OPERATIONAL WASTE MANAGEMENT PLAN

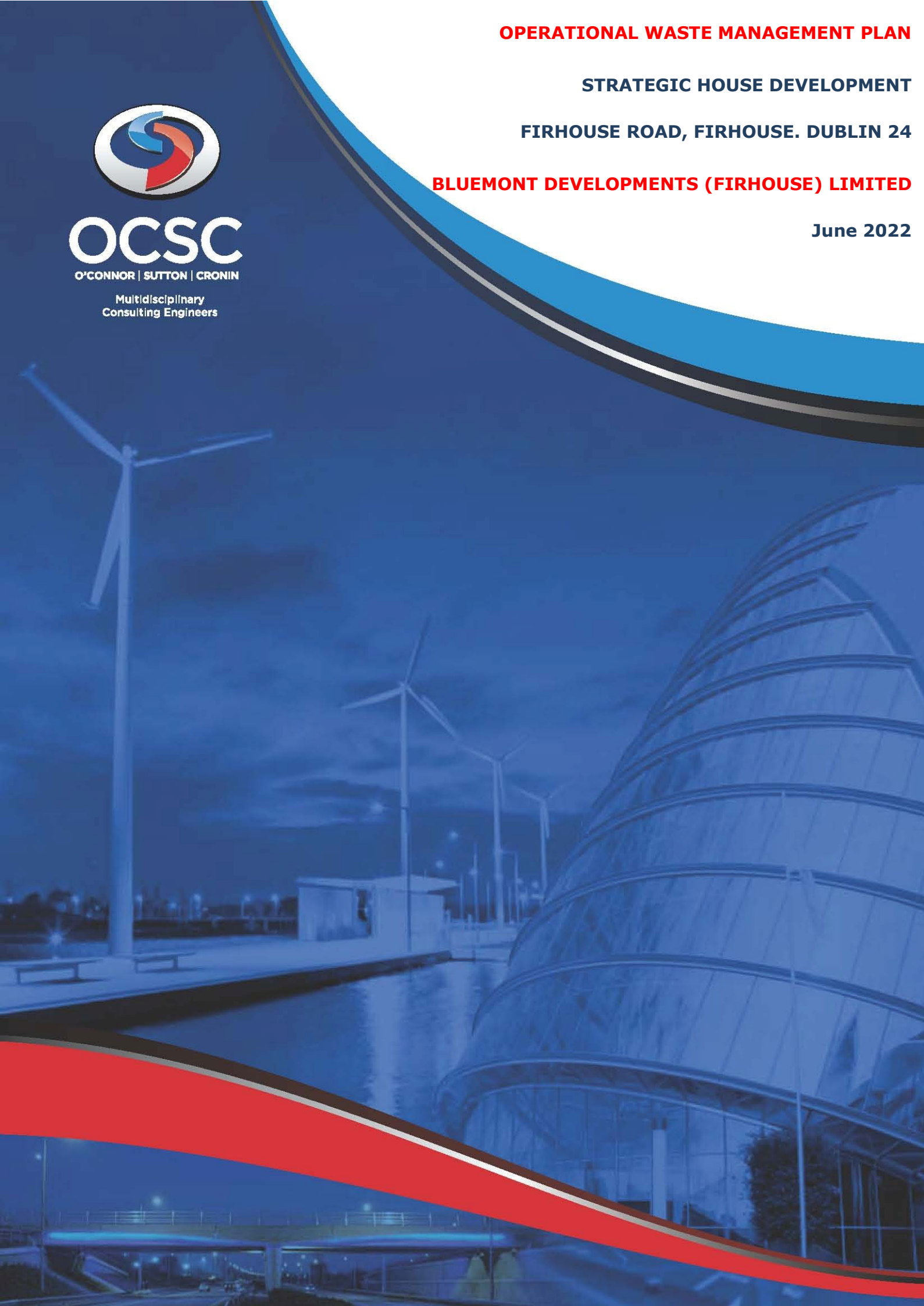
STRATEGIC HOUSE DEVELOPMENT

FIRHOUSE ROAD, FIRHOUSE. DUBLIN 24

BLUEMONT DEVELOPMENTS (FIRHOUSE) LIMITED

June 2022

OCSC
O'CONNOR | SUTTON | CRONIN
Multidisciplinary
Consulting Engineers



Operational Waste Management Plan

Firhouse, Firhouse Road, Dublin 24

for

Bluemont Developments (Firhouse) Limited

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NOTICE

Contents

1. INTRODUCTION

This Operational Waste Management Plan (OWMP) has been prepared for the proposed residential development at No. 2 Firhouse Road and the former 'Morton's The Firhouse Inn', Firhouse Road, Dublin 24. Bluemont Developments (Firhouse) Limited intends to apply to An Bord Pleanála (the Board) for strategic housing development with a total site area of c. 0.46 ha.

This OWMP provides a strategy for segregation (at source), storage and collection of the wastes generated within the development during the operational phase of the development, including dry mixed recyclables, organic waste, mixed non-recyclable waste, as well as providing a strategy for management of other wastes including glass, batteries, WEEE, printer/toner cartridges, chemicals, textiles, waste cooking oil and furniture.

This document aims to provide an overview of the proposed operational waste management strategy to be implemented by the scheme's management company.

The plan provides detail on the expected waste arisings which will be generated during the operational phase of the development and details of the methods and locations to be employed for the prevention, minimisation, recovery and disposal of this material in accordance with the provision of the OWMP for South Dublin County Council (SDCC). In summary, this OWMP presents a waste strategy that complies with all legal requirements, waste policies and best practice guidelines and demonstrates that the required storage area has been incorporated into the development design.

1.1 Waste Legislation & Guidelines

Currently, there are no specific guidelines in Ireland for the Operational Waste Management Plans. Therefore, this document was prepared according to the national and regional waste policy, legislation and other guidelines.

The implementation of this OWMP will ensure that the waste management during the operational phase of the proposed development is undertaken in accordance with current legal and industry standards listed below:

- South Dublin County Development Plan 2016-2022;
- Draft South Dublin County Development Plan 2022 – 2028;
- The Waste Management Act 1996 – 2020, Amendments & Associated Regulations;
- Planning and Development Act (2000) (as amended);
- Environmental Protection Act 1992 as amended;
- Protection of the Environment Act 2003 as amended;

- The Litter Pollution Act 1997 as amended;
- Eastern-Midlands Region (EMR) Waste Management Plan 2015 – 2021;
- BS 5906:2005 Waste Management in Buildings – Code of Practice; and
- Presentation and Collection of Household and Commercial Waste 2013.

The plan may be subject to review. Any material changes in the proposed operational strategy will be subject to agreement with South Dublin County Council Waste Regulation Unit at the project construction stage.

Pending appointment of the successful Contractor(s) they will need to adopt and adapt this report issuing further levels of required information.

The effective implementation of this OWMP will ensure maximum reuse, recycling and recovery of waste with a diversion from landfill wherever possible and provides guidance on the appropriate collection and transport of waste.

The OWMP is designed so as to ensure the highest possible levels of waste reduction, waste reuse and waste recycling are achieved for the proposed development. Specifically, the OWMP aims to achieve *"Sustainably manage waste generation, invest in different types of waste treatment and support circular economy principles, prioritising prevention, reuse, recycling and recovery, to support a healthy environment, economy and society."*

2. 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

The 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.

The scheme's predicted waste types will be segregated into the Dry Mixed Recyclables, Mixed Non-Recyclables, General, Organic and other 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.

2.1 Prevention of Waste Generation

Preventing the generation of excessive levels of waste through will be encouraged on an individual basis and is preferable to any form of waste management detailed in the following sections.

2.2 Segregation of Waste

Residents (and commercial units) will be required to segregate their waste into the following waste categories within their units:

- Dry Mixed Recyclables (DMR)
- Mixed Non-Recyclables (MNR)
- Organic (food and garden, i.e. plant) waste
- Glass (segregated by colour)

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

- Green/garden waste may be generated from internal plants or external landscaping;
- Batteries (both hazardous and non-hazardous);

- Waste electrical and electronic equipment (WEEE) (both hazardous and non-hazardous);
- Printer cartridges/toners;
- Chemicals (paints, etc.)
- Light bulbs (Fluorescent Tubes, Long Life, LED bulbs etc.);
- Textiles;
- Waste cooking oil (if any generated by the residents or retail/commercial tenants);
- Furniture (and from time to time other bulky wastes); and
- Abandoned bicycles.

The Environmental Protection Agency's (EPA) Household Food Waste and Bio-Waste regulations are designed to promote the segregation and recovery of household food waste. Adherence to the EPA's guidance notes on the segregation of domestic waste will be recommended.

Reuse or Recycling of Items to Avoid Landfill

The reuse and recycling of items will be encouraged as the preferred option for disposal. This action is well supported by existing reuse and recycling infrastructure in the local area – in the form of charity shops and local bring centres.

Use of Brown Bins for Organic Waste

The Compositing Association of Ireland has prepared a recommended list of acceptable materials for household brown bins to standardise household brown bin schemes across the country.

Encouraging the appropriate use of brown bins in the scheme to encourage the diverting of 'organic waste' towards more productive uses

South Dublin County Council Bye-Laws 2018

Bye-Laws for the Storage, Presentation and Collection of Household and Commercial Waste were brought into force by SDCC in 2007 and revocated in 2012 and 2018. The Bye-Laws set a number of enforceable requirements on waste holders and collectors with regard to storage, separation, presentation and collection of waste within the DCC functional area. Key requirements under these bye-laws are:

- A management company must ensure that adequate numbers of waste containers are available for use by holders in a multi-use development;
- Segregation of organic waste (Brown Bin) is required for holders of household & commercial waste; and
- Compliance with Waste Management (Food Waste) Amendment Regulations 2015 (S.I. 190 of 2015) and the European Union (Household Food Waste and

Bio-waste) Regulations 2015 (S.I. 191 of 2015), and the Eastern - Midlands Region Waste Management Plan 2015-2021.

3. SITE DESCRIPTION AND DEVELOPMENT OVERVIEW

The site is located at No. 2 Firhouse Road and the former 'Morton's The Firhouse Inn', Firhouse Road, Dublin 24. The site currently comprises the existing single and two-storey buildings, including the former 'Morton's The Firhouse Inn' public house and off-licence, barbers, betting office, cottage and other ancillary structures.

Figure 1: Site Location

3.1 Development Description

Bluemont Developments (Firhouse) Limited intend to apply to An Bord Pleanála (the Board) for a Strategic Housing Development with a total site area of c.0.46 ha, on lands located at No. 2 Firhouse Road and the former 'Morton's The Firhouse Inn', Firhouse Road, Dublin 24.

The development will consist of the demolition of all existing structures on site (c. 1,326 sq m), including:

- Two storey building formally used as public house, ancillary off-licence and associated structures (c. 972 sq m);
- Two storey building comprising an existing barber shop and betting office (c. 260 sq m);
- Single storey cottage building and associated structures (c. 94 sq m); and
- Eastern boundary wall and gated entrance from Mount Carmel Park.

The development with a total gross floor area of c. 11,638 sq m, will consist of 100 no. residential units arranged in 2 blocks (Blocks 01 and 02) ranging between 3 and 5 storeys in height, over lower ground floor and basement levels, comprising:

- 96 no. apartments (consisting of 2 no. studio units; 45 no. one bedroom units; 10 no. two bedroom (3 person) units; 34 no. two bedroom (4 person) units; and 5 no. three bedroom units), together with private (balconies and private terraces) and communal amenity open space provision at podium and roof levels; and
- 4 no. duplex apartments (consisting of 2 no. one bedroom units and 2 no. two bedroom units (4 person) located within Block 01, together with private balconies and terraces.

The development will also consist of non-residential uses (c. 355 sq m), including:

- 1 no. café (c. 58 sq m) and 1 no. office (c. 30 sq m) located at ground floor level of Block 01;
- 1 no. medical unit (c. 59 sq m) and 1 no. betting office (c. 66 sq m) located at ground floor level of Block 02;
- 1 no barber shop (c. 28 sq m) located at ground floor level between Blocks 01 and 02; and
- 1 no. crèche (c. 114 sq m) located at lower ground floor level of Block 01 and associated outdoor play area to the rear.

Vehicular access to the site will be from the existing access off Firhouse Road. The proposal includes minor alterations to the existing access, including the provision of new and enhanced pedestrian infrastructure.

The development will also consist of the provision of public open space and related play areas; hard and soft landscaping including internal roads, cycle and pedestrian routes, pathways and boundary treatments, street furniture, basement car parking (80 no. spaces in total, including accessible spaces); motorcycle parking; electric vehicle charging points; bicycle parking (long and short stay spaces including stands); ESB substations, piped infrastructural services and connections to existing public services, (including relocation of existing surface water sewer and water main from within the application site onto the public roads area along Firhouse Road and Mount Carmel Park); ducting; plant; waste management provision; SuDS measures; stormwater management and attenuation; sustainability measures; signage; changes in levels; public lighting; and all ancillary site development and excavation works above and below ground.

4. WASTE MANAGEMENT STRATEGY

The operational waste management strategy proposed is based on a number of factors, including:

- final permission granted and conditions attached to permitted development
- compliance requirements with South Dublin County Council plan policy
- requirements by other state bodies
- waste infrastructure availability in the locality
- concerns raised by residents and neighbours affected by the work

Waste storage was considered at the initial apartment design stage to ensure access for all (including people with disabilities) would be provided in a brightly lit, safe and well-designed bin storage area, spacious enough for easy manoeuvrability. Good ventilation and ready access, if required for the control of potential vermin, were also considered during design.

This integrated waste management strategy will form part of a larger operational estate management programme which will safeguard its implementation.

Implementation of this plan will ensure that waste management during the operational phase of the proposed development is undertaken according to current legal and industry standards as listed in Section 1.1.

This plan aims to ensure maximum recycling, reuse and recovery of waste with diversion from landfill, wherever possible. The plan also seeks to provide guidance on the appropriate storage, handling, collection and transport of waste to prevent issues associated with litter or more serious environmental pollution (e.g. contamination of soil or water resources). The plan estimates the type of waste to be generated from the proposed development during the operational phase and provides a strategy for managing the different waste streams.

4.1 Local Waste Management Infrastructure

There is an existing network of waste management infrastructure in the local area run by South Dublin County Council's Waste Management Division. The network operates in conjunction with private commercial operators, with public civic amenity sites and community bring centres, including one at Ballymount Avenue, Greenhills, Dublin 20. This facility is open Mon – Fri 9am – 5pm and Sat 9am – 5h30pm and Sunday and Bank Holidays 9:30am to 5:00pm.

There are also a number of approved municipal waste operators in the locality providing domestic waste management services throughout South Dublin. These companies are approved and hold waste collection permits from the South Dublin County Council, ensuring that the waste they collect is disposed of at an approved facility.

5. WASTE CATEGORIES

5.1 Typical Waste Categories

The typical non-hazardous and hazardous wastes that will be generated at the proposed development will include the following:

- Dry Mixed Recyclables (DMR) - includes waste paper (including newspapers, magazines, brochures, catalogues, leaflets), cardboard and plastic packaging, metal cans, plastic bottles, aluminium cans, tins and Tetra Pak cartons;
- Organic waste – food waste and green waste generated from plants/flowers;
- Glass; and
- Mixed Non-Recyclable (MNR)/General Waste.

5.2 European Waste Codes

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 was replaced by the EPA' Waste Classification – List of Waste & Determining if Waste is Hazardous or Non-Hazardous', which became valid from the 1st 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. Under the classification system, different types of waste are fully defined by a code. The List of Waste (LoW) code (also referred to as the European Waste Code or EWC) for typical waste materials expected to be generated during the operation of the proposed development is provided in Table 5.1.

Table 5.1: EWC/LoW

European Waste Catalogue/ List of Waste	
Type of Waste	**EWC/LoW**
Mixed Non-recyclable Waste	20 03 01
Paper and cardboard	20 01 01
Plastics	20 01 39
Biodegradable Kitchen Waste	20 01 08

5.3 Additional Waste Categories

In addition to the typical waste materials that residents will generate daily, there will be some additional waste types generated in small quantities which will need to be managed separately by the residents and commercial units, including:

- Green/garden waste may be generated from external landscaping;
- Batteries (both hazardous and non-hazardous);
- Waste electrical and electronic equipment (WEEE) (both hazardous and non-hazardous);
- Printer cartridges/toners;
- Chemicals (paints, adhesives, resins, detergents, etc.);
- Fluorescent tubes and other mercury containing waste;
- Textiles (rags);
- Waste cooking oil (if any generated by the residents); and
- Furniture (and from time to time other bulky wastes).

6. ESTIMATED REQUIRED BIN STORAGE SPACE

6.1 Model Calculation References

The following documents were considered in the bin quantity units and storage space calculations.

- Appendix C - Guidelines for Waste Storage Facilities from the Dublin Waste plan. The appendix is on the South Dublin County Council website, and it was used to calculate the required resident's bin store, including the crèche users.
- The BS5906:2005 Waste Management in Buildings – Code of Practice 2005 have been considered to estimate the waste arising.
- The Sustainable Urban Housing: Design Standards for New Apartments, Guidelines for Planning Authorities in December 2020 issued by the Department of the Environment, Heritage and Local Government have been considered when designing the Waste Storage Areas (WSAs) for the apartment blocks.

6.2 Total quantity of residents and crèche users

The bins quantity for the proposed development was calculated considering the estimative below to allow for a generous provision of facilities:

Table 6.1: Estimated number of residents per unit + crèche users

Number of residents + crèche users				
Residence type/ Unit	**Quantity of units**	**Total No. of bedrooms**	**No. of persons per bedroom based on unit type**	**Total No. of persons**
Studio (1b)	2	2	1.5	3
1 - bedroom	45	45	1.5	67.5
2 – bedroom (3p)	10	20	1.5	30
2 – bedroom (4p)	34	68	2	136
3 - bedroom	5	15	1.5	22.5
1 - Duplex (1b)	2	2	1.5	3
1 - Duplex (2b4p)	2	4	1.5	6
Total				268

The waste storage facilities Guidelines presented in appendix C of the Eastern-Midlands Regional Waste Management Plan recommendation is ***1No. bin*** of 1100L (0.5 tonnes) for every 15 persons. Based on that estimate, this site requires ***18No. bins*** of 1100L for household waste.

6.3 Commercial Waste Generation

The waste storage facilities Guidelines presented in appendix C of the Eastern-Midlands Regional Waste Management Plan recommendation is 1No. bin of 1100L (0.5 tonnes) for every 10No. bags to be collected.

The BS5906:2005 Waste Management in Buildings – Code of Practice was considered to estimate the waste arising.

The total proposed area occupied by the Café, the Barber, the Medical Unit, the Office and the Betting Office is 241m^2. The area occupied by the crèche is 114 m^2.

A Waste Generation Calculation has been developed by O'Connor Sutton Cronin Consultant Engineers to estimate the volume of commercial waste to be generated for each commercial unit. This calculation takes into account the business type, floor area, sales area, EPA statistics on commercial waste, bye-laws and Regional and European recycling targets. The BS5906:2005 Code of Practice has also been taken into account. Table 6 below summarises the estimated weekly commercial waste generation. The actual volume may vary once the tenant has been finalised. The Tenants environmental practices, purchasing policies and waste management practices and policies may cause variance to these figures.

Table 6.2: Estimated Weekly Waste Generation

Unit	Size of Units (Square Meters)	Estimated Weekly Waste Generation (kilograms)
Crèche	114	798
Cafe	58	406
Barber	28	196
Medical Unit	59	413
Betting Office	66	462
Office	30	210
Total	355	2485

Minimum Required Bins = 2.5 (tonnes/ week)/0.5 (tonnes/ bin) = 5No. bins of 1100L.

Based on that estimate, the commercial bins unit requires a minimum of ***5No. bins*** of 1100L for commercial use. For safety, a total of 7No. of bins will be used for commercial bin storage.

6.4 Total waste capacity and bin area required

The site requires a minimum of ***18No. bins*** of 1100L for household and ***7No. bins*** of 1100L for commercial use.

The typical wheeled bin dimensions are 1.37m wide x 1.10m deep x 1.40m high.

The occupied area for 18No.bins = 18No.bins x 1.37 x 1.1 = ***27m^2***

The occupied area for 7No.bins = 7No.bins x 1.37 x 1.1 = ***11m²***

Table 6.3: Total waste capacity and bin area required

Waste type	Suggested quantity of bins	Total capacity suggested (litres)
Organic Brown bin 1100L	4	4 x 1100 = 4400 L
DMR Green bin 1100L	10	10 x 1100 = 11000 L
MNR Black bin 1100L	11	11 x 1100 = 12100 L
		27,500L (13Tonnes)

From table 6.3 the total area occupied by the 25No. of required bins is 38m^2. The total proposed bin storage area is 113m^2, which gives room for the user's movement including disable people and for an in10crease in capacity for following years.

7. PROPOSED OPERATIONAL WASTE MANAGEMENT INFRASTRUCTURE

The Sustainable Urban Housing: Design Standards for New Apartments Guidelines for Planning Authorities, published in December 2020, requires proper provisions for storing and collecting waste materials in apartment schemes. The guidance stipulates that refuse facilities shall be accessible to each apartment stair/ lift core and designed concerning the projected level of waste generation, types and quantities of receptacles required, and individual adequate temporary waste storage provision.

According to the BS5906:2005 Waste Management in Buildings – Code of Practice, "*Communal storage and bulk containers can be shared by domestic users, but not between domestic, commercial and industrial users. In circumstances where a development will generate household, commercial and/or industrial waste, the different containers should be clearly identifiable. Unless there will be one controlling agent for the commercial/industrial waste producers, provision should be made to allow each producer to store their waste in separate containers as each should make their own collection arrangements, which might be with different waste collectors. These containers should ideally be in separate storage areas.*"

The proposed development provides two designated bin holding areas at the ground surface level underneath blocks 01 and 02, as illustrated in Figure 7.1: Site Layout. These bin areas will be used to store residential and commercial waste bins pending collection by the waste contractor.

Figure 7.1: Site Layout

The two communal storage facilities will satisfy the three-bin system for collecting mixed dry recyclables, organic waste and residual waste. They will be adequately ventilated to

manage nuisance odours. The management company will arrange for collective waste transfer and subsequent weekly refuse and recycling collections from the surface level bin holding area. All waste receptacles presented for collection will be clearly identified as required by waste legislation. Waste will be presented for collection within the curtilage of the privately managed scheme and in a manner that will not endanger health, create a risk to traffic, harm the environment or create a nuisance through odours or litter.

7.1 Outline Layout

The bins require sufficient space to facilitate ergonomic access for residents and waste contractors. The outline layout of the bins stores is as follows in Figures 7.2a and 7.2b.

Figure 7.2: Outline Layout - Illustrative picture. Bins are out of scale.

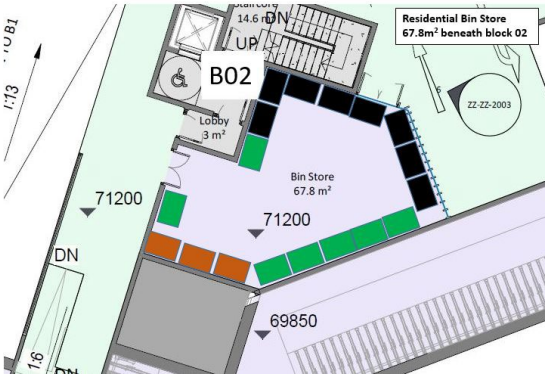

Figure 7.2a

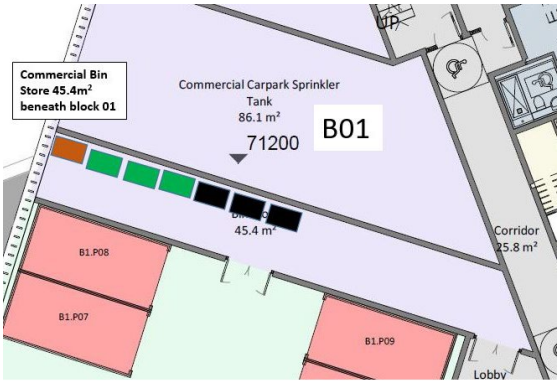

Figure 7.2b

Based on the estimated waste generation potential of the development once operational, the space available and a weekly collection frequency, the recommended bin requirement is 4No. Organic Brown bin, 10No. DMR Green bin and 11No. MNR Black bin units.

Figure 7.3: Typical wheeled bins

The required waste storage receptacles will vary in size, design, and colour depending on the appointed waste contractor. However, examples of typical receptacles in the WSA

are shown above. All waste receptacles used will comply with the IS EN 840 2012 standard for performance requirements of mobile waste containers.

The WSA should meet the following requirements:

- be fitted with a non-slip floor surface and have suitable lighting and mechanical ventilation;
- be easily accessible for people with limited mobility and kids;
- be provided with single phase power supply (suitable for a wet environment) for a baler, if utilised;
- have a hot and cold water supply; and
- have a floor sloped to a central foul drain to facilitate cleaning of bins.
- be located on a hard, level surface in a location that satisfies waste collection requirements.
- when located within a building their storage should allow for cleaning and limit the nuisance cause by noise and smells.
- where they are external to the buildling, waste and recycling areas should be screened, well ventilated, and be integrated by design with equivalent quality of material finish and external assembly as the rest of the façade.

The building management company will be required to maintain the bins and WSA in good condition.

All residents and commercial units should be made aware of the waste segregation requirements and waste storage arrangements

7.2 Segregation

Residents and commercial units will be required to segregate their waste into the following waste categories within their own units:

- DMR;
- MNR; and
- Organic food/green waste.

They will be required to provide and maintain appropriate waste receptacles within their units to facilitate segregation at source of these waste types. As required, they will need to bring these segregated wastes to the dedicated Waste Storage Area (WSA) located within the basement.

In addition, the following waste types should also be segregated (if generated):

- Glass (segregated as brown, green, clear);
- Batteries (both hazardous and non-hazardous);

- WEEE (both hazardous and non-hazardous);
- Printer cartridges/toners;
- Chemicals (paints, adhesives, resins, detergents, etc.);
- Light bulbs (Fluorescent Tubes, Long Life. LED bulbs etc.)
- Textiles (rags);
- Waste cooking oil (if it arises); and
- Furniture/bulky wastes.

These waste types should not be brought to the WSA.

Provision will be made for the collection of glass (separated by colour) in Bottle Banks. The total footprint of each of these banks is 4metres by 2metres wide. The location will be external, with sufficient access and clearance for servicing using a crane.

7.3 Waste Storage Area

A WSA has been allocated in the underground car park basement of the development, which will service the occupants of the apartments as well as the commercial facilities. Access to the WSA will be restricted to the residents and commercial units and personnel nominated by the building management company (and waste contractor if required).

It is proposed that all DMR, MNR and organic waste generated by the residents/commercial units will be brought to this WSA. The additional waste types that should not be brought to the WSA (if generated) include glass, batteries, WEEE, chemicals, waste cooking oil etc.

8. CONCLUSION

By implementing the procedures outlined in this Operational Waste Management Plan, a high level of recycling, reuse, and recovery will be achieved at the development. Where significant volumes of recyclable materials are being generated, these will be segregated at source to reduce waste contractor costs and ensure maximum diversion of materials from landfill, thus achieving the targets of the EMR Waste Management Plan 2015 – 2021 and the existing South Dublin County Council Development Plan 2016-2022 and the Draft South Dublin County Development Plan 2022 – 2028.