REPORT



Operational Waste Management Plan

The Royal Liver Retail Park, Old Naas Road, Dublin 12 – Phase 2

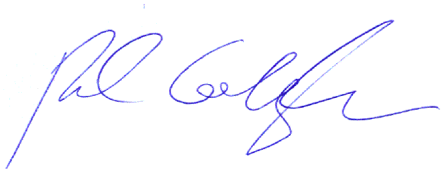
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1. INTRODUCTION

AWN Consulting, a Trinity Consultants Company, has prepared this Operational Waste Management Plan (OWMP) on behalf of The Land Development Agency (the Client) for a proposed amendment to a residential development. The development will consist of amendments to a previously permitted mixed-use development (DCC Reg. Ref.: 4238/19; ABP Ref. PL29S.307804, as amended by DCC Ref.: 4436/23 and DCC Reg. Ref.: 5050/26). The proposed amendments relate solely to the permitted Blocks B1, B2, C1, C2, D1 & D2 (identified as Phase 2). No amendments are proposed to any other permitted blocks.

This OWMP has been prepared to ensure that the management of waste during the operational phase of the Development is undertaken in accordance with the current legal and industry standards including, the *Waste Management Act 1996* (as amended) [1], the *Environmental Protection Agency Act 1992 (as amended), the Litter Pollution Act 1997* (as amended) [2], Litter Pollution Act 1997 (as amended) [3] Regional Waste Management Planning Offices, *the National Waste Management Plan for a Circular Economy 2024–2030* (2024) [4] and the Dublin City Council (DCC) *Dublin City Council (Storage, Presentation and Segregation of Household and Commercial Waste) Bye-Laws* (2018) [5]. In particular, this OWMP aims to provide a robust strategy for the storage, handling, collection and transport of waste generated at the site.

This OWMP aims to ensure maximum recycling, reuse and recovery of waste with diversion from landfill, wherever possible. The OWMP also seeks to provide guidance on the appropriate 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 and quantity of waste to be generated from the development during the operational phase and provides a strategy for managing the different waste streams.

At present, there are no specific national guidelines in Ireland for the preparation of OWMPs. Therefore, in preparing this document, consideration has been given to the requirements of national and regional waste policy, legislation and other guidelines.

2. OVERVIEW OF WASTE MANAGEMENT IN IRELAND

2.1 National Level

The Irish Government, Department of the Environment and Local Government (DELG) issued a policy statement in September 1998 entitled *'Changing Our Ways'* [6], 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 prepared by the Department of the Environment, Heritage and Local Government (DEHLG), '*Preventing and Recycling Waste – Delivering Change'* (2002) [7]. 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 DEHLG '*Making Irelands Development Sustainable – Review, Assessment and Future Action*' (2002) [8]. This document also stressed the need to decouple 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 DEHLG '*Taking Stock and Moving Forward' (2004)* [9]. 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, Department of Climate, Energy and the Environment (DCEE) 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 - Ireland's National Waste Policy 2020–2025* (2020) [10] (*WAPCE*), was prepared in response to the European Commissions '*European Green Deal'* (2019) [11] 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 Department of the Environment, Community and Local Government (DECLG) *"A Resource Opportunity – Waste Management Policy in Ireland"* (2012) [12].

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 and 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 DECC, '*Whole of Government Circular Economy Strategy 2022-2023 Living More, Using Less'* (2021) [13] 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. The latest version of this stratergy has been issued as of Feb 2026, by DCEE, *Whole of Government Circular Economy Strategy 2026-2028: Accelerating Action* (2026) [14], with the main purpose of this stratergy being to increase Ireland's circular material use rate by two percentage points per year.

The *Circular Economy and Miscellaneous Provisions Act (2022)* [15] was signed into law in July 2022. The Act underpins Ireland's shift from a "take-make-waste" linear model to a more sustainable pattern of production and consumption, that retains the value of resources in our economy for as long as possible and that will to significantly reduce our greenhouse gas emissions. The Act defines Circular Economy for the first time in Irish law, incentivises the use of recycled and reusable alternatives to wasteful, single-use disposable packaging, introduces a mandatory segregation and incentivised charging regime for commercial waste, streamlines the national processes for End-of-Waste and By-Products decisions, tackling the delays which can be encountered by industry, and supporting the availability of recycled secondary raw materials in the Irish market, and tackles illegal fly-tipping and littering.

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* [16] 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 2025 National Circular Economy and Waste Statistics web resource, which is the most recent study published, along with the national waste statistics web resource (2025) reported the following key statistics for 2023:

- *Ireland generated 3.13 million tonnes of municipal waste in 2023, relatively unchanged compared to the 3.19 million tonnes generated in 2022.*
- *Between 2016 and 2023, municipal waste increased from 2.7 million tonnes to 3.13 million tonnes.*
- *Some 1.3 million tonnes of municipal waste generated in Ireland was recycled in 2023, resulting in a recycling rate of 42%. This indicates that we face significant challenges to meet the upcoming EU recycling targets for 2025 to 2035.*
- *Of the municipal waste recycled in 2023, over 814,000 tonnes went for material recycling (approximately the same as 2022) and over 480,000 tonnes were treated by composting/anaerobic digestion (approximately the same as 2022 but up 37% on 2020).*
- *A rounded 1.3 million tonnes of Ireland's municipal waste went for incineration with energy recovery in 2023. This tonnage is 43% of municipal waste managed.*
- *Ireland's landfill rate for municipal waste managed was 14% in 2023. This is a 1% decrease from 2022's rate of 15%.*
- *There has been a steep decline in Ireland's landfill rate for municipal waste from over 80% in 2001. Ireland must reduce the share of municipal waste landfilled to 10% or less by 2035, which includes waste landfilled at each step along the waste treatment process in Ireland and abroad.*
- *An estimated 42% (1.2 million tonnes) of all municipal waste managed was exported abroad in 2023, an increase from the 39% in 2022. Of the waste exported, most went for recycling (49%) or energy recovery (36%) while 11% went for composting or anaerobic digestion.*

2.2 Regional Level

The Development is located in the Local Authority area of Dublin City Council (DCC).

The *Eastern Midlands Region (EMR) Waste Management Plan 2015 – 2021* [17], which previously governed waste management policy in the DCC area, has been superseded as of 2024 by the *NWMPCE 2024 – 2030*, the national waste management plan for Ireland.

The *NWMPCE* does not dissolve the three regional waste areas. The *NWCPCE* sets the ambition of the plan to have a 0% total waste growth per person over the life of the Plan with an emphasis on non-household wastes including waste from commercial activities and the construction and demolition sector.

This Plan seeks to influence sustainable consumption and prevent the generation of waste, improve the capture of materials to optimise circularity and enable compliance with policy and legislation.

The national plan sets out the following strategic targets for waste management in the country that are relevant to the development:

National Targets

- 1A. (Residual Municipal Waste) 6% Reduction in Residual Municipal Waste per person by 2030.
- 2A. (Contamination of Materials) 90% of Material in Compliance in the Dry Recycling Bin.
- 2B. (Material Compliance Residual) 10% per annum increase in Material Compliance in the residual bin. (90% by the end of 2030).
- 3A. (Reuse of Materials) 20kg Per person / year – Reuse of materials like cloths or furniture to prevent waste.

Municipal landfill charges in Ireland are based on the weight of waste disposed. In the Leinster Region, charges are approximately €140-160 per tonne of waste, which includes a €85 per tonne landfill levy introduced under the *Waste Management (Landfill Levy) Regulations* (as amended) (2015)[18]. Government of Ireland, *The Circular Economy (Waste Recovery Levy) Regulations* (2024) [19] will also incur a levy of €10 per tonne for waste accepted for recovery. This will include backfilling at authorised recovery sites and at municipal waste landfills.

At a local level, waste management is further guided by the *Dublin City Development Plan 2022 – 2028* [20], which sets out a number of policies and objectives for Dublin City in line with the objectives of the national climate action policy and emphasises the need to take action to address climate action across all sectors of society and the economy.

In the waste sector, policy on climate action is focused on a shift towards a 'circular economy' encompassing three core principles:

- Designing out waste and pollution;
- Keeping products and material in use; and
- Regenerating natural systems. Further policies and objectives can be found within the development plan.

The following policies and objectives are of relevance to the Proposed Development:

- *CA8 (f): minimising the generation of site and construction waste and maximising reuse or recycling.*
- *CA23: The Circular economy: To support the shift towards the circular economy approach as set out in 'a Waste Action Plan for a Circular Economy 2020 to 2025, Ireland's National Waste Policy, or as updated.*
- *CA24: To have regard to existing Best Practice Guidance on Waste Management Plans for Construction and Demolition Projects as well as any future updates to these guidelines in order to ensure the consistent application of planning requirements.*
- *SI27: Sustainable Waste Management: To support the principles of the circular economy, good waste management and the implementation of best practice in relation to waste management in order for Dublin City 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.*

- SI28: To prevent and minimise waste generation and disposal, and to prioritise prevention, recycling, preparation for reuse and recovery in order to develop Dublin as a circular city and safeguard against environmental pollution.
- *SI29: Segregated Storage and Collection of Waste Streams: To require new commercial and residential developments, to include adequate and easily accessible storage space that supports the separate collection of as many waste and recycling streams as possible, but at a minimum general domestic waste, dry recyclables and food waste as appropriate.*
- *SI30: To require that the storage and collection of mixed dry recyclables, organic and residual waste materials within proposed apartment schemes have regard to the Sustainable Urban Housing: Design Standards for New Apartments Guidelines for Planning Authorities 2018 (or and any future updated versions of these guidelines produced during the lifetime of this plan).*

Objectives:

- *SIO14 Local Recycling Infrastructure: To provide for a citywide network of municipal civic amenity facilities/ multi-material public recycling and reuse facilities in accessible locations throughout the city in line with the objectives of the circular economy and 15 minute city.*
- *SIO16 Eastern-Midlands Region Waste Management Plan: To support the implementation of the Eastern-Midlands Regional Waste Management Plan 2015–2021 and any subsequent plans in order to facilitate the transition from a waste management economy towards a circular economy.*

2.3 Legislative Requirements

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

- *Waste Management Act 1996* (as amended);
- *Environmental Protection Agency Act 1992* (as amended);
- *Litter Pollution Act 1997* (as amended);
- *Planning and Development Act 2000* (as amended) [21];
- *Circular Economy and Miscellaneous Provisions Act 2022.*

These Acts and subordinate Regulations transpose the relevant European Union Policy and Directives into Irish law.

One of the guiding principles of European waste legislation, which has in turn been incorporated into the Waste Management Act 1996 as amended and subsequent Irish legislation, is the principle of "*Duty of Care*". This implies that the waste producer is responsible for waste from the time it is generated through until its legal disposal (including its method of disposal). As it is not practical in most cases for the waste producer to physically transfer all waste from where it is produced to the final disposal area, waste contractors will be employed to physically transport waste to the final waste disposal site.

It is, therefore, imperative that the residents, commercial tenants and facilities management undertake on-site management of waste in accordance with all legal requirements and that the facilities management company employ suitably permitted / licenced contractors to undertake off-site management of their waste in accordance with all legal requirements. This includes the requirement that a waste contactor handle, transport and reuse / recover / recycle / dispose of waste in a manner that ensures that no adverse environmental impacts occur as a result of any of these activities.

A collection permit to transport waste must be held by each waste contractor which is issued by the National Waste Collection Permit Office (NWCPO). Waste receiving facilities must also be appropriately permitted or licensed. Operators of such facilities cannot receive any waste, unless in possession of a Certificate of Registration (COR) or waste permit granted by the relevant Local Authority under the Waste

Management (Facility Permit and Registration) Regulations 2007, as amended, or a Waste 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.

2.4 Dublin City Council Waste Management Bye-Laws

The DCC *Dublin City Council (Storage, Presentation and Segregation of Household and Commercial Waste) Bye-Laws* (2018) were brought into force in May 2019. These bye-laws repeal the previous Bye-Laws for the Storage, Presentation and Collection of Household and Commercial Waste. The bye-laws set a number of enforceable requirements on waste holders with regard to storage, separation and presentation of waste within the DCC administrative area. Key requirements under these bye-laws of relevance to the operational phase of the Proposed Development include the following:

- *Kerbside waste presented for collection shall not be presented for collection earlier than 5.00 pm on the day immediately preceding the designated waste collection day;*
- *All containers used for the presentation of kerbside waste and any uncollected waste shall be removed from any roadway, footway, footpath or any other public place no later than 10:00 am on the day following the designated waste collection day, unless an alternative arrangement has been approved in accordance with bye-law 2.3;*
- *Documentation, including receipts, is obtained and retained for a period of no less than one year to provide proof that any waste removed from the premises has been managed in a manner that conforms to these bye-laws, to the Waste Management Act and, where such legislation is applicable to that person, to the European Union (Household Food Waste and Bio-Waste) Regulations 2015; and*
- *Adequate access and egress onto and from the premises by waste collection vehicles is maintained.*

The full text of the bye-laws is available from the DCC website.

2.5 Regional Waste Management Service Providers and Facilities

Various contractors offer waste collection services for the residential sector in the DCC region. Details of waste collection permits (granted, pending and withdrawn) for the region are available from the NWCPO.

Only three municipal solid waste landfills remain operational in Ireland and all are operated by the private sector. There are a number of other licensed and permitted facilities in operation in the region including waste transfer stations, hazardous waste facilities and integrated waste management facilities. There are two existing thermal treatment facilities, one in Duleek, Co. Meath and a second in Poolbeg in Dublin.

There is a DCC civic amenity c. 1.7km to the south west of the development, which can be utilised by the residents of the development for certain household waste streams. This centre can accept paper, cans, cardboard, batteries, WEEE, plastics, textiles, glass and flat glass. There is also a bring bank 260m to the northeast where glass and textiles can be deposited.

A copy of all CORs and waste permits issued by the Local Authorities are available from the NWCPO website and all Waste Licenses issued are available from the EPA.

3. DESCRIPTION OF THE PROPOSED DEVELOPMENT

3.1 Location, Size and Scale of the Proposed Development

The development will consist of amendments to a previously permitted mixed-use development (DCC Reg. Ref.: 4238/19; ABP Ref. PL29S.307804, as amended by DCC Ref.: 4436/23 and DCC Reg. Ref.: 5050/26). The proposed amendments relate solely to the permitted Blocks B1, B2, C1, C2, D1 & D2 (identified as Phase 2). No amendments are proposed to any other permitted blocks.

- The proposed alterations result in an overall increase of 2 no. units increasing the total overall units from 1196 to 1198. The proposed amended residential development of Block B1, B2, C1, C2, D1 & D2 will consist of a total of 635 no. residential apartments (an increase from 633 no. as permitted), which includes 38 No. Studios, 269 No. 1-Bed, 288 No. 2-Bed- 4-Person and 40 No. 3-Bed- 5-Person, units as follows:
  - Alteration of Block B1 from a permitted 11-12-storey building providing for 90 no. apartment units to a 10-storey building providing for 107 no. apartments.
  - Alteration of Block B2 from a permitted 10 storey building providing for 90 no. apartment units to a 10-storey building providing for 89 no. apartments.
  - Alteration of Block C1 from a permitted 10-storey building providing for 171 no. apartment units to a 10-storey building providing for 144 no. apartments.
  - Alteration of Block C2 from a permitted 10-storey building providing for 89 no. apartment units to a 10-storey building providing for 98 no. apartments.
  - Alteration of Block D1 from a permitted 9-storey building providing for 87 no. apartment units to a 9-storey building providing for 123 no. apartments.
  - Alteration of Block D2 from a permitted 8-storey building providing for 106 no. apartment units to an 8-storey building providing for 74 no. apartments.
- The reconfiguration of internal layouts of each of the blocks has resulted in the minor shift in the block footprints. The permitted podium between Block B2 and Block C1 is removed with additional public realm and connection to the south proposed. The block amendments result in amendments to permitted communal amenity space with the removal of roof terraces on Blocks C1, C2 and D1 and amendment to roof terraces on Block B1 and B2.
- Façade modifications are proposed to respond to the revised internal layouts including minor relocation of windows, balconies etc. and a revised approach to the Naas Rd frontage.
- Alteration of the permitted uses and facade at ground floor level and removal of permitted BTR tenant amenity spaces located in Blocks B1, B2, C1 & C2 to provide for a ground floor level that includes:
  - Blocks B1-B2: 1 no. retail/café/restaurant unit, 1 no. café unit, 1 no. community unit, a creche (relocated from Block D1) and associated cycle parking, plant areas and entrances.
  - Block C1-C2-D1-D2: 1 no. retail unit, 2 no. retail/cafe/restaurant units, own door residential units, undercroft parking and associated cycle parking, plant areas and entrances.
- Alterations to the permitted undercroft and basement parking areas under Blocks B1, B2, C1, C2, D1 & D2 to include for alterations to permitted layouts of car parking, cycle parking, plant, waste stores and substation locations.
- Amendment of Condition 3 (a) of the parent permission (DCC Reg. Ref.: 4238/19; ABP Ref. PL29S.307804) relating to the Build to Rent (BTR) covenant, and its removal as it relates to Blocks B1, B2, C1, C2 & D1.

For the purposes of this OWMP, the term "commercial tenants" refers to the occupiers and operators of the supermarket, retail, retail/café/restaurant, café, community and crèche uses within the Proposed Development. The term "commercial units" refers to the premises occupied by these uses.

The location of the site is presented in Figure 3.1, while the site layout is presented in Figure 3.2.

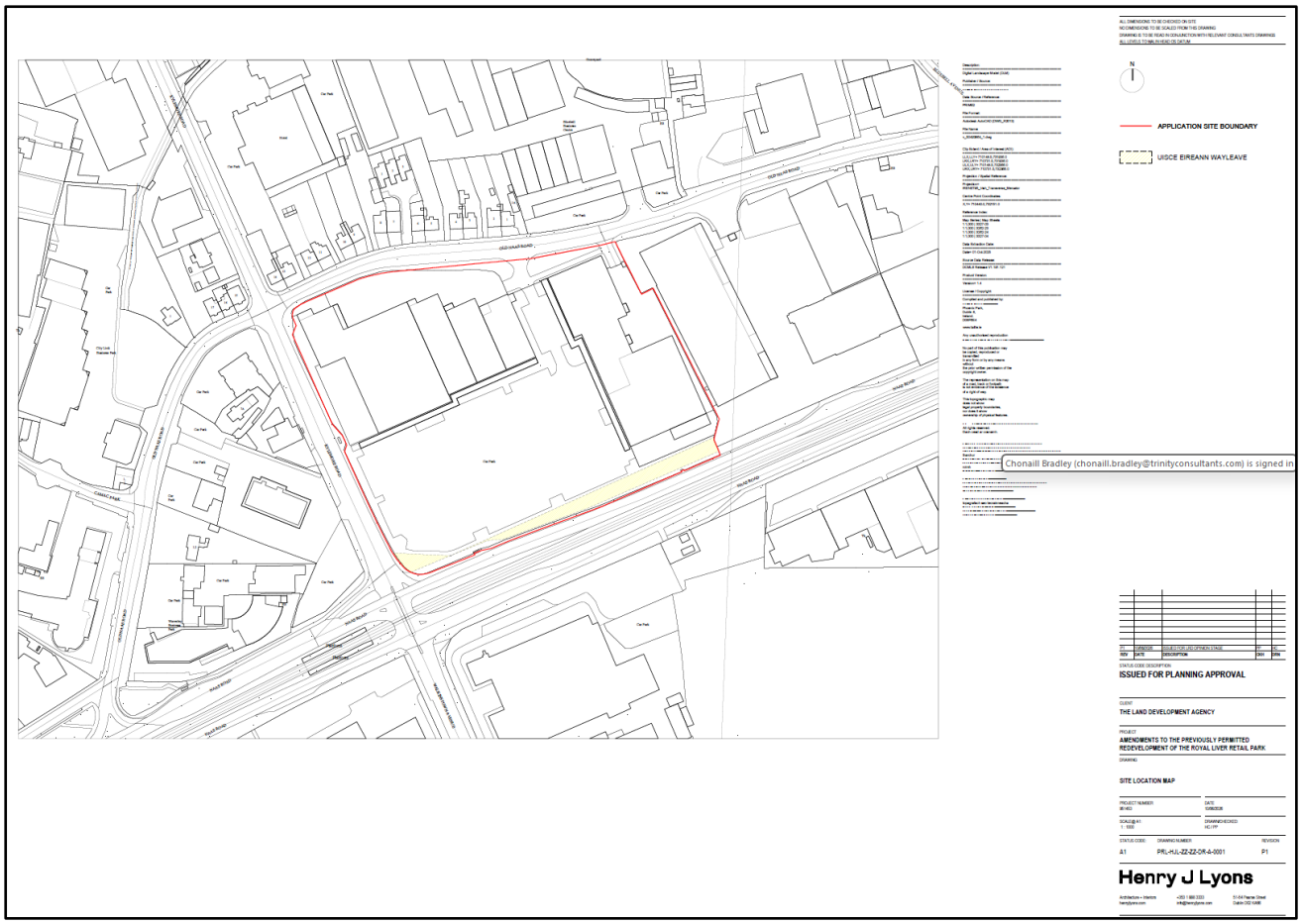


Figure 3.1 Proposed Development Site Location Plan (Source: Henry J Lyons, Drawing No: PRL-HJL-ZZ-ZZ-DR-A-0001, 2026)



Figure 3.2 Proposed Development Site Layout Plan (Source: Henry J Lyons, Drawing No: PRL-HJL-ZZ-ZZ-DR-A-0014A, 2026)

3.2 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), metal cans, plastic bottles, aluminium cans, tins and Tetra Pak cartons;
- Organic waste – food waste and green waste generated from internal plants / flowers;
- Glass; and
- Mixed Non-Recyclable (MNR) / General Waste.

In addition to the typical waste materials that will be generated at the Proposed Development on a daily basis, there will be some additional waste types generated less frequently / in smaller quantities which will need to be managed separately including:

- Drink Cans and Bottles (Deposit Return Scheme);
- 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.);

- Light bulbs;
- Textiles;
- Waste cooking oil (if any generated by the tenants or residents);
- Furniture (and, from time to time, other bulky wastes); and
- Abandoned bicycles.

Wastes will be segregated into the above waste types to ensure compliance with waste legislation and guidance while maximising the reuse, recycling and recovery of waste with diversion from landfill wherever possible.

3.3 List of Waste Codes

In 1994, the *European Waste Catalogue* [22] and *Hazardous Waste List* [23]were published by the European Commission. In 2002, the EPA published a document titled the *European Waste Catalogue and Hazardous Waste List* [24], which was a condensed version of the original two documents and their subsequent amendments. This document has recently been replaced by the EPA *Waste Classification – List of Waste and Determining if Waste is Hazardous or Non-Hazardous* [25] (2018). 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, CORs, permits and licences and EPA National Waste Database.

Under the classification system, different types of wastes are fully defined by a code. The List of Waste (LoW) code for typical waste materials expected to be generated during the operation of the Development are provided in Table 3.1 below.

Table 3.1 Typical Waste Types Generated and LoW Codes

Waste Material	LoW Code
Paper and Cardboard	20 01 01
Plastics	20 01 39
Metals	20 01 40
Mixed Non-Recyclable Waste	20 03 01
Glass	20 01 02
Biodegradable Kitchen Waste	20 01 08
Oils and Fats	20 01 25
Textiles	20 01 11
Batteries and Accumulators*	20 01 33* - 34
Printer Toner/Cartridges*	20 01 27* - 28
Green Waste	20 02 01
WEEE*	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

** Individual waste type may contain hazardous materials*

4. ESTIMATED WASTE ARISING

A waste generation model (WGM) developed by AWN, was used to predict waste types, weights and volumes arising from operations within the Development. The WGM incorporates building area and use and combines these with other data including from similar development operated by the applicant, along with Irish and US EPA waste generation rates.

The estimated quantum / volume of waste that will be generated from the residential units has been determined based on the predicted occupancy of the units. Residential amenity area space has been included within these calculations.

The estimated quantum / volume of waste that will be generated from the commercial units is based on floor area usage (m^2). The estimated waste generation for the Development for the main waste types is presented in Table 4.1 and 4.2

Table 4.1 Estimated Waste Generation for the Proposed Development

Waste Type	Waste Volume (m^3 / week)			
	Residential Block B1 (Combined)	Residential Block B2 (Combined)	Residential Block C1 (Combined)	Residential Block C2 (Combined)
Organic Waste	1.45	1.30	2.20	1.34
DMR	10.27	9.22	15.62	9.52
Glass	0.28	0.25	0.43	0.26
MNR	5.40	4.85	8.21	5.01
Total	**17.41**	**15.63**	**26.46**	**16.13**

Table 4.2 Estimated Waste Generation for the Proposed Development

Waste Type	Waste Volume (m^3 / week)			
	Residential Block D1 (Combined)	Commercial Block D (Combined)	Commercial Block B (Combined)	Commercial Block C (Combined)
Organic Waste	1.86	0.92	0.19	0.19
DMR	13.19	6.52	3.42	8.81
Glass	0.36	0.18	0.04	0.18
MNR	6.93	3.43	1.85	3.75
Total	**22.34**	**11.04**	**5.51**	**12.94**

BS5906:2005 Waste Management in Buildings – Code of Practice [26] has been considered in the calculations of waste estimates. AWN's modelling methodology is based on recently published data and data from numerous other similar developments in Ireland and is based on AWN's experience, it provides a more representative estimate of the likely waste arisings from the Proposed Development.

5. WASTE STORAGE AND COLLECTION

This section provides information on how waste generated within the Site will be stored and collected. 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 DCC. In particular, consideration has been given to the following documents:

- *BS 5906:2005 Waste Management in Buildings – Code of Practice*;
- The *NWMPCE* (2024);
- *Dublin City Council Development Plan 2022 – 2028* (Appendix 7);
- DCC *Dublin City Council (Storage, Presentation and Segregation of Household and Commercial Waste) Bye-Laws* (2018); and
- Department of Housing, Local Government and Heritage (DoHLGH), Sustainable Urban Housing: Design Standards for New Apartments, Guidelines for Planning Authorities (2025) [26].

Waste Storage Areas

Locations of all Waste Storage Areas (WSAs) can be viewed on the drawings submitted with the planning application under separate cover and in Appendix A of this report.

Residential

Five (5 no.) shared residential WSAs have been incorporated into the design of the Proposed Development to serve the residential units within Phase 2. The WSAs have been allocated on the basement floor level in close proximity to the cores.

Residential MNR, DMR and organic waste receptacles will be collected on twice weekly basis, while glass waste will be collected on a weekly basis.

Commercial

Two (2 no.) shared commercial WSAs have been incorporated into the design of the Proposed Development to serve the commercial units within Phase 2. The WSAs have been allocated, on the ground floor level in Block B2 and C2.

Commercial MNR, DMR, organic waste and glass receptacles will be collected on weekly basis.

Holding/Staging

One (1 no.) shared centralised waste holding / staging area has been incorporated into the design of the Proposed Development to serve Phase 2. The holding / staging area has been allocated on the eastern side of the development on the ground floor level and will facilitate the presentation and collection of waste.

The locations of all WSAs and the holding / staging area can be viewed in Appendix A of this OWMP.

Using the estimated waste generation volumes in Tables 4.1 and 4.2, above, the waste receptacle requirements for the residential and commercial units for MNR, DMR, organic waste and glass have been established for the WSAs.

Waste Storage Requirements

Estimated waste storage requirements for the operational phase of the Proposed Development are detailed in Table 5.1, below.

Table 5.1 Waste storage Requirements for the Proposed Development

Area/Use	Bins Required				
	MNR[1]	DMR[2]	Glass	Organic	Deposit Return Scheme
Residential Waste B1 and B2 (Combined)	5 x 1100 L	9 x 1100 L	3 x 240 L	6 x 240 L	N/A
Residential Waste C1 (Combined)	4 x 1100 L	7 x 1100 L	2 x 240 L	5 x 240 L	N/A
Residential Waste C2 (Combined)	3 x 1100 L	5 x 1100 L	1 x 240 L	3 x 240 L	N/A
Residential Waste D1 (Combined)	3 x 1100 L	6 x 1100 L	2 x 240 L	4 x 240 L	N/A
Residential Waste D2 (Combined)	2 x 1100 L	3 x 1100 L	1 x 240 L	2 x 240 L	N/A
Commercial Waste B (Combined)	3 x 1100 L	5 x 1100 L	1 x 240 L	1 x 240 L	N/A
Commercial Waste C (Combined)	4 x 1100 L	8 x 1100 L	1 x 240 L	1 x 240 L	10 x 1100 L

Note: 1 = Mixed Non-Recyclables
2 = Dry Mixed Recyclables

Waste storage receptacles as per Table 5.1 above (or similar appropriate approved containers) will be provided by the facilities management company in the WSA.

As outlined in the current Dublin City Development Plan, it is preferable to use 1,100 L wheelie bins for waste storage, where practical. However, in the case of organic and glass waste, it is considered more suitable to use smaller waste receptacles due to the weight of bins when filled with organic and glass waste. The use of 240 L bins, as recommended in Table 5.1, will reduce the manual handling impacts on the facilities management personnel and waste contractor employees.

The types of bins used will vary in size, design and colour dependent on the appointed waste contractor. However, examples of typical receptacles to be provided in the WSA are shown in Figure 5.1. All waste receptacles used will comply with the SIST EN 840-1:2020 and SIST EN 840-2:2020 as the standards for performance requirements of mobile waste containers, where appropriate.



Figure 5.1 Typical Waste Receptacles of Varying Size (240L and 1100L)

Receptacles for organic, mixed dry recyclable, glass and mixed non-recyclable waste will be provided in the shared WSAs prior to first occupation of the development i.e. prior to the first residential or commercial unit being occupied.

This Plan will be provided to each resident and tenant from first occupation of the development i.e. once the first residential or commercial unit is occupied. This Plan will be supplemented, as required, by the property management company with any new information on waste segregation, storage, reuse and recycling initiatives that are subsequently introduced. Training will be provided to the relevant staff on the implementation of the Plan.

5.1 Waste Storage – Residential Apartment Units

Residents will be required to segregate waste into the following main waste streams:

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

Provision will be made in all residential units to accommodate 3 no. bin types to facilitate waste segregation at source. An example of a potential 3 bin storage system is provided in Figure 5.2 below.



Figure 5.2 Example Three Bin Storage System to be Provided within Unit Design

Residents will be required to take their segregated waste materials to their designated WSA and deposit their segregated waste into the appropriate bins. The location of the WSAs are illustrated in the drawings submitted with the planning application under separate cover and in the appendices of this report.

Graphical signage will be erected by facilities management, above or on the bins to show exactly which wastes can be put in each. Bins/containers will also be colour coded to avoid cross contamination of the different waste streams.

Other waste materials such as DRS bottles, textiles, batteries, light bulbs, printer toner/cartridges, cooking oil, chemicals, bulky waste and WEEE may be generated infrequently by the residents. Residents will be required to identify suitable temporary storage areas for these waste items within their own units and dispose of them appropriately. Further details on additional waste types can be found in Section 5.4.

5.2 Waste Storage – Commercial Units

The commercial units, will be required to segregate waste within their own unit into the following main waste types:

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

The commercial units will be required to take their segregated waste materials to their designated WSA and deposit their segregated waste into the appropriate bins. The location of the WSA is illustrated in Appendix A of this report.

Suppliers for the commercial units will be requested by the tenants and staff to:

- Deliver goods in reusable containers;
- Minimise packaging; and
- Remove packaging after delivery where possible.

If any kitchens are allocated within the units, they will contribute an increased portion of the daily waste volume. Therefore, it is important that adequate provision is made for the storage and transfer of waste from these areas to the WSAs.

If kitchens are required it is anticipated that waste will be generated in kitchens throughout the day, primarily at the following locations:

- Food Storage Areas (i.e. cold stores, dry store, freezer stores and stores for decanting of deliveries);
- Meat Preparation Area;
- Vegetable Preparation Area;
- Cooking Area; and
- Dish-wash and Glass-wash Area.

Small bins will be placed adjacent to each of these areas for temporary storage of waste generated during the day. Waste will then be transferred from these areas to their designated WSAs.

All bins / containers in the commercial units and WSAs will be clearly labelled and colour coded to avoid cross-contamination of waste streams. Signage will be posted above or on the bins to indicate which wastes can be put in each.

Other waste materials such as DRS bottles, textiles, batteries, light bulbs, printer toner/cartridges, cooking oil, chemicals, bulky waste and WEEE may be generated infrequently by the tenants. The tenants will be required to store these waste types within their own unit and arrange collection with an appropriately licensed waste contractor. Facilities management may arrange collection, depending on the agreement. Further details on additional waste types can be found in Section 5.4.

5.3 Waste Collection

There are numerous private contractors that provide waste collection services in the Dublin City area. All waste contractors servicing the Proposed Development must hold a valid waste collection permit for the specific waste types collected. All waste collected must be transported to registered / permitted / licensed facilities only.

Bins from the development will be brought to the Phase 2 centralised waste holding area by facilities management to await collection by the waste contractor, immediately prior to collection. The locations for collection can be viewed on the drawings submitted with the planning application under separate cover and in the appendices of this report.

A trolley / tug or suitable vehicle may be required to convey the bins to and from the collection area. The facilities management and/or waste contractor will ensure that empty bins are promptly returned to the WSAs after collection / emptying.

Suitable access and egress have been provided to enable the bins to be moved easily from the WSAs to centralised waste holding area and to the waste collection vehicles on the appropriate days. Waste will be collected at agreed days and times by the nominated waste contractors.

All waste receptacles will be clearly identified as required by waste legislation and the requirements of the DCC *Waste Bye-Laws*. 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.

It is recommended that bin collection times are staggered to reduce the number of bins required to be emptied at once and the time the waste vehicle is on-Site. This will be determined during the process of appointment of a waste contractor.

5.4 Additional Potential Waste Materials

In addition to the typical waste materials that are generated on a daily basis, there will be some additional waste types generated from time to time that will need to be managed separately. A non-exhaustive list is presented below.

Deposit Return Scheme
Most drinks containers can be recycled via the deposit return scheme, such as bottles, cans and tins made from plastic, aluminium or steel can be returned once they are between 150ml and 3 litres in size and have the Re-turn logo on them.

At the shops you can either return the containers:

- Using a Reverse Vending Machine (RVM); or
- Manually in the shop.

If a shop does not have a RVM but they sell containers with the Re-turn logo, the shop may allow you to manually return containers in store, unless they have a take back exemption.

Locations of RVM machines can be found via the Re-turn website (www.re-turn.ie)

Green Waste
Green waste may be generated from gardens, external landscaping and internal plants / flowers. Green waste generated from landscaping of external areas will be removed by external landscape contractors. Green waste generated from gardens internal plants / flowers can be placed in the organic waste bins.

Batteries
A take-back service for waste batteries and accumulators (e.g. rechargeable batteries) is in place in order to comply with the S.I. No. 283/2014 - European Union (Batteries and Accumulators) Regulations 2014, as amended. In accordance with these regulations, consumers are able to bring their waste batteries to their local civic amenity centre or can return them free of charge to retailers which supply the equivalent

type of battery, regardless of whether or not the batteries were purchased at the retail outlet and regardless of whether or not the person depositing the waste battery purchases any product or products from the retail outlet.

The commercial units cannot use the civic amenity centre. They must segregate their waste batteries and either avail of the take-back service provided by retailers or arrange for recycling / recovery of their waste batteries by a suitably permitted / licenced contractor. The commercial units may arrange collection, depending on the agreement.

Waste Electrical and Electronic Equipment (WEEE)

The WEEE Directive (Directive 2002/96/EC) and associated Waste Management (WEEE) Regulations have been enacted to ensure a high level of recycling of electronic and electrical equipment. In accordance with the regulations, consumers can bring their waste electrical and electronic equipment to their local recycling centre. In addition, consumers can bring back WEEE within 15 days to retailers when they purchase new equipment on a like for like basis. Retailers are also obliged to collect WEEE within 15 days of delivery of a new item, provided the item is disconnected from all mains, does not pose a health and safety risk and is readily available for collection.

As noted above, the commercial units cannot use the civic amenity centre. They must segregate their WEEE and either avail of the take-back / collection service provided by retailers or arrange for recycling / recovery of their WEEE by a suitably permitted / licenced contractor. The commercial units may arrange collection, depending on the agreement.

Printer Cartridge / Toners

It is recommended that a printer cartridge / toner bin is provided in the commercial units, where appropriate. The commercial units will be required to store this waste within their unit and arrange for return to retailers or collection by an authorised waste contractor, as required.

Waste printer cartridge / toners generated by residents can usually be returned to the supplier free of charge or can be brought to a civic amenity centre.

Chemicals

Chemicals (such as solvents, paints, adhesives, resins, detergents, etc) are largely generated from building maintenance works. Such works are usually completed by external contractors who are responsible for the off-site removal and appropriate recovery / recycling / disposal of any waste materials generated.

Any waste cleaning products or waste packaging from cleaning products generated in the commercial units that are classed as hazardous (if they arise) will be appropriately stored within the unit. The commercial units' staff may arrange collection, depending on the agreement.

Any waste cleaning products or waste packaging from cleaning products that are classed as hazardous (if they arise) generated by the residents should be brought to a civic amenity centre.

Light Bulbs

Waste light bulbs (fluorescent, incandescent and LED) may be generated by lighting at the commercial units. It is anticipated that commercial units will be responsible for arranging for the off-site removal and appropriate recovery / disposal of these wastes. The commercial units may arrange collection, depending on the agreement.

Light bulbs generated by residents should be taken to the nearest civic amenity centre for appropriate storage and recovery / disposal.

Textiles
Where possible, waste textiles should be recycled or donated to a charity organisation for reuse. commercial units and residents will be responsible for disposing of waste textiles appropriately.

Waste Cooking Oil
If the commercial units use cooking oil, waste cooking oil will need to be stored within the unit on a bunded area or spill pallet and regular collections by a dedicated waste contractor will need to be organised as required. Under sink grease traps will be installed in any cooking space.

If the residents generate waste cooking oil, this can be brought to a civic amenity centre.

Furniture and Other Bulky Waste Items
Furniture and other bulky waste items (such as carpet, etc.) may occasionally be generated by the commercial units. The commercial units may arrange collection of any bulky waste, depending on the agreement. If residents wish to dispose of furniture, this can be brought a civic amenity centre.

Abandoned Bicycles
Bicycle parking areas are planned for the development. As happens in other developments, residents sometimes abandon faulty or unused bicycles, and it can be difficult to determine their ownership. Abandoned bicycles should be donated to charity if they arise or facilities management may arrange collection by a licensed waste contractor.

5.5 Waste Storage Area Design

The shared residential and commercial WSAs should be designed and fitted-out to meet the requirements of relevant design standards, including:

- Be fitted with a non-slip floor surface;
- Provide ventilation to reduce the potential for generation of odours with a recommended 6-10 air changes per hour for a mechanical system for internal WSAs;
- Provide suitable lighting – a minimum Lux rating of 400 is recommended;
- Be easily accessible for people with limited mobility;
- Be restricted to access by nominated personnel only;
- Be supplied with hot or cold water for disinfection and washing of bins;
- Be fitted with suitable power supply for power washers;
- Have a sloped floor to a central foul drain for bins washing run-off;
- Have appropriate signage placed above and on bins indicating correct use;
- Have access for potential control of vermin, if required; and
- Be fitted with CCTV for monitoring.

The building management company, tenants and residents will be required to maintain the resident bins and storage areas in good condition as required by the DCC Waste Bye-Laws.

5.6 Facility Management Responsibilities

It shall be the responsibility of the Facilities Management Company to ensure that all domestic waste generated by residents and commercial waste generated by commercial tenants is managed to ensure correct storage prior to collection by an appropriately permitted waste management company.

- Provision of a Waste Management Plan document, prepared by the Facilities Management Company to all residential and commercial units, which shall clearly state the methods of source waste

segregation, storage, reuse and recycling initiatives that shall apply to the management of the development;
- Provision and maintenance of appropriate graphical signage to inform residents and commercial tenants of their obligation to reduce waste, segregate waste and in the correct bin;
- Preparation of an annual waste management report for all residential units and commercial tenants;
- Designation of access routes to common waste storage areas to ensure safe access from the apartment units by mobility impaired persons;
- Provision of an appropriately qualified and experienced staff member, who will be responsible for all aspects of waste management at the development;
- Frequent inspection of waste storage areas and signing of a check list, which shall be displayed within the area; and
- Maintenance of a register, detailing the quantities and breakdown of wastes collected from the development and provision of supporting documentation by the waste collector to allow tracking of waste recycling rates.

5.7 Pest Management

A pest control operator will be appointed as required to manage pests onsite during the operational phase of the Proposed Development. All waste generated within the Proposed Development will be stored in closed waste receptacles within the units and the shared WSAs. Waste receptacles will be appropriately managed to prevent leaks, odours and pest infestations.

The shared WSAs will have access for the control of vermin, if required, and will be supplied with hot and cold water, drainage and appropriate cleaning facilities. The shared WSAs will be regularly inspected and cleaned to deter pests and prevent infestations.

6. SUMMARY AND CONCLUSION

In summary, this OWMP presents a waste strategy that addresses all legal requirements, waste policies and best practice guidelines and demonstrates that the required storage areas have been incorporated into the design of the Proposed Development.

Implementation of this OWMP will ensure a high level of recycling, reuse and recovery at the development. All recyclable materials will be segregated at source to reduce waste contractor costs and ensure maximum diversion of materials from landfill, thus contributing to the targets set out in *the NWMPCE*.

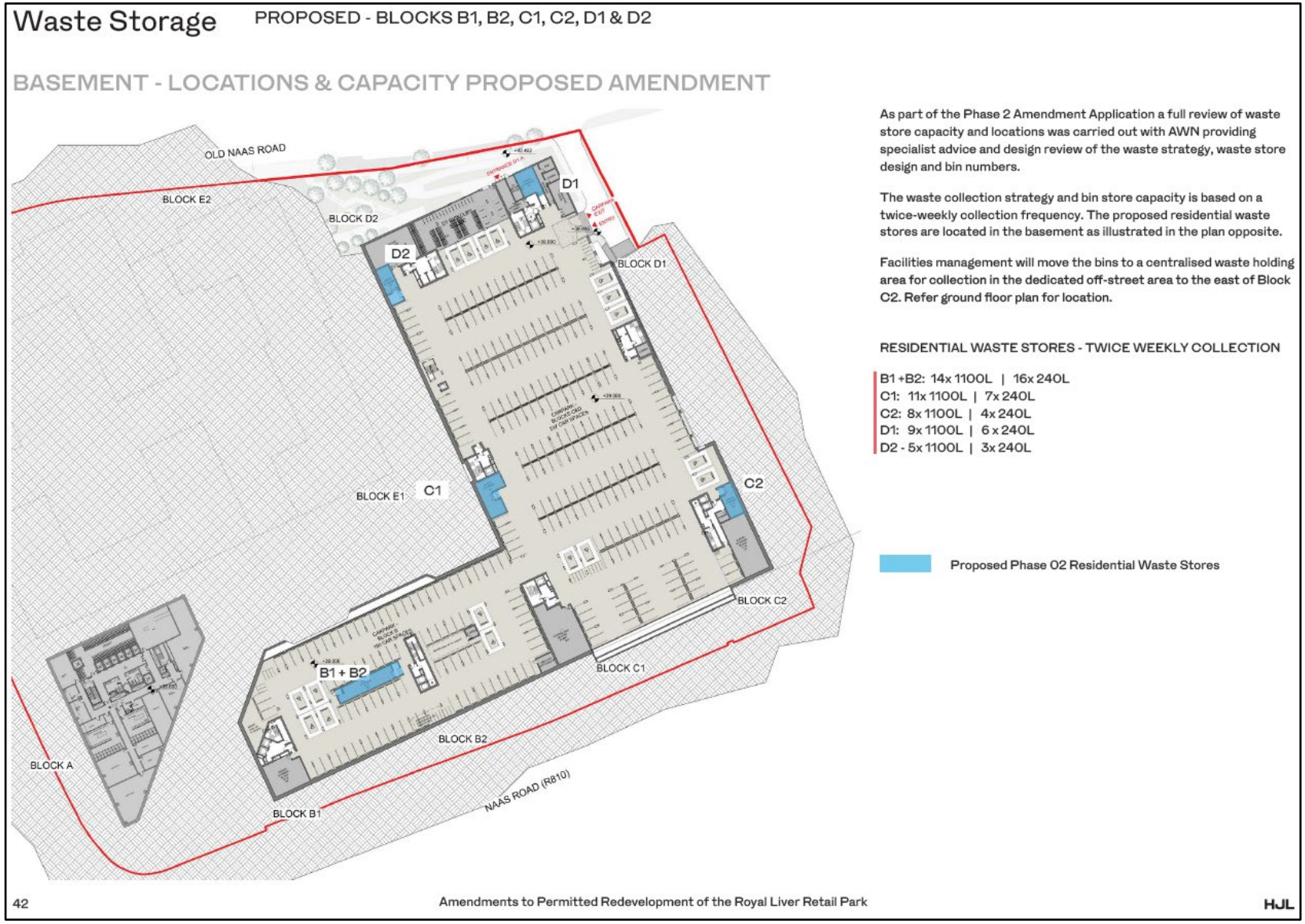
Adherence to this plan will also ensure that waste management at the development is carried out in accordance with the requirements of the *DCC Waste Bye-Laws.*

The waste strategy presented in this document will provide sufficient storage capacity for the estimated quantity of segregated waste. The designated areas for waste storage will provide sufficient room for the required receptacles in accordance with the details of this strategy.

7. REFERENCES

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26. *BS 5906:2005 Waste Management in Buildings – Code of Practice*.
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APPENDIX A. WASTE STORAGE AREAS



WASTE STORAGE PROPOSED - BLOCKS B1, B2, C1, C2, D1 & D2

GROUND FLOOR - LOCATIONS & CAPACITY PROPOSED AMENDMENT



The waste holding area east of Block C2 will serve as the centralised collection point for all residential and non-residential waste.

The supermarket waste store is located within the supermarket loading bay.

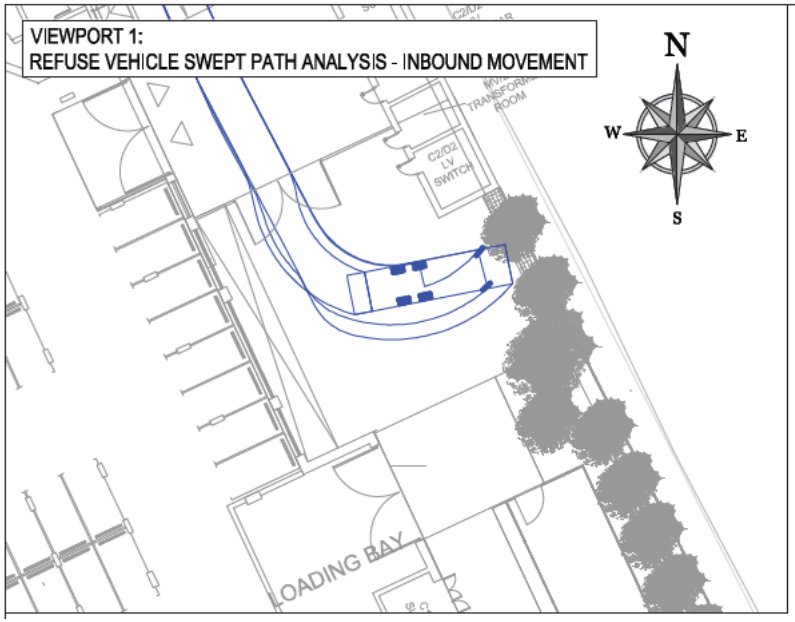
Non-residential uses in Blocks B1 & B2 have access to a ground floor waste room, to avoid long travel to the centralised waste holding area. Facilities management will move the bins to the collection point as required.

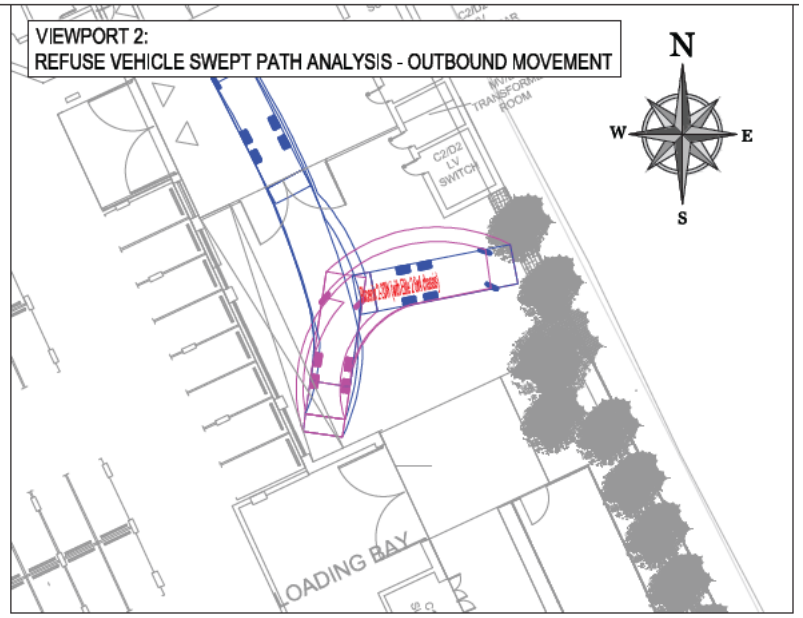
The Phase 02 centralised bin collection area will require space for 31 no. 1100L bins.

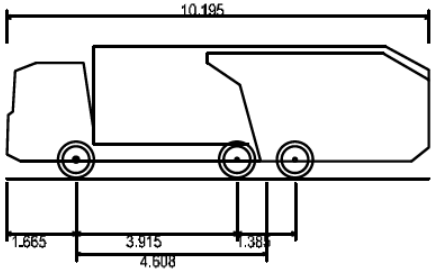
Non-resi waste store (Blocks B1 & B2)
8x 1100L bins | 2x 240L bins

Non-resi waste store (Blocks C1 & C2)
22x 1100L bins | 2x 240L bins

APPENDIX B. WASTE VEHCILE ROAD SWEEP







Phoenix 2-20W (with Elite 2 6x4 chassis)	
Overall Length	10.195m
Overall Width	2.530m
Overall Body Height	3.205m
Min Body Ground Clearance	0.410m
Track Width	2.500m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	9.000m