

**OPERATIONAL PHASE
WASTE MANAGEMENT PLAN**

FOR

**CAIRN HOMES PROPERTIES LTD
7 GRAND CANAL
GRAND CANAL STREET LOWER
DUBLIN 2**

RELATING TO A PROPOSED

RESIDENTIAL DEVELOPMENT

AT

**COOKSTOWN ROAD, ENNISKERRY
Co. WICKLOW**

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1.0 INTRODUCTION

This document presents the Operational Phase Waste Management Plan (OWMP) for the control, management and monitoring of waste associated with the proposed residential development at Cookstown Road, Enniskerry, County Wicklow.

The development will consist of the construction of 165 no. dwellings and associated ancillary infrastructure as follows:

- A) 105 no. 2 storey houses (49 no. 3 bedroom houses [House Types B, B1, & B2], 56 no. 4 bedroom houses [House Types A, D, E & E1];
- B) 56 no. apartments/duplex apartments in 6 no. 3 storey buildings – (28 no. 2 bedroom apartments and 28 no. 3 bedroom duplex apartments) all with terrace;
- C) 4 no. 1 bedroom Maisonette dwellings in a 2 storey building;
- D) Part 2-storey and single storey creche (c. 510 sq. m - including storage);
- E) Open space along southern boundary of c. 0.93 hectares [with pedestrian connections to boundary to 'Lover's Leap Lane' to the south and to boundary to the east and west], hard and soft landscaping (including public lighting) and open space (including boundary treatment), communal open space for duplex apartments; regrading/re-profiling of site where required [including import/export of soil as required] along with single storey bicycle/bin stores and ESB substation;
- F) Vehicular access (including construction access) from the Cookstown Road from a new junction as well as 313 no. car parking spaces and 150 no. cycle spaces;
- G) Surface water attenuation measures and underground attenuation systems as well as connection to water supply, and provision of foul drainage infrastructure (along the Cookstown Road to existing connection at junction with R760) and provision of underground local pumping station to Irish Water specifications;
- H) 3 no. temporary (for 3 years) marketing signage structures [2 no. at the proposed entrance and 1 no. at the junction of the R760 and the Cookstown Road] and a single storey marketing suite (c. 81 sq.m) within site;
- I) All ancillary site development/construction/landscaping works, along with provision of footpath/public lighting to Powerscourt National School pedestrian entrance and lighting from Powerscourt National School entrance to the junction of the R760 along southern side of Cookstown Road and pedestrian crossing across Cookstown Road.

The **Objective of this Waste Management Plan** is to maximise the quantity of waste recycled by providing sufficient waste recycling infrastructure, 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*.

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 the integrated into the development by the provision of separate bin systems, signage and notifications.
- That the 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 WASTE MANAGEMENT PLAN – OPERATIONAL PHASE

The Operational Phase of the Waste Management Plan has been prepared in accordance with *The Eastern-Midlands Region Waste Management Plan 2015-2021* as referenced in the *Wicklow County Development Plan 2016 – 2022-Chapter 9.3* and 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

Section 9 of the Wicklow County Development Plan 2016 – 2022 – Development & Design Standards details how solid waste shall be managed in residential developments.

Residential developments

- The design and layout of all individual and multi house developments shall provide for on site waste storage (including recyclables) and composting facilities;
- For traditional housing layouts, this will normally require the inclusion of sufficient space to the side or rear of a dwelling for the storage of waste, including up to 4 wheelie bins (recyclables, glass, organic and residual waste);
- For terraced houses or courtyard type developments (i.e. those developments that include houses with either no / limited private gardens) and apartment developments, communal bin storage and composting areas shall be provided;
- Waste storage areas shall be designed and screened so as not to cause any adverse visual impact on the proposed complex and located so as not cause noise impact.

Key Aspects to achieve Waste Targets

- All residential 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 waste handling and storage activities shall occur in the dedicated communal apartment waste storage areas or within the curtilage of individual houses.
- 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

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 building.

The duplex apartments which will include a 3 - bin waste segregation at source system together with the communal waste storage areas have been designed with regard to *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.*

Section 3 below describes how the development will be designed and operated in compliance with the above guidelines and standards.

3.0 RESIDENTIAL UNITS DOMESTIC WASTE MANAGEMENT

The Facilities Management Company shall be responsible for the implementation of all aspects of the Domestic 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.

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.

Houses / Duplex & Maisonette Units

The design of residential houses, maisonettes and duplex units shall provide sufficient internal kitchen space for the storage of up to 10kg of general unrecyclable waste, green recyclable waste and organic waste.

Individual houses shall have external storage space for 3 no. 220 litre waste bins for segregating recyclable, non-recyclable and organic waste. Residential houses shall be served by private waste collection contractor.

Duplex / Maisonette Communal Waste Storage Areas

The apartment/duplex blocks and the Maisonettes shall be served by common waste storage areas and shall include clearly visible guidelines on the appropriate segregation of different waste types.

Signage will be posted to inform residents indicating the location of the local can, glass and clothing bring-bank at Bog Meadow Car Park in Enniskerry 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 area 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 of a block construction with a roof.
- 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 weekly 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.
- Sufficient domestic waste storage areas shall be provided throughout the development.
- Each communal waste storage area shall contain a brown organic waste bulk bin. 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 twice weekly inspections of the waste storage areas and shall sign a 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 quarterly basis to clean and sterilise all communal waste storage areas.

It is expected that a single Waste Collection contractor shall be engaged to remove all mixed domestic waste and recyclable wastes from the waste storage areas and from individual houses on a minimum weekly basis. The name of the waste collection contractor(s) once appointed shall be forwarded to the Environment Department of Wicklow County Council.

Waste Management & Record Keeping

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.

The Facilities Management Company shall prepare an annual information report for all residential units detailing the quantities and waste types generated by the development for the previous year. The report shall include reminder information on the correct segregation at source procedures and the correct placement of wastes in the waste storage area. Other aspects of ongoing waste management continuous improvement shall also be stated. This annual report shall also be submitted to Wicklow County Council's Environment Department.

Annual Bulky Waste & WEEE Collections

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.

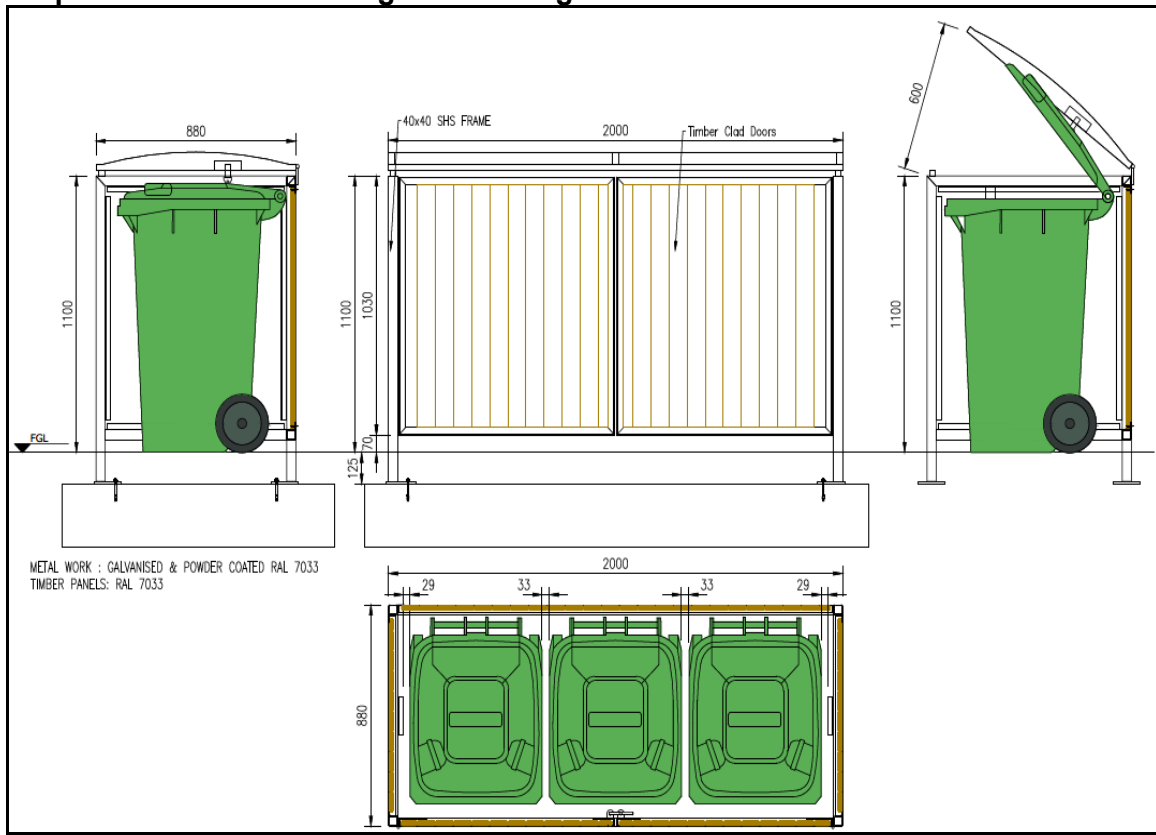
Domestic kitchen 3 bin systems to segregate waste at source



Typical Communal waste storage area



Proposed House Bin Storage Area Design



4.0 WASTE TYPES & QUANTITIES

Houses shall have a 3-bin system (grey, green and brown) which shall be stored within the curtilage of each house.

Communal bulk bin storage areas are proposed for the apartment/duplex blocks.

The 2016 EPA Publication, *National Waste Prevention Programme, 2015 Annual Report*, states,

“The household waste per person in Ireland has been decreasing over the period 2006 to 2012 from 470 kg/person in 2006 to 344 kg/person in 2012. This indicates success in national campaigns and awareness as regards waste minimisation – though effects of reduced consumption are also likely to have contributed. In addition, it suggests an economy and society that are improving the efficiency of consumption patterns with respect to waste generation.”

A value of 0.942Kg of waste generated per person per day has been therefore assumed for the purposes of this report to estimate the volume of waste to be generated at the proposed fully occupied residential development will be c. 37m³/week.

Table 1 Residential Waste Types per day/week

Waste Type	% Waste	Kg/week	Kg/day
Organic waste	30.6	1689	241
Paper	12.5	690	99
Cardboard	3.6	199	28
Composites	1	55	8
Textiles	15.5	855	122
Plastics	13.6	751	107
Glass	3.4	188	27
Metals	3.1	171	24
Wood	1.2	66	9
Hazardous municipal waste	0.9	50	7
Unclassified combustables	1.4	77	11
Unclassified incombustables	1.2	66	9
Fines	11.7	646	92
Bulky Waste & WEEE	0.3	17	2
Totals	100	5519	788

5.0 APARTMENT / DUPLEX COMMUNAL WASTE STORAGE AREA DESIGN

Each of the Apartment/Duplex blocks shall have a dedicated communal bin storage area which shall be of sufficient size to house the required number of 1100 litre wheelie bins as detailed in Table 2 below.

The dimensions of standard 1100 litre bin are:

Width (mm)	1360
Depth (mm)	1080
Height (mm)	1455
Floor Area per bin (m ²)	1.5

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

Table 2 Communal Duplex Bin Store Area Requirements

Block	Green Bin#	Brown Bin#	Grey Bin#	Total Bin Area (m²)
1	1	1	1	8
2	1	1	1	8
3	1	1	1	8
4	1	1	1	8

6.0 WASTE COLLECTION STRATEGY

All communal waste bins shall be brought from the communal bin storage areas to the designated demarcated bin collection areas within the development at road-level by the Facilities Management staff. Emptied bins shall be immediately returned to the bin storage areas following collection.

7.0 CRECHE WASTE MANAGEMENT

Waste generated by the Creche (510m²) shall be managed by the operators of the creche unit who shall engage a commercial waste contractor to collect waste generated.

Wastes from the creche shall be stored in commercial waste bins within the curtilage of the premises and shall be segregated into grey (mixed waste), green (dry recyclable), brown (organic) and cardboard packaging waste.

An area of 9 m² shall be included within the curtilage of the Creche to accommodate 4 no. 1100 litres wheelie bins.

8.0 CONCLUSIONS

The proposed residential development at Cookstown Road, Enniskerry, Co. Wicklow 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 proper waste disposal information by the site's Facility Management Company who will be responsible for providing clean, safe and mobility impaired accessible communal waste storage areas.

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 and WEEE collection service for all residents.

The development shall be designed to provide adequate domestic waste storage areas for common residential areas (Duplex blocks) and for individual houses. 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 signage for the correct disposal and recycling of waste is available for residents.

The Facility Management Company shall prepare an annual report for Wicklow County Council and residents 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 Collection Vehicle dimensions and minimum turning requirements

