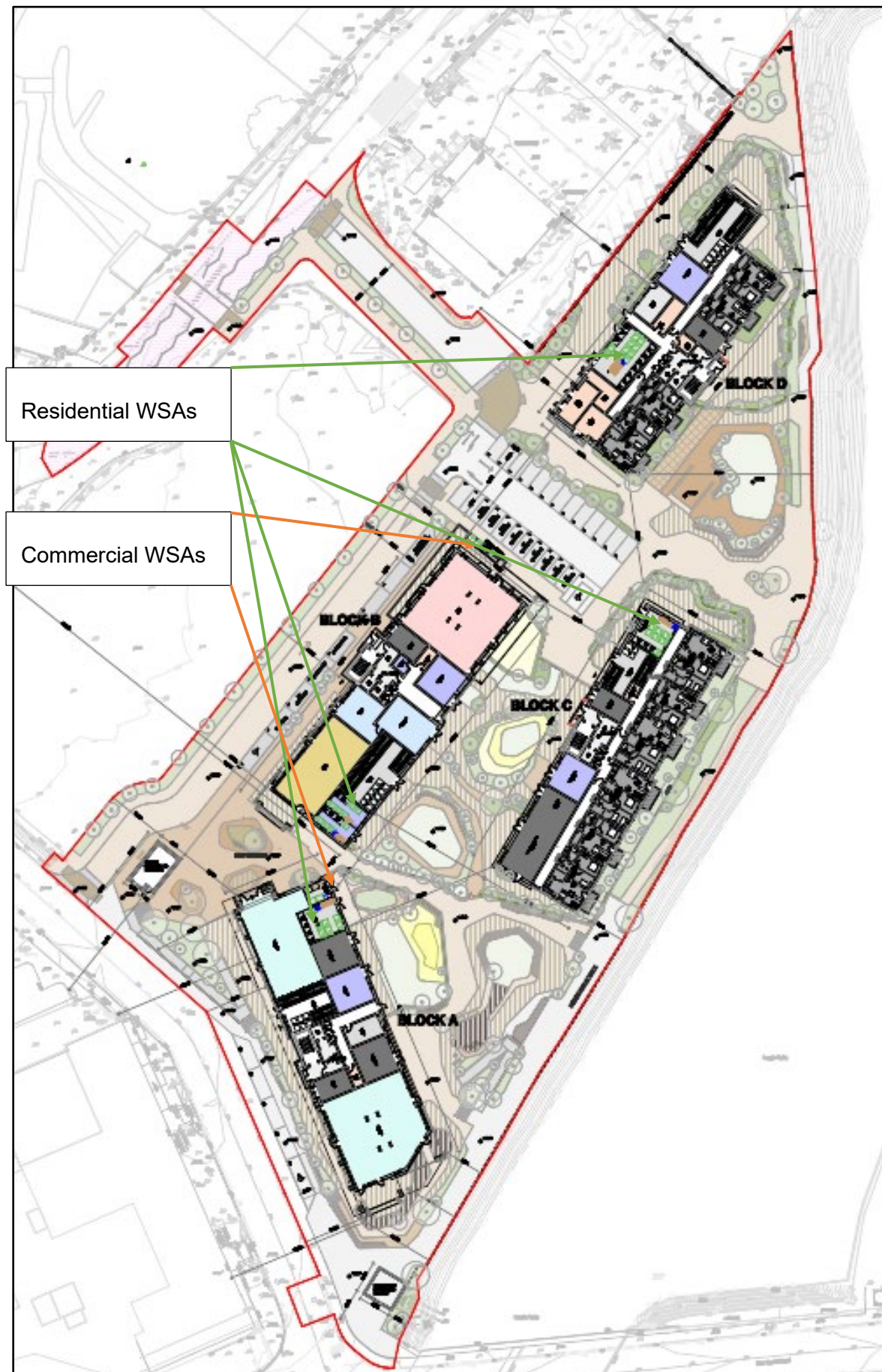
Adherence to this plan will also ensure that waste management at the development is carried out in accordance with the requirements of the *GCC Waste Bye-Laws*.

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

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2. Environmental Protection Agency Act 1992 as amended.
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8.0 APPENDIX 1: WASTE STORAGE AREA LOCATION



9.0 APPENDIX 2: ROAD SWEEP ANALYSIS FOR REFUSE TRUCK

