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Operational Waste Management Plan

Proposed Infill Housing Development at Spine Site, Darndale

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Respond
Housing

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1. INTRODUCTION

AWN Consulting, a Trinity Consultants Team, has prepared this Operational Waste Management Plan (OWMP) on behalf of Respond Housing (the Client) for the proposed infill housing development of 84 no. social housing units including 50 no. apartments and 34 no. 2-storey houses (the Proposed Development) at Spine Site, Darndale, Dublin 17 (the site).

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 *National Waste Management Plan for a Circular Economy 2024 - 2030 (NWMPCE)* (2025)⁴ and the Dublin City Council (DCC) '*Dublin City Council (Storage, Presentation and Segregation of Household and Commercial Waste) Bye-Laws*' 2018⁵. 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. 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. The latest version of this strategy has been issued as of February 2026 '*Whole of Government Circular Economy Strategy 2026-2028: 'Accelerating Action*' (2026)¹², with the main purpose of this strategy being to increase Ireland's circular material use rate by two percentage points per year.

The *Circular Economy and Miscellaneous Provisions Act 2022*¹³ 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.

The *Department of Housing, Local Government and Heritage* authored *Sustainable Residential Development and Compact Settlements - Guidelines for Planning Authorities (2024)*¹⁴, suggests the below thresholds at which the need for the supplemental information such as the OWMP should be considered.

- ▶ *30 or more residential units.*

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*¹⁵ 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 2025 National Circular Economy and Waste Statistics web resource, which is the most recent study published, along with the national waste statistics web resource (2025) reported the following key statistics for 2023:

- ▶ *Ireland generated 3.13 million tonnes of municipal waste in 2023, relatively unchanged compared to the 3.19 million tonnes generated in 2022.*
- ▶ *Between 2016 and 2023, municipal waste increased from 2.7 million tonnes to 3.13 million tonnes.*
- ▶ *Some 1.3 million tonnes of municipal waste generated in Ireland was recycled in 2023, resulting in a recycling rate of 42%. This indicates that we face significant challenges to meet the upcoming EU recycling targets for 2025 to 2035.*
- ▶ *Of the municipal waste recycled in 2023, over 814,000 tonnes went for material recycling (approximately the same as 2022) and over 480,000 tonnes were treated by composting/anaerobic digestion (approximately the same as 2022 but up 37% on 2020).*
- ▶ *A rounded 1.3 million tonnes of Ireland's municipal waste went for incineration with energy recovery in 2023. This tonnage is 43% of municipal waste managed.*
- ▶ *Ireland's landfill rate for municipal waste managed was 14% in 2023. This is a 1% decrease from 2022's rate of 15%.*
- ▶ *There has been a steep decline in Ireland's landfill rate for municipal waste from over 80% in 2001. Ireland must reduce the share of municipal waste landfilled to 10% or less by 2035, which includes waste landfilled at each step along the waste treatment process in Ireland and abroad.*
- ▶ *An estimated 42% (1.2 million tonnes) of all municipal waste managed was exported abroad in 2023, an increase from the 39% in 2022. Of the waste exported, most went for recycling (49%) or energy recovery (36%) while 11% went for composting or anaerobic digestion.*

2.2 Regional Level

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

The *Eastern Midlands Region (EMR) Waste Management Plan 2015 – 2021*, which previously governed waste management policy in the DCC area, has been superseded as of March 2024 by the *NWMPCE 2024 – 2030*, the national waste management plan for Ireland.

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 Proposed 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 Leinster Region, charges are approximately €140-160 per tonne of waste, which includes a €85 per tonne landfill levy introduced under the Waste Management (Landfill Levy) (Amendment) Regulations 2015 (as amended)¹⁶. *The Circular Economy (Waste Recovery Levy) Regulations 2024*¹⁷ will also have a levy of €10 per tonne to waste accepted for recovery.

The *Dublin City Development Plan 2022 – 2028*¹⁸ sets out a number of policies and objectives for Dublin City in line with the objectives of the National climate action policy and emphasises the need to take action to address climate action across all sectors of society and the economy. In the waste sector, policy on climate action is focused on a shift towards a 'circular economy' encompassing three core principles: designing out waste and pollution; keeping products and material in use; and regenerating natural systems. Further policies and objectives can be found within the draft development plan.

Policies:

- ▶ **CA23: The Circular economy:** *To support the shift towards the circular economy approach as set out in 'a Waste Action Plan for a Circular Economy 2020 to 2025, Ireland's National Waste Policy, or as updated.*
- ▶ **SI27: Sustainable Waste Management:** *To support the principles of the circular economy, good waste management and the implementation of best practice in relation to waste management in order for Dublin City and the Region to become self-sufficient in terms of resource and waste management and to provide a waste management infrastructure that supports this objective.*
- ▶ **SI29: Segregated Storage and Collection of Waste Streams:** *To require new commercial and residential developments, to include adequate and easily accessible storage space that supports the separate collection of as many waste and recycling streams as possible, but at a minimum general domestic waste, dry recyclables and food waste as appropriate.*

Objectives:

- ▶ **SI014 Local Recycling Infrastructure:** *To provide for a citywide network of municipal civic amenity facilities/ multi-material public recycling and reuse facilities in accessible locations throughout the city in line with the objectives of the circular economy and 15-minute city.*
- ▶ **SI016 Eastern-Midlands Region Waste Management Plan:** *To support the implementation of the Eastern-Midlands Regional Waste Management Plan 2015–2021 and any subsequent plans in order to facilitate the transition from a waste management economy towards a circular economy.*

2.3 Legislative Requirements

The primary legislative instruments that govern waste management in Ireland and applicable to the 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 amended* ¹⁹; and
- ▶ *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 residents and any 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 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.

2.4 Dublin City Council Waste Management Bye-Laws

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

- ▶ *Kerbside waste presented for collection shall not be presented for collection earlier than 5.00 pm on the day immediately preceding the designated waste collection day;*
- ▶ *All containers used for the presentation of kerbside waste and any uncollected waste shall be removed from any roadway, footway, footpath or any other public place no later than 10:00 am on the day following the designated waste collection day, unless an alternative arrangement has been approved in accordance with bye-law 2.3;*
- ▶ *Documentation, including receipts, is obtained and retained for a period of no less than one year to provide proof that any waste removed from the premises has been managed in a manner that*

conforms to these bye-laws, to the Waste Management Act and, where such legislation is applicable to that person, to the European Union (Household Food Waste and Bio-Waste) Regulations 2015; and

- ▶ *Adequate access and egress onto and from the premises by waste collection vehicles is maintained.*

The full text of the bye-laws is available from the DCC website.

2.5 Regional Waste Management Service Providers and Facilities

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

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 Ballymun Recycling Centre, Ballymun, located c. 8.3 km west of the Proposed Development, can be utilised by the residents of the Proposed Development for certain household waste streams. This centre can accept aluminium cans, metal tins/cans, plastic bottles, Tetra Pak cartons, glass bottles, paper, green waste, car batteries, household batteries and waste oil. There is also a bring bank c. 1.3 km to the south at the Darndale Belcamp Village Centre where clear, green and brown glass can be brought.

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. DESCRIPTION OF THE PROPOSED DEVELOPMENT

3.1 Location, Size and Scale of the Development

The Proposed Development comprises an infill social housing scheme on the Spine Site (c. 1488 ha) in Darndale, Dublin 17.

The Proposed Development comprises 84 no. social housing units including:

34 no. 2 storey houses comprising of:

- ▶ 14 no. two-bed units;
- ▶ 19 no. three-bed units; and
- ▶ 1 no. four-bed units.

50 no. apartments comprising of:

- ▶ 45 no. one-bed units; and
- ▶ 5 no. two-bed units.

The layout comprises four urban blocks across the site:

- ▶ The three-storey apartment block adjacent to the Our Lady Immaculate Church and Darndale junior school; and
- ▶ Three blocks of two-storey terraced housing ranging eastwards across the site towards Buttercup Avenue and the Malahide Road beyond.

A community hub is provided on the ground floor at the northwestern corner of the apartment block, facing existing community facilities such as the church and community centre. This community facility provides a separate kitchen and large dining room, a co-working space, and W.C. facilities

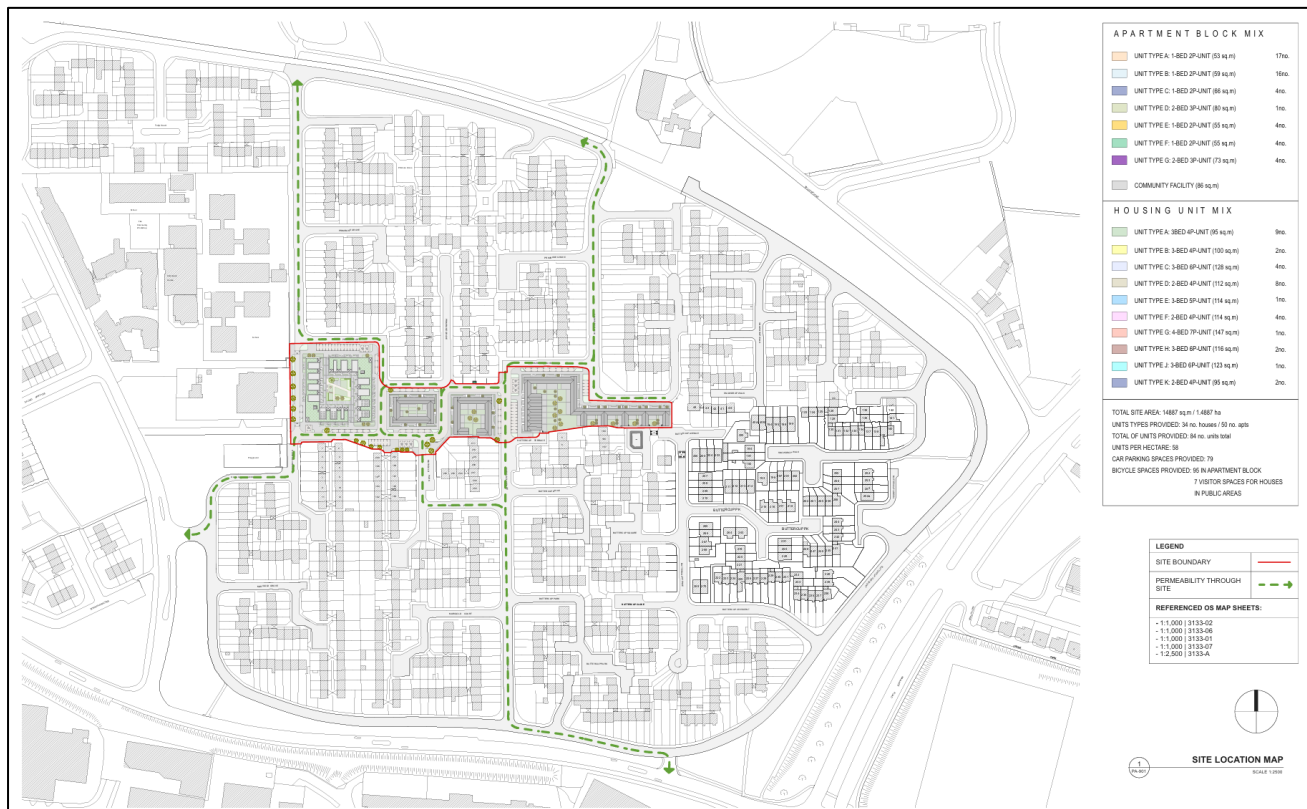


Figure 3.1 Proposed Site Location (illustrated by Red Line Boundary) (Source: Paul Keogh Architects, Drawing No: 2330 / PA / 901 / E, 2026)

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, landscaping and gardens;
- ▶ Glass; and
- ▶ Mixed Non-Recyclable (MNR)/General Waste.

In addition to the typical waste materials that will be generated at the Proposed 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:

- ▶ Drink Cans and Bottles (Deposit Return Scheme);
- ▶ 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 the residents);
- ▶ 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 List of Waste Codes

In 1994, the *European Waste Catalogue* ²⁰ and *Hazardous Waste List* ²¹ were published by the European Commission. In 2002, the EPA published a document titled the *European Waste Catalogue and Hazardous Waste List* ²², 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*'²³ 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 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. 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.

The estimated waste generation for the Proposed Development for the main waste types is presented in Tables 4.1 - 4.2.

Table 4.1 Estimated Waste Generation for the Apartment Units of the Proposed Development

Waste Type	Waste Volume (m ³ / week)
	Apartment Block
Organic Waste	0.40
DMR	2.83
Glass	0.08
MNR	1.49
Total	4.79

Table 4.2 Estimated Waste Generation for the Individual Residential Units of the Proposed Development

Waste Type	Waste Volume (m ³ / week)		
	2-bed House Units (Individual WSAs)	3-bed House Units (Individual WSAs)	4-bed House Units (Individual WSAs)
Organic Waste	0.02	0.02	0.02
DMR	0.11	0.13	0.18
Glass	0.01	0.01	0.01
MNR	0.07	0.08	0.09
Total	0.21	0.24	0.30

*BS5906:2005 Waste Management in Buildings – Code of Practice*²⁴ 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. 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 DCC. In particular, consideration has been given to the following documents:

- ▶ *BS 5906:2005 Waste Management in Buildings – Code of Practice*,
- ▶ *The NWMPCE (2024)*;
- ▶ *Dublin City Council Development Plan 2022 – 2028*;
- ▶ *DCC Dublin City Council (Storage, Presentation and Segregation of Household and Commercial Waste) Bye-Laws (2018)*; and
- ▶ *DoHLGH, Sustainable Urban Housing: Design Standards for New Apartments, Guidelines for Planning Authorities (2025)* ²⁵.

Waste Storage Areas

The location of the Waste Storage Areas (WSAs) can be viewed on the drawings submitted with the planning application under separate cover and in Appendix A of this report.

Locations

- ▶ There are one (2 no.) shared WSAs for the Apartment Block units which are located internally at ground floor level within the Apartment Block; and
- ▶ Individual units will have designated space for storing their bins, either within a shielded bin store at the front of the unit or within the rear of their unit where external access is available.

Facilities management will supply all residents using the shared WSAs within the Proposed Development with a document that will clearly outline the required methods of source waste segregation, storage, reuse and recycling initiatives to be followed within the Proposed Development.

Using the estimated waste generation volumes in Tables 4.1 to 4.2, above, the waste receptacle requirements for MNR, DMR, organic waste and glass have been established for the WSAs. 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 Storage Requirements for the Proposed Development

Area/Use	Bins Required			
	MNR ¹	DMR ²	Glass	Organic
Apartment Duplex Block (Per Shared WSA)	1 no. 1100 L	2 no. 1100 L	1 no. 120 L	1 no. 240 L
Individual Houses (Individual WSA)	1 no. 240 L	1 no. 240 L	Bottle Bank	1 no. 120 L

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

The waste receptacle requirements have been established from distribution of the total weekly waste generation 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 team in the shared WSAs. Residents in the house units will need to provide their own waste receptacles.

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, DMR, glass and MNR 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 supplemented, as required, by the facilities 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

Graphical signage will be erected by facilities management, above or on the bins to show exactly which wastes can be put in each. Bins/containers will also be colour coded to avoid cross contamination of the different waste streams.

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

Other waste materials such as textiles, batteries, printer toner/cartridges, 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 5.3.

5.2 Waste Collection

There are numerous private contractors that provide waste collection services in the 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.

All bins from the Proposed Development shared WSAs will be collected directly from the WSAs there will be no need for a temporary staging/collection area. It will be the responsibility of the facilities management or the waste contractor, depending on the agreement, to bring bins from the shared WSAs to the collection truck for emptying. The facilities manager or the waste contractor will ensure that empty bins are promptly returned to the WSAs after emptying.

Residents in the units with their own individual WSAs will be responsible for relocating their bins to and from the roadside on designated collection days.

Suitable access and egress has been provided to enable the bins to be moved easily from the WSAs to the waste collection vehicle on the appropriate days. Waste will be collected at agreed days and times by the nominated waste contractors.

All waste receptacles will be clearly identified as required by waste legislation and the requirements of the DCC *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.

A road sweep analysis can be found in Appendix B of this report.

The collection of the waste will be 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) ²⁶.

5.3 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); or
- ▶ 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 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.

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.

Printer Cartridge / Toners

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 that are classed as hazardous (if they arise) generated by the residents will be brought to a civic amenity centre.

Light Bulbs

Waste light bulbs (fluorescent, incandescent and LED) may be generated by lighting in the Apartment Block. It is anticipated that facilities management will be responsible for the off-site removal and appropriate recovery / disposal of these wastes.

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 residents will be responsible for disposing of waste textiles appropriately.

Waste Cooking Oil

If the residents generate waste cooking oil, this can be brought to a civic amenity centre.

Furniture & Other Bulky Waste Items

Furniture and other bulky waste items (such as carpet, etc.) may occasionally be generated by the residents. If residents wish to dispose of furniture, this can be brought to a civic amenity centre.

Abandoned Bicycles

Bicycle parking areas are planned for the Proposed Development. As happens in other developments, residents sometimes abandon faulty or unused bicycles, and it can be difficult to determine their ownership. Abandoned bicycles will be donated to charity if they arise or facilities management will arrange collection by a licensed waste contractor.

5.4 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 400 is recommended;
- ▶ Be easily accessible for people with limited mobility;
- ▶ Be restricted to access by nominated personnel only;

- ▶ Be supplied with hot or cold water for disinfection and washing of bins;
- ▶ Be fitted with suitable power supply for power washers;
- ▶ Have a sloped floor to a central foul drain for bins washing run-off;
- ▶ Have appropriate signage placed above and on bins indicating correct use;
- ▶ Have access for potential control of vermin, if required; and
- ▶ Be fitted with CCTV for monitoring.

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

5.5 Facility Management Responsibilities

It shall be the responsibility of the facilities manager to ensure that all waste generated is properly managed and correctly stored prior to collection by an appropriately permitted waste management company.

The facilities manager will provide the following items to all residents utilising the WSAs and any appointed facilities management team appointed:

- ▶ Provision of a Waste Management Plan document, prepared by the facilities manager to all residents and facilities management staff which shall clearly state the methods of source waste segregation, storage, reuse and recycling initiatives that shall apply to the management of the Proposed Development;
- ▶ Provision and maintenance of appropriate graphical signage to inform residents of their obligation to reduce waste, segregate waste and in the correct bin;
- ▶ Preparation of a waste management report for all residents to view;
- ▶ Designation of access routes to common waste storage areas to ensure safe access from the unit by mobility impaired persons;
- ▶ Provision of an appropriately qualified and experienced staff member, who will be responsible for all aspects of waste management at the Proposed Development;
- ▶ Frequent inspection of waste storage areas and signing of a check list, which shall be displayed within the area; and
- ▶ Maintenance of a register, detailing the quantities and breakdown of wastes collected from the Proposed Development and provision of supporting documentation by the waste collector to allow tracking of waste recycling rates.

5.6 Pest Management

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

The WSAs 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. SUMMARY AND CONCLUSION

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.

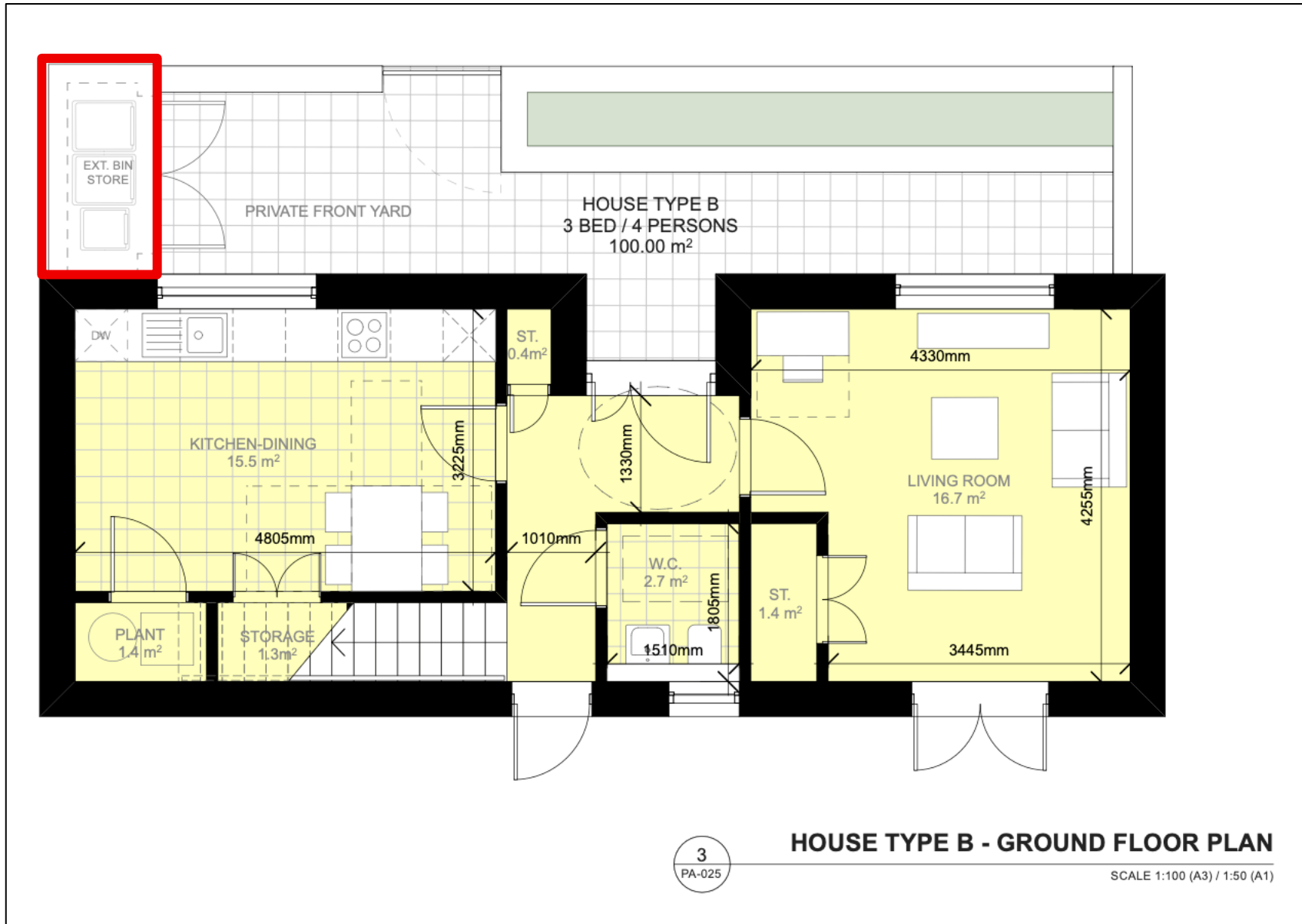
Implementation of this OWMP will ensure a high level of recycling, reuse and recovery at the Proposed Development. All recyclable materials will be segregated at source to reduce waste contractor costs and ensure maximum diversion of materials from landfill, thus contributing to the targets set out in *the NWMPCE*.

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

The waste strategy presented in this document will provide sufficient storage capacity for the estimated quantity of segregated waste. The designated areas for waste storage will provide sufficient room for the required receptacles in accordance with the details of this strategy.

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APPENDIX B. ROAD SWEEP ANALYSIS

