OPERATIONAL WASTE & RECYCLING MANAGEMENT PLAN

AT

PARKMORE INDUSTRIAL ESTATE

LONG MILE RD

ROBINHOOD

DUBLIN 12

Prepared for

Watfore Limited

Prepared by

Traynor Environmental Ltd.

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CONTENTS

1.0 INTRODUCTION

This Operational Waste Management Strategy (the 'Strategy) has been prepared by Nevin Traynor BSc.Env, HDIP IT, Cert SHWW, IAH of Traynor Environmental Ltd for Watfore Limited (The Applicant ') in support of the proposed Parkmore development (hereafter referred to as the 'Proposed Development') within South Dublin County Council. The principal aim of this Strategy is to demonstrate how the Proposed Development has considered sustainable methods for waste and recycling management during its operation. Furthermore, with regards to waste and recycling management within the Proposed Development, this Strategy has the following aims:

- To contribute towards achieving current and long-term government, Eastern Midlands Region (EMR) and South Dublin County Council targets waste minimisation, recycling, and re-use.
- To comply with all legal requirements for handling operational waste.
- To achieve high standards of waste management performance, through giving (and continuing to give) due consideration to the waste generated by the Proposed Development during its operation; and
- To provide the Proposed Development with a convenient, clean, and efficient waste management strategy that enhances the operation of the Proposed Development and promotes recycling.

It is important to note that the South Dublin County Council is part of the Eastern Midlands Region. The Eastern Midlands Region comprises of Dublin City Council, Dun Laoghaire – Rathdown, Fingal, South Dublin, Kildare, Louth, Laois, Longford, Meath, Offaly, Westmeath, and Wicklow County Council. This Strategy provides a review of the requirements placed upon the Proposed Development under national legislation and implemented policy at all levels of government (i.e., national (Ireland), regional (EMR), district and local (South Dublin County Council).

Consideration has also been given to requirements included in local standards and guidance documents (i.e., DoEHLG, Sustainable Urban Housing: Design Standards for New Apartments, Guidelines for Planning Authorities (2018) in line with the Regional Waste Management Plan and British Standard Waste Management in Buildings, Code of Practice (BS 5906:2005) to comply with relevant objectives and targets. Estimate volumes of waste generated during operation of the Proposed Development have been provided in the report which also include a breakdown of the waste management process, which details waste handling, storage area provision, and collection arrangements. All waste reduction measures are compliant with BS 5906:2005, Eastern Midlands Region (EMR) and Sustainable Urban Housing: Design Standards for New Apartments which are also discussed in this strategy.

2.0 LEGISLATION/ PLANNING POLICY

A summary of the European, national regional and local planning policy relevant to the Proposed Development is outlined in the section below. It should be noted that this summary identifies those elements of the policy or guidance applicable to waste management within the Proposed Development.

2.1 International and European Policy

The EU Waste Framework Directive (EU WFD) provides the overarching legislative framework for the collection, transport, recovery, and disposal of waste, and includes a common definition of waste. It encourages the prevention and reduction of harmful waste by requiring that Member States put waste control regimes into place. These waste management authorities and plans should ensure that necessary measures exist to recover or dispose of waste without endangering human health or causing harm to the environment and includes permitting, registration and inspection requirements.

The directive also requires Member States to take appropriate measures to encourage firstly, the prevention or reduction of waste production and its harmfulness and secondly the recovery of waste by means of recycling, re-use or reclamation or any other process with a view to extracting secondary raw materials, or the use of waste as a source of energy. The directive also puts an end to co-disposal of waste streams.

The definition of waste for the Ireland is governed by the EU WFS as:

"*Any substance or object…which the holder discards or intends or is required to discard.*"

It is the responsibility of the holder of a substance or object to decide whether or not they are handling waste. The European Protection Agency is the authority responsible for enforcing waste management legislation in Ireland, but where there is a disagreement as to whether or not something is waste it is ultimately a matter for the courts to decide.

The European Waste Catalogue In 1994, the *European Waste Catalogue* and *Hazardous Waste List* were published by the European Commission. In 2002, the EPA published a document titled the *European Waste Catalogue and Hazardous Waste List*, which was a condensed version of the original two documents and their subsequent amendments. This document has been replaced by the EPA '*Waste Classification – List of Waste & Determining if Waste is Hazardous or Non-Hazardous*' which became valid from the 1st of June 2015. This waste classification system applies across the EU and is the basis for all national and international waste reporting, such as those associated with waste collection permits, COR's, permits and licences and EPA National Waste Database.

The European Landfill Directive is in place to reduce the negative effects of land filling on the environment and health. It aims to encourage waste minimisation and increased levels of recycling and recovery; the increased costs of land filling associated with compliance with the Directive will also encourage alternative waste management methods.

The first requirement of the regulations was a ban on the co-disposal of hazardous waste with non-hazardous waste in landfills. The Directive has also imposed a ban on whole tyres going to landfill since 2003, with this ban extending to shredded tyres from July 2006, while liquid wastes were banned from landfill from October 2007.

The Directive also brings with it, tighter site monitoring and engineering standards. This is supplemented by the European Waste Catalogue, which has extended the range of materials classified as 'hazardous', and the Waste Acceptance Criteria, which has introduced potential pre-treatment requirements.

2.2 National Policy

The Government issued a policy statement in September 1998 titled as *'Changing Our Ways'* which identified objectives for the prevention, minimisation, reuse, recycling, recovery, and disposal of waste in Ireland. A heavy emphasis was placed on reducing reliance on landfill and finding alternative methods for managing waste. Amongst other things, Changing Our Ways stated a target of at least 35% recycling of municipal (i.e., household, commercial and non-process industrial) waste.

A further policy document *'Preventing and Recycling Waste – Delivering Change'* was published in 2002. This document proposed a number of programmes to increase recycling of waste and allow diversion from landfill. The need for waste minimisation at source was considered a priority.

This view was also supported by a review of sustainable development policy in Ireland and achievements to date, which was conducted in 2002, entitled *'Making Irelands Development Sustainable – Review, Assessment and Future Action'*. This document also stressed the need to break the link between economic growth and waste generation, again through waste minimisation and reuse of discarded material.

In order to establish the progress of the Government policy document *Changing Our Ways*, a review document was published in April 2004 entitled *'Taking Stock and Moving Forward'*. Covering the period 1998 – 2003, the aim of this document was to assess progress to date with regard to waste management in Ireland, to consider developments since the policy framework and the local authority waste management plans were put in place, and to identify measures that could be undertaken to further support progress towards the objectives outlined in *Changing Our Ways*.

In particular, *Taking Stock and Moving Forward* noted a significant increase in the amount of waste being brought to local authority landfills. The report noted that one of the significant challenges in the coming years was the extension of the dry recyclable collection services.

The policy document A Waste Action Plan for a Circular Economy Ireland's National Waste Policy 2020-2025 was published on the 4th of September 2020. The 'Waste Action Plan for a Circular Economy' goes beyond the management of waste and addresses how we look at resources more broadly, capturing and maximising the value of materials that may in the past have been discarded. A key objective of this Action Plan is therefore to shift the focus away back up the product life cycle, to remove or design out harmful waste, to extend the life of the products and goods used and prevent waste arising in the first place – consistent with the concept of a zero-waste future. The document sets out a number of actions, including the following:

- A move away from landfill and replacement through prevention, reuse, recycling, and recovery.
- A Brown Bin roll-out diverting 'organic waste' towards more productive uses.
- Introducing a new regulatory regime for the existing side-by-side competition model within the household waste collection market.
- New Service Standards to ensure that consumers receive higher customer service standards from their operator.
- Placing responsibility on householders to prove they use an authorised waste collection service.
- The establishment of a team of Waste Enforcement Officers for cases relating to serious criminal activity will be prioritised.
- Reducing red tape for industry to identify and reduce any unnecessary administrative burdens on the waste management industry.
- Design of waste management equipment and systems must be approved by the supplier.
- A review of the producer responsibility model will be initiated to assess and evaluate the operation of the model in Ireland.
- Significant reduction of Waste Management Planning Regions from ten to three.

In September 2020, the government released a new policy document outlining a new action plan for Ireland to cover the period of 2020-2025. This plan '*A Waste Action Plan for a Circular Economy*' was prepared in response to the 'European Green Deal' which sets a roadmap for a transition to a new economy, where climate and environmental challenges are turned into opportunities.

It aims to fulfil the commitment in the Programme for Government to publish and start implementing a new National Waste Action Plan. It is intended that this new national waste policy will inform and give direction to waste planning and management in Ireland over the coming years. It will be followed later this year by an All of Government Circular Economy Strategy. The policy document shifts focus away from waste disposal and moves it back up the production chain. To support the policy, regulation is already being used (Circular Economy Legislative Package) or in the pipeline (Single Use Plastics Directive). The policy document contains over 200 measures across various waste areas including Circular Economy, Municipal Waste, Consumer Protection & Citizen Engagement, Plastics and Packaging, Construction and Demolition, Textiles, Green Public Procurement and Waste Enforcement.

Since 1998, the Environmental Protection Agency (EPA) has produced periodic 'National Waste (Database) Reports' which as of 2023 have been renamed Circular Economy and Waste Statistics Highlight Reports 14 detailing, among other things, estimates for household and commercial (municipal) waste generation in Ireland and the level of recycling, recovery, and disposal of these materials. The 2020 National Circular Economy and Waste Statistics web resource, which is the most recent study published, along with the national waste statistics web resource (November 2023) reported the following key statistics for 2021:

- **Generated –** Ireland produced 3,170,000 t of municipal waste in 2021. This has been a 1% decrease since 2020. This means that the average person living in Ireland generated 630 kg of municipal waste in 2021Managed – Waste collected and treated by the waste industry. In 2020, a total of 3,137,000 t of municipal waste was managed and treated.
- **Unmanaged –** An estimated 33,000 tonnes of this was unmanaged waste i.e., not disposed of in the correct manner in 2021.
- **Recovered –** The amount of waste recycled, used as a fuel in incinerators, or used to cover landfilled waste. In Ireland 42% of Municipal waste was treated by energy recovery through incineration in 2021
- **Recycled –** Just over 1.3 million tonnes of municipal waste generated in Ireland was recycled in 2021, resulting in a recycling rate of 41 per cent. The recycling rate remains unchanged from 2020 and indicates that we face significant challenges to meet the upcoming EU recycling targets of 55% by 2025 and 65% by 2035.
- **Disposed –** The proportion of municipal waste sent to landfill also remains unchanged at 16% the same as 2020.
- **Reuse –** 54,800 tonnes of second-hand products we estimated by the EPA to have been reused in Ireland in 2021. The average annual Reuse rate per person in Ireland is 10.6 kg per person.

2.3 Regional Level

The proposed development is located in the Local Authority area of South Dublin County Council. The *EMR Waste Management Plan 2015 – 2021* is the regional waste management plan for the area which was published in May 2015. The EMR Waste Management Plan 2015 – 2021 has been superseded as of March 2024 by the NWMPCE 2024 - 2030.

The NWCPCE sets the ambition of the plan to have a 0% total waste growth per person over the life of the Plan with an emphasis on non-household wastes including waste from commercial activities and the construction and demolition sector.

This plan seeks to influence sustainable consumption and prevent the generation of waste, improve the capture of materials to optimise circularity and enable compliance with policy and legislation. The national plan sets out the following strategic targets for waste management in the country that are relevant to the development:

Proposed National Targets

1A. (Residual Municipal Waste) 6% Reduction in Residual Municipal Waste per person by 2030

2A. (Contamination of Materials) 90% of Material in Compliance in the Dry Recycling Bin

2B. (Material Compliance Residual) 10% per annum increase in Material Compliance in the residual bin. (90% by the end of 2030)

3A. (Reuse of Materials) 20kg Per person / year – Reuse of materials like cloths or furniture to prevent waste.

Municipal landfill charges in Ireland are based on the weight of waste disposed. In the Leinster Region, charges are approximately €140-160 per tonne of waste, which includes a €85 per tonne landfill levy introduced under the Waste Management (Landfill Levy) (Amendment) Regulations 2015.

The *South Dublin County Council Development Plan 2022 – 2028* sets out a number of objectives and actions for the South Dublin area in line with the objectives of the waste management plan.

Waste policies and objectives with a particular relevance to this development are:

Policy:

- **Policy IE7:** Implement European Union, National and Regional waste and related environmental policy, legislation, guidance, and codes of practice to improve management of material resources and wastes.

Objectives:

- ***IE7 Objective 1:*** *To encourage a just transition from a waste management economy to a green circular economy to enhance employment and increase the value, recovery, and recirculation of resources through compliance with the provisions of the Waste Action Plan for a Circular Economy 2020-2025 and to promote the use of, but not limited to, reverse vending machines and deposit return schemes or similar to ensure a wider and varying ways of recycling.*
- ***IE7 Objective 2:*** *To support the implementation of the Eastern Midlands Region Waste Management Plan 2015-2021 or as amended by adhering to overarching performance targets, policies, and policy actions.*
- ***IE7 Objective 3:*** To provide for, promote and facilitate high quality sustainable waste recovery and disposal infrastructure / technology in keeping with the EU waste hierarchy and to adequately cater for a growing residential population and business sector.
- ***IE7 Objective 4:*** To provide for and maintain the network of bring infrastructure (for example, civic amenity facilities, bring banks) in the County to facilitate the recycling and recovery of hazardous and non-hazardous municipal wastes.
- ***IE7 Objective 5:*** To ensure the provision of adequately sized public recycling facilities in association with new commercial developments and in tandem with significant change of use / extensions of existing commercial developments where appropriate.
- ***IE7 Objective 6:*** To ensure that green waste centres are provided in suitable locations to augment the local house to house collection system for compostable waste.
- ***IE7 Objective 7:*** To require the appropriate provision for the sustainable management of waste within all developments, ensuring it is suitably designed into the development, including the provision of facilities for the storage, separation, and collection of such waste.
- ***IE7 Objective 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.*
- **IE7 Objective 9:** To support the development of indigenous capacity for the treatment of non-hazardous and hazardous wastes where technically, economically, and environmentally practicable subject to the relevant environmental protection criteria for the planning and development of such activities being applied.

2.4 Legislative Requirements

The primary legislative instruments that govern waste management in Ireland and applicable to the project are:

- Waste Management Act 1996 (No. 10 of 1996) as amended. Secondary legislation includes:
  - European Communities (Waste Directive) Regulations 2011 (SI 126 of 2011) as amended.
  - Waste Management (Collection Permit) Regulations (S.I No. 820 of 2007) as amended.
  - Waste Management (Facility Permit and Registration) Regulations 2007, (S.I No. 821 of 2007) as amended.
  - Waste Management (Licensing) Regulations 2004 (S.I. No. 395 of 2004) as amended.
  - Waste Management (Packaging) Regulations 2014 (S.I. 282 of 2014) as amended.
  - Waste Management (Planning) Regulations 1997 (S.I. No. 137 of 1997) as amended.
  - Waste Management (Landfill Levy) Regulations 2015 (S.I. No. 189 of 2015) as amended by S.I. No. 182 of 2019, reg 3.
  - European Union (Waste Electrical and Electronic Equipment) Regulations 2014 (S.I. No. 149 of 2014) as amended.
  - European Union (Batteries and Accumulators) Regulations 2014(S.I. No. 283 of 2014) as amended.
  - Waste Management (Food Waste) Regulations 2009 (S.I. 508 of 2009), as amended.
  - European Union (Household Food Waste and Bio-waste) Regulation 2015 (S.I. No. 430 of2015)
  - Waste Management (Hazardous Waste) Regulations, 1998 (S.I. No. 163 of 1998) as amended.
  - Waste Management (Shipments of Waste) Regulations, 2007 (S.I. No. 419 of 2007) as amended.
  - European Communities (shipments of Hazardous Waste exclusively within Ireland) Regulations 2011 (S.I. No.342/2011)
  - European Communities (Transfrontier Shipment of Waste) Regulations 1994 (SI 121 of 1994)
  - European Union (Properties of Waste which Render it Hazardous) Regulations 2015 (S.I. No. 233 of 2015)
- Environmental Protection Act 1992 (No. 7 of 1992) as amended.
- Litter Pollution Act 1997 (No. 12 of 1997) as amended.
- Planning and Development Act 2000 (No. 30 of 2000) as amended.

2.5 Responsibilities of the Waste Producer

The waste producer is responsible for waste from the time it is generated through until its legal disposal (including its method of disposal.) Waste contractors will be employed to physically transport waste to the final waste disposal / recovery site. It is therefore imperative that the residents, commercial tenants, and the proposed facilities management company undertake on-site management of waste in accordance with all legal requirements and employ suitably permitted/licenced contractors to undertake off-site management of their waste in accordance with all legal requirements. This includes the requirement that a waste contactor handle, transport, and reuse/recover/recycle/dispose of waste in a manner that ensures that no adverse environmental impacts occur as a result of any of these activities.

A collection permit to transport waste must be held by each waste contractor which is issued by the National Waste Collection Permit Office (NWCPO). Waste receiving facilities must also be appropriately permitted or licensed. Operators of such facilities cannot receive any waste, unless in possession of a Certificate of Registration (COR) or waste permit granted by the relevant Local Authority under the *Waste Management (Facility Permit & Registration) Regulations 2007* as amended or a waste or IED (Industrial Emissions Directive) license granted by the EPA. The COR/permit/license held will specify the type and quantity of waste able to be received, stored, sorted, recycled, recovered and/or disposed of at the specified site.

2.6 South Dublin County Council Byelaws 2018

These Byelaws for the Segregation, Storage and Presentation of Household and Commercial Waste were designed to repeal South Dublin County Council Household Waste Bye-Laws 2012 and South Dublin County Council (Storage, separation at source, presentation, and collection of commercial waste) Bye-Laws 2007. The Bye-Laws commenced on the 3rd December 2018 and place legal obligations on the waste producer in terms of the way waste is stored and managed on a site/premises. Dry recyclables must be segregated at source, and bio-waste (organic) must be segregated if a collection service is available. Waste must be presented in approved containers that are kept in a reasonable state and only presented for collection in approved areas and times by the Council. Key requirements under these bye-laws are:

- Kerbside waste presented for collection shall not be presented for collection earlier than 8.00pm on the day immediately preceding the designated waste collection day.
- All containers used for the presentation of kerbside waste and any uncollected waste shall be removed from any roadway, footway, footpath, or any other public place no later than 8:00am on the day following the designated waste collection day.
- 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; and
- 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: o 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;
- 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.
- 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.
- 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,
- written information is provided to each tenant or other occupier about the arrangements for waste separation, segregation, storage, and presentation prior to collection.
- 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 South Dublin County Council; and
- receptacles for kerbside waste are presented for collection on the designated waste collection day.

2.7 Summary of Segregation, Storage and Presentation of Household and Commercial Waste

A) General Principals for Waste Storage Areas design

1. A defined pedestrian route from apartment areas to the nearest waste storage area
2. Waste storage areas will be so as not present any safety risks to users.
3. A non-slip surface within the waste storage area
4. Adequate ventilation to avoid the creation of stagnant air or foul odours.
5. Appropriate sensor-controlled lighting.
6. Suitable wastewater drainage points and water supply points will be installed in the bin storage area for cleaning and disinfecting.
7. Provision of appropriate graphical signage to inform residents of their obligation to reduce waste, segregate waste and in the correct bin.
8. Measures to control access to waste storage areas.
9. Adequate space for separate storage of general mixed waste, general recyclable waste, organic, glass WEEE and hazardous waste
10. Worst case sizing of waste storage containers with reference to BS 5906:2005. Waste Management in Buildings – Code of Practice

B) Within Residential Units

1. Provision of sufficient space for the storage of general domestic waste, green recyclable waste, glass waste and organic waste.
2. Each apartment shall include individual waste storage bins which shall be sized to allow their easy manual handling to be brought to the central waste storage area.

C) Initial Waste Management

1. Provision of a full waste collection service from the date of first occupation of units in the development.
2. Provision of a guidance document to all occupants from the date of first occupation of units in the development.

D) Waste Collection system

1. Identification of a suitable location within the curtilage of the development where the waste bins can be left out for collection.
2. Access for waste collection trucks, including design of turning circles and headroom requirements.
3. Avoidance of traffic hazard
4. Avoidance of environmental pollution, including visual pollution, environmental nuisance, and litter
5. Door access to bin area that allows for 1100litre bins plus 20% over width.
6. Robust design of doors to bin area incorporating steel sheet covering where appropriate.

2.8 Regional Waste Management Service Providers & Facilities

Various contractors offer waste collection services for the residential and commercial sector in the South Dublin Council. Details of waste collection permits (granted, pending, and withdrawn) for the region are available from the NWCPO. As outlined in the new regional waste management plan, there is a decreasing number of landfills available in Ireland. Only three municipal solid waste landfills remain operational and are all operated by the private sector. There are a number of other licensed and permitted facilities in operation in the region including waste transfer stations, hazardous waste facilities and integrated waste management facilities. There are two existing thermal treatment facilities, one in Duleek, Co. Meath and a second facility in Poolbeg in Dublin. A copy of all CORs and waste permits issued by the Local Authorities are available from the NWCPO website and all waste/IED licenses issued are available from the EPA. There are a number of Bring Banks in the Lucan area.

2.9 Policy Context

Development Plan Policy generally sets out guidelines for waste management which conform to the European Union and National Waste Management Hierarchy as follows:

- Waste Prevention
- Minimisation
- Re-use
- Waste Recycling
- Energy Recovery
- Disposal

This guidance is subject to economic and technical feasibility and environmental assessment. Council's Waste Management Strategy is firmly grounded in EU and National policy and can be summarised by the waste hierarchy of prevention, recycling, energy recovery and disposal.

3.0 DESCRIPTION OF THE PROJECT

3.1 Location, Size and Scale of the Development

"The development will comprise a Large-Scale Residential Development (LRD) on a site at Parkmore Industrial Estate, Long Mile Rd, Robinhood, Dublin, 12. The proposed development will comprise the demolition of existing industrial units, and construction of a mixed use, residential-led development within 4 no. blocks ranging in height from 06 to 10 storeys over semi-basement. The development will comprise the following: 436 no. apartments (studios; 1 beds; 2 beds and 3 beds) with commercial/employment units, creche, café and library. Provision of car, cycle and motorbike parking. Vehicular accesses from Parkmore Estate Road and additional pedestrian/cyclist accesses from the Long Mile Road and Robinhood Road. Upgrade works to the estate road and surrounding road network. All associated site development works and services provision, open spaces, ESB substations, plant areas, waste management areas, landscaping and boundary treatments. ."

Block	Number of Units			Total
	1-Bed	2-Bed	3-Bed	
Apartments	182	158	96	436
Total	**182**	**158**	**96**	**436**

Table 1.0 Residential Development Unit Mix

Services & Amenities	NIA Floor Space m²
Unit 1 Block A - Library/Community Facilities	352.1 m²
Unit 2 Block A/Unit 3 Block B - Offices /Co-Working	435.8m²
Unit 4 Block B - Medical Centre & Small Pharmacy	674.1m²
Unit 5 Block B - Café	116.7 m²
Unit 6 - Créche Childcare Facilities	359.1
Total	**1937.8 m²**

Table 2.0 Non-Residential Floor Areas

3.2 Typical Waste Categories

The predicted waste types that will be generated at the proposed development include the following:

- **Dry Mixed Recyclables (DMR**) – includes Newspaper / General paper Magazines, Cardboard Packaging, Drink (Aluminum) Cans, Washed Food (Steel/Tin) Cans, Washed Tetra Pak Milk & Juice Cartons, Plastic Bottles (Mineral/Milk/Juice/Shampoo/Detergents), Rigid Plastics. (Pots/Tubs/Trays*)
- **Mixed Non-Recyclables (MNR) / All General Waste** – Nappies, soiled food, packaging, old candles, plasters, vacuum cleaner contents, broken delph, contaminated plastics.
- **Organic (food) Waste** – Bread, pasta and rice, Meat, fish, poultry bones, out of date food (no plastic packaging), Tea Bags, Coffee grounds and paper filters**.** Fruit and vegetables (cooked and uncooked). Food soiled cardboard or paper (no coated paper) Eggs and dairy products (no plastic packaging) Paper napkin and paper towels.
- **Glass**

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:

- Green/garden waste - may be generated from internal plants and external landscaping carried out by the management company.
- Textiles
- Batteries
- Waste electrical and electronic equipment (WEEE)
- Chemicals (solvents, pesticides, paints, adhesives, resins, detergents, etc.)
- Furniture (and from time-to-time other bulky wastes)

Wastes should be segregated into the above waste types to ensure compliance with waste legislation and guidance while maximising the re-use, recycling, and recovery of waste with diversion from landfill wherever possible. Residents will be required to take these waste types as required to the local civic centre.

3.3 European Waste Codes

Under the classification system, different types of wastes are fully defined by a code. The List of Waste (LoW) code (also referred to as European Waste Code or EWC) for typical waste materials expected to be generated during the operation of the proposed development are provided in the Table below 3.0.

Waste Material	LoW Code
Paper and Cardboard	20 01 01
Plastic	20 01 39
Metals	20 01 40
Mixed Municipal Waste	20 03 01
Glass	20 01 02
Biodegradable Kitchen Waste	20 01 08
Oils and Fats	20 01 25/26*
Biodegradable garden and park wastes	20 02 01
Textiles	20 01 11
Batteries and accumulators*	20 01 33*-34
Printer Toner / Cartridges*	20 01 27* -28
Green Waste	20 02 01
Waste electrical and electronic equipment*	20 01 35*-36
Chemicals (solvents, pesticides, paints & adhesives, detergents etc) *	20 01 13 / 19 /27 / 28 / 29* 30
Fluorescent tubes and other mercury containing waste*	20 01 21*
Bulky wastes	20 03 07

Table 3.0 LoW Code

3.4 Methodology

3.4.1 Residential Calculation Methodology

Waste arisings were calculated in accordance with BS 5906:2005 and included a provision of 5 litres (L) of food waste per residential unit per week. These guidelines determine the minimum capacity for waste storage space to be allocated and are as follows:

- 30 litres (L) per unit + 70L per bedroom (see Table 4.0 for further details).
- Split 50:50 between DMR and residual waste; and
- 5L per residential unit for food waste.

Number of Bedrooms	Weekly Waste Arisings per Unit (L)			
	DMR	Food Waste	MNR	Total
1 Bedroom	50	5	50	105
2 Bedroom	85	5	85	175
3 Bedroom	120	5	120	245

Table 4.0 Weekly Waste Arisings Methodology

3.4.2 Commercial Calculation Methodology

BS 5906:2005 provides a methodology for the calculation of waste arisings from communal areas and crèche. These calculation methodologies are outlined within Table 5.0 of this Strategy. A 50:50 split between DMR, and residual waste has been assumed for the crèche and communal area.

Land Use Class	Waste Storage Requirements	Waste Stream Ratios
Community/ Amenities Space	5L per m^2 NIA	50: 50 DMR: Residual
Retail/Commercial	10L per m^2 Sales Floor Area (SFA)	MDR: Residual Waste 50: 50
Crèche	10L per m^2 NIA	50: 50 MDR: Residual
Café	75L per cover	MDR: Food: Residual 50:30:20
Offices/Co-working	50L per employee per week	50:50 DMR: Residential

Table 5.0 Commercial Waste Arising Calculations (Weekly)

4.0 ESTIMATED WASTE ARISING

The estimated quantum/volume of waste that will be generated from the residential units has been determined based on the predicted occupancy of the units and is presented in table 6.0 below.

Waste Volume (L/week)					
Units	**Organic Waste**	**Dry Mixed Recyclables**	**Mixed Non-Recyclables**	**Glass**	**Total**
Block A	405	7,095	7,095	405	15,000
Block B	685	11,155	11,155	685	23,680
Block C	425	5,965	5,965	425	12,780
Block D	525	6,510	6,510	525	14,070
Total	**2,040**	**30,725**	**30,725**	**2,040**	**65,530**

Table 6.0 Residential Waste Prediction (L/per week)

Non-Residential Floor Areas	Area(sq.) (NIA)	DMR (Recycling)	Food Waste	MNR (Residual)	Glass	Total (L)
Library/Community Facilities	352.1	880	10	880	5	1,775
Medical Centre & Small Pharmacy	674.1	3,370.3	10	3,370.3	5	6,755
Café	116.7	583.5	10	583.5	5	1,182
Créche Childcare Facilities	359.10	1,795	10	1,795	5	3,605
Total	**1,502**	**6,628.8**	**40**	**6,628.8**	**20**	**13,317**

Table 7.0 Amenities Waste Predictions (L/per week)

Offices/Co-working	Area (Sq.m)	DMR Recycling	Food Waste	MNR (Residual)	Glass	Total (L)
	565.8	1,050	10	1,050	5	**2,115**

Table 8.0 Offices/Co-working (L/per week)

4.1 Waste Storage and Collection

This section provides information on how waste generated within the development will be stored and how the waste will be collected from the development. This has been prepared with due consideration of the proposed site layout as well as best practice standards, local and national waste management requirements including those of South Dublin Council. In particular, consideration has been given to the following documents:

- BS 5906:2005 Waste Management in Buildings – Code of Practice.
- EMR Waste Management Plan 2015 – 2021.
- The NWMPCE (2024).
- South Dublin Council *Waste Bye-Laws* (2018).
- DoEHLG, Sustainable Urban Housing: Design Standards for New Apartments, Guidelines for Planning Authorities (2023).

4.2 Residential Waste and Recycling Management and Storage Strategy

It is required that space be provided for recycling bins to accommodate 50% of the total weekly volume. This is in line with the BS5906:2005 requirements. Residual waste (MNR) is required for 87.5% of the total weekly arising. For the purpose of the strategy Glass and Organic Waste is required for 87.5% of the total weekly arising.

Block	Number of Bins Required for a Weekly Collection			
	MDR	Organic	MNR	Glass
Block A	7 x 1100L	2 x 240L	7 x 1100L	2 x 240L
Block B	10 x 1100L	3 x 240L	10 x 1100L	3 x 240L
Block C	6 x 1100L	2 x 240L	6 x 1100L	2 x 240L
Block D	6 x 1100L	2 x 240L	6 x 1100L	2 x 240L

Table 8.0 Residential Storage Requirements

Block	Number of Bins Required for a Weekly Collection			
	MDR	Organic	MNR	Glass
Café	1 x 1100L	1 x 240L	1 x 1100L	1 x 240L
Library/Community Facilities	1 x 1100L	1 x 240L	1 x 1100L	1 x 240L
Medical Centre & Small Pharmacy	4 x 1100L	1 x 240L	4 x 1100L	1 x 240L
Créche Childcare Facilities	2 x 1100L	1 x 240L	2 x 1100L	1 x 240L
Offices/Co Working	1 x 1100L	1 x 240L	1 x 1100L	1 x 240L

Table 9.0 Commercial Requirements

4.3 Waste Storage Residential Units

Provision is made for the segregation and storage of domestic waste within each unit. Each unit is provided with bins in the kitchen area to enable the separation of waste into different waste streams – 1.) glass, 2.) food, 3.) DMR (Dry Mixed Recycling) and 4.) general waste (MNR). Sample images of bin types in each unit below.

All Apartment Blocks

Residential Developments will ensure access for all (including people with disabilities) in a brightly lit, safe & well sighted area, spacious enough for easy manoeuvrability, good ventilation and ready access if required for the control of potential vermin. Sufficient access and egress will be provided to enable receptables to be moved easily from the storage area to an appropriate collection point within the curtilage of the development.

Each apartment will include individual waste storage bins which shall be sized to allow their easy manual handling to be brought to the central waste storage area (WSA). It is anticipated that DMR, MNR and organic waste will be collected on a weekly basis.

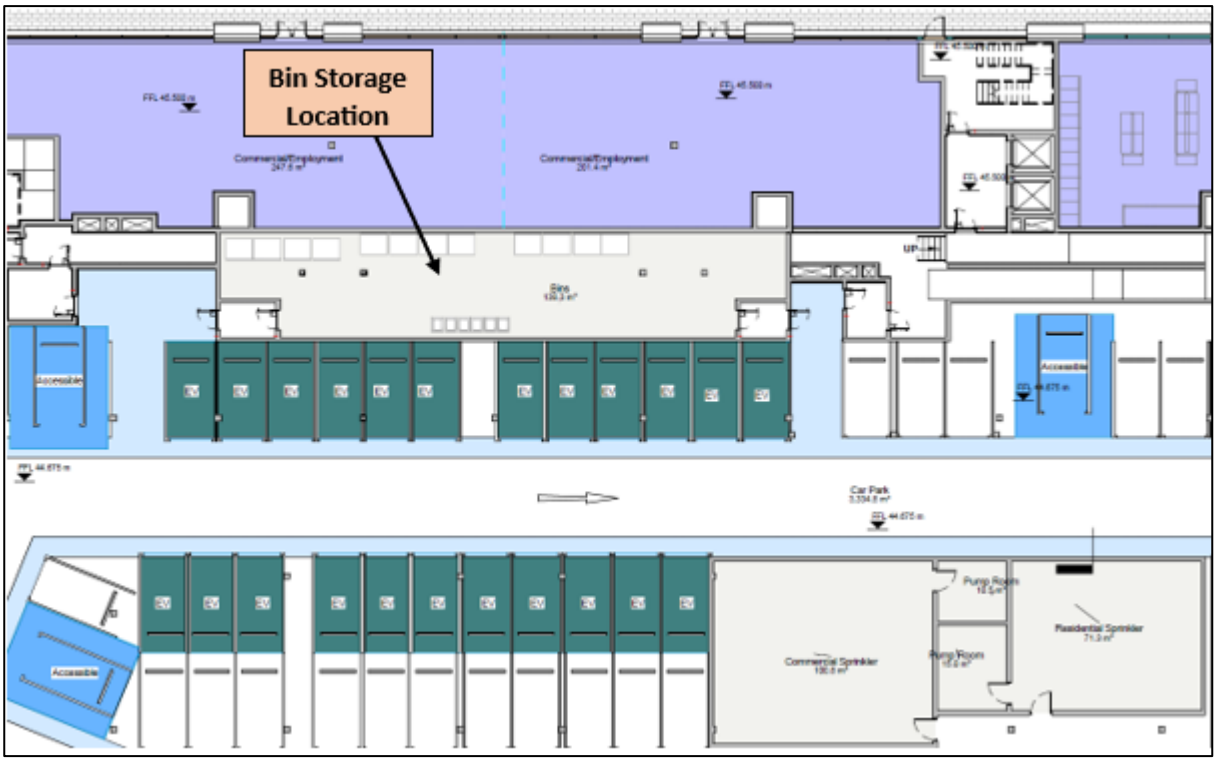
4.3.1 Apartment Block A and B

Residents will be expected to take all waste arisings from their units to the appropriate residential waste storage area. Residents will be required to segregate their waste into the following waste categories within their own apartment units:

- DMR.
- MNR
- Organic waste; and
- Glass

The proposed Waste Storage Area for Apartment Block A & B (9 storey block to the north) is provided within the Basement below block A & B as shown below in Figure 1.0. It is recommended that all WSAs should have secure access with either key or fob to ensure only residents may place waste in the respective WSA. On collection day, the bins from block A, B & C will be brought from the WSA's located on basement level up to the waste collection point by the management company personnel. The bin collection point is Indicated in Figure 3.0 below. Once the bins are emptied the bins will be returned to the Waste Collection Point and then brought back down to the waste storage area.

Figure 1.0 Waste Storage Area – Block A & B (Basement Level)



4.3.2 Apartment Block C

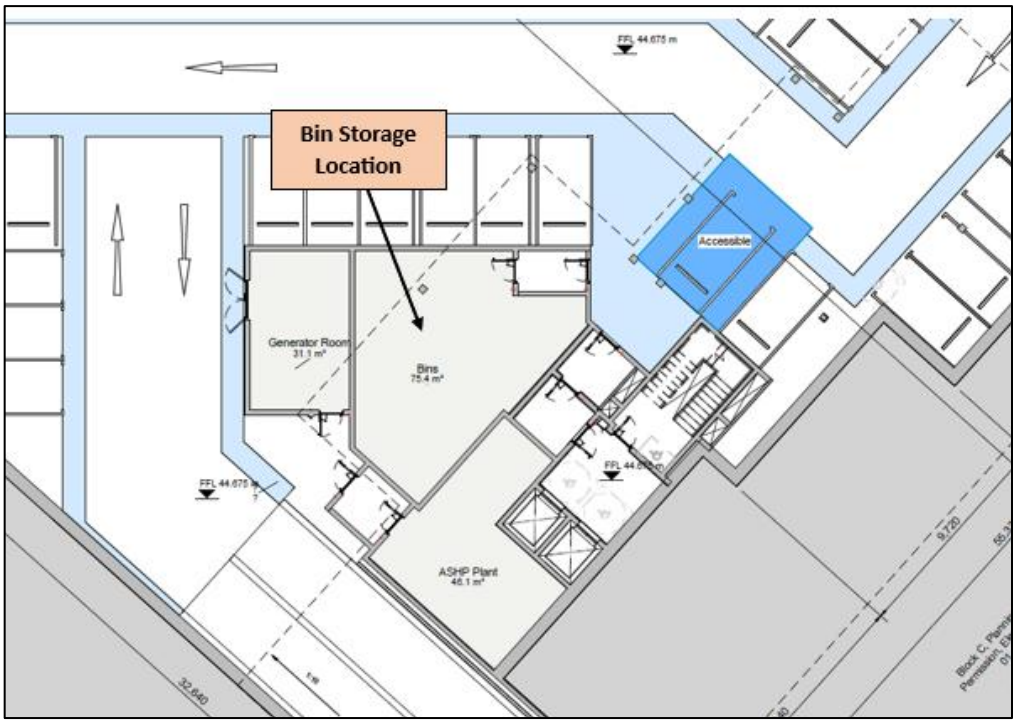
Residents will be expected to take all waste arisings from their units to the appropriate residential waste storage area. Residents will be required to segregate their waste into the following waste categories within their own apartment units:

- DMR.
- MNR
- Organic waste; and
- Glass

The proposed Waste Storage Area for Apartment Block C is provided with a storage space within its structure at basement level as shown below in Figure 2.0. It is recommended that all WSAs should have secure access with either key or fob to ensure only residents may place waste in the respective WSA.

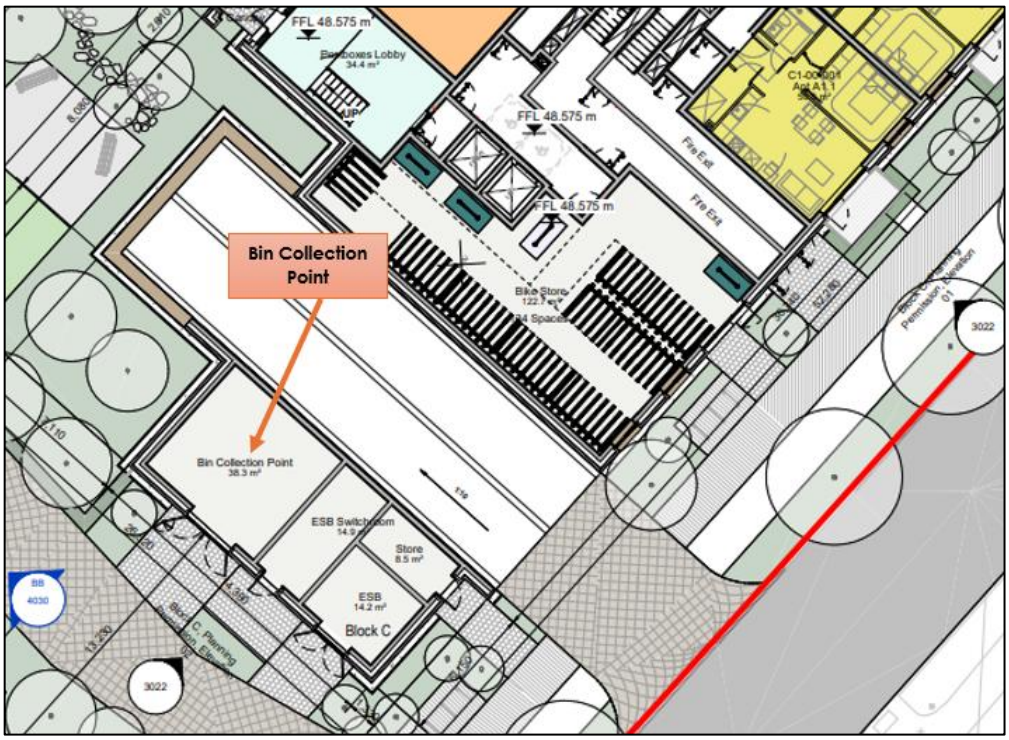
On collection day, the bins from block A, B & C will be brought from the WSA's located on basement level up to the waste collection point by the management company personnel. The bin collection point is Indicated in Figure 3.0 below. Once the bins are emptied the bins will be returned to the Waste Collection Point and then brought back down to the waste storage area.

Figure 2.0 Waste Storage Area - Block C



On collection day, the bins from block A, B & C will be brought from the WSA's located on basement level up to the waste collection point by the management company personnel. The bin collection point is Indicated in Figure 3.0 below. Once the bins are emptied the bins will be returned to the Waste Collection Point and then brought back down to the waste storage area.

Figure 3.0 Waste Collection Point (for Bin Lorries) Block A, B & C



4.3.3 Apartment Block D

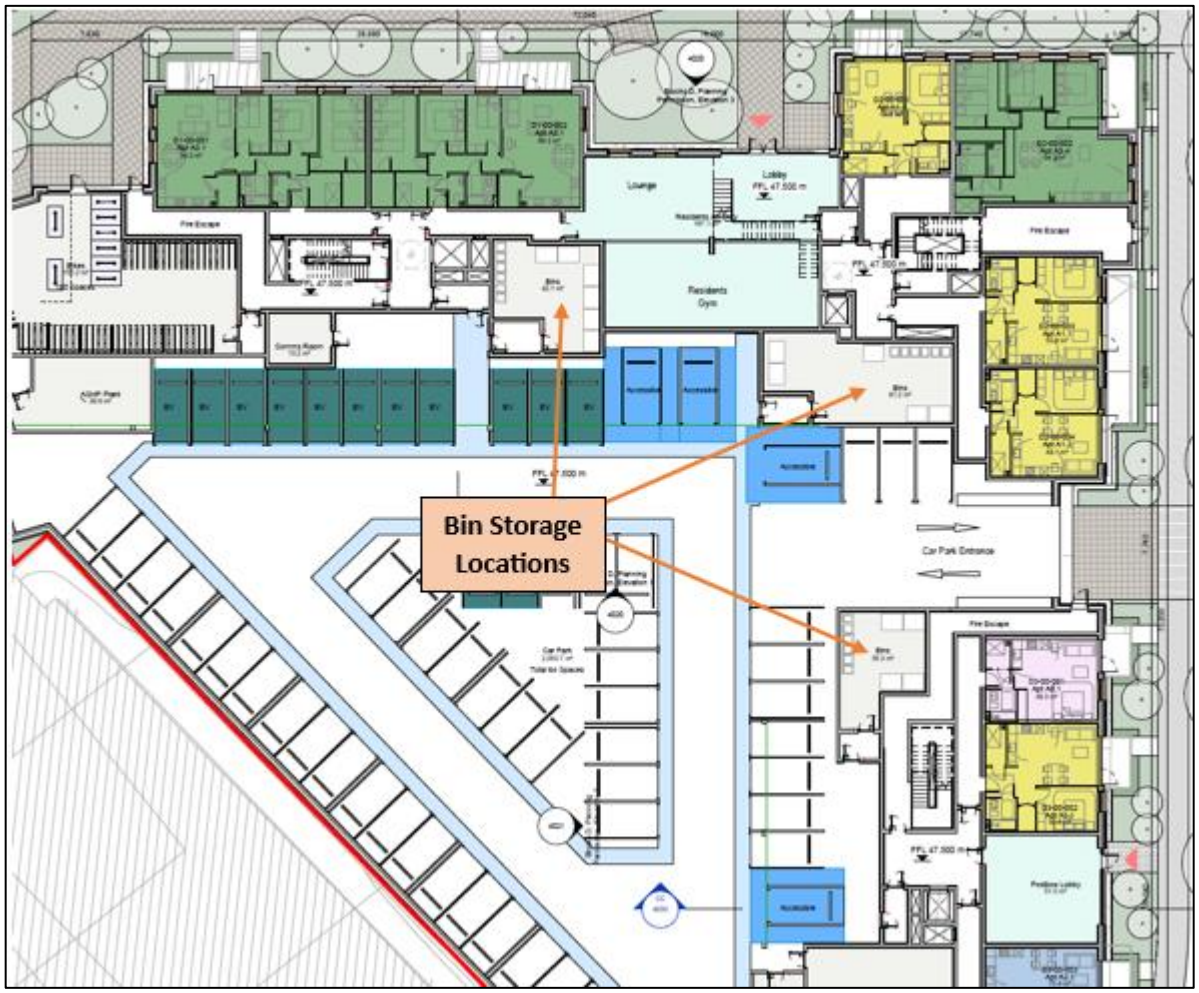
Residents will be expected to take all waste arisings from their units to the appropriate residential waste storage area. Residents will be required to segregate their waste into the following waste categories within their own apartment units:

- DMR.
- MNR
- Organic waste; and
- Glass

The proposed Waste Storage Area for Apartment Block D is provided with a storage space within its structure at ground floor level as shown below in Figure 3.0. It is recommended that all WSAs should have secure access with either key or fob to ensure only residents may place waste in the respective WSA.

On collection day, the bins from block D will be brought from the WSA's to the waste collection point by the management company personnel. Once the bins are emptied the bins will be returned to the Waste Collection Point and then brought back down to the waste storage areas.

Figure 3.0 Waste Storage Area Block D



4.4 Waste Collection Contractors

There are numerous private contractors that provide waste collection services in the South Dublin area who hold a valid waste collection permit for the specific waste types collected. All waste collected must be transported to registered/permitted/licensed facilities only. All waste requiring collection by the appointed waste contractor will be collected from the designated waste collection points depending on the agreement. The empty bins will be promptly returned to the appropriate WSAs. All waste receptacles presented for collection will be clearly identified as required by waste legislation and the requirements of the South Dublin Council Bye-Laws. Also, waste will be presented for collection in a manner that will not endanger health, create a risk to traffic, harm the environment or create a nuisance through odours or litter.

4.5 Additional Waste Materials

There is likely to be a small component of the overall waste arisings from the Proposed Development that will comprise other waste streams, such as WEEE, printer and toner cartridges, and fluorescent light tubes, etc. Residents will be required to take these waste types as required to the local civic centre.

4.6 Waste Storage Area Design

This area will be installed in accordance with BS 5906:2005.

- The walls and roofs of the bin stores will be formed of non-combustible, robust, secure, and impervious material, and have a fire resistance of one hour.
- All containers for waste, including recyclable material, will be easily accessible to both the occupier and waste collector.
- Waste stores will be designed and located in such a way as to limit potential noise disturbance to residents.
- Storage areas for waste and DMR will be clearly designated for this use only, by a suitable door or wall sign and, where appropriate, with floor markings.
- Waste storage sites will include areas for instructional signage detailing correct use of the facilities.
- The entrance to the waste storage room will be free from steps and projections.
- Where the area is to be enclosed in a roofed building, adequate ventilation will be provided. Permanent ventilators will be provided, giving a total ventilation area of not less than 0.2m^2.
- Contain electrical lighting by means of sealed bulkhead fittings (housings rated to IP65 in BS EN 60529:199 for the purpose of cleaning down with hoses and inevitable splashing. Luminaires will be low energy light fittings or low energy lamp bulbs, controlled by proximity detection or a time delay button to prevent lights being left on; and
- Gullies for wash down facilities will be positioned so as not to be in the track of container trolley wheels.
- CCTV Should be installed.

In addition to the above requirements, based on past experience and best practice the storage of waste materials will include the following provisions:

- Waste storage facilities will not block any utility service points.
- Waste storage areas will not obstruct sight lines for pedestrians, drivers, and cyclists, if doors open outwards, they will not open onto a road or highway.
- Waste containers will be inside or at least enclosed. If bins are outside, they will be secured in a compound; Information packs will be provided to residents to include full information on available recycling facilities.
- Colour coding will be used for bins of different streams; and any internal storage areas adjacent to a fire escape route will be fitted with fire doors, automatic fire detection and a sprinkler system and comply with the Building Regs.
- The facilities management company will be required to maintain the bins and their WSAs in good condition. All residents will be made aware of the waste segregation requirements and waste storage arrangements.

5.0 WASTE COLLECTION REQUIREMENTS

In line with BS 5906:2005 and South Dublin County Council Bye Laws 2018 guidance, the following collection requirements have been designed into the Proposed Development in order to comply with all mandatory waste storage requirements:

5.1 BS 5906 2005

All paths used to transport bins from the storage area to the collection point will have a minimum width of 2m, be free from kerbs or steps, have a solid foundation and be finished with a smooth, continuous finish. Based on the clearance height and tonnage specified by the dimensions of a standard waste collection vehicle have been used to undertake the swept path analysis. The reversing distance should not normally exceed 12m. Waste collection operatives should also walk no further than 25m from the truck to the collection point (temporary or permanent location).

Dimensions	
Width	2.53 metres
Gross vehicle weight	26 tonnes
Length	11.2 metres
Clearance Height	4.75m (Any part of a building through which a waste collection vehicle passes must have a minimum clear height of 4.75 m, to allow for overhead fixtures and fittings)
Turning Circle (diameter)	9.5 metres

Table 8.0 Collection Vehicle Dimensions: Waste/Recycling Collection Vehicle

6.0 CONCLUSIONS

The Proposed Development will be achieved with high standards of waste management performance. As such, due consideration has been given to waste which will be generated by the Proposed Development during its operation. Waste management within the Proposed Development has the following aims:

- To contribute towards achieving current and long-term government, South Dublin County Council and EMR targets for waste minimisation, recycling, and reuse.
- To ensure that all legal requirements for the handling and management of waste during the operation of the Proposed Development are complied with; and
- To provide tenants with convenient, clean, and efficient waste management systems that enhance the operation of the buildings and promote high levels of recycling.

In summary, this OWRMP presents a waste strategy that complies with all legal requirements, waste policies and best practice guidelines and demonstrates that the required storage areas have been incorporated into the design of the development.