

**For: Portal Asset Holdings Ltd.
Port Road, Killarney**

PROPOSED RESIDENTIAL DEVELOPMENT



Preliminary Operational Waste Management Plan

May 2024



MHL & Associates Ltd.
Consulting Engineers



Document Control Sheet

Client	Portal Asset Holdings Ltd
Project Title	Proposed Residential Development at Port Road, Killarney, Co. Kerry
Document Title	Preliminary Operational Waste Management Plan
Document No.	18137HD-MHL-Doc08-POWMP-Rev02_Preliminary Operational Waste Management Plan
Job No.	18137HD

Rev	Status	Author	Reviewed By	Approved By	Date
--	Internal Draft	D. Murphy	---	---	16 th -April- '24
01	Client Draft	D. Murphy	D. Murphy	B. Murphy	23 rd -April- '24
02	Final Issue	D. Murphy	D. Murphy	B. Murphy	08 th -May- '24

M.H.L. & Associates Ltd.

Consulting Engineers

Unit 1b,
The Atrium,
Blackpool,
Cork.

Tel 021-4840214 Fax: 021-4840215

E-Mail: info@mhl.ie

Table of Contents

1	Introduction	2
2	Overview of Waste Management in Ireland	4
2.1	European and Irish Legal Context	4
2.2	Waste Policy in Ireland	5
2.3	Regional Waste Management Plans & Local Byelaws	5
3	Description of Project Site Location	7
3.1	Proximity of the Development to Recycling Facilities.....	9
4	Waste Generation and Storage	10
4.1	Waste Types Arising – Residential (Apartments, Duplexes and Houses)	10
4.2	Waste Types Arising – Creche Unit.....	10
4.3	List of Waste Codes.....	10
4.4	Waste Storage Arrangements – Apartments and Townhouse / Duplex	11
4.5	Apartments and Townhouse / Duplex Bin Compound Areas	12
4.6	Other Waste Materials	13
4.7	Recycling Rates & Targets.....	13
4.8	Bin Weight Limits & Dimensions.....	13
5	Waste Collection.....	14
6	Management System.....	15
6.1	Communication	15
6.2	Waste Management Contracts	15
6.3	Waste Storage Areas.....	15
7	Conclusion	17
8	References.....	18
9	Appendix	19

Table of Figures

Figure 3.1:	Site Location	7
Figure 3.2	Site Location – wider context.....	7
Figure 3.3:	Development Site Layout (c: DG Architects/ BSM)	8
Figure 3.4	Bring Banks and a Civic Amenity Recycling Centre (c: Repak).....	9
Figure 4.1	Waste codes and expected waste types.	11
Figure 9.1	Typical 240Litre bins	19
Figure 9.2	Typical 1100 Litre bins.....	19

1 INTRODUCTION

This Preliminary Operational Waste Management Plan (POWMP) has been carried out by MHL & Associates Ltd. on behalf of Portal Asset Holdings Ltd. to supplement an LRD planning application for a Large-scale Residential Development at Coollegrean, Port Road, Killarney, Co. Kerry. Portal Asset Holdings Ltd is seeking planning permission for the construction of a new housing development at the site.

Section 3 of this report provides a comprehensive project description, outlining a development comprising a mix of apartments, townhouse/duplex units, and various commercial units.

This plan is crafted to ensure that waste management during the operational phase of the proposed development aligns with prevailing legal and industry standards. Its primary objective is to maximize recycling, reuse, and recovery of waste, aiming to divert waste from landfill whenever feasible. The plan offers directives on the proper collection and transportation of waste. Additionally, it includes estimations regarding the types and quantities of waste anticipated from the proposed development during its operational phase, along with guidance for managing the waste effectively.

This OWMP has been developed to ensure that waste management during the operational phase of the proposed development adheres to current legal and industry standards. This includes compliance with the 'Waste Management Act 1996, as amended', and associated regulations such as the 'Protection of the Environment Act 2003', 'Litter Pollution Act 1997' and the 'Southern Region Waste Management Plan 2015-2021'.

In formulating this document, careful consideration has been given to the directives of national and regional waste policy, legislation, and other guidelines.

It's important to note that this plan will undergo review if planning permission is granted, and any significant changes in the proposed operational strategy will be subject to agreement with Kerry County Council during both the construction and operational stages of the project.

Specifically, this OWMP is geared towards furnishing a comprehensive plan for the storage, handling, collection, and transportation of waste generated at the development in a manner that safeguards human health and the environment, while also mitigating common waste-related nuisances such as litter or odours.

The OWMP is crafted to ensure that waste arising from the operational phase of the project is managed to promote waste prevention and encourage waste segregation in line with the Waste Hierarchy. The overarching philosophy prioritizes waste diversion from landfill and waste prevention. The plan entails estimating the types and quantities of waste anticipated from the proposed development during its operational phase, along with providing a strategy for managing various waste streams.

This OWMP aligns with the mandates of national and regional waste policies, legislation, and relevant guidelines. This plan has been prepared in accordance with best practice standards, local and national waste management requirements, including those of Kerry County Council and in particular, with the following documents:

- BS 5906:2005 Waste Management in Buildings – Code of Practice.

- | |
|---|
| <ul style="list-style-type: none">• Southern Region Waste Management Plan 2015 - 2021. |
| <ul style="list-style-type: none">• Kerry County Council Development Plan 2022 - 2028. |
| <ul style="list-style-type: none">• Draft County of Kerry (Segregation, Storage and Presentation of Household and Commercial Waste) Bye-Laws 2019 |
| <ul style="list-style-type: none">• DoHLGH, Sustainable Urban Housing: Design Standards for New Apartments, Guidelines for Planning Authorities (2022). |

2 OVERVIEW OF WASTE MANAGEMENT IN IRELAND

Operational Waste Management Plans are mandated in Ireland's planning process. The aim of this Preliminary Operational Waste Management Plan is to meticulously outline how waste generated during the operational phase of a proposed development will be handled. This encompasses provisions for waste storage, access to authorized waste collection services, and proximity to additional recycling facilities.

The proposed development falls within the jurisdiction of Kerry County Council's planning district. In formulating this plan, careful attention has been paid to the directives of Kerry County Council's Environment Department, as well as to national and regional waste policies, legislation, and other guidelines issued by Local Authorities.

2.1 European and Irish Legal Context

Waste legislation in Europe and Ireland is extensive and often intricate. The framework legislation establishes the legal framework for waste prevention and management in Ireland, covering aspects such as waste generation reporting, treatment, capacity, and setting mandatory targets for diversion, collection, and treatment.

At the core of waste regulations across Europe is the Waste Framework Directive (Directive 2008/98/EC), which was transposed into Irish law in 2011 through the European Communities (Waste Directive) Regulations 2011 (S.I. No. 126/2011). This directive promotes waste prevention, recycling, and processing, outlining a Waste Hierarchy that prioritizes waste prevention, preparation for re-use, recycling, and energy recovery, with disposal as the last resort. Member States are required to adopt waste management plans and waste prevention programs.

The new Waste Framework Directive (Directive (EU) 2018/851) was adopted by the EU in July 2018 and transposed into Irish law in July 2020. Part of the Circular Economy Package, this directive mandates EU Member States to enhance their waste management systems, improve resource efficiency, and ensure that waste is considered a valuable resource.

In Ireland, the primary legislation governing waste is the Waste Management Act 1996, as amended, and the Protection of the Environment Act 2003, as amended. The Waste Management Act, supplemented by subordinate regulations, addresses specific waste types such as food waste, waste electrical and electronic equipment, and batteries. Amendments to the Act, particularly through Waste Directive Regulations, align with new EU environmental initiatives and reinforce areas of concern.

A fundamental principle of European waste legislation, incorporated into Irish legislation including the Waste Management Act, is the principle of "Duty of Care." This principle holds waste producers responsible for their waste from generation to legal disposal, including the disposal method.

As it is often unfeasible for waste producers to physically transport waste to its final treatment destination, the services of waste contractors are typically enlisted for this purpose. Hence, it is essential for management companies overseeing residential developments to manage waste on-site in compliance with legal obligations. Additionally, they must engage authorized waste contractors to handle waste off-site, ensuring adherence to all legal requirements. This entails ensuring that waste contractors manage waste transportation, handling, and treatment in a manner that prevents any adverse environmental impacts.

Each appointed Waste Contractor must hold a valid waste collection permit issued by the National Waste Collection Permit Office (NWCPO). Moreover, waste treatment facilities must possess appropriate permits or licenses from the Local Authority or Environmental

Protection Agency to accept waste. The designated Management Company is responsible for verifying that all Waste Contractors possess the requisite authorizations.

2.2 Waste Policy in Ireland

Ireland has adopted waste management policies in addition to waste regulations. These policies have been detailed in a series of policy documents since 1998:

- Waste Management: Changing Our Ways (1998)
- Preventing and Recycling Waste: Delivering Change (2002)
- Taking Stock & Moving Forward (2004)
- National Strategy on Biodegradable Waste Management (2006)
- A Resource Opportunity – Waste Management Policy in Ireland (2012)
- A Waste Action Plan for a Circular Economy (2020)

The latest policy document, 'A Waste Action Plan for a Circular Economy: Ireland's National Waste Policy 2020-2025,' was published by the Department of Communications, Climate Action, and Environment in September 2020. This policy outlines several significant actions aimed at transitioning the current economic and waste system from linear to circular, including:

- Shifting towards a policy framework that incentivizes circularity and reduces resource wastage.
- Enhancing accountability for products placed on the market by imposing levies on non-recyclable waste and excessive packaging.
- Setting targets for recycling (65% by 2035), reducing food waste (by 50% by 2030), and limiting waste sent to landfill (no more than 10% by 2035).
- Strengthening awareness and education measures for households, with encouragement for the waste collection industry to participate.
- Replacing all Regional Waste Management Plans with a National Waste Management Plan for a Circular Economy.
- Standardizing bin color-coding (e.g., designating the general waste bin as a 'recovery' bin in black, the mixed dry recycling bin in green, and the organic waste bin as an 'organic waste recycling bin' in brown).

These policies reflect Ireland's commitment to sustainable waste management practices and the transition to a circular economy.

2.3 Regional Waste Management Plans & Local Byelaws

Kerry County Council is situated within the Southern Waste Region, encompassing the territories of ten local authority areas: Carlow, Clare, Cork County, Cork City, Limerick City & County, Kerry, Kilkenny, Tipperary, Waterford City & County, and Wexford. The Southern Region Waste Management Office (SRWMO), overseen by Limerick City & County Council and Tipperary County Council, manages the implementation of the Southern Region Waste Management Plan 2015 – 2021 (WMP). This plan, a statutory document guided by national and EU waste legislation, outlines a strategic vision aimed at reimagining waste management approaches. To realize this vision, the WMP establishes three specific and measurable performance targets:

- A 1% reduction per annum in the quantity of household waste generated per capita over the Plan's duration.
- Achieving a recycling rate of 50% of managed municipal waste by 2020.
- Eliminating direct disposal of unprocessed municipal waste to landfill (from 2016 onwards) in favour of advanced pre-treatment processes and local recovery practices.

The existing regional waste management plans will be succeeded by the National Waste Management Plan for a Circular Economy (NWMPCE), currently in the consultation/drafting stage, aligning with the principles outlined in the Waste Action Plan for a Circular Economy.

For apartment complexes, management companies are required to furnish separate receptacles of appropriate size and quantity for the proper segregation, storage, and collection of recyclable household kerbside waste and residual household kerbside waste. Additional receptacles are mandated for segregating, storing, and collecting food waste. The specific number of bins for this development is further elaborated in Section four of this report.

Section 10(h) of the Byelaws stipulates that "adequate access and egress onto and from the premises by waste collection vehicles is maintained" for waste collection. This requirement has been factored into the design of the development, ensuring sufficient access and egress for waste collection vehicles. Additionally, this Operational Waste Management Plan (OWMP) aligns with the objectives outlined in the Kerry County Development Plan 2022-2028.

3 DESCRIPTION OF PROJECT SITE LOCATION

The applicant’s land ownership consists of land holdings to the east of Port Road. The development proposes to connect onto Port Road with a proposed new development junction. The proposed site layout has been developed by Deady Gahan Architects. Please refer to the design team drawing pack submitted for further details.



Figure 3.1: Site Location

The figure below shows the site location in relation to the wider urban environs and the wider regional road network. The site is circa 1.0 km west of the town centre.

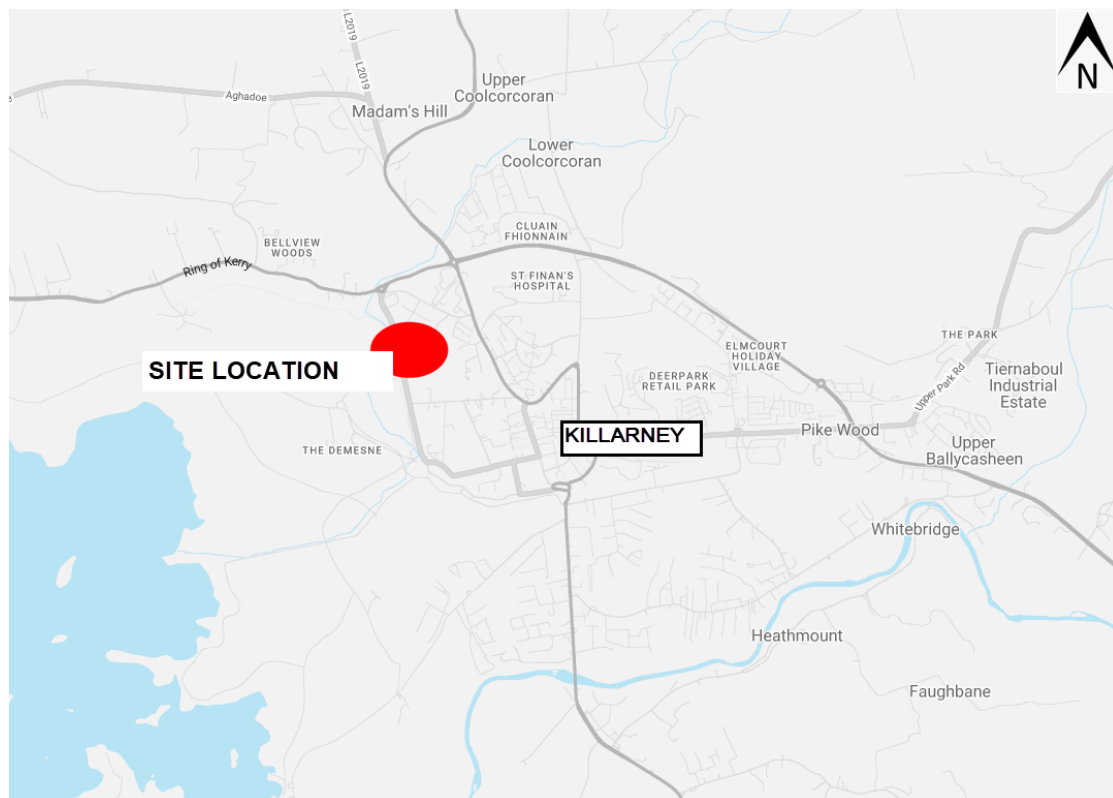


Figure 3.2 Site Location – wider context

The proposed development will consist of 224 no. units comprising 76 no. two storey houses (8 no. 2 bed units, 38 no. 3 bed units and 30 no. 4 bed units), 52 no. duplexes over 3 no. storeys (14 no. 1 bed units, 26 no. 2 bed units and 12 no. 3 bed units) and 96 no. apartments in 3 no. 4 no. storey buildings (16 no. 1 bed units and 80 no. 2 bed units), and a 2 no. storey creche (334 sq. m). Ancillary site works include public and communal open spaces, hard and soft landscaping, the relocation/undergrounding of ESB powerlines, wastewater infrastructure including foul pumping station, surface water attenuation, water utility services, public lighting, bin stores, bicycle stores, ESB substation, and all associated site development works.

Vehicular access to the development will be via a new entrance from Port Road. The proposed development includes upgrade works to Port Road, a pedestrian connection to Millwood Estate, and improvements to the stormwater network on St. Margaret's Road, as part of enabling infrastructure for the project.



Figure 3.3: Development Site Layout (c: DG Architects/ BSM)

3.1 Proximity of the Development to Recycling Facilities

The development site is positioned along Port Road. As depicted in the figure below, the site's proximity to local bring bank facilities is noted. Notably, the Killarney area boasts a significant civic amenity centre located in close proximity to the site, catering to the region's waste management needs. Additionally, various bring banks are dispersed across the region, facilitating glass bottle collection.

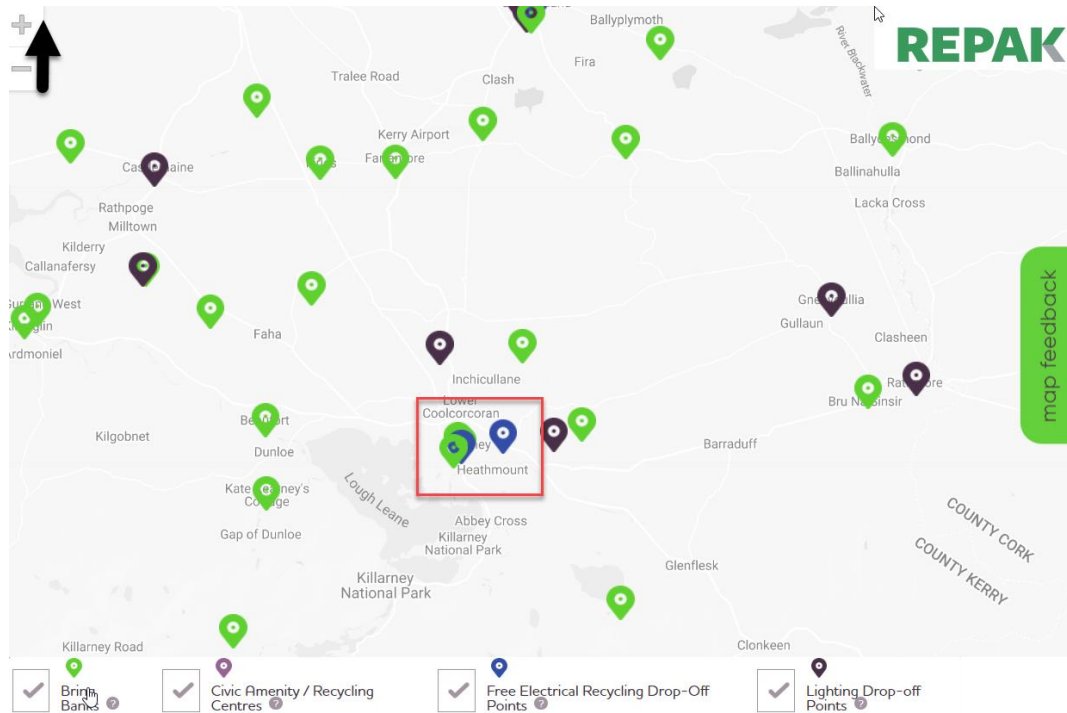


Figure 3.4 Bring Banks and a Civic Amenity Recycling Centre (c: Repak)

4 WASTE GENERATION AND STORAGE

4.1 Waste Types Arising – Residential (Apartments, Duplexes and Houses)

The anticipated waste types expected to be generated at the proposed residential properties include the following:

- i. Mixed Municipal Waste (MSW) or General Waste,
- ii. Dry Mixed Recyclables (DMR) - comprising cardboard, plastic packaging, aluminium cans, tins, paper, and Tetra Pak cartons,
- iii. Organic (food) waste, and
- iv. Glass.

Alongside these daily waste materials, there will be additional waste types produced in smaller quantities that will require separate management, including:

- Bulky wastes such as furniture, carpets, and mattresses,
- Glass items like bottles and jars,
- Waste Electrical and Electronic Equipment (WEEE),
- Batteries,
- Textiles like clothes or soft furnishings,
- Light bulbs or fluorescent tubes,
- Chemicals such as old medicines, paints, and detergents, and
- Waste oil, including cooking oil.

4.2 Waste Types Arising – Creche Unit

Such units are expected to generate waste types similar to those of residential units, including:

- Dry mixed recyclables,
- Mixed Municipal Waste (non-recyclable),
- Organic (food) waste, and
- Glass.

Additionally, there will be some commercial "office" type waste generated, such as paper, printer ink, batteries, and Waste Electrical and Electronic Equipment (WEEE).

4.3 List of Waste Codes

Ensuring the accurate classification of waste is essential to guaranteeing that its collection, transportation, storage, and treatment adhere to environmental and health protection standards and comply with legal regulations. The European Waste Catalogue was initially issued by the European Commission in 1994. Subsequently, in 2002, the Environmental Protection Agency (EPA) released a publication titled the 'European Waste Catalogue and Hazardous Waste List'. This publication has been superseded by the EPA's 'Waste Classification – List of Waste & Determining if Waste is Hazardous or Non-Hazardous', which came into effect on July 1, 2018.

The waste classification system, applicable across the European Union, serves as the foundation for various national and international waste reporting requirements. These include obligations related to waste collection permits, certificates of registration, waste facility permits, EPA Waste and IED licenses, and the EPA National Waste Database.

The EPA's publication 'Waste Classification – List of Waste & Determining if Waste is Hazardous or Non-Hazardous' (EPA, 2018) consolidates relevant legislation, facilitating waste generators in classifying waste as hazardous or non-hazardous and accurately assigning the corresponding List of Waste (LoW) entry.

Within this classification system, each type of waste is precisely defined by a code. The following figure provides the List of Waste (LoW) codes, previously referred to as European Waste Codes (EWC), for typical waste materials anticipated during the operation of the proposed development.

Waste Description	List of Waste Code
Mixed Municipal Waste	20 03 01
Mixed Dry Recyclables	20 03 01
Biodegradable Kitchen Waste	20 01 08
Glass	20 01 02
Bulky wastes	20 03 07
Waste electrical and electronic equipment*	20 01 35*21 01 36
Batteries and accumulators*	20 01 33*20 01 34
Textiles	20 01 11
Fluorescent tubes and other mercury containing waste*	20 01 21
Chemicals (solvents, pesticides, paints & adhesives, detergents, etc.) *	20 01 13/19/27-28/29-30
Plastic	20 01 39
Metals	20 01 40
Paper and Cardboard	20 01 01

Figure 4.1 Waste codes and expected waste types.

The British Standard BS5906:2005 Waste management in buildings — Code of practice offers guidance on waste generation for both domestic and commercial units, assisting in determining the necessary storage, containment, and equipment requirements for effective waste management. Utilizing calculations outlined in this British Standard, the waste storage capacity requirements for the apartments and townhouse/duplex units in this proposed development have been computed. The following figure provides a breakdown of the Schedule of Accommodation for apartments and townhouse/duplex units. The number of bedrooms is essential for completing the calculations of waste volumes generated as per BS 5906:2005 Waste management in buildings — Code of practice.

4.4 Waste Storage Arrangements – Apartments and Townhouse / Duplex

Each communal amenity space includes several dedicated shared waste stores to cater to the needs of the apartment and townhouse/duplex units. These bin stores are strategically positioned to ensure both security and convenient access for residents across the development.

Residents of apartments and townhouse/duplex units will be instructed to separate waste into the following categories:

- Municipal Solid Waste
- Dry Mixed Recyclables
- Glass
- Organic (Food) Waste

The layout and design of the apartments and townhouse/duplex units should ensure sufficient space for the temporary storage of segregated materials before they are deposited in communal waste storage areas. Adequate room is allocated in the kitchen area to accommodate a three-compartment bin for waste segregation at the source. In-sink macerators will not be provided in the apartments and townhouse/duplex units.

The Management Company will distribute leaflets to all new tenants, encouraging proper waste segregation, along with pictorial information detailing the waste streams suitable for each bin. Additionally, clauses supporting waste segregation targets will be included in relevant legal documents, such as tenancy agreements whenever feasible.

Several bin compound areas are designated for apartment and townhouse/duplex residents. It will be the residents' responsibility to transport their segregated waste to these areas and deposit it into appropriately labelled bins. Each bin will be clearly marked to indicate the types of waste allowed and prohibited, with pictorial labels for clarity.

The pathway leading to the bin compound area and the area itself will be wheelchair accessible, well-lit, and properly ventilated. Residents will have secure access to the bin compound area through the use of a pin code or fob key, preventing unauthorized access by the general public. Any additional household wastes such as bulky waste, WEEE, batteries, textiles etc. must be brought to a local recycling facility.

4.5 Apartments and Townhouse / Duplex Bin Compound Areas

The Department of Housing, Planning, and Local Government released guidelines in 2022 titled "Sustainable Urban Housing: Design Standards for New Apartments, Guidelines for Planning Authorities." These guidelines outline the requirements for the storage and collection of waste materials in apartment complexes. They have been carefully considered in the design of the waste compound area for this development.

The bin compounds for the residential apartments and townhouse/duplex units are strategically located throughout the development to serve each block effectively. These compounds will feature the following minimum provisions:

1. **Accessibility:** The bin compounds will be designed to be accessible for individuals with mobility impairments.
2. **Lighting:** Adequate lighting will be installed in the bin compounds, utilizing energy-saving fixtures operated by sensors to ensure safety and prevent waste disposal in poorly lit areas.
3. **Spillage & Drainage:** Non-slip surfaces will be implemented to prevent slips or falls, and the compounds will have proper drainage directed to the foul sewer system.
4. **Security:** Access to the bin compounds will be restricted to tenants and residents only, preventing unauthorized access by the general public.
5. **Ventilation:** Natural ventilation will be provided, with all vents ducted to external openings to prevent odour nuisances and ensure comfort for nearby habitable rooms.
6. **Signage:** Pictorial signage will be installed to inform residents and tenants about proper waste disposal practices for each bin. This signage will be provided by the appointed management company, as stipulated in their agreement.
7. **Environmental Nuisance:** The bin compounds will be enclosed to prevent environmental nuisances such as litter. Regular waste collections will be essential to prevent odour or vermin issues, with the management company responsible for ensuring adequate vermin control.
8. **Vehicular Access:** The development's design ensures safe access for waste collection vehicles to collect the bins, with vehicular access included in the traffic management plan.

Apartments and townhouses/duplex units will be equipped with shared bin stores containing a standard three-bin wheeler bin system.

4.6 Other Waste Materials

Occasional waste materials like bulky items, textiles, printer toner/cartridges, WEEE (Waste Electrical and Electronic Equipment), batteries, and other household hazardous wastes might be generated by residents of the residential units. It will be the responsibility of residents to store these wastes appropriately within their own dwellings and dispose of them properly at nearby bring centres or civic amenity facilities. Information regarding nearby recycling centres and bring banks can be accessed through the Repak.ie website. The management company will provide all occupants with information about the location of recycling facilities in the area.

4.7 Recycling Rates & Targets

Waste collection areas will be equipped with receptacles and signage aimed at achieving a waste composition rate of 30% non-recyclable municipal solid waste (MSW) and 70% recyclable waste streams. Recyclable waste streams will encompass dry mixed recyclables (including packaging, papers, cardboards, plastics, aluminium, metals, and tin), glass, and food waste.

All MSW collected will be transported for further recovery, with none directed to landfill. It will either undergo mechanical waste recovery or be consigned to a facility for energy recovery.

Upon assessment of bin usage by the appointed Management Company, MSW bins may be substituted with additional bins for food waste or mixed dry recyclables to enhance waste segregation at its source.

This bin ratio aligns with the European Commission's proposal to achieve a 70% plus reuse and recycling target for municipal waste by 2030. Furthermore, this waste collection plan offers a flexible waste management solution capable of accommodating future targets and legislative requirements.

4.8 Bin Weight Limits & Dimensions

The Kerry County Council stipulate that waste presented for collection must not be overloaded. Given the capacity of the bins provided, they will adhere to this requirement.

For the residential shared bin storage areas, typically 1,100-liter bins measuring approximately 1300mm x 1000mm x 1300mm, with a load capacity of no more than 240kg, are utilized for dry recyclables and mixed municipal waste. Additionally, 240-liter bins measuring 1100mm x 740mm x 660mm can be used for food waste and glass. All bins will be color-coded and labeled to prevent cross-contamination: green for dry recyclables, brown for organic waste, black for mixed non-recyclable waste, and blue for glass waste, aligning with the Waste Action Plan for Circular Economy.

Access to the waste storage area in the apartments and townhouse/duplex buildings will be restricted to residents and waste contractors. The area will not be visible to the public and will adhere to the requirements outlined in BS 5906:2005 – Waste Management in Buildings – Code of Practice.

Residents of the apartments and townhouse/duplex will likely be subject to a service management charge, which will include waste management fees.

5 WASTE COLLECTION

All waste collections must adhere to the conditions specified in the waste contractor's Waste Collection Permit for the region and comply with Local Authority by-laws and the Waste Management (Waste Collection Permit) Regulations 2007, as amended. Residents are legally obligated to utilize the waste management service and adhere to local By-Laws and Statutory Instruments regarding waste presentation for collection. Waste collection for a three-bin system service will commence from the time of first occupancy, regardless of the occupancy status of all dwellings.

A waste collection service will be accessible to all occupants from the commencement of occupancy, regardless of the occupancy status of all units. Waste collection vehicles will service the bins in all cases, and the emptied bins will be returned to the waste storage areas. Bins will never be left outside the development's curtilage. Access and egress of waste collection vehicles will adhere to the Traffic Management Plan for the facility, ensuring unimpeded movement throughout the development. Consideration has been given to BS 5906:2005 – Waste Management in Buildings – Code of Practice when determining vehicular access and egress for waste collection purposes.

The management company for the development will maintain records of collections from residential blocks, including reports from the facilities where waste is deposited. All bins in shared waste storage areas will be accessible for collection by the waste management contractor. It will be the responsibility of the management company to ensure that bins are accessible for collection and to assist waste management operatives in wheeling out and replacing bins during collections if necessary.

Management of the proposed crèche will be responsible for arranging their own waste collection, with bins accessible via the entrance to the side of the roadway for emptying and return to the bin compound.

6 MANAGEMENT SYSTEM

6.1 Communication

The designated management company will furnish written instructions to each tenant or occupant regarding waste separation, segregation, storage, and presentation prior to collection. This information package will also include details about nearby recycling facilities. Additionally, new occupants of properties within the development will receive these instructions through informational booklets.

It will be a contractual obligation for the appointed management company to ensure that all residents receive an information pack from the waste collection provider. This pack will outline the types of waste suitable for the provided bins in the waste compound, promoting active waste segregation, and clearly specify the collection schedule.

Furthermore, a contractual clause will be established with the waste collection provider to guarantee the provision of this information pack to new residents.

6.2 Waste Management Contracts

Any management contract for the development will include a requirement for sufficient budgets to cover all necessary waste management services. This encompasses the establishment of a three-bin system for the separate collection of organic waste, mixed dry recyclables, and general residual waste from the buildings.

Additionally, apart from the stipulations outlined, the appointed Management Company will be tasked with ongoing monitoring of the waste management system's performance. This entails regular visual inspections of the bin compound area to ensure that all collected bins are returned and that the area is well-maintained to prevent environmental disturbances. These inspections will also assess the condition of bins, with replacements arranged for any identified damage.

The contract with the waste management contractor will incorporate provisions for bin cleaning services or the replacement of clean bins as necessary. Furthermore, the Management Company will scrutinize annual waste reports from the appointed Waste Collection Company to verify compliance with European recycling targets. In cases of subpar recycling rates, informational leaflets containing recycling guidelines and legal obligations will be redistributed to all residents. If required, additional communication strategies will be implemented to promote effective waste management practices among tenants and owner-occupiers.

Contingency policies will be established to ensure uninterrupted service provision in unforeseen circumstances.

6.3 Waste Storage Areas

Adequate waste storage facilities will be provided to accommodate the storage, segregation, and recycling of waste for this residential development. Regarding the communal refuse storage provision, the refuse collection point will be accessible to both external collectors and residents, while also being secured against illegal dumping by non-residents.

The communal Waste Storage Areas (WSAs) provided will adhere to relevant design standards. For the duplex blocks, the WSAs will be situated externally with open access. WSAs located internally typically feature:

- A non-slip floor surface
- Effective ventilation to minimize odours.
- Sensor-controlled lighting with a minimum Lux rating of 400

- Accessibility for individuals with limited mobility
- Clear signage, including labels indicating allowable content on bins.
- Provision of water and power supply for power washers, with a sloped floor for runoff
- Secure doors enabling controlled access for both external collectors and residents.
- CCTV for monitoring purposes

The building management company and their appointed operator will be responsible for maintaining the communal waste storage areas in good condition.

To prevent unauthorized dumping, this Outline Construction Environmental Management Plan (CEMP) outlines the following measures that can be employed:

- **Site Security:** Adequate site security measures will be put in place to restrict access to the construction site, preventing unauthorized individuals or vehicles from entering the premises.
- **Signage:** Clearly visible signage will be erected around the site perimeter indicating that dumping is prohibited and outlining the consequences of unauthorized dumping.
- **Regular Inspections:** Routine inspections of the site will be conducted to identify any signs of unauthorized dumping. These inspections will be carried out by designated personnel trained to recognize and address any instances of illegal dumping.
- **Surveillance:** If deemed necessary, surveillance cameras may be installed strategically around the site to monitor activity and deter unauthorized dumping.
- **Prompt Removal:** Any waste materials found on-site that are suspected to be dumped without authorization will be promptly removed and disposed of properly by qualified personnel.
- **Reporting:** Any incidents of unauthorized dumping will be reported to the appropriate authorities for further investigation and action.

By implementing these measures, the CEMP aims to maintain the integrity of the construction site and ensure that waste disposal activities adhere to legal and environmental regulations.

7 CONCLUSION

In conclusion, the Operational Waste Management Plan (OWMP) sets forth a comprehensive strategy to achieve high levels of recycling, reuse, and recovery at the development site. By emphasizing source segregation of recyclables and organic waste, the plan aims to reduce the quantity of residual waste materials requiring off-site recovery or disposal. Furthermore, adherence to the guidelines outlined in the Sustainable Urban Housing: Design Standards for New Apartments ensures that the design of the waste storage area meets regulatory requirements and promotes efficient waste management practices.

Through the implementation of the OWMP, the development endeavours to align with European targets for waste management and contribute to the objectives outlined in the Southern Region Waste Management Plan 2015-2021. By prioritizing sustainable waste management practices, the project not only minimizes its environmental footprint but also fosters a culture of responsible resource utilization. Overall, the OWMP represents a proactive approach to waste management, reflecting our commitment to environmental stewardship and regulatory compliance.

The waste storage and collection strategy outlined in this plan ensures ample storage capacity for the estimated quantity of segregated waste. Designated areas for waste storage are tailored to accommodate the required receptacles as detailed in the plan.

Recyclable materials will be sorted at the source to minimize waste operator expenses and decrease the volume of material sent to landfills. Both communal and individual waste storage areas are appropriately sized and configured to meet the storage needs for segregated waste. Depending on the collection frequency, these areas will accommodate the necessary bins.

The layout of the proposed development allows unimpeded movement for refuse vehicles during waste collection from both private and communal Waste Storage Areas (WSAs)

8 REFERENCES

<ul style="list-style-type: none"> • A Resource Opportunity – Waste Management Policy in Ireland, Department of the Environment, Community and Local Government, 2012.
<ul style="list-style-type: none"> • European Communities (Waste Directive) Regulations 2011, S.I. No. 126/2011.
<ul style="list-style-type: none"> • European Waste Catalogue, European Commission, 2002.
<ul style="list-style-type: none"> • Litter Pollution Act 1997 as amended.
<ul style="list-style-type: none"> • Mobile Waste and Recycling Containers Part 1: Containers with 2 wheels with a capacity up to 400 l for comb lifting devices – Dimensions and design, British Standard, BS EN 840-1:2012, 2012.
<ul style="list-style-type: none"> • Mobile waste containers. Containers with four wheels with a capacity from 750 l to 1700 l with flat lid(s), for wide trunnion or BG-and/or wide comb lifting devices. Dimensions and design, British Standard, BS EN 840-4:1997, 1997.
<ul style="list-style-type: none"> • Municipal Waste Statistics for Ireland, EPA Waste Data Release, September 25th, 2020.
<ul style="list-style-type: none"> • National Strategy on Biodegradable Waste Management, Department Environment, Heritage, and Local Government, 2006.
<ul style="list-style-type: none"> • Preventing and Recycling Waste: Delivering Change, The Department of the Environment and Local Government, 2002.
<ul style="list-style-type: none"> • Protection of the Environment Act 2003 as amended.
<ul style="list-style-type: none"> • Southern Region Waste Management Plan 2015-2021.
<ul style="list-style-type: none"> • Sustainable Urban Housing: Design Standards for New Apartments, Guidelines for Planning Authorities issued under Section 28 of the Planning and Development Act, 2000 (as amended), Department of Housing, Planning and Local Government, December 2020.
<ul style="list-style-type: none"> • Taking Stock & Moving Forward, The Department of the Environment and Local Government, 2004.
<ul style="list-style-type: none"> • Waste Action Plan for a Circular Economy - Ireland's National Waste Policy 2020-2025, Department of the Environment, Climate and Communications, 2020.
<ul style="list-style-type: none"> • Waste Classification – List of Waste & Determining if Waste is Hazardous or Non-Hazardous, Environment Protection Agency, 2018.
<ul style="list-style-type: none"> • Waste Framework Directive (Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste).
<ul style="list-style-type: none"> • Waste Management Acts 1996, as amended.
<ul style="list-style-type: none"> • Waste Management (Collection Permit) Regulations 2007 (S.I. No. 820 of 2007) as amended.
<ul style="list-style-type: none"> • Waste Management in Buildings – Code of Practice, British Standard, BS 5906:2005, 2005.
<ul style="list-style-type: none"> • Waste Management: Changing Our Ways, The Department of the Environment and Local Government, 1998.

9 APPENDIX

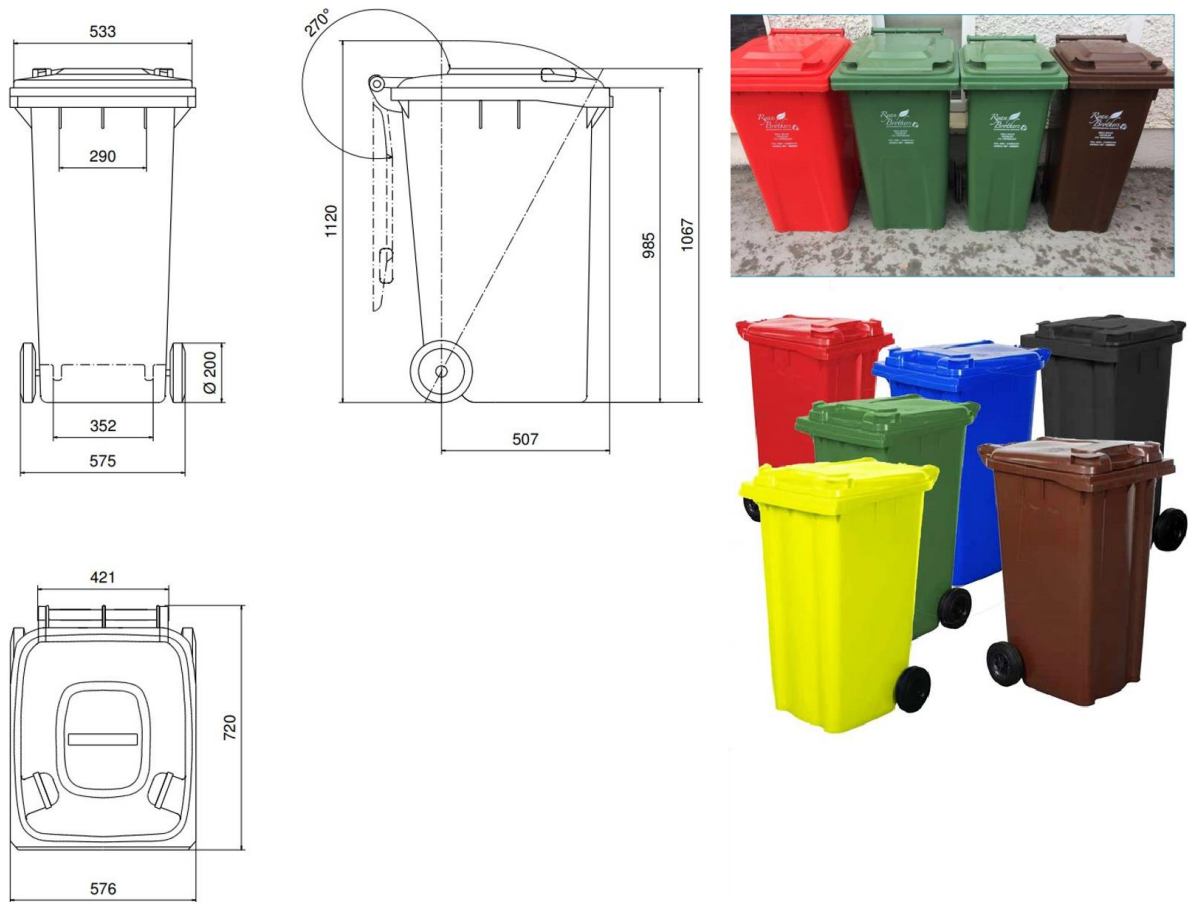


Figure 9.1 Typical 240 Litre bins

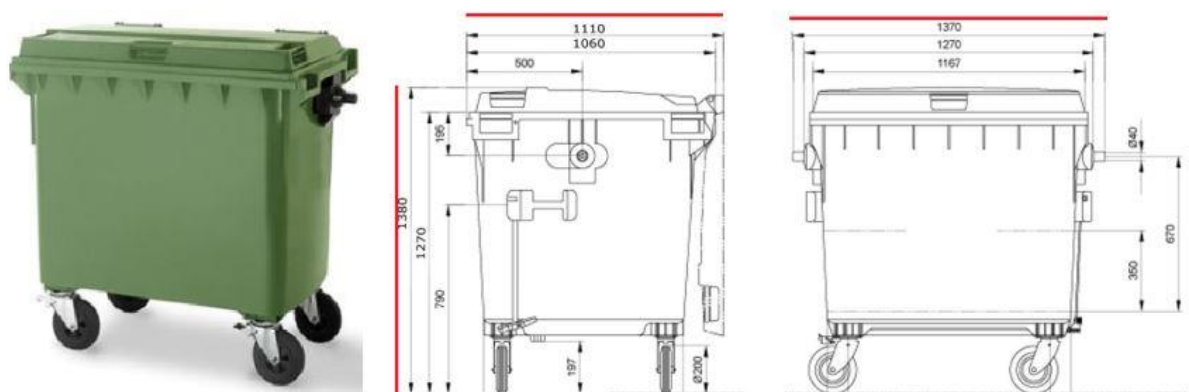


Figure 9.2 Typical 1100 Litre bins



OFFICES:

CORK
Unit 1B,
The Atrium,
Blackpool,
Cork.

KERRY
HQ Tralee,
Abbey Street,
Tralee,
Kerry

Tel: +353 (0) 214840214
E: info@mhl.ie

MHL & Associates Consulting Engineers
Registration Number
311279

Visit us at:
www.mhl.ie