PROPOSED LARGE-SCALE RESIDENTIAL DEVELOPMENT AT RATHMULLAN ROAD, OLDBRIDGE, DROGHEDA, CO. MEATH

Operational Waste Management Plan

Earlsfort Developments Drogheda Limited

Report no.: 1.0, Rev. **2.0**
Document no.: 1.0
Date: 04/09/2025

DOCUMENT CONTROL SHEET

Client	Earlsfort Developments Drogheda Limited
Project Title	Rathmullan Large-scale Residential Development
Document Title	Operational Waste Management Plan

Rev.	Status	Author(s)	Reviewed by	Approved by	Issue Date
00	Draft for Internal Review	Brendan Jalil *Environmental Consultant*	Grainne Ryan *Principal EIA Consultant*	Catherine Sheridan *Technical Director*	02/07/2025
01	Draft for Client Review	Brendan Jalil *Environmental Consultant*	Grainne Ryan *Principal EIA Consultant*	Catherine Sheridan *Technical Director*	02/07/2025
02	Final for Client Issue	Brendan Jalil *Environmental Consultant*	Charlotte Lawler-Greene *Principal Consultant*	Catherine Sheridan *Technical Director*	29/08/2025

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1 INTRODUCTION

DNV has produced this Operational Waste Management Plan (OWMP) at the request of Earlsfort Developments Drogheda Limited for a Proposed Large-scale Residential Development located on lands at Rathmullan Road, Oldbridge, Drogheda, Co. Meath.

The Proposed Development consists of a mix of apartments, houses, duplexes and a crèche facility. A full project description is included in Section 3 of this report.

The OWMP has been prepared to ensure that the management of waste during the operational phase of the Proposed Development is undertaken in accordance with current legal and industry standards including the 'Waste Management Act 1996, as amended', and associated Regulations including, 'Protection of the Environment Act 2003 as amended', 'Litter Pollution Act 1997 as amended', the 'National Waste Management Plan for a Circular Economy 2024-2030', the 'Waste Framework Directive 2008/98/EC', and 'Meath County Council *Waste Management (Storage, Presentation And Segregation Of Household And Commercial Waste) Bye-Laws 2018*' (hereinafter referred to as 'the Bye-Laws').

At present, there are no specific guidelines issued by Meath County Council (MCC) 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 the guidelines listed in Section 1.1 below.

The plan will be subject to review if a planning permission is granted and any material-changes in the proposed operational strategy will be subject to agreement with MCC at project construction and operational stages.

1.1 Scope of the Project

This OWMP aims to provide a detailed plan for the storage, handling, collection, and transport of the wastes generated at the development in a manner that does not present a risk to human health or the environment, or a risk of common waste related nuisance such as litter or odour.

European and national waste management policy is based on the concept of 'waste hierarchy', which establishes an order of preference for managing and disposing of waste. The OWMP is designed to ensure that waste arising from the operational phase of the project is managed to incentivise waste prevention and to encourage the segregation of waste so that it can be managed in accordance with the Waste Hierarchy. Diversion of waste from landfill and waste prevention will be the overarching philosophy adopted.

https://environment.ec.europa.eu/topics/waste-and-recycling/waste-framework-directive_en

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.

This OWMP considers the requirements of national and regional waste policy, legislation, and other local authority guidelines. In addition, it takes account of the following guidance:

- *"Planning Design Standards for Apartments, Guidelines for Planning Authorities, 2025",* and
- The British Standard, *"BS 5906:2005 Waste management in buildings — Code of practice"*

2 OVERVIEW OF WASTE MANAGEMENT IN IRELAND

OWMPs are prepared to support planning applications in Ireland. The purpose of this OWMP is to detail and plan how waste generated during the operational phase of the Proposed Development will be managed. This will include requirements for waste storage provisions, access to authorised waste collection and proximity to additional recycling facilities.

The Proposed Development is located in the MCC planning district. In preparing this document, consideration has been given to the requirements of MCC Environment Department, national and regional waste policy, legislation, and other Local Authority Guidelines.

2.1 European and Irish Legal Context

Waste Legislation in Europe and the Republic of Ireland (hereinafter referred to as “Ireland”) is extensive and often complex.

The Waste Framework Directive (Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste) is a core component of waste regulations across Europe. The Waste Framework Directive (which was transposed into Irish law in 2011) by ‘S.I. No. 126/2011 - European Communities (Waste Directive) Regulations 2011’, encourages the prevention, recycling, and processing of waste. The Waste Framework Directive 2008/98/EC is amended by the Waste Framework (Directive (EU) 2018/851 of the European Parliament) (the “WFD, as amended”). It was approved by the EU in July 2018, and was transposed into Irish Law by S.I No. 323/2020 European Union (Waste Directive) Regulations 2020. The Waste Framework legislation establishes the legal structure for the prevention and management of waste in Ireland. It sets out a Waste Hierarchy which priorities waste prevention, preparation for re-use, recycling, and energy recovery. Waste disposal is the last resort and least favourable option. The Directive requires Member States to adopt waste management plans and waste prevention programmes. It also governs the reporting on waste generation, waste treatment, and capacity and sets down mandatory targets for waste diversion, collection, and treatment.

The WFD, as amended forms part of the circular Economy Package adopted by the EU; it requires EU Member States to improve their waste management systems, to improve the efficiency of resource use, and to ensure that waste is valued as a resource.

In Ireland, the primary platform for waste legislation is the ‘Waste Management Act 1996, as amended’, and the ‘Protection of the Environment Act 2003, as amended’. ‘The Waste Management Act, as amended’, has been brought into effect by making a series of subordinate regulations, covering a range of specific ‘priority’ waste types such as food waste, waste electrical and electronic equipment, batteries etc. The Waste Management Act has been further amended by enacting regulations, mainly the European Communities (Waste Directive) Regulations 2011 (S.I. No 126 of 2011) which addresses new EU environmental initiatives and strengthen areas where problems have arisen.

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 imposes obligations and the responsibility on the waste producer for waste from the time it is generated up 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 waste treatment destination, waste contractors will be employed to physically transport waste to the final waste destination. It is therefore imperative that residential development management companies undertake on-site management of waste in accordance with all legal requirements and employ appropriately authorised waste 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.

Each appointed waste contractor must hold a valid waste collection permit to transport waste which is issued by the National Waste Collection Permit Office (NWCPO). Waste treatment facilities must also be appropriately permitted (Waste Facility Permit or Certificate of Registration) or licensed by the Local Authority or Environmental Protection Agency (EPA) to accept the waste. The Management Company appointed will be responsible for ensuring that all Waste Contractors hold the appropriate authorisations.

2.2 Waste Policy in Ireland

In addition to waste regulations, Ireland has adopted waste management policies. Waste management policy is adopted by the government and is detailed in a set of policy documents which have been produced since 1998:

- Waste Management: Changing Our Ways (1998)
- Preventing and Recycling Waste: Delivering Change (2002)
- Taking Stock & Moving Forward (2004)
- National Strategy on Biodegradable Waste Management (2006)
- A Resource Opportunity – Waste Management Policy in Ireland (2012)
- A Waste Action Plan for a Circular Economy – Ireland's National Waste Policy 2020-2025 (2020)

'A Waste Action Plan for a Circular Economy: Ireland's National Waste Policy 2020-2025' was published by the Department of Communications, Climate Action and Environment in September 2020. This policy sets out a number of important policy actions with the aim of transforming the current economic and waste system from linear to circular. These include the following actions:

- A shift towards a policy framework which rewards circularity and moves away from the waste of resources.
- Increased accountability of products that producers place on the market through levies on non-recyclable waste and the overuse of packaging.

- Targets for recycling (65% by 2035), food waste (reduced by 50% by 2030) and waste to landfill (no more than 10% by 2035).
- To support households, awareness and education measures will be strengthened; the waste collection industry will be encouraged to play a role in such measures.
- All Regional Waste Management Plans will be replaced with a National Waste Management Plan for a Circular Economy.
- A standardising of the colour coding of bins
    - Mixed Municipal Waste (MMW) / General / Residual Waste to be designated as a 'recovery' bin: colour **black**;
    - Dry Mixed Recyclables (DMR) bin: colour **green;**
    - Organic (food) Waste bin to be designated as 'organic waste recycling bin': colour **brown**, and
    - Glass bin: colour **blue**.

2.3 National Waste Management Plan & Local Bye-laws

The National Waste Management Plan for a Circular Economy 2024 -2030 sets out the framework for the prevention and management of waste across Ireland. This document is a statutory document underpinned by national and EU waste legislation.

The strategic vision of the Plan is to rethink the approach to managing waste, and to move towards a 'circular economy' approach where resources are reused or recycled as much as possible and the overall generation of waste is minimised.

In order to achieve this vision, the Plan has set out a number of specific and measurable performance targets:

- Achieve a recycling rate of 55% by 2025, 60% by 2030 and 65% by 2035
- Mitigate total waste growth to 0% growth per person over the life of the Plan (baseline for total waste generated per person per year is 2.7 tonnes based on NWCPO data).
- 6% aggregate reduction in all residual municipal waste by 2030 (including commercial and household) (Baseline 0.37 tonnes rMSW per person).
- Reduce contamination in municipal bins. This is measured as 'material compliance' which is the fraction of appropriate material placed in each of the residual, recyclable or food waste recycling bins.
    - A material compliance target of 90% in the dry recycling bin as a minimum standard.

- A target of 10% per annum increase in material compliance in the residual bin is applied in this Plan. This represents a potential 90% material compliance rate by the end of 2030.

The relevant Priority Actions identified by the Plan in regard to the management of Municipal Household Waste are as follows:

- *"Maximise households on kerbside systems, standardise the identification of bins and promote items accepted for recycling using visual representation."*

- *"Identify appropriate segregated waste collection systems for apartments and mixed-use developments and support the waste industry in the implementation of these systems."*

The MCC Waste Management (Segregation, Storage & Presentation of Household and Commercial Waste) Bye-Laws 2018 (hereinafter referred to as 'the Bye-Laws') place some additional obligations in how waste is to be stored and managed at the proposed development.

Section 2.3 of the Bye-Laws covers the location for container storage and states that "Other than on the day before and the designated waste collection day, containers used for the presentation of kerbside waste shall be held within the curtilage of the premises where the waste is produced. They shall not be stored on a roadway, footway, footpath or any other public place unless the location has been expressly authorised in writing by an authorised person."

Section 2.4 of the Bye-Laws covers the Use of Waste Containers on Collection Day and states that "waste shall only be presented for collection in an appropriate waste container. The container shall not be over-loaded and the lid shall be securely closed. No waste shall be presented on the top of the lid or adjacent to the waste container."

Section 2.7 of the Bye-Laws covers the Segregation of Household Waste and Contamination Prevention and states:

(a) Household kerbside waste shall be segregated into residual household kerbside waste and recyclable household kerbside waste, with these fractions being stored separately. Any such separated recyclable waste shall not be deposited into a container designated for residual household kerbside waste and no such residual waste shall be deposited into a container designated for recyclable household kerbside waste.

(b) Neither recyclable household kerbside waste nor food waste arising from households shall be contaminated with any other type of waste before or after it has been segregated.

There are separate legal requirements mandating householders to segregate food waste and to keep it separate. These are contained in the European Union (Household Food Waste and Bio- Waste) Regulations 2015. Food waste also may be subject to home composting or be delivered to an authorised waste facility

Section 2.9 of the Bye Laws outlines the provision for multi-user buildings and apartments: A management company, or another person if there is no such company, who exercises control and supervision of residential and/or commercial activities in multi-unit developments, mixed-use developments, flats or apartment blocks, combined living/working spaces or other similar complexes shall ensure that:

(a) Separate receptacles of adequate size and number are provided for the proper segregation, storage and collection of recyclable household kerbside waste and residual household kerbside waste.
(b) Additional receptacles are provided for the segregation, storage and collection of food waste where this practice is a requirement of the national legislation on food waste.
(c) The receptacles referred to in paragraphs (a) and (b) are located both within any individual apartment and at the place where waste is stored prior to its collection.
(d) Any place where waste is to be stored prior to collection is secure, accessible at all times by tenants and other occupiers and is not accessible by any other person other than an authorised waste collector.
(e) Written information is provided to each tenant or other occupier about the arrangements for waste separation, segregation, storage and presentation prior to collection.
(f) An authorised waste collector is engaged to service the receptacles referred to in this section of these bye-laws, with documentary evidence, such as receipts, statements or other proof of payment, demonstrating the existence of this engagement being retained for a period of no less than two years. Such evidence shall be presented to an authorised person within a time specified in a written request from either that person or from another authorised person employed by Meath County Council.
(g) Receptacles for kerbside waste are presented for collection on the designated waste collection day.
(h) Adequate access and egress onto and from the premises by waste collection vehicles is maintained.

This OWMP also takes into account the following objectives of the Meath County Development Plan 2021-2027:

INF POL 61 "*To facilitate the implementation of National Waste Legislation, National and Regional Waste Management Policy and the circular economy".*

INF OBJ 54 "*To facilitate the transition from a waste management economy to a green circular economy to enhance employment opportunities and increase the value recovery and recirculation of resources*".

INF OBJ 64 "*To ensure that during the assessment of planning applications through the Development Management process that provision for household waste recycling is adequately addressed in all new residential developments*".

3 DESCRIPTION OF THE PROJECT

3.1 Description of the Development

The site of the Proposed Development is located on lands at Rathmullan Road, Oldbridge, Drogheda, Co. Meath.

The Proposed Development will consist of the following:

(i) demolition/removal of all existing farm buildings/structures, and associated hard standing on site;

(ii) construction of a large-scale residential development (LRD) of 249 no. units comprising 170 no. two-storey houses (including 37 no. two-bedroom houses, 111 no. three-bedroom houses and 22 no. four-bedroom houses), 16 no. three-storey duplex buildings (accommodating 16 no. one-bedroom and 16 no. two-bedroom units) and a mix of 8 no. three-storey and 3 no. four-storey apartments blocks accommodating a total of 22 no. one-bedroom and 25 no. two-bedroom apartments);

(iii) construction of a new vehicular entrance and access road off Rathmullan Road with associated junction works and associated internal access road network with pedestrian and cyclist infrastructure;

(iv) provision of a three-storey creche facility (411sq.m) with external play areas at ground and second floors and vehicular/bicycle parking area; and,

(v) all ancillary site and infrastructural works, inclusive of removal of existing vehicular entrances, general landscaping and public open space provision, vehicular parking provision (396 no. spaces in total), bicycle parking, boundary treatments, foul/surface water drainage, attenuation areas, provision of pumping station and provision of an ESB substation, as necessary to facilitate the Proposed Development. Each house will be served by vehicular parking to the front and private amenity space in the form of a rear garden. Each duplex building will be served by vehicular parking to the front and private amenity space in the form of balcony/terrace spaces to the rear. Each apartment block will have shared access to adjoining car parking bays with communal amenity space and bicycle/bin stores provided to the rear and each apartment will be provided with private amenity space in the form of a balcony or terrace. The development includes provision of a landscaped area of public open space to the north of the site, with 2 no. pedestrian/cyclist connections (via the northern/eastern site boundaries) to Rathmullan Road which will be subsequently ceded to Meath County Council.

The application is accompanied by a Natura Impact Statement (NIS) and an Environmental Impact Assessment Report (EIAR).

The OWMP addresses waste management for the development once it is operational i.e., post the construction phase.

3.2 Proximity of the Development to Recycling Facilities

The development site is located at Rathmullan Road, Oldbridge, Drogheda, Co. Meath. Figure 3-1 presents the proximity of the development site to local bring bank facilities. There is a large civic amenity centre in Drogheda servicing the Rathmullan area, with numerous bring banks throughout the region for glass bottle collection.

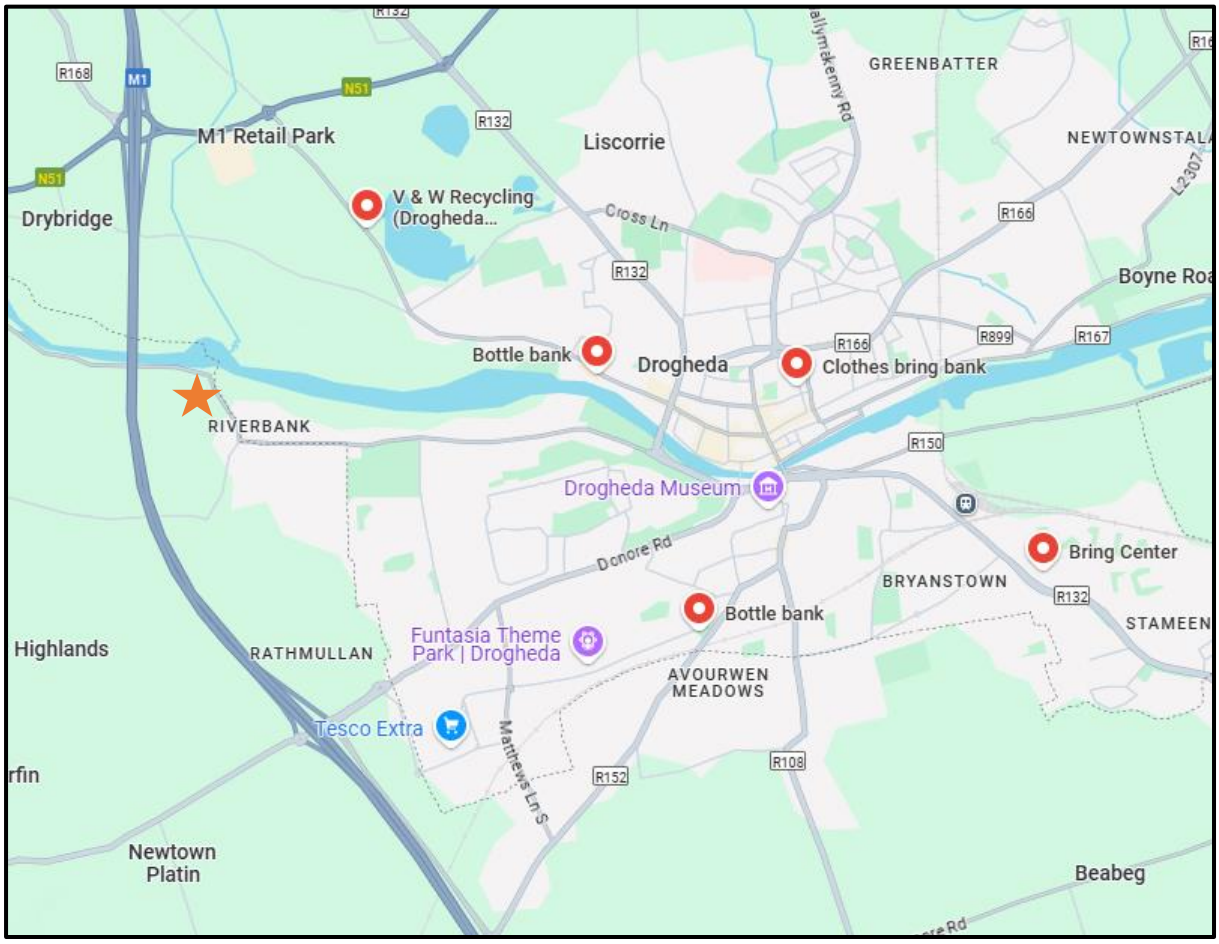

Figure 3-1 Bring Banks and Civic Amenity Recycling Centre Located in proximity to the Proposed Development (Source: Google Maps), site location identified with an orange star.

4 Waste Generation and Storage

4.1 List of Waste Codes

Correct classification of waste is the foundation for ensuring that the collection, transportation, storage, and treatment of waste is carried out in a manner that provides protection for the environment and human health and in compliance with legal requirements. In 1994, the '*European Waste Catalogue' (EWC)* was published by the European Commission. This waste classification system applies across the EU and is the basis for all national and international waste reporting obligations such as those associated with waste collection

permits, certificates of registration, waste facility permits, EPA Waste and Industrial Emissions (IE) licences and EPA National Waste Database.

In 2002, the EPA published a document titled the '*European Waste Catalogue and Hazardous Waste List'*. This document was replaced in 2018 by the EPA '*Waste Classification – List of Waste & Determining if Waste is Hazardous or Non-Hazardous'*. This 2018 EPA document consolidates the EWC legislation and allows the generators of waste to classify the waste as hazardous or non-hazardous and, in the process to assign the correct List of Waste (LoW) entry.

Under the classification system, different types of wastes are fully defined by a code. The LoW code for typical waste materials expected to be generated during the operation of the Proposed Development are provided in Table 4-1.

Table 4-1 Expected Waste Types and List of Waste Codes

Waste Description	List of Waste (LoW) Code
Mixed Municipal Waste	20 03 01
Dry Mixed Recyclables	20 03 01
Biodegradable Kitchen Waste	20 01 08
Glass	20 01 02
Bulky wastes	20 03 07
Waste electrical and electronic equipment*	20 01 35*, 21 01 36
Batteries and accumulators*	20 01 33*,20 01 34
Textiles	20 01 11
Fluorescent tubes and other mercury containing waste*	20 01 21
Chemicals (solvents, pesticides, paints & adhesives, detergents, etc.)*	20 01 13*; 20 01 19*; 20 01 27*; 20 01 28; 20 01 29*; 20 01 30
Plastic	20 01 39
Metals	20 01 40
Paper and Cardboard	20 01 01

**Individual waste type may contain hazardous materials*

4.2 Residential

4.2.1 Waste Types Arising

The predicted waste types that will be generated at the Proposed Development residential units include the following:

i. **MMW** / General Waste;
ii. **DMR** - including cardboard, plastic packaging, aluminium cans, tins, paper, and Tetra Pak cartons;
iii. **Organic (food)** Waste; and
iv. **Glass.**

In addition to the typical waste materials that will be generated daily, some other waste types may be generated infrequently in small quantities. These wastes will need to be managed separately and may include:

- Bulky wastes – including furniture, carpets, mattresses;
- Waste electrical and electronic equipment (WEEE);
- Batteries;
- Textiles – clothes or soft furnishings;
- Light bulbs or fluorescent tubes;
- Chemicals – old medicines, paints, detergents; and
- Waste oil - cooking oil.

4.2.2 Waste Storage Capacity Requirements

4.2.2.1 Houses

The following housing types and numbers will be provided the development:

Table 4-2 No. of Houses and types

House Type	Description	No. Beds	Access	No
2.1	2 Bed Mid Terrace	2	Ground Floor	23
2.4	2 Bed Semi-Detached	2	Ground Floor	8
2.5	2 Bed Semi-Detached	2	Ground Floor	6
3.2	3 Bed Mid Terrace	3	Ground Floor	16
3.4	3 Bed Mid Terrace	3	Ground Floor	22
3.5	3 Bed Semi-Detached	3	Ground Floor	4
3.6	3 Bed Semi-Detached	3	Ground Floor	14
3.7	3 Bed Semi-Detached	3	Ground Floor	46
3.8	3 Bed Semi-Detached	3	Ground Floor	9
4.1	4 Bed Semi-Detached	4	Ground Floor	22

Knowledge of the number of bedrooms in the proposed development is required to complete the calculations of waste volumes generated as per the *BS 5906:2005 Waste management in buildings — Code of practice.* The calculation for typical weekly waste arisings and subsequent storage requirements for domestic dwellings is as follows:

number of dwellings × {(volume arising per bedroom [70 L] × average number of bedrooms) + 30}[a]

[a] *Based on average household occupancy.*

Table 4-3 below includes the calculations of waste arising using the formula provided in the British Standard *BS 5906:2005 Waste management in buildings — Code of practice.* Table 4-

3 details the number of dwellings for each accommodation type. The volume arising per bedroom is assumed to be 70 litres (L) as per the calculation formula provided. An additional 30L is added onto every dwelling for each calculation. It is expected that this additional volume is to allow for sufficient storage capacity in periods of seasonal variations resulting in high waste generation. The capacity requirements have been based on a full occupancy scenario. The total volume of estimated waste generated weekly from the houses is 39,750L per week, or an average of 240L per house per week.

Table 4-3 Estimated Waste Volumes for Houses

House Type	No. of dwellings	Volume waste generated per Bedroom (70L)	No. of Bedrooms	Additional 30L	Total Litres All Units	Total Litres Per Unit per week
2 Bed House	37	70	2	30	**6,290**	**170**
3 Bed House	111	70	3	30	**26,640**	**240**
4 Bed House	22	70	4	30	**6,820**	**310**
Total Dwellings	**170**			**Total Litres**	**39,750**	**240**

4.2.2.2 Apartments and Duplexes

For the apartment and duplex buildings, it is necessary to calculate the required bin storage capacity based on the number of units and the number of bedrooms in each unit. The capacity requirements have been based on a full occupancy scenario with a weekly bin collection.

Table 4-4 Description and Number of Apartments and Duplexes

Dwelling Type	1 BED	2 BED	Total
26/A	2	3	5
32/A	2	2	4
39/A	2	3	5
51/A	2	2	4
60/A	2	2	4
14/C	2	2	4
12/D	2	3	5
26/D	2	2	4
9/G	2	2	4
10/G	2	2	4
1/H	2	2	4
Duplexes	16	16	32
Total	**38**	**41**	**79**

The British Standard *BS 5906:2005 Waste management in buildings — Code of practice* provides guidance in respect of waste generation for domestic and commercial premises to calculate the storage, containment, and equipment requirements for effective waste management. Calculations provided in this British Standard document have been used to calculate the waste storage capacity requirements for the apartments and duplexes in this

Proposed Development. Table 4-4 details the Schedule of Accommodation for apartments and duplexes.

The number of bedrooms is required to complete the calculations of waste volumes generated as per the *BS 5906:2005 Waste management in buildings — Code of practice.*

The calculation for typical weekly waste arisings and subsequent storage requirements for domestic dwellings is as follows:

number of dwellings × {(volume arising per bedroom [70 L] × average number of bedrooms) + 30}[a]

[a] *Based on average household occupancy.*

Table 4-5 below includes the calculations of waste arising using the formula provided in the *BS 5906:2005 Waste management in buildings — Code of practice.* The calculations completed in Table 4-5 conclude that the estimated typical weekly waste arising is 10,770L.

Table 4-5 Estimated Waste Volumes for Apartments and Duplexes

26/A					
Type	**No. of dwellings**	**Volume per Bedroom (70L)**	**No. of Bedrooms**	**Additional 30L**	**Total Litres /Unit/Week**
1 Bed	**2**	**70**	1	**30**	**200**
2 Bed	**3**	**70**	2	**30**	**510**
	5		**Total Litres**		**710**
32/A					
Type	**No. of dwellings**	**Volume per Bedroom (70L)**	**No. of Bedrooms**	**Additional 30L**	**Total Litres /Unit/Week**
1 Bed	**2**	**70**	1	**30**	**200**
2 Bed	**2**	**70**	2	**30**	**340**
	4		**Total Litres**		**540**
39/A					
Type	**No. of dwellings**	**Volume per Bedroom (70L)**	**No. of Bedrooms**	**Additional 30L**	**Total Litres /Unit/Week**
1 Bed	**2**	**70**	1	**30**	**200**
2 Bed	**3**	**70**	2	**30**	**510**
	5		**Total Litres**		**710**
51/A					
Type	**No. of dwellings**	**Volume per Bedroom (70L)**	**No. of Bedrooms**	**Additional 30L**	**Total Litres /Unit/Week**
1 Bed	**2**	**70**	1	**30**	**200**
2 Bed	**2**	**70**	2	**30**	**340**
	4		**Total Litres**		**540**
60/A					

Type	No. of dwellings	Volume per Bedroom (70L)	No. of Bedrooms	Additional 30L	Total Litres /Unit/Week
1 Bed	**2**	**70**	1	**30**	**200**
2 Bed	**2**	**70**	2	**30**	**340**
	4		**Total Litres**		**540**

14/C					
Type	**No. of dwellings**	**Volume per Bedroom (70L)**	**No. of Bedrooms**	**Additional 30L**	**Total Litres /Unit/Week**
1 Bed	**2**	**70**	1	**30**	**200**
2 Bed	**2**	**70**	2	**30**	**340**
	4		**Total Litres**		**540**

12/D					
Type	**No. of dwellings**	**Volume per Bedroom (70L)**	**No. of Bedrooms**	**Additional 30L**	**Total Litres /Unit/Week**
1 Bed	**2**	**70**	1	**30**	**200**
2 Bed	**3**	**70**	2	**30**	**510**
	5		**Total Litres**		**710**

26/D					
Type	**No. of dwellings**	**Volume per Bedroom (70L)**	**No. of Bedrooms**	**Additional 30L**	**Total Litres /Unit/Week**
1 Bed	**2**	**70**	1	**30**	**200**
2 Bed	**2**	**70**	2	**30**	**340**
	4		**Total Litres**		**540**

9/G					
Type	**No. of dwellings**	**Volume per Bedroom (70L)**	**No. of Bedrooms**	**Additional 30L**	**Total Litres /Unit/Week**
1 Bed	**2**	**70**	1	**30**	**200**
2 Bed	**2**	**70**	2	**30**	**340**
	4		**Total Litres**		**540**

10/G					
Type	**No. of dwellings**	**Volume per Bedroom (70L)**	**No. of Bedrooms**	**Additional 30L**	**Total Litres /Unit/Week**
1 Bed	**2**	**70**	1	**30**	**200**
2 Bed	**2**	**70**	2	**30**	**340**
	4		**Total Litres**		**540**

1/H					
Type	**No. of dwellings**	**Volume per Bedroom (70L)**	**No. of Bedrooms**	**Additional 30L**	**Total Litres /Unit/Week**
1 Bed	**2**	**70**	1	**30**	**200**
2 Bed	**2**	**70**	2	**30**	**340**
	4		**Total Litres**		**540**

Duplexes					
Type	**No. of dwellings**	**Volume per Bedroom (70L)**	**No. of Bedrooms**	**Additional 30L**	**Total Litres /Unit/Week**
1 Bed	**16**	**70**	1	**30**	**1,600**
2 Bed	**16**	**70**	2	**30**	**2,720**
	32		**Total Litres**		**4,320**
Total Weekly waste arising, (Apartments and Duplex's) in Litres					**10,770**

Table 4-6 details the number of bins required to service the volume of waste arisings. The volume arising per bedroom is assumed to be 70 litres (L) as per the calculation formula provided. An additional 30L is added onto every dwelling for each calculation. It is expected that this additional volume is to allow for sufficient storage capacity in periods of seasonal variations resulting in high waste generation.

Based on weekly waste collections, there would therefore be a requirement to accommodate storage for a volume of 10,770L, or the equivalent of 10 no. 1,110L wheeled bins.

Table 4-6 Breakdown of Bin Numbers & Capacity for weekly Collections (Apartments and Duplexes)

No. of Bins	Size of Bins	Total Litre Capacity	Waste Type
12	140	1,680	Glass
14	140	1,960	Organic (food) Waste
15	660	9,900	Dry Mixed Recyclables (DMR)
13	660	8,580	Mixed Municipal Waste (MMW)
TOTAL		**22,120**	

Based on weekly waste collections of each bin type, it is anticipated that 28 no. 660L bins and 26 no. 140L bins (or equivalent) will be required in the waste storage areas as detailed in Table 4-6 above (13 no. 660L bins for **MMW**, 15 no. 660L bins for **DMR**, 14 no. 140L bin for **Organic (food) Waste**, and 12 no. 140L bin for **Glass**).

The percentage of recyclable and non-recyclable wastes are set out in Table 4-7.

Table 4-7 Breakdown of Waste Storage Capacity into Recyclable and Non-Recyclable (Apartments and Duplexes)

		Waste Types to be Generated								Total Storage Volume Required per WSA
		Glass		Organic (food) Waste		Dry Mixed Recyclables (DMR)		Mixed Municipal Waste (MMW)		
WSA ID	Total No. of Units	Bin Capacity (l)	No. bins required	Bin Capacity (l)	No. bins required	Bin Capacity (l)	No. bins required	Bin Capacity (l)	No. bins required	
26/A	5	140	1	140	1	660	1	660	1	1,600
32/A	4	140	1	140	1	660	1	660	1	1,600
39/A	5	140	1	140	1	660	1	660	1	1,600
51/A	4	140	1	140	1	660	1	660	1	1,600
60/A	4	140	1	140	1	660	1	660	1	1,600
14/C	4	140	1	140	1	660	1	660	1	1,600
12/D	5	140	1	140	1	660	1	660	1	1,600
26/D	4	140	1	140	1	660	1	660	1	1,600
9G	4	140	1	140	1	660	1	660	1	1,600
10/G	4	140	1	140	1	660	1	660	1	1,600
1/H	4	140	1	140	1	660	1	660	1	1,600
Duplexes	32	140	1	140	3	660	4	660	2	4,520
		1,680		**1,960**		**9,900**		**8,580**		**22,120**
% Of waste type		**7.6%**		**8.9%**		**44.8%**		**38.8%**		**100.00%**
		61%						39%		

The total capacity of the number of bins which will be provided is 22,120L (or the equivalent of just over 20 no. 1100L wheeled bins) which significantly exceeds the required capacity for weekly collections.

4.2.3 Waste Storage Arrangements

4.2.3.1 Houses

All houses are provided with rear gardens. All houses have space within the curtilage of the dwelling to facilitate a three-bin system for the collection in standard 240L wheelie bins for **MMW / General Waste**, **DMR** and 140L wheelie bin for **Organic (food) Waste**. The bins provided will be typical of the widely rolled out "three bin system" which is provided as standard by the waste management contractor, conforming to the requirements for residents to source segregate organic and recyclable waste from the non-recyclable waste stream.

It is concluded that adequate capacity is provided for the estimated volume of waste arising at each dwelling (as detailed in Table 4-3), through the provision of ample storage space for a three wheelie bin collection system of approximately 600L capacity with space for larger bins if required, based on fortnightly collections, and taking into account that glass bottles generated will be recycled by the occupants at nearby bring bank facilities. In-sink macerators will not be provided in the houses.

The development has been designed to ensure that waste collection vehicles can safely access the development to collect the bins. Vehicular access and egress for waste collection is detailed in Figure 5-1.

4.2.3.2 Apartments and Duplexes

A number of dedicated, shared Waste Storage Areas are provided within the communal amenity spaces to serve the apartment and duplex units. These Waste Storage Areas are centrally located to ensure security and ease of access for residents throughout the development.

Residents will be required to segregate waste into the following waste categories:

- **Mixed Municipal Waste (MMW) / General Waste**;
- **Dry Mixed Recyclables (DMR)** - includes cardboard, plastic packaging, aluminium cans, tins, paper, and Tetra Pak cartons;
- **Organic (food) Waste**; and
- **Glass**.

The layout and design of the apartments and duplexes will ensure that there is adequate provision for the temporary storage of segregated materials prior to deposition in communal Waste Storage Areas. Adequate space is allocated in the kitchen area to accommodate a three-compartment bin for waste segregation at source. In-sink macerators will not be provided in the apartments and duplexes.

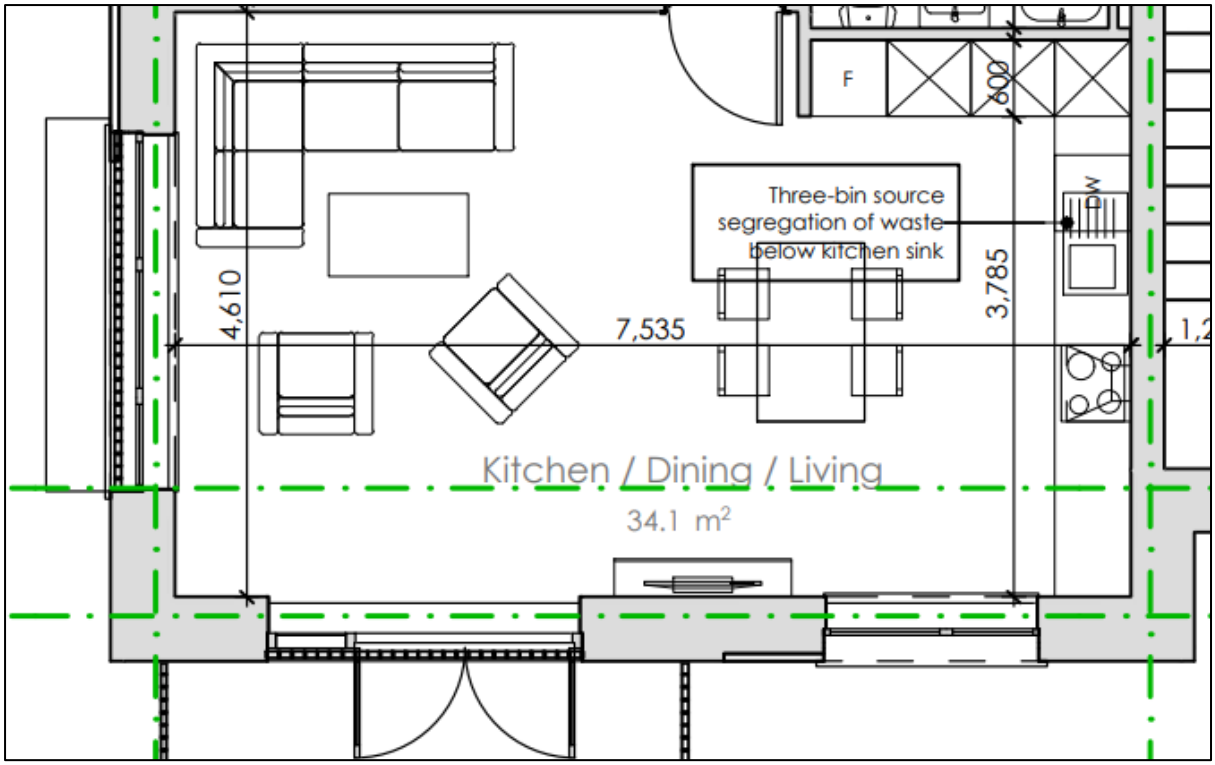

Figure 4-1 Bin Allocation in Kitchen

The Management Company will be responsible for the provision of a leaflet to all new tenants encouraging good waste segregation and pictorial information detailing the waste streams that can be placed in each bin. In addition to this, clauses that support waste segregation targets will be included in relevant legal documentation e.g., tenancy agreements where possible.

A number of Waste Storage Areas have been allocated for the apartment and duplex residents at ground level. It will be the responsibility of the residents to bring their segregated waste to Waste Storage Areas and place into the appropriately labelled bins. Each bin will be clearly labelled to identify what wastes can and cannot be placed in the bin and labels will be pictorial. The route to the Waste Storage Areas, and the area itself, will be wheelchair accessible, adequately lit, and appropriately ventilated.

Residents will have secure access to the Waste Storage Areas (pin code or fob key). This will prevent unauthorised access to waste bins by the general public.

Any additional household wastes such as bulky waste, WEEE, batteries, textiles etc. must be brought by the apartment residents to a local recycling facility.

Access to a Waste Collection Service will be provided upon the first occupancy, irrespective of the occupancy levels of the new units.

4.3 Commercial

4.3.1 Waste Types Arising

The commercial facility (the creche) will generate similar waste types to residential waste types;

i. **MMW / General Waste**;
ii. **DMR** - includes cardboard, plastic packaging, aluminium cans, tins, paper, and Tetra Pak cartons;
iii. **Organic (food) Waste**

In addition to the typical waste materials that will be generated on a daily basis, there will be some additional waste types generated in small quantities that will need to be managed separately including:

- 'Office' type wastes such as paper and printer ink;
- Waste electrical and electronic equipment (WEEE);
- Batteries;
- Glass; and
- Light bulbs or fluorescent tubes.

4.3.2 Waste Storage Capacity Requirements

For the commercial unit, it is necessary to calculate the required bin storage capacity based on the floor area of the units.

It is estimated, based on the floor area of the commercial unit, that there will be a requirement for 4 no. 660L bins for **DMR**, 2 no. 660L bins for **MMW / General Waste** and 3 no. 140L bins for **Organic (food) Waste**, and **Glass** if required. Table 4-8 details the number of bins required to service the volume of waste arising.

Table 4-8 Estimated Waste Volumes for Commercial Unit

		Organic (food) Waste	Glass	Dry Mixed Re-cyclables (DMR)	Mixed Munici-pal Waste (MMW)
Bin Size	**Description**	**140**	**140**	**660**	**660**
Commercial Unit	Creche	2	1	4	2

Ample space is provided in the secure Commercial Waste Storage Area to accommodate these receptacles. The Commercial Waste Storage Area will only be accessible to the commercial unit staff members and will not be accessible to residents or members of the public. The commercial units are expected to generate similar waste types to the domestic

dwellings as well as volumes of packaging waste. It will be incumbent on the occupier to arrange collection of materials such as ink cartridges.

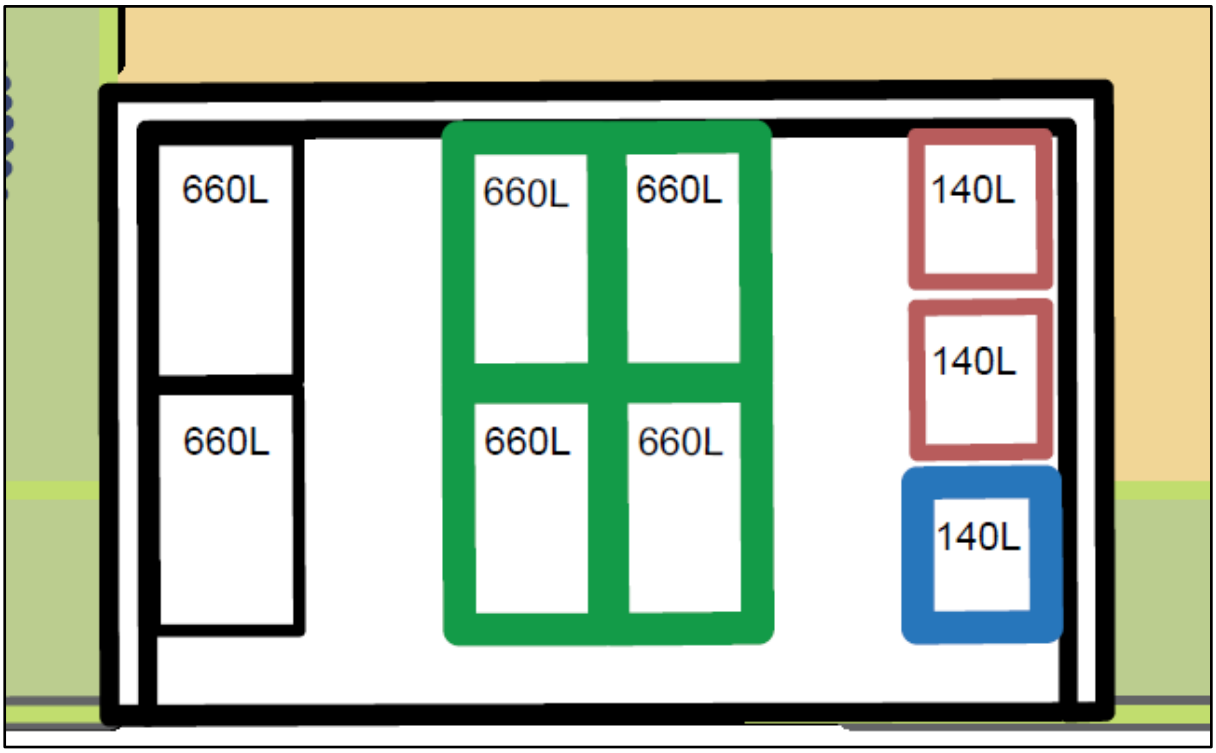

Figure 4-2 Layout of Creche Waste Storage Area (NDBA Architects, 2025)

4.4 Shared Waste Storage Areas – Apartments and Duplexes

The Department of Housing, Local Government and Heritage published guidelines in July 2025 – "*Planning Design Standards for Apartments, Guidelines for Planning Authorities, 2025*". These Guidelines detail the provisions that need to be made for the storage and collection of waste materials in apartment schemes. These guidelines have been considered when preparing the design of the Waste Storage Areas.

The Waste Storage Areas for this residential development are strategically located and will have the following provisions as minimum:

i. **Access:** The Waste Storage Area will be accessible for the mobility impaired.
ii. **Lighting:** The Waste Storage Area will have adequate lighting. This is to ensure that waste will not be tipped in dimly lit areas and that the areas do not pose as a safety risk.
iii. **Spillage & drainage:** A non-slip surface will be provided to prevent slips or falls, and the Waste Storage Area will have adequate drainage which will be directed to foul sewer.
iv. **Security:** The Waste Storage Area will have restricted access and will be accessible by tenants and residents only. This is to prevent unauthorised access to the bins by the general public.

v. **Screening:** The Waste Storage Area will be appropriately screened to ensure it is not visible to the general public.
vi. **Ventilation:** A natural vent will be provided. All vents will be ducted to an external opening so that the Waste Storage Area will not cause an odour nuisance, taking into account the avoidance of nuisance for habitable rooms nearby.
vii. **Signage:** Pictorial signage will be provided to show residents and tenants what wastes can and cannot be placed in each bin. All signage will be provided by the management company appointed.
viii. **Environmental nuisance:** The Waste Storage Area will be in an enclosed area to avoid environmental nuisances such as litter. Regular waste collections will be required from the waste collection providers to prevent any other environmental nuisances such as odour or vermin. The management company appointed will be required to ensure there is adequate vermin control in place.
ix. **Vehicular Access:** The development has been designed to ensure that waste collection vehicles can safely access the development to collect the bins. Vehicular access for waste collection is included in the traffic management plan for the development.

Duplexes and apartments are provided with shared Waste Storage Areas containing a four-bin wheelie bin system. Each apartment block is provided with a Shared Waste Storage Area such as the one depicted in Figure 4-3. Figure 4-4 details the location and internal layout of the shared Waste Storage Area for the duplex units.

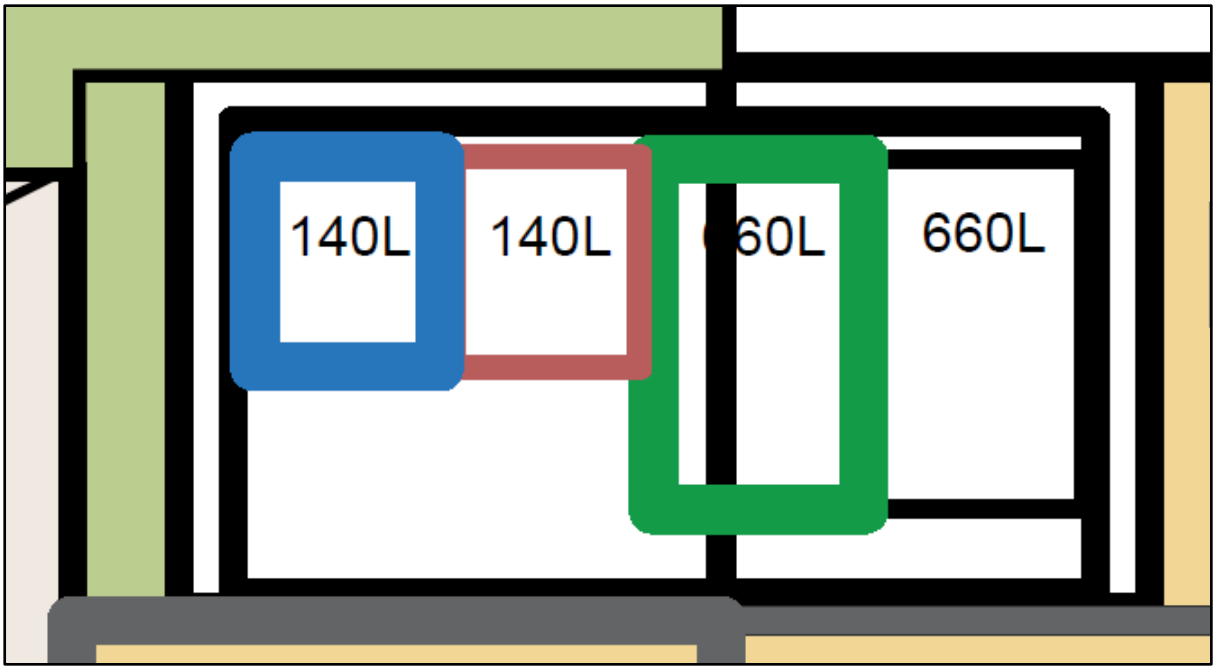

Figure 4-3 Internal Layout of the Shared Waste Storage Areas for the Apartment blocks (NDBA Architects, 2025)

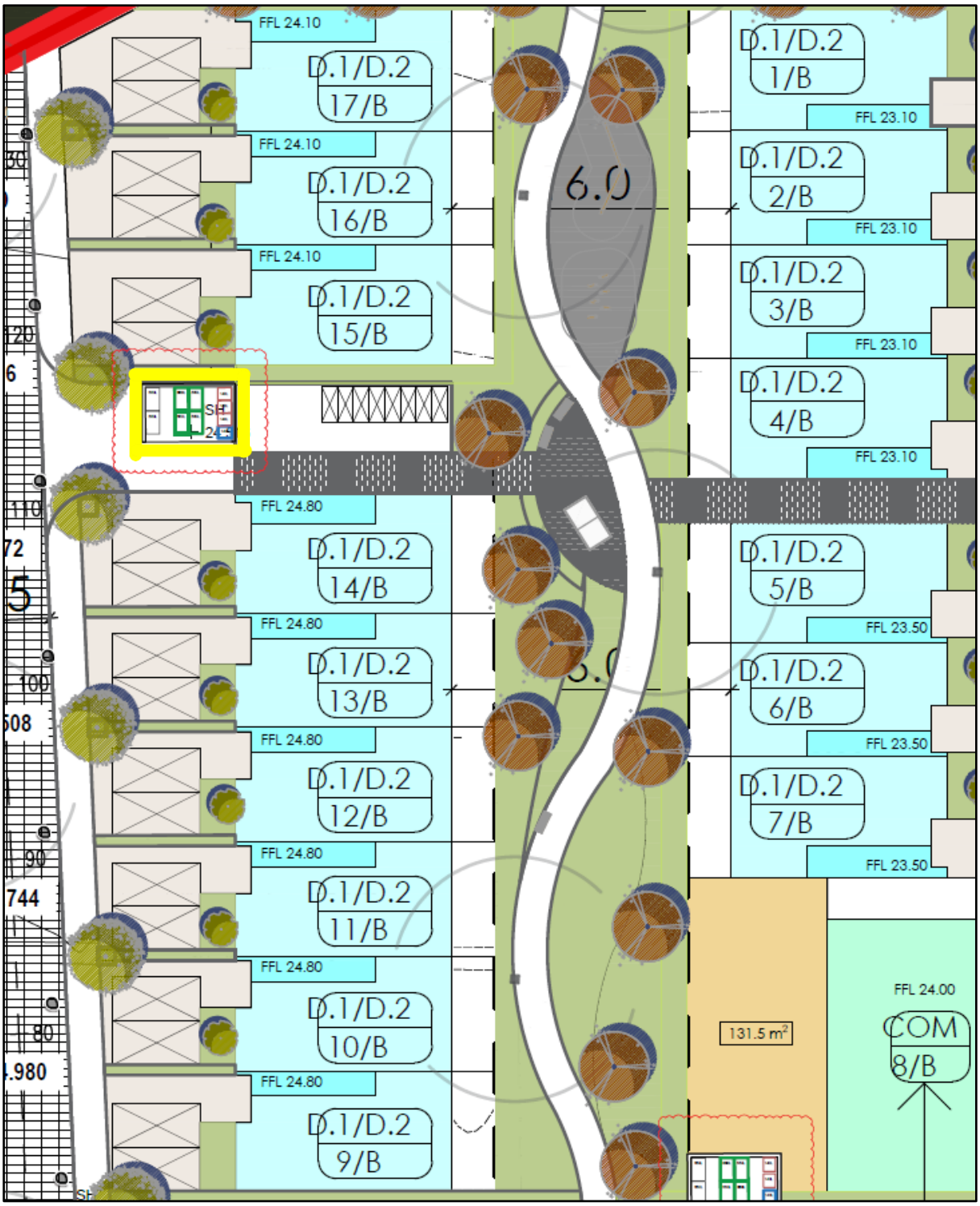

Figure 4-4 Location and internal layout of Shared Waste Storage Area for the duplex units (Yellow) (NDBA Architects, 2025)

4.5 Other Waste Materials

Other waste materials such as bulky waste, textiles, printer toner/cartridges, WEEE and batteries and other household hazardous wastes may be generated infrequently by the occupants of the residential units. Residents will be required to suitably store these wastes

within their own dwellings and dispose of them appropriately at bring centres or civic amenity facilities. Details of nearby recycling centres and bring banks is available on the Repak.ie website. All occupants will be supplied with information by the management company on the location of recycling facilities in the area.

4.6 Recycling Rates & Targets

All of the MMW collected will be transported for further recovery. All MMW will be consigned to a recovery facility where it will undergo mechanical waste recovery, or it will be consigned to a facility for energy recovery. No MMW will be transported directly to landfill.

On review of bin usage by the appointed Management Company, MMW bins may be replaced with additional Organic (food) Waste or Dry Mixed Recyclables (DMR) bins to further increase waste segregation at source.

The ratio of bins detailed in this OWMP is in line with the European Commission's proposal to introduce 70% or higher re-use and recycling targets for MMW by 2030, as outlined in the Waste Framework Directive 2008/98/EC. This waste collection proposal also provides a waste management solution that has sufficient flexibility to support future targets and legislative requirements.

4.7 Bin Weight Limits & Dimensions

The MCC bye-laws state that waste presented for collection by a holder shall not be overloaded.

Due to the capacity of bins being provided, bins will not be overloaded and will comply with the Bye-Laws.

For the shared Waste Storage Areas, it is intended to use 660L bins of approximately 1340mm x 1200mm x 700mm with a load capacity of no more than 270kg which will comply with IS EN 840 1997 for DMR and MMW, and 140L bins of 1100mm x 555mm x 505mm for Organic (food) Waste. All houses will be provided with standard sized, compliant wheelie bins from their bin provider.

All bins will be colour-coded and labelled to avoid cross-contamination, **green bin** for DMR, **brown bin** for Organic (food) Waste, **black bin** for MMW/ General Waste, and **blue bin** for Glass (in accordance with the Waste Action Plan for Circular Economy). Use of and access to the Waste Storage Areas will be restricted to residents and waste contractors only. The Waste Storage Areas will not be visible to the public and will conform to the requirements of *BS 5906: 2005 – Waste Management in Buildings – Code of Practice*.

It is envisaged that residents of the apartments and duplexes will be subjected to a service management company service charge where waste management will be included in the fee.

5 WASTE COLLECTION

All collections must take place in compliance with conditions of the Waste Contractor's Waste Collection Permit for the region and in line with the MCC Bye-Laws and the Waste Management (Waste Collection Permit) Regulations 2007 as amended. All residents are obliged by law to avail of the waste management service and must comply with Bye-Laws and Statutory Instruments in relation to the presentation of waste for collection. Waste collections for both a three bin and four bin system service will be available to all occupants from first occupancy, irrespective of whether all units have been filled or not.

In all cases, waste collection vehicles will service the bins and the empty bins will be returned to the Waste Storage Areas. Bins will never be left outside the curtilage of the development. Access and egress of the waste collection vehicles will be in accordance with the Traffic Management Plan for the facility which has ensured the design allows for free-flowing movement of refuse collection vehicles throughout the development. *BS 5906: 2005 – Waste Management in Buildings – Code of Practice* has been taken into consideration when detailing vehicular access and egress to the development for the purposes of waste collection. See Figure 5-1 for Swept Path Analysis.

Records of the collections from the apartments and duplexes will be maintained by the management company for the development including reports from the facilities to which the waste is taken. Residents of individual dwellings will be responsible for maintaining their own waste collection records.

All bins in the shared Waste Storage Areas will be accessible for collection by the waste management contractor. It will be the responsibility of the management company to ensure that bins are accessible for collection from the Waste Storage Areas by the waste management operatives and to assist on collection day to wheel out and replace bins during collection where required.

The staff of the Commercial facility will be responsible for arranging their own waste collection. It is the responsibility of the Commercial facility staff to ensure that their bins are available for collection by the waste management operatives and to that they are returned to the Waste Storage Areas following collection.

Occupants of residential houses will be responsible for placing their own bins at the kerb for collection, and for the return of those bins to the storage areas within the curtilage of their dwelling in compliance with the MCC Bye-Laws require that bins must not be presented before 6pm the previous night nor left out post collection beyond 9am the day following the day of collection.

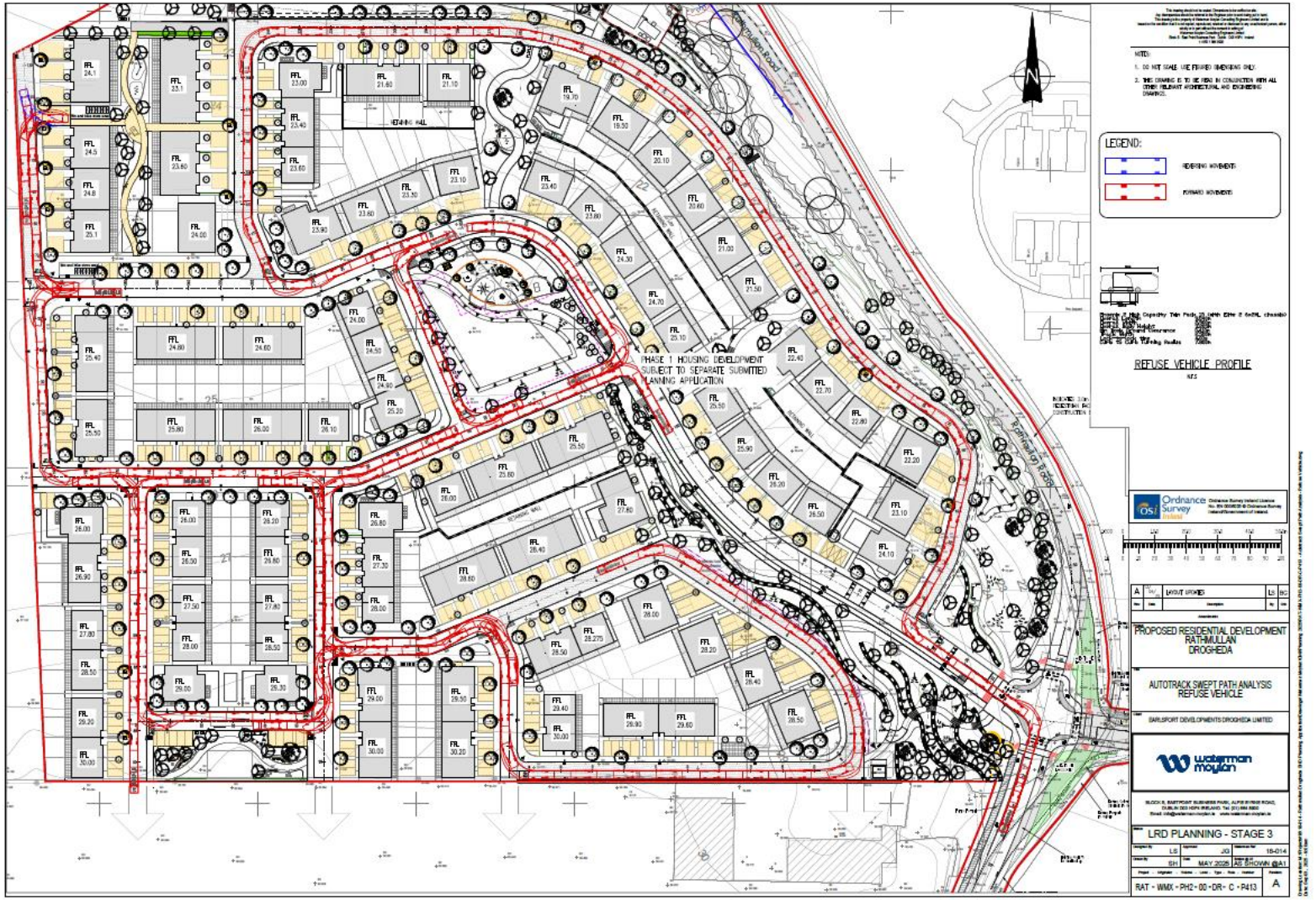

Figure 5-1 Swept Path Analysis (Waterman Moylan Consulting Engineers, 2025)

6 MANAGEMENT SYSTEM

6.1 Information and Communication

Written information will be provided by the appointed management company, to each tenant or other occupier about the arrangements for waste separation, segregation, storage, and presentation prior to collection. The information pack will also contain information about nearby recycling facilities. This information will also be included in information booklets provided to new occupants of properties on the development.

It shall be a condition of contract with the appointed management company to ensure that all residents will be provided with an information pack from the waste collection provider. This information pack will detail the waste streams that can and cannot be placed in the bins provided in the waste compound so that waste segregation is actively encouraged and the specific dates on which the bins will be collected are clearly identified.

A clause will be included in the contract with the waste collection provider to provide this information pack to new residents.

6.2 Waste Management Contracts

It will be a condition of any management contract at the development that adequate budgets are in place for the provision of all required waste management services including a four-bin system for the collection of separate Organic (food) Waste, DMR, MMW / General Waste and Glass from the apartments and duplexes.

In addition to the requirements set out in Section 6.1 Information and Communication, the Management Company appointed will be required to continually monitor the performance of the waste management system. This will include routine visual checks of the Waste Storage Areas to ensure that all bins collected are returned to the Waste Storage Areas and to ensure this area is maintained so as not to cause any environmental nuisance to residents. These checks will also assess if the bins are in good condition or need to be replaced where damage is identified.

Provision for bin cleaning will be included in the contract with the waste management contractor appointed to ensure the provision of bin cleaning services or replacement of clean bins by the waste contractor.

The Management Company will review all annual waste reports from the Waste Collection Company appointed to ensure that the waste collected is in line with the European recycling targets. Where poor recycling rates are noted information leaflets will be recirculated to all residents which will include information on what materials can be recycled and the waste streams that can be placed in bins. Residents will also be reminded of legal obligations where applicable. Further communication strategy to engage tenants and owner occupiers in good waste management practices will be adopted if deemed necessary.

Contingency policies will be in place to ensure continuity of service.

7 CONCLUSIONS

By implementing design and actions outlined in this OWMP, a high level of recycling, reuse and recovery will be achieved at the development in line with European targets. DMR and Organic (food) Waste will be segregated at source to reduce the quantity of residual waste materials requiring off-site recovery or disposal. The design and actions outlined in this report will also negate any negative impact on the environment such as littering and pollution.

The source segregation of waste types as detailed in this report will help to achieve the targets set out in the *National Waste Management Plan for a Circular Economy 2024-2030*.

The design of the Waste Storage Areas will meet the requirements as detailed in the "*Planning Design Standards for Apartments, Guidelines for Planning Authorities, 2025".*

The measures outlined in this OWMP will ensure that waste arising from the operational phase of the project will be managed to ensure waste prevention and to encourage segregation of waste.

8 REFERENCES

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