

OPERATIONAL WASTE & RECYCLING MANAGEMENT PLAN

FOR DEVELOPMENT

AT

PROPOSED PART 8 RESIDENTIAL DEVELOPMENT

BALALLY

SANDYFORD

DUBLIN 16



Prepared for

NDFA on behalf of Dun Laoghaire-Rathdown County Council

Prepared by

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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 on behalf of NDFA on behalf of Dun Laoghaire-Rathdown County Council ('The Applicant') in support of the proposed Balally development (hereafter referred to as the 'Proposed Development') within the Dun Laoghaire – Rathdown County Council.

The principal aim of this Strategy is to demonstrate how the Proposed Development has taken into account 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 Dun Laoghaire – Rathdown County Council targets for 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 Dun Laoghaire – Rathdown 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 (Dun Laoghaire Rathdown). 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) so as 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 includes 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 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 Legislation

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.

In September 2020, the Irish Government published 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' (WAPCE), 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, replacing the previous national waste management plan "A Resource Opportunity" (2012).

The WAPCE sets the direction for waste planning and management in Ireland up to 2025. This reorientates policy from a focus on managing waste to a much greater focus on creating circular patterns of production and consumption. Other policy statements of a number of public bodies already acknowledge the circular economy as a national policy priority.

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.

One of the first actions to be taken was the development of the Whole of Government Circular Economy Strategy 2022-2023 'Living More, Using Less' (2021) to set a course for Ireland to transition across all sectors and at all levels of Government toward circularity and was issued in December 2021. It is anticipated that the Strategy will be updated in full every 18 months to 2 years.

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 is a 1% decrease since 2020. This means that the average person living in Ireland generated 630 kg of municipal waste in 2021.
- Managed – 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 were 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 Dun Laoghaire – Rathdown County Council. The *EMR Waste Management Plan 2015 – 2021* is the regional waste management plan for the DLR area which was published in May 2015. This plan replaces the previous Dublin region plan due to changing National policy as set out in *A Resource Opportunity: Waste Management Policy in Ireland* and changes being enacted by the *Waste Framework Directive (2008/98/EC)*.

The regional plan sets out the following strategic targets for waste management in the region:

- A 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 2020; and
- Reduce to 0% the direct disposal of unprocessed residual municipal waste to landfill (from 2016 onwards) in favour of higher value pre-treatment processes and indigenous recovery practices.

Municipal landfill charges in Ireland are based on the weight of waste disposed. In the Leinster Region, charges are approximately €130 - €150 per tonne of waste which includes a €75 per tonne landfill levy introduced under the *Waste Management (Landfill Levy) (Amendment) Regulations 2015*. The *Dun Laoghaire – Rathdown County Council Plan 2022 – 2028* sets out a number of objectives and actions for the Dun Laoghaire – Rathdown area in line with the objectives of the regional waste management plan.

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

Objectives:

- **Policy Objective EI11: Resource Management:** *It is a Policy Objective to implement the Eastern-Midlands Region Waste Management Plan 2015-2021 and subsequent plans, in supporting the transition from a waste management economy towards a circular economy, to enhance employment and increase the value recovery and recirculation of resources. Underpinning this objective is the requirement to conform to the European Union and National Waste Management Hierarchy of the most favoured options for waste as illustrated below subject to economic and technical feasibility and Environmental Assessment. (Consistent with RPO 10.25 of the RSES)*
- **Policy Objective EI12: Waste Management Infrastructure, Prevention, Reduction, Reuse and Recycling (Circular Economy)**

approach) It is a Policy Objective:

- To support the principles of the circular economy, good waste management and the implementation of best international practice in relation to waste management in order for the County and the Region to become self-sufficient in terms of resource and waste management and to provide a waste management infrastructure that supports this objective.
 - To aim to provide a supporting waste management infrastructure in the County for the processing and recovery of waste streams such as mixed municipal waste in accordance with the proximity principle.
 - To provide for civic amenity facilities and bring centres as part of an integrated waste collection system in accessible locations throughout the County and promote the importance of kerbside source segregated collection of household and commercial waste as the best method to ensure the quality of waste presented for recycling is preserved.
 - To ensure any waste amenity facilities adhere to the Waste Regional Offices Waste Management Infrastructure siting guidelines.
 - To develop a County wide network of multi material recycling centres, bring centres and a re-use centre and to require the provision of adequately-sized recycling facilities in new commercial and large-scale residential developments, where appropriate.
 - To require the inclusion of such centres in all large retail developments to maximise access by the public.
 - To ensure new developments are designed and constructed in line with the Council's Guidelines for Waste Storage Facilities (an excerpt of which is contained in Appendix 6).
- **Policy Objective EI13: Hazardous Waste** It is a Policy Objective to adhere to the recommendations of the 'National Hazardous Waste Management Plan 2014-2020' and any subsequent plan, and to co-operate with other agencies, to plan, organise, authorise and supervise the disposal of hazardous waste streams, including hazardous waste identified during construction and demolition projects.

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.
 - 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 of 2015)
 - 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. 324/2011)
 - 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) as amended.

- Environmental Protection Agency 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 contractor 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) licence granted by the EPA. The COR/permit/licence 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 Dun Laoghaire – Rathdown County Council Byelaws 2019

The requirements set out in the Dún Laoghaire-Rathdown County Council (Segregation, Storage And Presentation Of Household And Commercial Waste) Bye-Laws, 2019 must be adhered to and, in particular, the requirement in the bye-laws to segregate waste into separate fractions to facilitate the collection of dry recyclables, organic kitchen/garden waste and residual waste in line with Waste Management (Food Waste) Amendment Regulations 2015 (S.I. 190 of 2015) and the European Union (Household Food Waste and Biowaste) Regulations 2015 (S.I. 191 of 2015), Waste Management (Food Waste) Regulations 2009 (S.I. 508/2009) and the Eastern-Midlands Regional Waste Management Plan 2015 – 2021.

Multi-user Buildings, Apartment Blocks

The Dún Laoghaire-Rathdown County Council (Segregation, Storage and Presentation of Household and Commercial Waste) Bye-Laws, 2019 require the following

Provisions affecting Multi-user Buildings, Apartment Blocks

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:

- separate receptacles of adequate size and number are provided for the proper segregation, storage and collection of recyclable kerbside waste, residual kerbside waste and food waste,
- the receptacles referred to in paragraph (a) 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 Dún Laoghaire-Rathdown County Council,
- receptacles for kerbside waste are presented for collection on the designated waste collection day,
- adequate access and egress onto and from the premises by waste collection vehicles is maintained.

Waste storage issues should be considered at the initial apartment design stage, taking full account of the Dún-Laoghaire Rathdown "Guidance Notes for Waste Management in Residential Developments", to ensure access for all (including people with disabilities) in a brightly lit, safe and well-signed area, spacious enough for easy manoeuvrability, good ventilation and ready access if required for the control of potential vermin.

Where storage is provided in a basement area, sufficient access and egress must be provided to enable receptacles to be moved easily from the storage area to an appropriate collection point within the curtilage of the development in accordance with Dún Laoghaire-Rathdown County Council (Segregation, Storage and Presentation of Household And Commercial Waste) Bye-Laws, 2019, Section 9.

2.7 Regional Waste Management Service Providers & Facilities

Various contractors offer waste collection services for the residential and commercial sector in the Dun Laoghaire – Rathdown County 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 the region. 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.

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.

2.8 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 proposed development includes:

- i. 62 no. apartment units in a 5-6 storey building over undercroft area, including 31 no. one bed units; 21 no. two bed units; and 10 no. three bed units;
- ii. 1 no. crèche facility of 297sqm with associated external play area at upper ground level.
- iii. Energy Centre at sixth floor level and an external plant area set back at fifth floor roof level.
- iv. Undercroft area at lower ground level comprising (a) 1 no. ESB substation (b) car and bicycle parking; (c) bin storage; (d) bulk storage area; and (e) supporting mechanical, electrical and water infrastructure.
- v. Landscaping works including provision of (a) communal open space; (b) new pedestrian and cycle connections linking Blackthorn Dive with Cedar Road; and (c) public realm area fronting onto Blackthorn Drive.
- vi. All associated site development works including (a) vehicular access off Cedar Road; (b) pedestrian and cycle access off Blackthorn Drive; (c) public lighting; (d) varied site boundary treatment; and (e) temporary construction signage.

Block	Number of Units			Total
	1-Bed	2-Bed	3-Bed	
Apartments	31	21	10	62
Total	31	21	10	62

Table 1.0 Residential Development Unit Mix

Services & Amenities	Floor Space m ²
Crèche	297 m ²
Total	297 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)
- Covid-19 Waste

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.

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 Bedrooms	85	5	85	175
3 Bedrooms	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 commercial area. 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 commercial area.

Land Use Class	Waste Storage Requirements	Waste Stream Ratios
Crèche	10L per m ² NIA	50: 50 DMR: Residual

Table 5.0 Commercial Area Waste Arising Calculations (Weekly)

4.0 ESTIMATED WASTE ARISING

The estimated quantum/volume of waste that will be generated from the residential units is based on BS 5906:2005.

The estimated quantum/volume of waste that will be generated from the residential units and commercial area has been determined based on the predicted occupancy of the units and is presented in table 6.0 and 7.0 below.

Waste Volume (L/week)					
Block	Organic Waste	Mixed Dry Recyclables	Mixed Municipal Waste	Glass	Total
Apartments	310	4,535	4,535	310	9,690

Table 6.0 Residential Waste Prediction (L/per week)

Non-Residential Floor Areas	Area (Sq.m)	Area (sq.) GIA	Area (sq.) (NIA)	DMR Recycling	Food Waste	MNR Residual	Glass	Total (L)
Crèche	297	273.2	228.69	1,143.45	5	1,143.45	5	2,296.9

Table 7.0 Commercial Waste Predictions (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 Dun Laoghaire Rathdown County 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.
- Dún Laoghaire Rathdown County Council, *Presentation and Storage of Waste Bye-Laws* (2019);
- DoEHLG, *Sustainable Urban Housing: Design Standards for New Apartments, Guidelines for Planning Authorities* (2018).
- Dún Laoghaire Rathdown - *Guidance Notes for Waste Management in Residential and Commercial Developments* February 2020.

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 Organic Waste is required for 87.5% of the total weekly arising.

Block	Number of Bins Required for a Weekly Collection			
	MNR	Organic	DMR	Glass
Apartments	4 x 1100L	1 x 240L	4 x 1100L	1 x 240L

Table 8.0 Residential Storage Requirements

Location	Number of Bins Required for a Weekly Collection			
	MNR	Organic	DMR	Glass
Crèche	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 Apartments

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 must be provided to enable receptacles to be moved easily from the storage area to an appropriate collection point within the curtilage of the development.

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. It is anticipated that DMR, MNR and organic waste will be collected on a weekly basis.

4.3.1 Apartments

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 residents will bring their waste and recycling to the waste storage area located on the lower ground level as per figure 1.0 and place the waste and recycling into the appropriate bins. It is recommended that the WSAs will have secure access with either key or fob to ensure only residents may place waste in the WSA.

On collection day, the bins will be brought from the bin store up to the waste collection point by the management company personnel. Once the bins are emptied the bins will be brought back down to the waste storage area.

Figure 1.0 Waste Storage Area



4.3.2 Crèche

Staff will be expected to take all waste arisings from the Crèche to the appropriate waste storage area. Staff will be required to segregate their waste into the following waste categories:

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

The staff will bring their waste and recycling to the waste storage area located on the lower ground level as per figure 1.0 above and place the waste and recycling into the appropriate bins. It is recommended that the WSAs will have secure access with either key or fob. On collection day, the bins will be brought from the bin store to the waste collection point. Once the bins are emptied the bins will be brought back down to the waste storage area.

4.4 Waste Collection Contractors

There are numerous private contractors that provide waste collection services in the Sandyford 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 WSAs by nominated waste contractors or facilities management depending on the agreement and will be brought to the temporary waste collection areas. 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 Dun Laoghaire – Rathdown Waste County 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 arising from the Proposed Development that will comprise other waste streams, such as WEEE, printer and toner cartridges, and fluorescent light tubes. Building maintenance will also give rise to materials such as paints and will be the responsibility of the management company to dispose of this waste.

4.6 Waste Storage Area Design

This area will be installed in accordance with Dún Laoghaire-Rathdown County Council (Segregation, Storage and Presentation of Household and Commercial Waste) Bye-Laws, 2019, Section 9.

A Common Waste Storage Areas design

- A defined pedestrian route from apartment areas to the nearest waste storage area
- Waste storage areas should not present any safety risks to users.
- A non-slip surface within the waste storage area
- Adequate ventilation to avoid the creation of stagnant air or foul odours.
- Appropriate sensor-controlled lighting.
- Suitable wastewater drainage points and water supply points should be installed in the bin storage area for cleaning and disinfecting.
- Provision of appropriate graphical signage to inform residents of their obligation to reduce waste, segregate waste and in the correct bin.
- Measures to control and monitor access to waste storage areas.
- Identification of space required for separate storage of waste segregated into general mixed waste, dry recyclable waste, organic/food waste, glass and in the case of larger developments, WEEE and hazardous waste, as appropriate, based on weekly collection of the main waste streams
- Worst case sizing of waste storage containers with reference to BS 5906:2005. Waste Management in Buildings – Code of Practice

Requirements within Residential Units

- Provision of sufficient space for the storage of general domestic waste, dry recyclable waste and organic/food waste.
- Each apartment shall include individual waste storage bins which shall be sized to allow their easy manual handling to be brought to the common waste storage area.

Initial Waste Management

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

Waste Collection system

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

5.0 Waste Collection Requirements

In line with BS 5906:2005 and Dun Laoghaire – Rathdown County Council Bye Laws 2019 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.

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 10.0 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, Dun Laoghaire – Rathdown 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.

Residential waste storage allows for a weekly (seven day) storage capacity for DMR, food and MNR (i.e. nonrecyclable).

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.