

OPERATIONAL WASTE MANAGEMENT PLAN

FOR

**DUNDRUM RETAIL GP DAC
(ACTING FOR AND ON BEHALF OF DUNDRUM RETAIL LIMITED
PARTNERSHIP)**

RELATING TO

**DUNDRUM VILLAGE
STRATEGIC HOUSING DEVELOPMENT (SHD)**

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1.0 INTRODUCTION

This document presents the Operational Waste Management Plan (OWMP) for the control, management and monitoring of waste associated with a proposed Strategic Housing Development at Main Street, Dundrum, Dublin 14.

The development will consist of 881 no. residential units in a mix of 1, 2 and 3 bed apartments, residential amenity space, a creche, café/restaurant units and retail units.

The **Objective of this Waste Management Plan** for the operation of the development is to maximise the quantity of waste recycled by providing sufficient waste recycling infrastructure, and to provide waste reduction initiatives and waste collection and waste management information to the residents of the development.

The **Goal of this Waste Management Plan** is to achieve a residential recycling rate of 50% of managed municipal waste by 2020 in accordance with *The Eastern-Midlands Region Waste Management Plan 2015-2021 (and future revisions of the Plan)*.

The Waste Management Plan shall be integrated into the design and operation of the development to ensure the following:

- That sufficient waste management infrastructure is included in the design of the development to assist residents minimise the generation of mixed waste streams.
- That the principle of waste segregation at source is integrated into the development by the provision of separate bin systems, signage and notifications.
- That the development's facility management company shall record the volumes and types of waste generated by the development to assess on an annual basis if the 50% recycling rate is being achieved.
- That all waste materials generated by site activities are removed from site by appropriately permitted waste haulage contractors and that all wastes are disposed of at approved waste licensed / permitted facilities in compliance with the Waste Management Act 1996 and all associated Waste Management Regulations.
- That the Facilities Management Company will manage wastes storage areas and provide annual bulky waste collection services to facilitate residents.

2.0 OPERATIONAL PHASE WASTE MANAGEMENT

The Operational Phase of the Waste Management Plan has been prepared in accordance with *The Eastern-Midlands Region Waste Management Plan 2015-2021* which defines the following Waste Targets:

- 1% reduction per annum in the quantity of household waste generated per capita over the period of the plan.
- Achieve a recycling rate of 50% of managed municipal waste by 2021.
- Reduce to 0% the direct disposal of unprocessed residual municipal waste to landfill.

The OWMP has been prepared with regard to *Dun Laoghaire Rathdown County Council's Guidance Notes for Waste Management in Larger Residential Developments (2021)*.

The OWMP has been prepared with regard to *British Standard BS 5906:2005 Waste Management in Buildings-Code of Practice* which provides guidance on methods of storage, collection, segregation for recycling and recovery for residential building.

Section 3.0 below defines how the management of domestic wastes including 3 - bin waste systems for the segregation of waste at source together with the communal waste storage areas have been designed with regard to *Sections 4.8 and 4.9 Refuse Storage of The Department of Housing, Planning and Local Government – Sustainable Urban Housing : Design Standards for New Apartments – Guidelines for Planning Authorities. 2018 which is reproduced below.*

Refuse Storage

- 4.8 Provision shall be made for the storage and collection of waste materials in apartment schemes. Refuse facilities shall be accessible to each apartment stair/ lift core and designed with regard to the projected level of waste generation and types and quantities of receptacles required. Within apartments, there should be adequate provision for the temporary storage of segregated materials prior to deposition in communal waste storage and in-sink macerators are discouraged as they place a burden on drainage systems.
- 4.9 The following general design considerations should be taken into account in the provision of refuse storage facilities:
- Sufficient communal storage area to satisfy the three-bin system for the collection of mixed dry recyclables, organic waste and residual waste;
 - In larger apartment schemes, consideration should also be given to the provision of separate collection facilities for other recyclables such as glass and plastics;
 - Waste storage areas must be adequately ventilated so as to minimise odours and potential nuisance from vermin/flies and taking account the avoidance of nuisance for habitable rooms nearby;
 - Provision in the layout for sufficient access for waste collectors, proximity of, or ease of access to, waste storage areas from individual apartments, including access by disabled people;
 - Waste storage areas should not present any safety risks to users and should be well-lit;
 - Waste storage areas should not be on the public street, and should not be visible to or accessible by the general public. Appropriate visual screening should be provided, particularly in the vicinity of apartment buildings;
 - Waste storage areas in basement car parks should be avoided where possible, but where provided, must ensure adequate manoeuvring space for collection vehicles;
 - The capacity for washing down waste storage areas, with wastewater discharging to the sewer.

Ref. Section's 4.8 and 4.9 Refuse Storage of The Department of Housing, Planning and Local Government – Sustainable Urban Housing : Design Standards for New Apartments – Guidelines for Planning Authorities. 2018.

Key Aspects to achieve Waste Targets

The operational phase of the WMP has been prepared with regard to *British Standard BS 5906:2005 Waste Management in Buildings-Code of Practice* which provides guidance on methods of storage, collection, segregation for recycling and recovery for residential buildings.

- All residential apartment units shall be provided with information on the segregation of waste at source and how to reduce the generation of waste by the Facilities Management Company.
- All units shall have sufficient space for the storage of a 3-bin waste system within the kitchen areas to facilitate the segregation of waste at source.
- All waste handling and storage activities shall occur in the dedicated communal apartment waste storage areas.
- The development's Facility Management Company shall appoint a dedicated Waste Services Manager to ensure that waste is correctly and efficiently managed throughout the development.
- The Operational Phase of the Waste Management Plan is defined by the following stages of waste management for both the residential and commercial aspects of the development:

Stage 1	Occupier Source Segregation
Stage 2	Occupier Deposit and Storage
Stage 3	Bulk Storage and On-Site Management
Stage 4	On-site treatment and Off-Site Removal
Stage 5	End Destination of wastes

3.0 RESIDENTIAL UNITS DOMESTIC WASTE MANAGEMENT

All accommodation units shall be provided with a Waste Management Information document, prepared by the Facilities Management Company, which shall clearly state the methods of source waste segregation, storage, and recycling initiatives that shall apply to the Management of the development. This Information document shall be issued to all residential units on an annual basis.

The design of the residential apartment units shall provide sufficient internal kitchen space for the storage of up to 10kg of general domestic waste, green recyclable waste and organic waste. Each apartment / unit shall include waste storage bins which will be of such a size that will allow their easy manual handling to be brought to the communal waste storage areas.

Domestic kitchen 3 bin waste systems



Communal Waste Storage Areas

The residential apartment blocks shall be served by communal waste storage areas and shall include clearly visible guidelines on the appropriate segregation of different waste types.

Signage to inform residents indicating the location of the local Recycling Centres and the nature of waste materials that can be brought and deposited there.

Signage to inform residents of their obligations to reduce waste, segregate waste within the home and dispose of waste in the correct bin will be clearly posted within the waste storage area.

All waste storage bins shall be clearly labelled with exactly what type of waste materials may be deposited within them.

The communal waste storage areas shall be designed to include the following aspects:

- A defined pedestrian route shall be marked from the apartment buildings to the waste storage area.
- A non-slip surface shall be provided within the waste storage area.
- The waste storage area shall be located in a delineated area adjacent the apartment building.
- The waste storage shall be passively ventilated.
- The waste storage area shall be fitted with sensor lighting.
- The waste storage area shall be fitted with CCTV cameras and associated signage.

- The waste storage area shall be designed to provide safe access from the apartment units by mobility impaired persons.
- A dedicated and clearly labelled area shall be provided in which mobility impaired persons may place wastes into receptacles at a lower level which will be subsequently transferred to the bulk storage bins on a daily basis by the Facilities Management Company.
- The waste storage area shall include ground drainage to allow for its regular cleaning and disinfection.
- The Facilities Management Company shall engage a mobile bin cleaning service provider to clean waste bins as required.
- Each communal waste storage area shall contain brown organic waste bulk bins. Appropriate signage shall be placed on all brown bins informing residents of the exact nature of organic waste that can be placed in the bin. Signage will also state that all organic waste must be placed within biodegradable bags before placing in the bulk bin.
- Each communal waste storage area shall contain a biodegradable waste bag dispenser which will facilitate and encourage residents of apartments and duplexes to separately segregate food and organic waste within their apartments in a dedicated bin.
- The Facilities Management Company shall conduct at least weekly inspections of the waste storage areas and shall sign a weekly check list which shall be displayed within the area.
- The Facilities Management Company shall ensure that an adequate supply of biodegradable organic waste bags are in place at all times.
- It shall be the responsibility of the Facilities Management Company to maintain and ensure the cleanliness of all waste storage areas to prevent odours and the attraction of vermin.

Image of a typical communal waste storage area



A battery box and a WEEE Bin shall also be provided in the communal waste storage areas, an example of which is shown in the following image. This shall be managed by a specialist waste contractor who will be responsible for its routine collection.

Image of WEEE & Battery Waste Storage



4.0 WASTE MANAGEMENT DUTIES OF THE FACILITY MANAGEMENT COMPANY

The Facilities Management Company shall be responsible for the implementation of all aspects of the Domestic and Amenity Areas Waste Management Plan which are detailed as follows:

- The Facilities Management Company shall employ an appropriately qualified and experienced staff member who will be responsible for all aspects of waste management at the development.
- The Facilities Management Company shall maintain a weekly register detailing the quantities and breakdown of general mixed domestic waste, recyclable waste and organic waste wastes removed from the development. Supporting documentation shall be provided by the Waste Collection Contractor on a monthly basis. This will allow for waste recycling targets to be tracked to achieve the 50% recycling target.
- All accommodation units shall be provided with a Waste Management Information document, prepared by the Facilities Management Company, which shall clearly state the methods of source waste segregation, storage, and recycling initiatives that shall apply to the Management of the development. This Information document shall be issued to all residential units on an annual basis.
- It shall be the responsibility of the Facilities Management Company to ensure that appropriate signage is provided in each apartment lobby/entrance halls notifying apartment residents of their obligations to recycle domestic waste items at source.
- It shall be the responsibility of the Facilities Management Company to ensure that all domestic waste generated by apartment residents is managed to ensure correct storage prior to collection by an appropriately waste permitted waste collection company on a weekly basis.
- The Facilities Management Company shall conduct daily inspections of the waste storage areas and shall sign a daily check list which shall be displayed within the area.
- The Facilities Management Company shall ensure that an adequate supply of biodegradable organic waste bags are in place at all times.
- It shall be the responsibility of the Facilities Management Company to maintain and ensure the cleanliness of all waste storage areas to prevent odours and the attraction of vermin.
- The Facilities Management Company shall engage a specialist cleaning contractor on a regular basis to clean and sterilise all communal waste storage areas.

- The name of the waste collection contractor(s) once appointed shall be forwarded to the Environment Department of DLRCC.
- The Facilities Management Company shall be responsible for the maintenance of all waste bins located in the following communal spaces.
 - Residents amenity spaces
 - External amenity Areas
- The Facilities management company shall manage waste generated at all communal spaces and shall similarly be segregated into grey (mixed waste), green (dry recyclable), brown (organic) and cardboard packaging waste.
- The Facilities Management Company shall provide a bulky waste and WEEE collection and transport service to the closest recycling centres on an annual basis which will allow residents to have bulky items such as appliances and furniture removed from their houses and apartments and transported to a licenced facility. This initiative will also reduce the potential for illegal waste collections and fly-tipping in the local area.

5.0 WASTE MANAGEMENT IN RESIDENTIAL AMENITY AREAS

The communal areas of the development will include 3-bin waste segregation systems.

Colour coded and clearly labelled waste bins for plastics, paper & cardboard, organic materials and non-recyclable general waste shall be installed in communal areas/rooms for easy and clear segregation by residents, an example of which is shown below.

Image of a typical internal communal space waste segregation recycling system



Image of a typical external communal/amenity areas waste segregation recycling system



6.0 WASTE MANAGEMENT AT THE CRECHE

Waste generated by the creche shall be separately managed by the operators of the creche who shall engage a commercial waste contractor to collect waste generated.

Wastes from the creche shall be stored in a dedicated waste storage area separate from residential communal bin stores and shall be segregated into grey (mixed waste), green (dry recyclable), brown (organic) and cardboard packaging waste.

7.0 WASTE MANAGEMENT AT THE RETAIL UNITS

Waste generated by the retail units shall be managed by the operators of the units who shall engage a commercial waste contractor to collect waste generated.

Wastes from the retail and café units shall be stored within a dedicated, separate and lockable commercial waste bin store and shall be segregated into grey (mixed waste), green (dry recyclable), brown (organic) and cardboard packaging waste.

8.0 WASTE TYPES & QUANTITIES GENERATED

The most recent EPA 2019 Waste statistics (published December 2021) on household waste generation states 1.72kg is produced per person per day.

A value of 1.72Kg of waste generated per person per day has been therefore used for the purposes of this report to estimate the volume of waste to be generated at the proposed fully occupied development will be c. 4848Kg/day,33,939kg/week or 106m³/week.

Table 1 Domestic waste generation per day/week

Waste Type	% Waste	Kg/week	Kg/day
Organic waste	30.6	10385	1484
Paper	12.5	4242	606
Cardboard	3.6	1222	175
Composites	1	339	48
Textiles	15.5	5261	752
Plastics	13.6	4616	659
Glass	3.4	1154	165
Metals	3.1	1052	150
Wood	1.2	407	58
Hazardous municipal waste	0.9	305	44
Unclassified combustables	1.4	475	68
Unclassified incombustables	1.2	407	58
Fines	11.7	3971	567
Bulky Waste & WEEE	0.3	102	15
Totals	100	33939	4848

9.0 WASTE STORAGE AREA DESIGN

9.1 Domestic Communal Waste Storage Area Design

The development shall have 11 no. communal bin storage areas.

The dimensions of standard 1100 litre bin are:

Width (mm)	1.4
Depth (mm)	1.2
Height (mm)	1.5
Floor Area per bin (m ²)	1.7

To allow free access to the bins and provide sufficient space for their movement, the required bin store area = bin floor area x 1.5.

Table 2 Domestic Communal Bin Store Minimum Area Requirements

Block Ref	Minimum Communal Bin Store Area (m ²)
1A	39
1B	37
1C	19
2A	34
2B	31
2C	27
3A	35
3B	34
3C	16
4A	30
4B	17

All bin stores meet the minimum area requirements

9.2 Retail Waste Storage Area Design

Table 3 Non Domestic Bin Store Area Minimum Requirements

Block Ref	Unit	Minimum Communal Bin Store Area (m ²)
1A	Foodstore 2028.1 sqm	76
1C	Retail 330.3 sqm	8
2C	Retail 182.8 sqm	8
3C	Retail 218.4 sqm	13
3C	Café/Restaurant 167.2 sqm	8
4A	Café/Restaurant 263.3 sqm	10
4B	Retail 365.1 sqm	13
4B	Creche 523.1sqm	10

10.0 WASTE COLLECTION STRATEGY

All bulk waste bins shall be brought from the apartments communal bin storage areas to the designated demarcated bin collection areas within the development at road-level within the development by the Facilities Management staff. Each bin store will require an associated bin collection area as detailed in Tables 4.

Retail waste bins shall be brought to demarcated collection points as detailed in Table 5.

Emptied bins shall be returned to the bin storage areas immediately following collection.

Appendix II presents the waste collection vehicle dimensions and turning dimensions.

Following a grant of permission, the applicant will engage with the local authority regarding the requirement, and a suitable location, for a bring bank facility within the site or in the vicinity.

Table 4 Domestic Bin Collection Points Area Requirements

Block Ref	Minimum Bin Collection Area (m ²)
1A	12
1B	12
1C	7
2A	12
2B	10
2C	9
3A	12
3B	10
3C	5
4A	10
4B	7

Table 5 Retail Bin Collection Points Area Requirements

Block Ref	Unit	Minimum Communal Bin Store Area (m ²)
1A	Foodstore 2038 sqm	26
2C	Retail 480 sqm	5
3C	Retail 377sqm	5
4A	Retail 226 sqm	3
4B	Retail 384 sqm	5
4B	Creche 515sqm	3

Image of Bulk bin transport from bin stores to collection point



11.0 CONCLUSIONS

The proposed Dundrum Village residential development shall be designed and managed to provide residents with the required waste management infrastructure to minimise the generation of un-segregated domestic waste and maximise the potential for segregating and recycling domestic waste fractions.

The **Objective** of this Waste Management Plan is to maximise the quantity of waste recycled by residents by providing sufficient waste recycling infrastructure, waste reduction initiatives and waste collection and waste management information services to the residents of the development.

The **Goal** of this Waste Management Plan is to achieve a residential recycling rate of 50% of managed municipal waste by 2021 (and future targets in subsequent Regional Waste Management Plans).

Residents will be provided with waste recycling and waste disposal information by the development's Facility Management Company who will be responsible for providing clean, safe and mobility impaired accessible communal waste storage areas for the apartment block.

The Facility Management Company shall maintain a register of all waste volumes and types collected from the development each year including a break-down of recyclable waste and where necessary, shall introduce initiatives to further encourage residents to maximise waste segregation at source and recycling. They shall also provide an annual bulky waste collection service for all residents.

The development shall be designed to provide adequate domestic waste storage and segregation space for each residential unit as a 3-bin kitchen system. This will promote the appropriate segregation at source of domestic generated waste from all residential units at the development.

Communal waste bin storage areas shall be designed in a manner to ensure that appropriate information and signage for the correct disposal and recycling of waste is available for residents.

The Facility Management Company shall prepare an annual report for Dun Laoghaire Rathdown County Council and residents of the development on the quantities of waste generated within the development to demonstrate how waste reduction and recycling targets are being achieved with regard to the targets defined in *The Eastern-Midlands Region Waste Management Plan 2015-2021*.

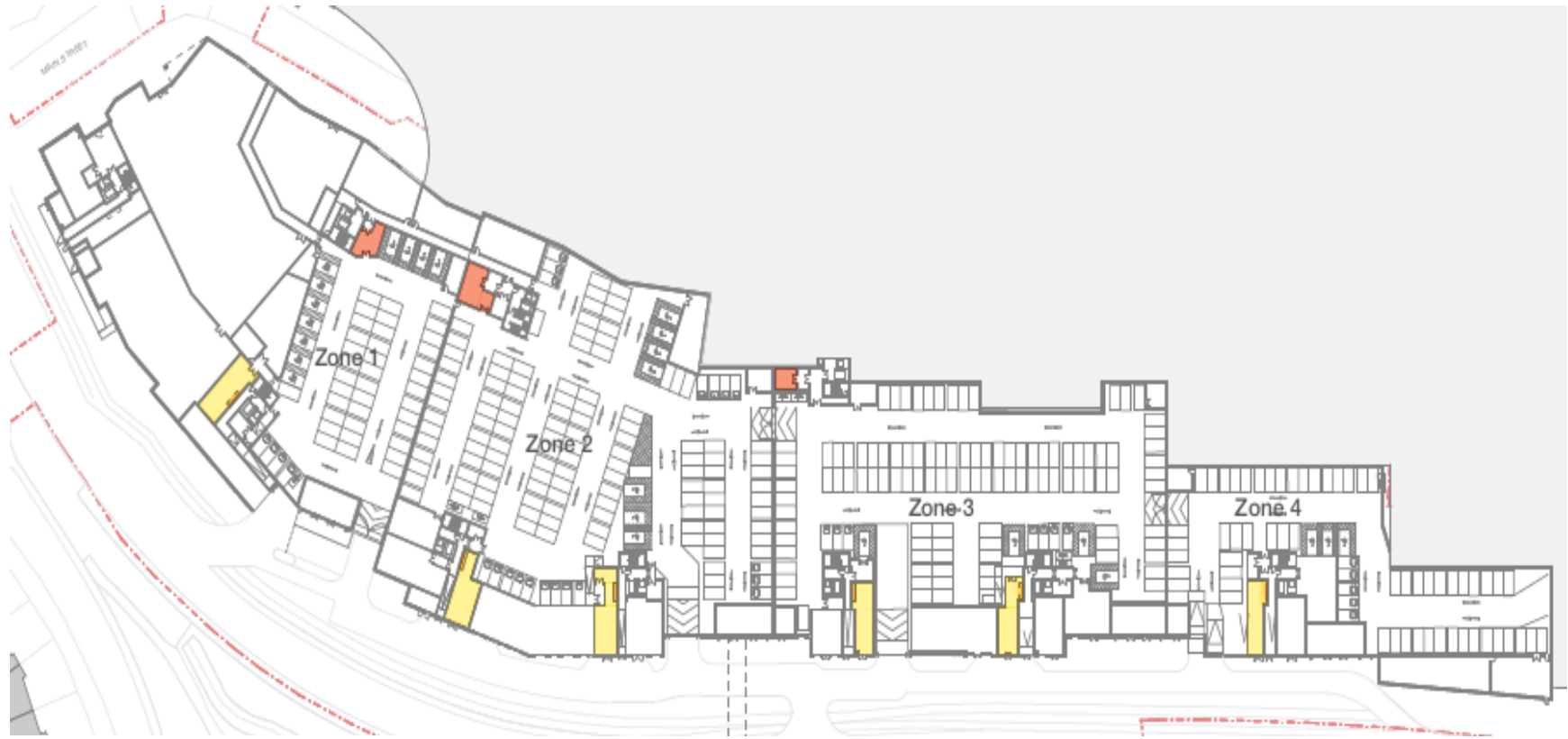
APPENDIX I Bin Store & Collection Locations



Refuse Chutes ■

Refuse Stores (for collection) ■

Satellite Refuse Stores ■



Refuse Stores (for collection)
Satellite Refuse Stores

APPENDIX II

Bin Collection Vehicle dimensions and minimum turning requirements

