

**OPERATIONAL WASTE
MANAGEMENT PLAN FOR
A PROPOSED MIXED USE
DEVELOPMENT
AT
CHERRY ORCHARD,
DUBLIN 10**

Report Prepared For

The Land Development Agency

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1.0 INTRODUCTION

AWN Consulting Ltd. (AWN) has prepared this Operational Waste Management Plan (OWMP) on behalf of The Land Development Agency. The proposed development (GFA of c. 66,399sqm) involves the construction of a residential led mixed use scheme across 16 blocks contained within 9 buildings ranging in height from 4 to 15 storeys. The development includes the provision of 708no. residential apartments comprising 547no. cost rental and 161no. social / affordable units (28no. studio units, 263no. one-bed units, 368no. two-bed units and 49no. three-bed units, together with a convenience retail supermarket (2,523sq.m GFA), 7no. retail / commercial units (totalling 373sq.m GFA), community, arts and cultural spaces delivered across 13no. community and arts / cultural units (totalling 1,222sq.m GFA), and associated external events space and community gardens (1,157sq.m) and a childcare facility (672sq.m GFA) with associated external playing space (200sq.m) and all ancillary accommodation including sub stations, plant, refuse stores, cycle stores, and metre / comms rooms.

This OWMP has been prepared to ensure that the management of waste during the operational phase of the proposed development is undertaken in accordance with the current legal and industry standards including, the *Waste Management Act 1996* as amended and associated Regulations ¹, *Environmental Protection Agency Act 1992* as amended ², *Litter Pollution Act 1997* as amended ³, the '*Eastern-Midlands Region (EMR) Waste Management Plan 2015 – 2021*' ⁴, draft *National Waste Management Plan for a Circular Economy (NWMPCE) 2023* ⁵ and the Dublin City Council (DCC) '*Dublin City Council (Storage, Presentation and Segregation of Household and Commercial Waste) Bye-Laws*' 2018 ⁶. In particular, this OWMP aims to provide a robust strategy for the storage, handling, collection and transport of the wastes generated at site.

This OWMP aims to ensure maximum recycling, reuse and recovery of waste with diversion from landfill, wherever possible. This 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). This OWMP estimates the type and quantity of waste to be generated from the proposed 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.

2.0 OVERVIEW OF WASTE MANAGEMENT IN IRELAND

2.1 National Level

The Irish Government issued a policy statement in September 1998 titled as '*Changing Our Ways*' ⁷ which identified objectives for the prevention, minimisation, reuse, recycling, recovery and disposal of waste in Ireland. A heavy emphasis was placed on reducing reliance on landfill and finding alternative methods for managing waste. Amongst other things, *Changing Our Ways* stated a target of at least 35% recycling of municipal (i.e. household, commercial and non-process industrial) waste.

A further policy document '*Preventing and Recycling Waste – Delivering Change*' was published in 2002 ⁸. This document proposed a number of programmes to increase recycling of waste and allow diversion from landfill. The need for waste minimisation at source was considered a priority.

This view was also supported by a review of sustainable development policy in Ireland and achievements to date, which was conducted in 2002, entitled '*Making Ireland's Development Sustainable – Review, Assessment and Future Action*'⁹. This document also stressed the need to break the link between economic growth and waste generation, again through waste minimisation and reuse of discarded material.

In order to establish the progress of the Government policy document *Changing Our Ways*, a review document was published in April 2004 entitled '*Taking Stock and Moving Forward*'¹⁰. Covering the period 1998 – 2003, the aim of this document was to assess progress to date with regard to waste management in Ireland, to consider developments since the policy framework and the local authority waste management plans were put in place, and to identify measures that could be undertaken to further support progress towards the objectives outlined in *Changing Our Ways*.

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

In September 2020, the Irish Government published a 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'¹¹ (WAPCE), was prepared in response to the 'European Green Deal' which sets a roadmap for a transition to a new economy, where climate and environmental challenges are turned into opportunities, replacing the previous national waste management plan "A Resource Opportunity" (2012).

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

The policy document contains over 200 measures across various waste areas including circular economy, municipal waste, consumer protection 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 Whole of Government Circular Economy Strategy 2022-2023 'Living More, Using Less' (2021)¹² 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 Circular Economy and Miscellaneous Provisions Act 2022¹³ 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'¹⁴ detailing, among other things, estimates for household and commercial (municipal) waste generation in Ireland and the level of

recycling, recovery and disposal of these materials. The 2020 National Waste Statistics, which is the most recent study published, along with the national waste statistics web resource (December 2022) reported the following key statistics for 2020:

- **Generated** – Ireland produced 3,210,220 t of municipal waste in 2020. This is a 4% increase since 2019. This means that the average person living in Ireland generated 645 kg of municipal waste in 2020.
- **Managed** – Waste collected and treated by the waste industry. In 2020, a total of 3,180,620 t of municipal waste was managed and treated.
- **Unmanaged** –Waste that is not collected or brought to a waste facility and is, therefore, likely to cause pollution in the environment because it is burned, buried or dumped. The EPA estimates that 29,600 t was unmanaged in 2020.
- **Recovered** – The amount of waste recycled, used as a fuel in incinerators, or used to cover landfilled waste. In 2020, around 84% of municipal waste was recovered – an increase from 83% in 2019.
- **Recycled** – The waste broken down and used to make new items. Recycling also includes the breakdown of food and garden waste to make compost. The recycling rate in 2020 was 41%, which is up from 37% in 2019.
- **Disposed** – 16% of municipal waste was landfilled in 2020. This is an increase from 15% in 2019.

2.2 Regional Level

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

The *EMR Waste Management Plan 2015 – 2021* is the regional waste management plan applicable to the DCC administrative area, which was published in May 2015. Currently the EMR Waste Management Plan and other regional waste management plans are under review and the Regional Waste Management Planning Offices have issued a new Draft *National Waste Management Plan for a Circular Economy* (NWMPCE) in June 2023.

The regional plan sets out the following strategic targets for waste management in the region that are relevant to the proposed development:

- A 1% reduction per annum in the quantity of household waste generated per capita over the period of the plan;
- Achieve a recycling rate of 50% of managed municipal waste by 2020; and
- Reduce to 0% the direct disposal of unprocessed residual municipal waste to landfill (from 2016 onwards) in favour of higher value pre-treatment processes and indigenous recovery practices.

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

The Draft NWMPCE does not dissolve the three regional waste areas. The NWMPCE 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.

Proposed National Targets (draft NWMPCE)

1a. (Residual Municipal Waste) 1% Reduction / person /year – Waste decline for landfill or recovery by thermal treatment.

2. (Contamination of Materials) 90% of Material in Compliance – Contamination of recycling and food waste with other materials

3a. (Reuse of Materials) 10kg Per person / year – Reuse of materials like cloths or furniture to prevent waste.

The *Dublin City Development Plan 2022 – 2028*¹⁵ 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.

Policies:

- 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.*

The proposed development site is located within the Park West – Cherry Orchard area. The *Park West – Cherry Orchard Local Area Plan 2019*¹⁶ identifies one specific objective (INF7) in relation to waste management in the area, to ‘Ensure provision is

made for recycling facilities within the LAP area, and in particular new provision within Park West’.

2.3 Legislative Requirements

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

- Waste Management Act 1996, as amended;
- Environmental Protection Agency Act 1992 as amended;
- Litter Pollution Act 1997 as amended and
- Planning and Development Act 2000 as amended ¹⁷
- 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 the operator of the proposed development undertake on-site management of waste in accordance with all legal requirements and that the operator of the proposed development employ suitably permitted / licenced contractors to undertake off-site management of their waste in accordance with all legal requirements. This includes the requirement that a waste contractor handle, transport and reuse / recover / recycle / dispose of waste in a manner that ensures that no adverse environmental impacts occur as a result of any of these activities.

A collection permit to transport waste must be held by each waste contractor which is issued by the National Waste Collection Permit Office (NWCPO). Waste receiving facilities must also be appropriately permitted or licensed. Operators of such facilities cannot receive any waste, unless in possession of a Certificate of Registration (COR) or waste permit granted by the relevant Local Authority under the Waste Management (Facility Permit & Registration) Regulations 2007, as amended, or a Waste or Industrial Emissions (IE) 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.

2.3.1 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.

2.4 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.

As outlined in the regional waste management plan, there is a decreasing number of landfills available in the region. Only three municipal solid waste landfills remain operational 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.

The DCC Recycling Centre at Kylemore Park North, Ballyfermot, located c. 1.92km east of the development site, can be utilised by the residents of the proposed development for other household waste streams. This centre can accept paper, glass, rigid plastic, batteries, Tetra Pak, batteries, light bulbs, waste mineral oil and oil filters. There is also a bring bank located c. 1.75 km north east of the development site at BLCO Sports Centre, Ballyfermot, where glass and aluminium cans 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 / Industrial Emissions Licenses issued are available from the EPA.

3.0 DESCRIPTION OF THE DEVELOPMENT

3.1 Location, Size and Scale of the Development

The proposed development (GFA of c. 66,398sqm) involves the construction of a residential led mixed use scheme across 16 blocks contained within 9 buildings ranging in height from 4 to 15 storeys. The development includes the provision of 709no. residential apartments comprising 547no. cost rental and 162no. social / affordable units (29no. studio units, 264no. one-bed units, 368no. two-bed units and 48no. three-bed units, together with a convenience retail supermarket (2,523sq.m GFA), 7no. retail / commercial units (totalling 373sq,m GFA), community, arts and cultural spaces delivered across 13no. community and arts / cultural units (totalling 1,222sq.m GFA), and associated external events space and community gardens (1,157sq.m) and a childcare facility (672sq.m GFA) with associated external playing space (200sq.m) and all ancillary accommodation including sub stations, plant, refuse stores, cycle stores, and metre / comms rooms. The proposed development also

includes the provision of landscaped public open space of 6,123 sq. m. including a public plaza, play space, outdoor fitness trail, communal amenity space of 5,596 sq. m. Private open space for the apartment units is achieved through the provision of balconies or terraces for all individual apartments.

The proposed development will also involve the provision of sufficient car parking (including accessible car parking) and bicycle parking spaces at undercroft and surface level throughout the development. The development will also provide for all associated ancillary site development infrastructure including site clearance, boundary treatment, associated public lighting, internal roads and pathways, ESB substations, switch room, water tank rooms, storage room, meter room, sprinkler tank room, comms room, bin storage, bicycle stores, green roofs, hard and soft landscaping, play equipment, attenuation area, green and blue infrastructure including green roofs, PV panels and all associated works and infrastructure to facilitate the development including connection to foul and surface water drainage and water supply. Please refer to the statutory notices for full and complete description of the proposed development.

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), cardboard and plastic packaging, 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 development on a daily basis, there will be some additional waste types generated less frequently / in smaller quantities which will be managed separately including:

- Green / garden waste may be generated from internal plants / flowers and 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 residents or commercial tenants);
- 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 re-use, recycling and recovery of waste with diversion from landfill wherever possible.

3.3 European Waste Codes

In 1994, the *European Waste Catalogue*¹⁸ and *Hazardous Waste List*¹⁹ were published by the European Commission. In 2002, the EPA published a document titled the *European Waste Catalogue and Hazardous Waste List*²⁰, which was a condensed version of the original two documents and their subsequent amendments. This

document has been replaced by the EPA 'Waste Classification – List of Waste & Determining if Waste is Hazardous or Non-Hazardous' ²¹ (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 the EPA National Waste Database.

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

4.0 ESTIMATED WASTE ARISING

A waste generation model (WGM) developed by AWN has been used to predict waste types, weights and volumes expected to arise from operations within the proposed development. The WGM incorporates building area and use and combines these with other data, including 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, while the floor area usage (m²) has been used to estimate the waste arising from the commercial units (retail units, cultural/community units and crèche unit).

The estimated waste generation for the proposed development for the main waste types is presented in Tables 4.1, 4.2, 4.3 and 4.4, below.

Table 4.1 Estimated Waste Generation for the Proposed Development

Waste Type	Waste Volume (m ³ / week)			
	Block 1 Residential Units (Combined)	Block 1 Retail Units (Combined)	Block 2a Residential Units (Combined)	Block 2b Residential Units (Combined)
Organic Waste	0.34	0.68	0.43	1.63
DMR	2.40	13.44	2.94	11.13
Glass	0.07	0.37	0.08	0.31

MNR	1.26	5.60	1.71	6.47
Total	4.07	20.09	5.16	19.54

Table 4.2 *Estimated Waste Generation for the Proposed Development*

Waste Type	Waste Volume (m ³ / week)		
	Block 2a & 2b Retail Units and Community/Cultural Units (Combined)	Block 3 Residential Units (Combined)	Block 3 Community/Cultural Units (Combined)
Organic Waste	0.19	0.60	0.14
DMR	3.83	4.41	2.79
Glass	0.11	0.22	0.08
MNR	1.60	2.10	1.16
Total	5.73	7.33	4.17

Table 4.3 *Estimated Waste Generation for the Proposed Development*

Waste Type	Waste Volume (m ³ / week)		
	Block 5 Residential Units (Combined)	Crèche Unit (Block 5)	Block 6 & Block 7 Residential Units (Combined)
Organic Waste	1.14	0.07	2.81
DMR	8.32	2.61	19.91
Glass	0.22	0.01	0.54
MNR	3.96	1.16	10.47
Total	13.64	3.85	33.73

Table 4.4 *Estimated Waste Generation for the Proposed Development*

Waste Type	Waste Volume (m ³ / week)		
	Block 6 & 7 Community/Cultural Units (Combined)	Block 8 & Block 9 Residential Units (Combined)	Block 10 Residential Units (Combined)
Organic Waste	0.21	2.27	1.05
DMR	4.04	16.11	7.41
Glass	0.11	0.44	0.20
MNR	1.69	8.47	3.90
Total	6.05	27.29	12.56

BS5906:2005 *Waste Management in Buildings – Code of Practice*²² 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.

5.0 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,*
- *EMR Waste Management Plan 2015 – 2021;*
- *Dublin City Council Development Plan 2022 – 2028;*
- Dublin City Council (Storage, Presentation and Segregation of Household and Commercial Waste) Bye-Laws (2018); and
- *DoHLGH, Sustainable Urban Housing: Design Standards for New Apartments, Guidelines for Planning Authorities (2023)* ²³.

Waste Storage Areas

Thirteen (13 no.) Waste Storage Areas (WSAs) have been allocated in the design of this development. The locations of all Waste Storage Areas (WSAs) can be viewed on the drawings submitted with the planning application under separate cover and in Appendices 1 and 2 of this report.

Block 1

One (1 no.) WSA has been allocated for use by the residents of Block 1. This WSA is located at ground floor level in Block 1, adjacent to the residential bicycle store and residential stair core.

One (1 no.) WSA has been allocated for use by the retail units in Block 1. This WSA is located at lower ground floor level, in the delivery area adjacent to the large retail unit.

Block 2a and Block 2b

One (1 no.) WSA has been allocated for use by residents of Block 2a. This WSA is located at upper ground floor level in Block 2a, adjacent to the bicycle store.

One (1 no.) WSA has been allocated for use by residents of Block 2b. This WSA is located at upper ground floor level in Block 2b.

One (1 no.) WSA has been allocated for use by the retail units and community and cultural units in Blocks 2a and 2b. This WSA is located at upper ground floor level in Block 2b, adjacent to the residential bin store and bicycle store.

Block 3

One (1 no.) WSA has been allocated for use by residents of Block 3. This WSA is located at lower ground floor level in Block 3, adjacent to the bicycle store and community and cultural units.

One (1 no.) WSA has been allocated for use by the community and cultural units in Block 3. This WSA is located at lower ground floor level, adjacent to the covered bike stand.

Block 5

One (1 no.) WSA has been allocated for use by residents of Block 5. This WSA is located externally, adjacent to Block 5.

One (1 no.) WSA has been allocated for use by the creche unit. This WSA is located externally adjacent to Block 5, beside the bicycle store.

Blocks 6 & 7

One (1 no.) WSA has been allocated for use by residents of Block 6 and Block 7. This WSA is located externally between Blocks 6 & 7.

One (1 no.) WSA has been allocated for use by the community and cultural units in Blocks 6 & 7. This WSA is located externally between Blocks 6 & 7, adjacent to the bicycle store.

Blocks 8 & 9

One (1 no.) WSA has been allocated for use by residents of Block 8 and Block 9. This WSA is located externally between Blocks 8 & 9.

Block 10

One (1 no.) WSA has been allocated for use by residents of Block 10. This WSA is located externally adjacent to Block 10.

Using the estimated waste generation volumes in Tables 4.1, above, the waste receptacle requirements for MNR, DMR, organic waste and glass have been established for the WSAs. It is envisaged that DMR, MNR, organic and glass waste will be collected on a weekly basis.

Waste Storage Requirements

Estimated waste storage requirements for the operational phase of the proposed development are detailed in Table 5.1, below. The WSAs have been appropriately sized to accommodate the weekly waste requirements for waste receptacles.

Table 5.1 Waste storage requirements for the proposed development

Area/Use	Bins Required			
	MNR ¹	DMR ²	Glass	Organic
Block 1 Retail WSA	6 x 1100 L	13 x 1100 L	2 x 240 L	3 x 240 L
Block 1 Residential WSA	1 x 1100 L 1 x 240 L	2 x 1100 L 1 x 240 L	1 x 240 L	2 x 240 L
Block 2a Residential WSA	2 x 1100 L	3 x 1100 L	1 x 240 L	2 x 240 L
Block 2b Residential WSA	5 x 1100 L	10 x 1100 L	2 x 240 L	7 x 240 L
Block 2a & Block 2b Retail Units and Community/Cultural WSA (Combined)	2 x 1100 L	4 x 1100 L	1 x 240 L	1 x 240 L
Block 3 Residential WSA	2 x 1100 L	4 x 1100 L	1 x 240 L	3 x 240 L
Block 3 Community/Cultural WSA	1 x 1100 L 1 x 240 L	3 x 1100 L	1 x 240 L	1 x 240 L
Block 5 Residential WSA	4 x 1100 L	8 x 1100 L	1 x 240 L	5 x 240 L
Creche WSA (Block 5)	2 x 1100 L	3 x 1100 L	1 x 240 L	1 x 240 L
Block 6 & Block 7 Residential WSA (Combined)	10 x 1100 L	19 x 1100 L	3 x 240 L	12 x 240 L
Block 6 & Block 7 Community/Cultural WSA (Combined)	2 x 1100 L	4 x 1100 L	1 x 240 L	1 x 240 L

Area/Use	Bins Required			
	MNR ¹	DMR ²	Glass	Organic
Block 8 & Block 9 Residential WSA (Combined)	8 x 1100 L	15 x 1100 L	2 x 240 L	10 x 240 L
Block 10 Residential WSA (Combined)	4 x 1100 L	7 x 1100 L	5 x 240 L	1 x 240 L

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

The waste receptacle requirements have been established from distribution of the total weekly waste generation estimate into the holding capacity of each receptacle type. Waste storage receptacles as per Table 5.1, above, (or similar appropriate approved containers) will be provided by the operator of the proposed development in the WSAs.

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 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 WSAs 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 standards for performance requirements of mobile waste containers, where appropriate.



Figure 5.1 Typical waste receptacles of varying size (240 L and 1100 L)

Receptacles for organic, DMR, glass and MNR waste will be provided in the WSAs prior to first occupation of the development i.e. prior to the first residential unit or commercial unit being occupied.

This Plan will be provided to each resident and commercial tenant from first occupation of the development i.e. once the first residential unit 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.

5.1 Waste Storage – Residential Units

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

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

Residents will be required to take their segregated waste materials to their designated communal WSA and deposit their segregated waste into the appropriate bins. The locations of the residential WSAs are illustrated in the drawings submitted with the planning application under separate cover, and in Appendices 1 and 2 of this report.

Each bin / container in the residential WSAs will be clearly labelled and colour coded to avoid cross contamination of the different waste streams. Signage will be posted above or on the bins to show exactly which waste types can be placed in each bin. Access to the residential WSAs will be restricted to authorised residents, operator of the proposed development and waste contractors by means of a key or electronic fob access.

Other waste materials such as textiles, batteries, printer toner/cartridges, waste cooking oil 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 (Retail, Crèche and Community/Cultural Units)

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

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

The commercial tenants 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 commercial WSAs are illustrated in the drawings submitted with the planning application under separate cover.

Suppliers for the commercial tenants should be requested by the tenants to make deliveries in reusable containers, minimize packaging or remove any packaging after delivery, where possible, to reduce waste generated by the proposed development.

If any kitchens are allocated in unit area, this will contribute a significant portion of the volume of waste generated on a daily basis, and as such it is important that adequate provision will be 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;
- Dish-wash and Glass-wash Area; and
- Bar 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 each of these areas to the appropriate waste store within their unit.

All bins / containers in the commercial tenants' areas as well as in the commercial WSAs will be clearly labelled and colour coded to avoid cross contamination of the different waste streams. Signage will be posted above or on the bins to show exactly which wastes can be put in each.

Other waste materials such as textiles, batteries, lightbulbs, WEEE, cooking oil and printer toner / cartridges will be generated less frequently. 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 proposed development will be brought to a collection area by the waste contractor prior to collection. The locations of the collection areas for each WSA are shown in Appendix 2 of this report. Bins will be returned to the WSAs immediately following collection. The locations of the collection areas are such that they will not obstruct traffic or pedestrians (allowing a footway path of at least 1.8m, the space needed for two wheelchairs to pass each other) as is recommended in the Design Manual for Urban Roads and Streets (2022)²³. A tracking exercise for waste vehicles can be found in Appendix 1 of this report.

Suitable access and egress has been provided to enable the bins to be moved easily from the WSAs 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 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.

Green Waste

Green waste may be generated from internal plants / flowers. Green waste generated from internal plants / flowers or external landscaping will be placed in the organic waste bins. If substantial green waste is produced by commercial tenants it will be removed by a landscape contractor.

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 tenants 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. Facilities management 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 tenants 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. Facilities management may arrange collection, depending on the agreement.

Printer Cartridge / Toners

A printer cartridge / toner bin will be provided in the commercial units, where appropriate. The commercial tenants 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 is classed as hazardous (if they arise) will be appropriately stored within the tenants' own space. Facilities management 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 will 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 tenants will be responsible for the off-site removal and appropriate recovery / disposal of these wastes. Facilities management may arrange collection, depending on the agreement.

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

Textiles

Where possible, waste textiles will be recycled or donated to a charity organisation for reuse. Commercial tenants and residents will be responsible for disposing of waste textiles appropriately.

Waste Cooking Oil

If the commercial tenants 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 or placed in the organic bin.

Furniture & Other Bulky Waste Items

Furniture and other bulky waste items (such as carpet, etc.) may occasionally be generated by the commercial tenants. The collection of bulky waste will be arranged, as required by the tenant. 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 will be donated to charity if they arise or facilities management will arrange collection by a licensed waste contractor.

5.5 Waste Storage Area Design

The WSAs will be designed and fitted-out to meet the requirements of relevant design standards, including:

- Be fitted with a non-slip floor surface;
- 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 operator of the proposed development, commercial 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.

6.0 CONCLUSIONS

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 *EMR Waste Management Plan 2015 – 2021*.

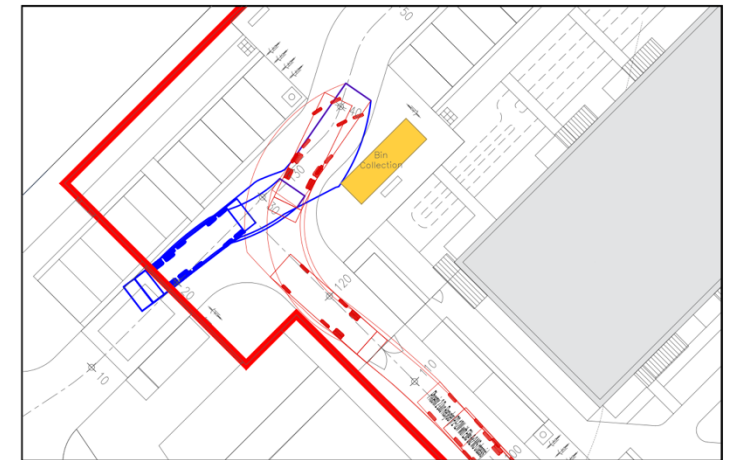
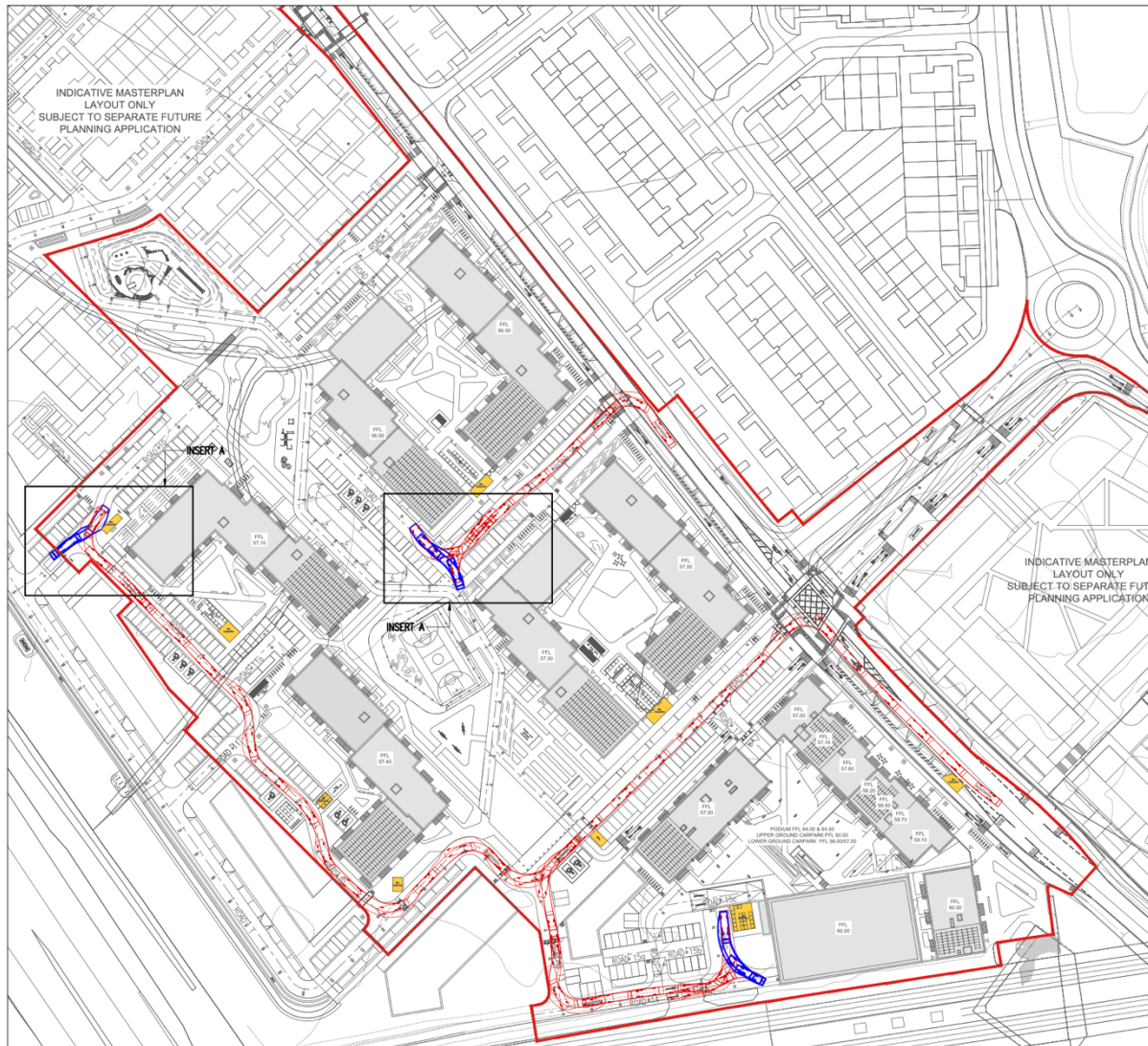
Adherence to this plan will also ensure that waste management at the development is carried out in accordance with the requirements of the *DCC Waste Bye-Laws*.

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.

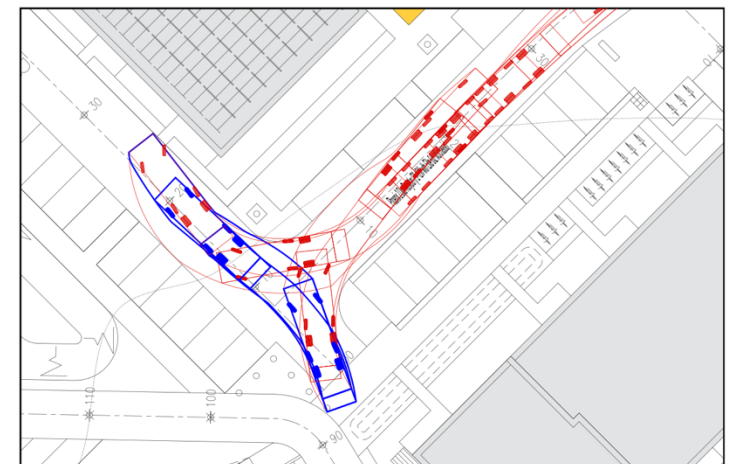
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8.0 APPENDIX 1: VEHICLE TRACKING EXERCISE FOR REFUSE TRUCK



INSERT A
PLAN VIEW - TURNING AREA 1



INSERT A
PLAN VIEW - TURNING AREA 2

9.0 APPENDIX 2: LOCATION OF WASTE STORAGE AREAS AND COLLECTION AREAS

