



Waterside Block 9
Developments Limited

Waterfront Development Dublin

Draft Operational Waste Management Plan

9 December 2020

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Waterfront Development Dublin

Draft Operational Waste Management Plan



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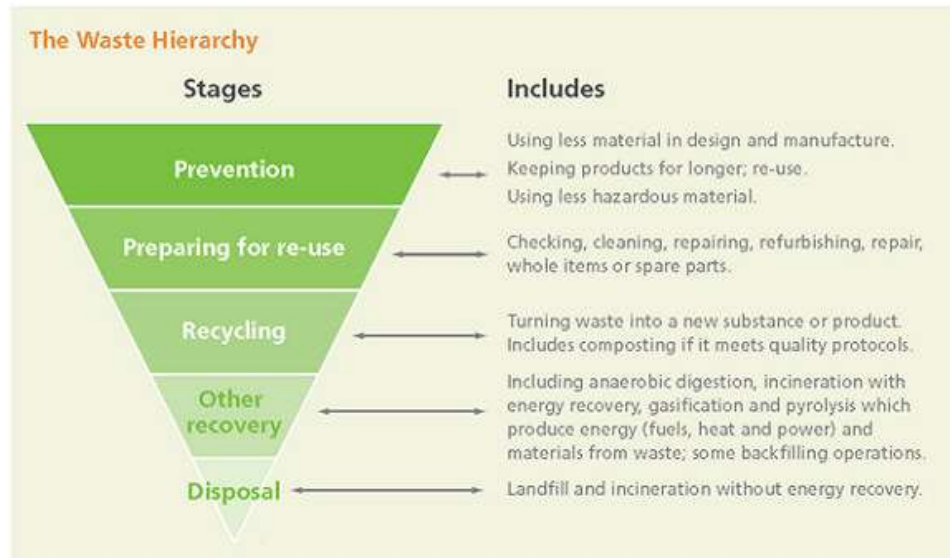
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1. INTRODUCTION

This Operational Waste Management Plan (OWMP) details how waste generated from the operation of a proposed residential and commercial development at City Block 9, North Wall Quay, Dublin will be managed. The OWMP has been developed to ensure that the wastes will be managed in accordance with all legal requirements and to meet current best practice in waste management. Specifically, the OWMP seeks to ensure that waste is managed in accordance with the Waste Hierarchy such that opportunities for waste reuse and recycling are maximised and the amount of waste sent to landfill is minimised.



Source: Defra, Guidance on applying the Waste Hierarchy, June 2011

The OWMP has been developed taking account of guidance prepared by the Waste and Resources Action Programme (WRAP) for the management of waste from office buildings ⁽¹⁾ and BS 5906:2005 ⁽²⁾.

The following sections of the OWMP discuss the legislative requirements relating to management of waste from the development and local waste management infrastructure, provide a description of the development and expected waste streams, and describe proposed waste management arrangements for the development including monitoring to be undertaken.

(1) Waste Management in Office Buildings, WRAP, 2009

(2) BS 5906:2005 - Waste management in buildings - Code of practice

2. POLICY AND LEGISLATIVE SETTING

The development will be impacted by European, national and local waste management policies and laws.

2.1 European Waste Management Policies and Laws

In general, European legislation comprises Directives and Regulations. EU Directives set out objectives or policies that must be implemented by each member state but it is up to individual member states to pass relevant domestic legislation to give effect to the terms of each Directive. EU Regulations are self-executing and do not require implementing measures from individual member states. European waste management policy is generally implemented by means of Directives and hence through laws enacted in individual countries although there are some waste Regulations. Ireland transposes EU Directives into national law by means of Acts and Regulations.

There are several EU Directives relating to the management of waste but those of particular relevance to the development include the following.

The **Waste Framework Directive** ⁽³⁾ – this sets out basic concepts and definitions as well principles for other legislation related to waste management. It includes the concepts of the ‘polluter pays principle’ and the ‘waste hierarchy’. The latter specifies a hierarchy of preferred means of managing waste (see diagram in *Section 1*).

The **Landfill Directive** ⁽⁴⁾ – although this includes a lot of technical detail regarding how landfill sites are to be operated, it also obliges member states to reduce the amount of biodegradable waste they send to landfill through a series of targets. It also requires waste to be treated prior to landfill.

The **WEEE Directive** ⁽⁵⁾ - as well aiming to improve the design of electrical and electronic equipment, this Directive promotes the reuse, recycling and other forms of recovery of waste electrical and electronic equipment (WEEE).

The **Industrial Emissions Directive (IED)** ⁽⁶⁾ – relates primarily to the reduction of pollution from industrial processes but it also includes requirements regarding the permitting of potentially polluting processes such as waste management operations.

2.2 National policy and Legislation

2.2.1 Policy

Over the past 20 years or so the Irish Government has issued a number of policy documents relating to the management of waste, partly in response to European initiatives to increase reuse and recycling and to reduce reliance on landfill. The main policy documents and their key objectives have been as follows ⁽⁷⁾:

(3) Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives

(4) Directive 1999/31/EC of 26 April 1999 on the landfill of waste

(5) Directive 2012/19/EC of the European Parliament and of the Council of 4 July 2012 on waste electrical and electronic equipment

(6) Directive 2010/75/EU on industrial emissions

(7) <https://www.epa.ie/waste/policy/>

Changing Our Ways, 1998 – endorsed the international ‘waste hierarchy’ including objectives for the prevention, minimisation, reuse, recycling, recovery and disposal of waste. Specifically, it introduced the requirement to reduce reliance on landfill and instead to adopt alternative methods for managing waste. It specified a target of at least 35% recycling of municipal (including household, commercial and non-process industrial) waste.

Preventing and Recycling Waste – Delivering Change, 2002 - proposed several programmes to increase recycling of waste and divert waste away from landfill to other waste management methods higher up the waste hierarchy. It also stressed the need for waste minimisation at source and announced the establishment of a National Waste Prevention Programme in the Environmental Protection Agency.

Taking Stock and Moving Forward, 2004 – reviewed the progress in waste management in Ireland between 1998 and 2003. It envisaged the introduction of thermal waste treatment as an alternative to landfill and highlighted the need for local authorities to expand collection schemes for dry recyclable materials.

A Resource Opportunity, 2012 – sets out the measures needed for Ireland to make further progress to become a recycling society, with a focus on resource efficiency and the virtual elimination of landfilling of municipal waste. Several actions are listed under a number of sub-headings and some of the key ones relating to this development are as follows:

Planning

- Monitoring of compliance with the waste management hierarchy
- Waste management planning to be undertaken at regional level with no more than 3 regions

Waste Collection

- Strengthened permitting system which ensures only fit and proper persons can hold permits and which requires that collectors deliver mandated service levels and manage waste in accordance with the waste hierarchy
- Increased inspection and enforcement

Waste Prevention

- A focus on resource efficiency, waste prevention and reuse through co-ordination of different agencies, enhanced producer responsibility schemes and use of economic measures (such as the plastic bag levy).

Reuse

- Encouragement and promotion of reuse through awareness campaigns and schemes which facilitate reuse of unwanted goods and materials.

Recycling

- Diversion of organic waste away from landfill through separate collection, via ‘brown bin’ scheme, and more productive use of this material
- Mandatory service standards for waste collection which will progressively increase the degree of segregation of different materials

Recovery

- Rigorous enforcement of the requirement that waste materials that have been segregated to facilitate recycling are not sent for (energy) recovery or disposal

- A co-ordinated approach to the provision of recovery facilities

Disposal

- Consideration to be given to the use of landfill bans depending on the rate of diversion achieved
- Further review of the rate of landfill tax to ensure it remains a strong disincentive for landfilling

2.2.2 Legislation – Acts and Regulations

Many of the Acts and associated Regulations related to waste management transpose relevant European Union Policy and Directives into Irish law.

Government policy is generally to apply the polluter pays principle. This means that the generator of the waste is obliged to ensure that the waste is properly managed. This applies equally to householders and businesses. In pursuit of the polluter pays principle, the government has imposed producer responsibility obligations on several sectors and waste streams, most notably packaging, waste electrical and electronic equipment, end-of-life vehicles, batteries & accumulators, tyres and farm plastics.

A large number of legal instruments govern the management of waste and outline the responsibilities of waste generators, waste management organisations (private sector and local authorities), waste planning authorities and waste regulators. The principal law is the Waste Management Act 1996 as amended. A series of regulations have been made under the Acts in relation to, for example:

- the authorisation of waste management facilities
- the authorisation of waste collection activities
- the imposition of a landfill levy
- waste management planning
- packaging waste
- hazardous waste
- waste electrical and electronic equipment
- end-of-life vehicles
- batteries and accumulators
- hazardous waste movements within Ireland
- the import and export of waste.

The Environmental Protection Agency (EPA) licenses certain waste activities and these licences are enforced by the EPA's Office of Environmental Enforcement. Industrial installations licensed by the EPA (IED and IPC licences) are also obliged to prevent or minimise waste generation. The management of municipal and other wastes is provided for in the three Regional Waste Management Plans (Connacht-Ulster Region, Eastern-Midlands Region and Southern Region).

Hazardous waste management is provided for in the National Hazardous Waste Management Plan prepared by the EPA.

The EPA also produces [national waste statistics](#) to meet numerous legislative reporting obligations and it makes these data available to the public. These include Ireland's progress towards meeting EU waste targets and estimates for municipal (household and commercial) waste generation together with levels of recycling, recovery and disposal. The EPA estimated the amount of municipal (household and commercial) waste generated in Ireland in 2016 was 2.8 million tonnes – a 6%

increase over 2014. The municipal waste recycling rate was 41% in 2016 and hadn't changed significantly since 2012 ⁽⁸⁾.

Movement of waste

The movement of waste is regulated and controlled by the [Waste Management Act 1996, as amended](#), and related regulations. For movements of waste within Ireland, a waste collection permit must be obtained from the National Waste Collection Permit Office (NWCPO).

Certificate of Registration

Certain waste management activities require a certificate of registration, as listed in Part II of the Third Schedule of the [Waste Management \(Facility Permit and Registration\) Regulations 2007, S.I. No. 821 of 2007](#). The list of activities was amended in 2008 by [S.I. No. 86 of 2008](#).

When these activities are carried out by local authorities, the EPA can grant a certificate of registration as authorisation for the activity. When these activities are carried out by private companies, certificates of registration are granted by the local authority in whose area the activity is to be carried out.

The Waste Management Act includes the concept of Duty of Care whereby a waste producer is responsible for his waste from the time it is generated through until its disposal (including its method of disposal.) Clearly, in most cases, a waste producer does not physically transfer his waste from where it is produced to the final disposal area but rather he employs a waste contractor to transport the waste to the final waste disposal site.

The building's facilities management company must manage waste on-site in accordance with all legal requirements and employ suitably permitted contractors to undertake off-site management of the waste in accordance with all legal requirements. The selected contractor must handle, transport and manage the waste (by reuse, recovery, recycling or disposal) in a manner that ensures there is no adverse environmental impact arising from the development's waste. As noted above, a collection permit to transport waste, issued by the NWCPO, must be held by each waste contractor.

The facilities to which the waste is sent for processing or disposal must also be appropriately permitted or licensed. Operators of waste management facilities should have an appropriate Certificate of Registration (COR) or waste permit granted by the relevant Local Authority under the [Waste Management \(Facility Permit & Registration\) Regulations 2007, as amended](#), or a waste or IED (Industrial Emissions Directive) licence granted by the EPA. The COR/permit/licence 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 Local Policy and Bye-laws

The development is located within the Dublin City Council (DCC) administrative area which is within the Eastern-Midlands Region (EMR) for waste planning purposes. The EMR [Waste Management Plan 2015 – 2021](#) was published in May 2015 and has three specific objectives and associated targets:

1. Prevent waste: a reduction of one per cent per annum in the amount of household waste generated over the period of the plan
2. More recycling: increase the recycle rate of domestic and commercial waste from 40 to 50 per cent by 2020
3. Further reduce landfill: eliminate all unprocessed waste going to landfill from 2016.

(8) <https://www.epa.ie/irelandsenvironment/waste/>

The *Dublin City Development Plan 2016 – 2022* ⁽⁹⁾ presents the spatial planning policies of the City Council and sets out a number of policies and objectives in line with the objectives of the regional waste management plan. Chapter 9 of the Development Plan deals with Sustainable Environmental Infrastructure and Section 9.5.5 addresses Waste Management.

The waste management policies stated in the Plan are as follows:

SI19: To support the principles of good waste management and the implementation of best international practice in relation to waste management in order for Dublin city and the region to become self-reliant in terms of waste management.

SI20: To prevent and minimise waste and to encourage and support material sorting and recycling.

SI21: To minimise the amount of waste which cannot be prevented and ensure it is managed and treated without causing environmental pollution.

SI22: To ensure that effect is given as far as possible to the 'polluter pays' principle.

The associated waste management Objectives presented in the Plan are as follows:

SIO15: To provide for municipal/public recycling and recovery facilities in accessible locations throughout the city.

SIO16: To require the provision of adequately-sized-recycling facilities in new commercial and large scale residential developments, where appropriate.

SIO18: To implement the current Litter Management Plan through enforcement of the litter laws, street cleaning and education and awareness campaigns.

SIO19: To implement the Eastern-Midlands Waste Management Plan 2015 -2021 and achieve the plan targets and objectives.

The second of these objectives is of particular relevance to the proposed development.

The development will be subject to the *Dublin City Council (Segregation, Storage and Presentation of Household and Commercial Waste) Bye-laws, 2018*. These Bye-Laws, adopted by DCC in accordance with Part 19 of the *Local Government Act 2001*, came into effect in May 2019 and apply to both household and commercial waste within the Council's area.

The Bye-Laws set a number of enforceable requirements on waste holders and collectors with regard to storage, separation, presentation and collection of waste within the Council's functional area. The main provisions of the Bye-Laws are as follows ⁽¹⁰⁾:

- Holders of waste must have their waste collected by an approved collector or disposed of at an approved facility.
- Segregation of organic waste is required for holders of household and commercial waste (Brown Bin scheme).
- A recommended list of materials that are acceptable for the household 'brown bin' scheme.
- The holder of waste and authorised waste collector for a household or commercial premises must be clearly identified from the waste container itself (includes bag collections).
- Waste Collectors must offer Household and Commercial customers the same service frequency in the Central Commercial District.
- If a customer has storage space restrictions the priority of bins is as follows;

(9) Dublin City Development Plan 2016-2022 - Written Statement

<https://www.dublincity.ie/sites/default/files/content/Planning/DublinCityDevelopmentPlan/Written%20Statement%20Volume%201.pdf>

(10) <http://www.dublincity.ie/main-menu-services-water-waste-and-environment-waste-and-recycling/waste-bye-laws>

1. Organic
 2. General
 3. Recyclables.
- Within the Central Commercial District (CCD) waste collection is only to take place between 7pm and 12pm on collection day. Waste is not to be presented for collection before 5pm.
 - Outside the CCD collections are only to take place between 6am and 9pm. This is restricted to 8am to 8pm at weekends and Bank Holidays. Waste is not to be presented for collection before 6pm on the day before collection.
 - Waste Operators will only be able to collect waste in defined areas on a designated day which can be determined by the City Council.
 - Provision is made for an on-the-spot fine of €75 for breaches of the Bye-Laws.

Municipal landfill charges in Ireland are based on the weight of waste disposed and include landfill tax introduced under the Waste Management (Landfill Levy) (Amendment) Regulations 2013.

3. LOCAL WASTE MANAGEMENT INFRASTRUCTURE

There are several private sector contractors that offer waste collection services for the household and commercial sectors in the Dublin area. As noted in *Section 2.2*, details of waste collection permits (granted, pending and withdrawn) are available from the National Waste Collection Permit Office (NWCPO).

In line with the waste hierarchy and the move away from landfill disposal, there is a decreasing number of landfills available in Ireland and specifically within the Dublin area. There are currently five landfills that accept municipal waste for disposal and two municipal waste incinerators that accept municipal waste for energy recovery in Ireland ⁽¹¹⁾. Details of all waste/industrial emissions (IE) licenses issued are available from the EPA.

(11) <https://www.epa.ie/irelandsenvironment/waste/>

4. THE PROPOSED DEVELOPMENT

The scheme, totalling 125,388 sq m, provides 22,499 sq m at basement levels, with 102,889 sq m from ground upwards. The development will consist of the:

1. Construction of 1,005 No. residential units (with balconies and winter gardens) arranged in 3 No. blocks ranging in height from 8 No. storeys to 45 No. storeys over a triple-level basement, the former comprising: Block A (8-14 No. storeys (with extended core to access roof level); with an apartment mix of: 116 No. 1-bed; and 92 No. 2-bed; with landscaped terraces at Level 1 (south east elevation), Level 8 (south west elevation), Level 11 (south west elevation) and Level 14 (north east elevation)); Block B (8-41 No. storeys (with extended core to access roof terrace); with an apartment mix of: 172 No. 1-bed; and 247 No. 2-bed; with landscaped terraces at Level 5 (south west elevation), Level 8 (north west elevation and south west elevation), Level 11 (north elevation), Level 12 (west elevation), Level 13 (east elevation), Level 14 (east elevation), and at Level 41 (roof level)); and Block C (11-45 No. storeys (with extended core to access roof level); with an apartment mix of: 207 No. 1-bed; 168 No. 2-bed; and 3 No. 3-bed units; with landscaped terraces at Level 11 (north elevation), Level 24 (south elevation), Level 32 (south elevation), and Level 45 (roof level), incorporating a public viewing deck at Levels 44 and 45).
2. Provision of ancillary residential amenities and support facilities including: live/work suites (321 sq m), a gym/spa reception (52 sq m), a residents' games room (91 sq m), a residents' common room (110 sq m), a residents-only social space (193 sq m), a management office (96 sq m), a security office (50 sq m), concierge spaces (GFA of c. 381 sq m) all located at ground floor level; a residents' games room (90 sq m) located at Level 1 of Block B; a residents' common room (86 sq m) located at Level 14 of Block B; a residents' wellness club and common room (408 sq m) located at Level 24 of Block C;
3. Construction of triple height basement which will comprise double basement with mezzanine plant level (total basement area 22,499 sq m), accommodating: waste storage areas (659 sq m), plant rooms (4,228 sq m), maintenance / management offices (GFA of 92 sq m), residents' courier / parcel rooms (GFA of 210 sq m), residents' laundry rooms (GFA of 138 sq m), ancillary residential storage (GFA of 291 sq m), residents' WCs (65 sq m), a residents' gym / spa (1,529 sq m) and ancillary gym storage room (100 sq m), residents' screening rooms (240 sq m), a residents' indoor plant cultivation room (356 sq m), 176 No. car parking spaces, 10 No. motorcycle parking spaces and 1,693 No. bicycle parking spaces, with vehicular access provided by ramp from North Wall Avenue.
4. Provision of "other uses" as defined by the Planning and Development (Housing) and Residential Tenancies Act 2016, comprising: a childcare facility (450 sq m), a restaurant (110 sq m), an indoor Farmer's Market/foodhall (299 sq m), an external market area, a winter garden/seating area (130 sq m), and 3 No. café units (110 sq m, 167 sq m and 261 sq m, respectively), all located at ground floor level; a restaurant (609 sq m) located at Level 32 of Block C; office use (1,894 sq m) from Floor Level 41 to 43 inclusive at Block C; and a public bar / function room (407 sq m) located at Level 44 of Block C. The total area of "other uses" provided is 4,307 sq m.
5. Provision of a pocket park and new pedestrian lanes from North Wall Quay, North Wall Avenue and Mayor Street Upper to the center of the site.
6. All enabling and site development works, landscaping (including living walls), lighting, services and connections, waste management and all other ancillary works above and below ground including the use of existing secant piling permitted under Reg. Ref. DSDZ3779/17 and DSDZ3780/17 (as amended by DSDZ3042/19).

4.1 Expected Waste Arisings

The majority of waste generated during the operation of the development will comprise household waste from the residential units. In addition there will be food and packaging waste from the four restaurants and a very small amount of non-hazardous dry waste from the leisure facilities and few commercial units.

The main types of waste expected from the operation of the building are listed in the table below.

Waste type	Example sources
Paper and cardboard	Scrap paper, packaging, newspapers and magazines from residential units and offices
Plastic	Packaging, drinks bottles
Metal (ferrous and non-ferrous)	Drinks cans, food tins
Glass	Drinks bottles
Composite packaging	Food and drinks packaging
Organics	Food waste – from the residential units and restaurants
Cooking oil	From the residential units and restaurants
Textiles	Discarded clothes from the households
Batteries (hazardous and non-hazardous)	Household and office equipment
Waste Electrical and Electronic Equipment (WEEE)	Computers and other electrical equipment from households and commercials
Chemicals	Pest control, detergents used by building maintenance company

Over time, any periodic refurbishment of the residential units, restaurants and offices is likely to result in a range of other wastes including wood, plasterboard, polystyrene tiles, electrical wire, paints and adhesives and discarded furniture and equipment.

4.2 Waste Volumes

The volumes of waste expected to be generated during the operation of the development have been estimated as follows.

4.2.1 Residential Waste

Type of Unit	Assumed average occupancy per unit (persons) ⁽¹⁾	Number of units	Total number of residents
1 bedroom	1	495	495
2 bedroom	4	507	2,028
3 Bed	6	3	18
Total	-	1,005	2,541

Note (1) Tom Phillips Associates - Compilation of Final Drawings and Areas, 3rd December 2020

Waste generation rates:

Waste type	Waste Generation		
	Per person	For Waterfront development	
units	kg/year ⁽¹⁾	tonnes/year	m3/year ⁽²⁾
Mixed Residual Waste (MRW)	143	363	1,646
Mixed Dry Recyclables (MDR)	53	135	748
Organic Waste (OW)	24	61	203

Notes

- 1) Assuming averages rates of waste generation for Irish households based on EPA waste statistics - <http://www.epa.ie/nationalwastestatistics/municipal/>
- 2) Based on un-compacted densities – WRAP: *UK conversion factors for waste*

4.2.2 Restaurant Waste

Four restaurants

Assumed total throughput = 400 covers (meals) per day

Waste type	Waste Generation		
	Per meal	For Waterfront development	
units	kg ⁽¹⁾⁽²⁾	tonnes/year	m3/year ⁽³⁾
Mixed Residual Waste (MRW)	0.75	110	521
Mixed Dry Recyclables (MDR)	0.25	37	174
Organic Waste (OW)	0.28	41	204

Notes

- 1) Taken from WRAP data for restaurant waste - <http://www.wrap.org.uk/sites/files/wrap/Restaurants.pdf>
- 2) Assuming 25% of non-food waste can be recycled (similar proportion as for household waste)
- 3) Based on un-compacted densities – SEPA: *UK Conversion factors for waste*

5. PROPOSED WASTE MANAGEMENT ARRANGEMENTS

The overall objectives of the proposed waste management arrangements for the development are to ensure that waste is managed in accordance with all legal requirements, as discussed in *Section 2* above, and to seek to manage wastes in accordance with the waste hierarchy (see diagram in *Section 1*). By ensuring that different wastes are appropriately segregated, the aim will be to maximise the potential for reuse and recycling of materials and hence to minimise the amount of waste that needs to be disposed and, specifically, the amount that needs to be landfilled.

It is expected that

- Residents will take their waste to a centralised waste storage area on the basement floor – one store per block so that residents don't need to carry waste too far
- Restaurants - similarly
- Office units - similarly

The service management company will be responsible for managing the waste store(s) and arranging for the collection/treatment/disposal of the wastes

Will wheel bins to a central loading bay which will be accessible to RCVs

- Layout of basement designed to allow access of RCVs , height basement (approx. 4.5m) provides sufficient clearance for wheeled bins to be emptied into a rear end loader (REL) RCV

5.1 Waste Segregation

Residents requested to segregate their wastes

A series of different containers will be provided in order to separately store different waste materials pending their collection for either recycling or disposal. Specifically, the following four categories of waste will be stored separately within the building's waste storage areas:

- Dry recyclables
- Glass
- Organics
- Residual

Residents and other occupants (restaurants, commercial units etc) within the building will be required to separate their waste materials into the four categories within their own premises and store them temporarily in suitable bins/containers and periodically/when convenient transfer the segregated wastes to the building's waste storage area.

The table below shows examples of the individual types of waste for the four categories of waste. The facilities management team will provide information to residents and other occupiers to make sure that everyone living or working in the building understands how the waste segregation system is supposed to operate and it will monitor the waste materials being put into the different containers to make sure that wastes are being segregated appropriately. If necessary further instruction will be provided to residents and individual units.

Waste Category	Example wastes
Dry recyclables ⁽¹⁾	Paper – scrap paper, newspaper, magazines Cardboard Plastics – drinks bottles, packaging. Not plastic film ⁽²⁾ . Metals – drinks cans Composite drinks/food cartons (Tetra-Pak' cartons)
Glass	Glass bottles
Organics	Food scraps Plants, flowers
Residual (mixed non-recyclables)	Other non-hazardous wastes Plastic film Mixed wastes that cannot be separated Contaminated materials (eg 'wet' paper)

Notes

- (1) All dry materials for recycling must be clean and, in the case of containers, empty
- (2) <https://voiceireland.org/news/post.php?s=2018-03-20-soft-plastics>

In order to ensure that the dry recyclable materials can be recovered for recycling and to ensure that as little material as possible is subsequently 'rejected', residents and occupants of other units will be requested to ensure that materials are dry and clean. Any materials which become contaminated will need to be disposed with the residual, non-recyclable wastes.

The expected very small amounts of more hazardous wastes such as printer toner cartridges, waste electrical equipment, fluorescent bulbs and batteries will be taken to a separate area within the waste storage area and stored securely until a sufficient volume has been accumulated to make up a load for treatment/disposal by a specialised waste contractor (see below).

Similarly, the restaurants will store any used cooking oil securely in suitable containers and regular collections by a suitably authorised waste contractor for recycling will be arranged.

5.2 Waste Storage

There will be dedicated waste storage areas in the basement of each block to which the residents and other occupiers will take their wastes. These waste storage areas will have containers for the four general types of waste discussed above. The exact details of the containers will depend on the appointed waste contractor (to be compatible with the contractor's collection vehicles) but they are likely to be 1100 litre wheeled containers similar to the ones shown below.



All containers used will comply with legal requirements and recognised standards such as BS EN 840-2:2012 ⁽¹²⁾.

To facilitate correct segregation, suitable labels and pictograms will be placed on all waste bins to show the types of waste that should be placed within each bin.

The waste containers will be kept closed at all times except when waste is being placed into them and collection will be frequent enough to avoid problems of odour and the attraction of vermin (in the case of organic waste). The rate of waste generation will be monitored and a sufficient number/size of containers will be provided to ensure adequate capacity for the safe and environmentally sound storage of all waste from the building. If necessary, the frequency of collections will be adjusted to match the rate of waste generation.

In addition, separate containers will be used for storing the small quantities of other wastes such as toner cartridges and batteries until sufficient volumes have been accumulated to warrant collection and treatment or disposal by a specialist contractor, each tenant will arrange disposal.

The waste storage areas will be easily accessible for residents and tenants to place their waste into the storage containers but the skips will be secured so that only authorised persons can move them (see Section 5.3).

In addition, the waste storage areas will:

- be well ventilated to prevent the build-up of odours;
- have suitable lighting to allow safe operation (loading and unloading of containers);
- have a non-slip floor;
- have appropriate signs to indicate the contents of each container and also to indicate contact names and phone numbers for emergencies; and
- be subject to vermin control measures as required.

All containers will be clearly labelled and colour-coded to minimise the risk of contamination of the recyclable materials by incorrect waste materials being put into those containers.

(12) Mobile waste and recycling containers. Part 2: Containers with 4 wheels with a capacity up to 1 300 l with flat lid(s), for trunnion and/or comb lifting devices – Dimensions and design

The facilities management team will maintain the bins in good condition and ensure the waste storage area is kept clean and tidy at all times. The rate at which the bins are filling will be closely monitored and collection will be arranged before any containers become full.

As noted above, the facilities management team will monitor wastes being put into the different containers. In the case of incorrect materials being found in a bin, if it is safe to remove the items this will be carried out but generally, for example in the case of contamination of dry recyclables, the particular bin will be 'reclassified' as a 'residual waste' container. If there is ongoing miss-allocation of waste to bins the occupants of the block(s) concerned will be notified by means of noticeboards and leaflets with instruction as to how to segregate waste properly.

If any potentially hazardous materials are found, the individual load will be quarantined and a specialist waste management contractor will be contacted to manage the waste.

5.3 Waste Collection

Co-ordination with the nominated waste contractor and at appropriate time bins will be moved from the individual waste storage areas for each block to a centralised loading bay at which the skips will be emptied into the waste collection vehicle (RCV) for onward transport for treatment/disposal. Only authorised members of the FM team will have keys to unlock skips and be allowed to move them to the loading bay at the appropriate time.

The loading bay will be designed to allow safe access for collection of the different wastes by suitable waste collection vehicles.

Arrangements will be made for waste to be transported from the building by contractors with appropriate NWCPO-issued collection permits using suitable vehicles. The permits will be checked before contracts are arranged and at least annually during the contract period. Collection of waste will be supervised to make sure appropriate vehicles are being used and that waste is secured safely/covered, to avoid problems of windblown litter for example, before the vehicle leaves the building.

5.4 Treatment/ disposal

As noted above, the aim will be for as much as possible of the building's waste to be recycled. The waste which cannot be recycled, the mixed residual waste (MRW) stream, will be sent for energy recovery at an energy from waste (EfW) facility. Discussions will be held with the collection contractor(s) to confirm the fate of the different waste streams and to ensure, for example, that all wastes are going to appropriately permitted waste processing facilities and that, in the case of dry recyclable materials, the amounts being recycled are being maximised.

Periodically during the collection contracts, contact will be made with the treatment/disposal contractors to confirm that the building's waste is going to the agreed facilities. In case of any doubt or suspicion that waste is not being taken to the agreed waste treatment facility, this will be discussed immediately with the waste collection contractor. In the event that it is discovered that waste has been sent to an inappropriate facility the EPA will also be advised accordingly.

Before changing to any alternative waste treatment/disposal arrangements the waste collection contractor will be required to agree this with the building's facilities management team who will carry out suitable checks to ensure the proposed treatment/disposal contractor is appropriately licensed. Checks will also be carried out to ensure that the proposed method of treatment meets the aim of maximising waste recycling.

5.5 Monitoring

The building's facilities management team will be responsible for monitoring compliance with various aspects of this OWMP. This will include the following:

- Checking the waste deposited in the bins to make sure it complies with the waste segregation requirements. If necessary they will advise residents and occupants of units in a particular block about which wastes can be placed in each of the four main types of container.
- Checking on the permit of the waste collection contractor prior to contract award and periodically throughout the contract.
- Checking on the suitability of the vehicle and security of the waste as the waste is collected by the waste transporter.
- Ensuring that all wastes are being taken to appropriately licensed waste processing/disposal facilities.
- Periodically checking the facilities to which the building's waste is taken to make sure it is being managed appropriately and as much as possible is being recycled

In addition, records will be kept of the volumes of waste produced from operation of the building together with data regarding the proportion of waste that is recycled and disposed (landfilled and incinerated). Trends in these data will be analysed and the building's occupants will be advised accordingly – for example by means of notices in residents' communal areas. The aim will be for the building as a whole to meet the targets set by Dublin City Council to recycle at least 50% of all the waste generated. In addition the target will be to reduce year on year the amount of waste generated (on a per capita basis) as well as increasing the percentage of waste recycled.

In order to help achieve these target, the facilities management team will monitor any developments in local waste management services – specifically the introduction of any new recycling schemes. The four-bin system of waste collection will be periodically reviewed and revised if appropriate (eg through the collection of additional materials and/or introduction of a different segregation system).

6. CONCLUSIONS

The principles and proposed waste management arrangements detailed in this Operational Waste Management Plan (OWMP) are in line with national and local waste management policy and will ensure that waste from the development is managed in accordance with all legal requirements. Specifically, the waste generated by all occupants (residents, restaurants and other units) will be managed by the building's facilities management organisation to comply fully with the *Dublin City Council (Segregation, Storage and Presentation of Household and Commercial Waste) Bye-laws, 2018* in the way that waste is segregated, stored and treated/disposed. Specifically:

- an authorised waste collector, with a permit to transport waste issued by NWCPD, will be engaged to service the waste containers used for the storage of waste at the development
- The facilities management company will ensure that:
 - separate containers of sufficient capacity (size and number) are provided for the proper segregation, storage and collection of recyclable and residual (non-recyclable) waste materials
 - separate receptacles will be provided for the storage and collection of food waste
 - written information will be provided to each resident and tenant of other units to explain the arrangements for waste separation, segregation, storage and presentation for collection
 - Waste containers will be clearly labelled to indicate the contents (type of waste) and provide contact numbers for further information.

The OWMP also addresses the main objectives and targets in the Eastern-Midlands Region (EMR) *Waste Management Plan 2015 – 2021* namely:

- More recycling: increase the recycle rate of domestic and commercial waste from 40 to 50 per cent by 2020 – the development will aim to achieve at least a 50% recycling rate
- Further reduce landfill: eliminate all unprocessed waste going to landfill from 2016 – the aim will be for all mixed residual waste (that waste which is not recycled) to be disposed via energy from waste so that no waste from the building is sent to landfill.

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