

**OPERATIONAL
WASTE MANAGEMENT PLAN**

FOR

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

RELATING TO A PROPOSED

DEVELOPMENT

AT

**COOLDOWN COMMONS, CITYWEST
DUBLIN 24**

10th June 2021



Prepared By: Ian Byrne MSc, MIOA, Dip Environmental & Planning Law

TABLE OF CONTENTS

1.0	Introduction.....	3
2.0	Operational Waste Management.....	4
3.0	Residential Units Domestic Waste Management.....	5
4.0	Waste Duties of Facility Management Company.....	8
5.0	Waste Management in Communal Areas.....	10
6.0	Waste Quantities Generated.....	11
7.0	Communal Waste Storage Design.....	12
8.0	Waste at the Café & Retail Units.....	13
9.0	Waste Collection Strategy.....	16
10.0	Conclusions.....	17
	Appendix I Bin Store and Bin Collection Locations	
	Appendix II Bin collection vehicle dimensions	

1.0 INTRODUCTION

This document presents the Operational Phase Waste Management Plan (OWMP) for the control, management and monitoring of waste associated with a proposed development at Cooldown Commons, Citywest, Dublin 24.

The proposed development will consist of the construction of 421 no. residential units within 9 no. blocks ranging in height from 1 – 13 storeys, retail/commercial/office units, residential amenity space, and open spaces along with all associated site development works and services provisions to facilitate the development including parking, bin storage, substations, landscaping and all services. A full description is provided in the statutory notices and in Chapter 3 of the EIAR.

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.

2.0 OPERATIONAL WASTE MANAGEMENT PLAN

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

Chapter 7.5.0 – Waste Management of the South Dublin County Council Development Plan 2016 – 2022 – includes the following Objectives and Actions relating to Domestic Waste Management:

IE5 OBJ1 *To support the implementation of the Eastern-Midlands Region Waste Management Plan 2015-2021 by adhering to overarching performance targets, policies, and policy actions.*

IE5 OBG 8 *To secure appropriate provision for the sustainable management of waste within developments including the provision of facilities for the storage, separation and collection of such waste.*

Actions

Support and facilitate the separation of waste at source into organic and non-inorganic streams or other waste management systems that divert waste from landfill and maximise the potential for each waste type to be re-used, recycled or composted and divert organic waste from landfill.

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

Section 3 of this document demonstrates how the design of the development will comply with the design standards included in:

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 and

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.

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.

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.

Domestic waste generated from the apartments shall be stored in communal waste storage areas.

Domestic waste generated from the duplex units shall be stored within the curtilage of the units.

Apartments & Duplex Units

The design of residential unit 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 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.

It shall be the responsibility of the Facilities Management Company to ensure that appropriate signage is provided in each apartment lobby/entrance hall notifying apartment residents of their obligations to recycle domestic waste items in accordance with the requirements of the contracted Waste Collection contractor and to inform residents of the location of the local Recycling Centres.

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.

Communal Waste Storage Areas

The residential apartment units shall be served by basement and surface level 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.
- The waste storage shall be 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.
- Sufficient domestic waste storage areas shall be provided throughout the development.
- 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 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.

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 domestic kitchen 3-bin system



Image of a typical Communal waste storage area



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.
- 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 South Dublin County Council.
- 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 be responsible for the maintenance of all waste bins located in the following communal spaces :
 - Internal communal spaces
 - External Communal Spaces

Waste Collection Contractor

The Facilities Management Company shall appoint a waste collection contractor capable of collecting Grey (mixed waste bins), Green (dry recyclable bins) and Brown (organic waste bins) from the waste storage areas on a thrice weekly basis. The name of the waste collection contractors once appointed shall be forwarded to the Environment Department of South Dublin County Council.

Waste Management & Record Keeping

The Facilities Management Company shall maintain a monthly 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 the Environment Department of South Dublin County Council.

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.

5.0 WASTE MANAGEMENT IN COMMUNAL 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 for easy and clear segregation by residents, an example of which is shown below.

Image of internal communal space waste segregation recycling system



Image of external communal areas waste segregation recycling system



6.0 WASTE QUANTITIES

The most recent EPA Waste statistics (2018) on household waste generation states 315kg is produced per person per year.

A value of 0.863Kg 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. 1289Kg/day, 9025Kg/week or 53m³/week.

Table 1 Domestic waste generation per day/week

Waste Type	% Waste	Kg/week	Kg/day
Organic waste	30.6	2762	395
Paper	12.5	1128	161
Cardboard	3.6	325	46
Composites	1	90	13
Textiles	15.5	1399	200
Plastics	13.6	1227	175
Glass	3.4	307	44
Metals	3.1	280	40
Wood	1.2	108	15
Hazardous municipal waste	0.9	81	12
Unclassified combustables	1.4	126	18
Unclassified incombustables	1.2	108	15
Fines	11.7	1056	151
Bulky Waste & WEEE	0.3	27	4
Totals	100	9025	1289

7.0 COMMUNAL WASTE STORAGE AREA DESIGN

The apartment blocks shall have a dedicated communal bin storage area which shall be of sufficient size to house the specified number of 1100 litre wheelie bins.

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, the required bin store area = bin floor area x 1.5

Basement level communal bin stores will be provided for Blocks, D1, D2, D3 & D4.

Surface Level Communal Bin Stores will be provided for Blocks E1 & E2.

Basement level retail bin store will be provided in Block D3.

Surface Level Bin Stores will be provided for Retail and Office Units

Table 2 Apartment Domestic Bin Store Area Requirements

Block/Location	Green Bin#	Brown Bin#	Grey Bin#	Total Bin Area (m ²)
D1 Basement	2	2	4	21
D2 Basement	2	2	3	18
D3 Basement	2	2	4	21
D4 Basement	3	2	5	26
E1 Surface	2	2	3	16
E2 Surface	2	2	3	16

Table 3 Non-Domestic Bin Store Area Requirements

Block	Area m²	#1100L bins	Total Bin Area (m²)
D3 Retail	285	4	10
D4 Residential Amenity	555	3	8
E1 Retail	434	3	8
E1 Office	376	3	8

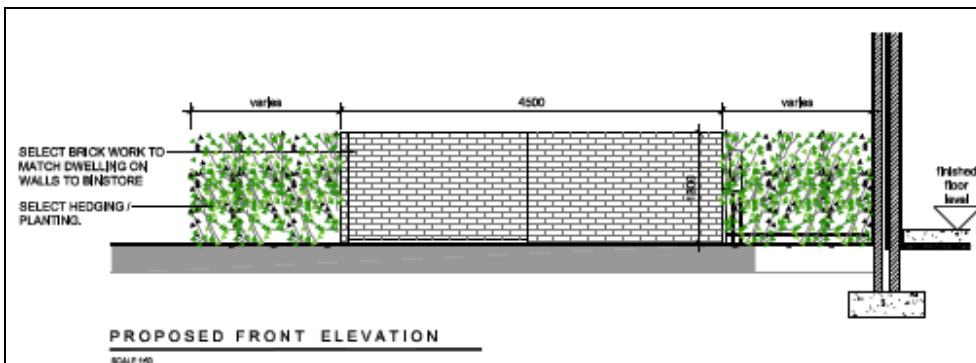
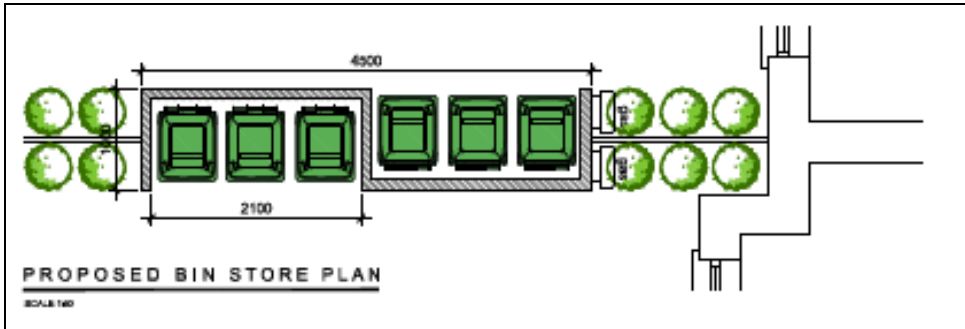
8.0 WASTE MANAGEMENT AT THE RETAIL & OFFICE UNITS

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

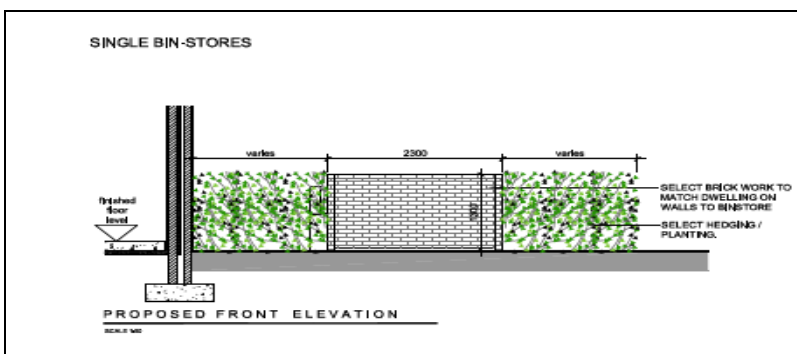
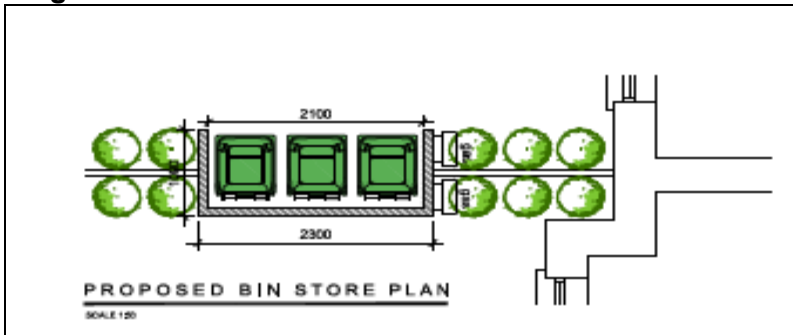
Waste generated from these units shall be stored within a dedicated, separate and lockable commercial waste area at ground level and shall be segregated into grey (mixed waste), green (dry recyclable), brown (organic) and cardboard packaging waste. It is calculated that up to 11,000 litres of waste could be generated per week by the retail, commercial and office units.

Proposed Duplex Bin Storage Area Design

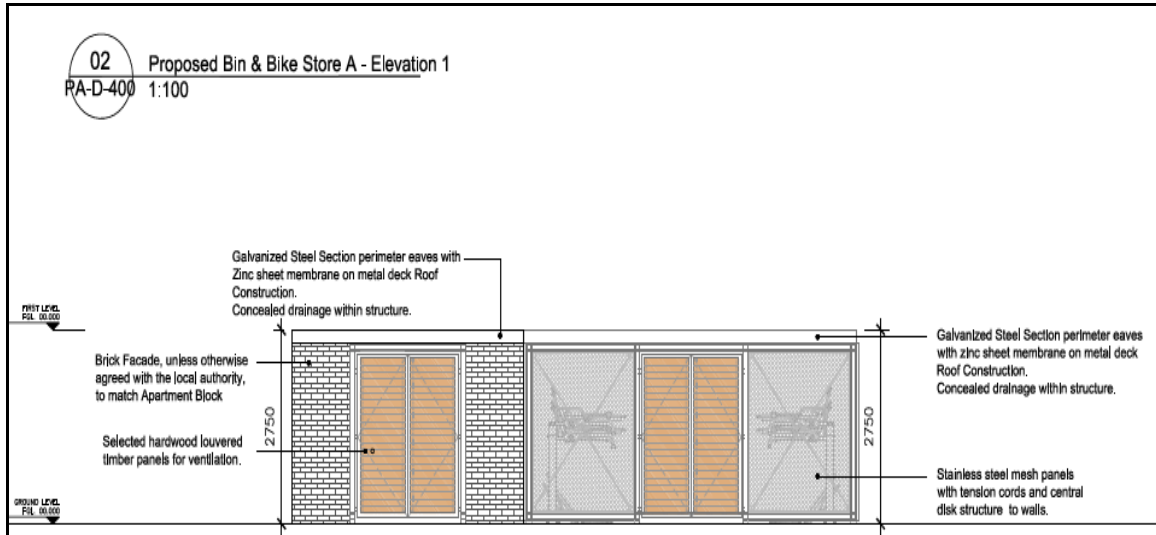
Double Bank of Bin-Stores



Single Bank of Bin-Stores



Proposed Street Level Bin/Bike Store Design



9.0 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 by the Facilities Management staff.

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

Domestic waste bins shall be separately collected from duplex units.

The development shall include 3 No. waste bin collection points as follows:

Domestic Waste Collection	Point 1 Serving Blocks D1 - D4	(Minimum Area 27m ²)
Domestic Waste Collection	Point 2 Serving Blocks E1 & E2	(Minimum Area 10m ²)
Retail/Office Waste Collection	Point 3 Serving Block E	(Minimum Area 15m ²)

Appendix I presents the site plan showing the proposed bin storage areas and the associated bin collection points.

Image of Bulk bin transport from bin stores to collection point



10.0 CONCLUSIONS

The proposed residential development at Cooldown Commons, Citywest 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 site's Facility Management Company who will be responsible for managing waste generated by the residential units and communal areas.

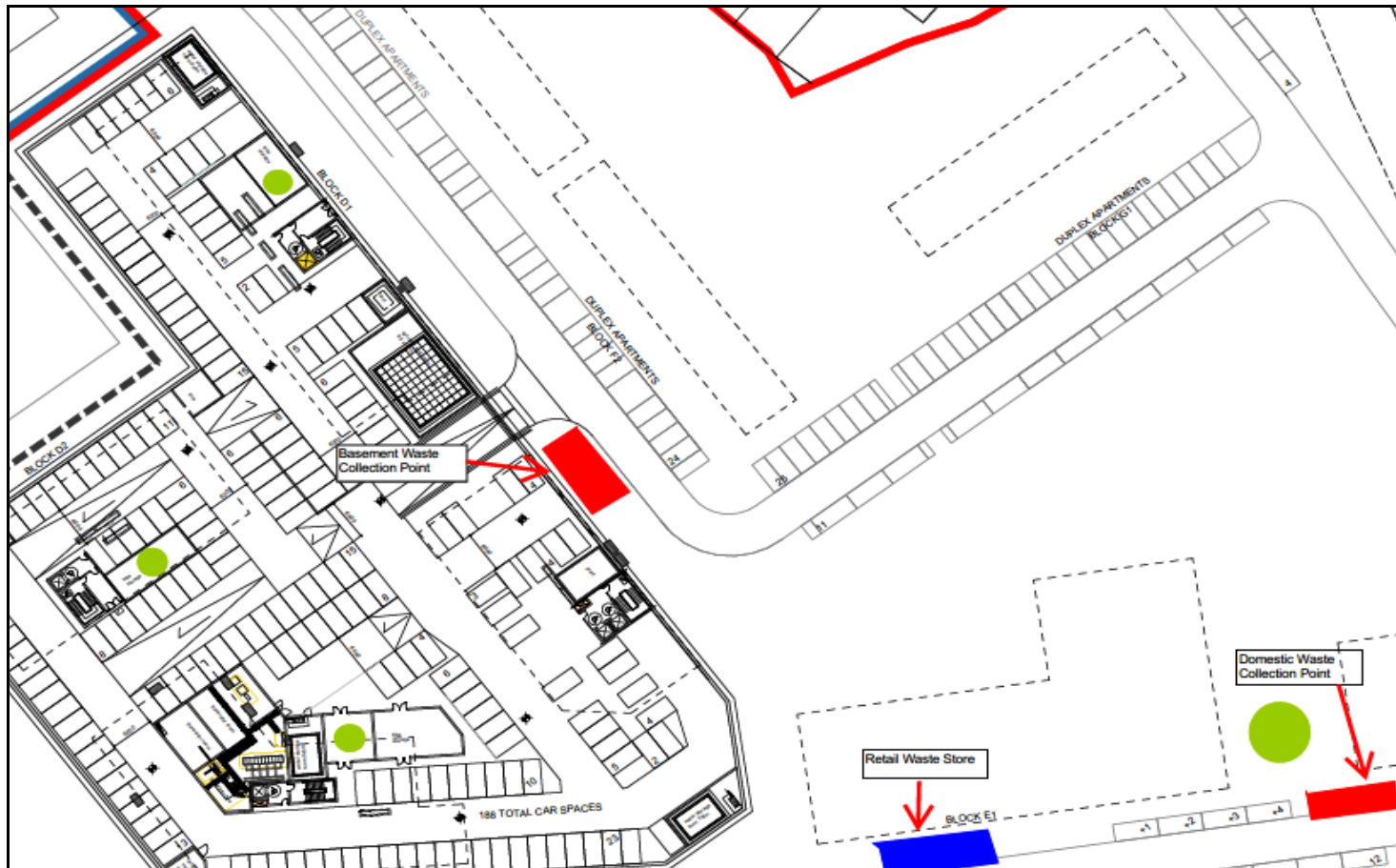
The Facility Management Company shall maintain a register of all waste volumes and types collected from the development each year including a break-down of recyclable waste and where necessary, shall introduce initiatives to further encourage residents to maximise waste segregation at source and recycling.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

All residential units shall be designed to provide adequate domestic waste storage and infrastructure. 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 and managed in a manner to ensure they are clean, mobility impaired accessible, and contain information and signage to encourage residents to correctly segregate and dispose of waste.

The Facility Management Company shall prepare an annual report for South Dublin 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

Site Plan showing waste bin stores and bin collection points



APPENDIX II

Bin Collection Vehicle dimensions and minimum turning requirements

