

**OPERATIONAL WASTE  
MANAGEMENT PLAN FOR  
A PROPOSED STRATEGIC  
HOUSING DEVELOPMENT**

**CARMNAHALL ROAD  
SHD 2022**

**AT THE FORMER AVID  
TECHNOLOGY SITE,  
JUNCTION OF  
BLACKTHORN ROAD AND  
CARMHANALL ROAD,  
SANDYFORD, DUBLIN 18**

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## 1.0 INTRODUCTION

AWN Consulting Ltd. (AWN) has prepared this Operational Waste Management Plan (OWMP) on behalf of Atlas GP Limited. The proposed development comprises the construction of 334 no. Build to Rent residential apartment units and crèche unit at the former Avid Technology site, at the junction of Blackthorn Road and Carmanhall Road, Sandyford, Dublin 18.

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 <sup>1</sup>, *Environmental Protection Agency Act 1992* as amended <sup>2</sup>, *Litter Pollution Act 1997* as amended <sup>3</sup>, the '*Eastern-Midlands Region (EMR) Waste Management Plan 2015 – 2021*' <sup>4</sup>, *The Dún Laoghaire Rathdown County Council (Segregation, Storage and Presentation of Household and Commercial) Bye-Laws (2019)* <sup>5</sup> and the *Guidance Notes for Waste Management in Residential and Commercial Developments (2020)* <sup>6</sup>. In particular, this OWMP aims to provide a robust strategy for storing, 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. 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 proposed development during the operational phase and provides a strategy for managing the different waste streams.

At present, there are no specific 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*' <sup>7</sup> 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 <sup>8</sup>. This document proposed a number of programmes to increase recycling of waste and allow diversion from landfill. The need for waste minimisation at source was considered a priority.

This view was also supported by a review of sustainable development policy in Ireland and achievements to date, which was conducted in 2002, entitled '*Making Irelands Development Sustainable – Review, Assessment and Future Action*' <sup>9</sup>. 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*' <sup>10</sup>. Covering the period 1998 – 2003, the aim of this document was to assess progress to date with regard to waste management in Ireland, to consider developments since the policy framework and the local authority waste management

plans were put in place, and to identify measures that could be undertaken to further support progress towards the objectives outlined in *Changing Our Ways*.

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

In September 2020, the Irish Government published a new policy document outlining a new action plan for Ireland to cover the period of 2020-2025. This plan 'A Waste Action Plan for a Circular Economy'<sup>11</sup> (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)<sup>12</sup> to set a course for Ireland to transition across all sectors and at all levels of Government toward circularity and was issued in December 2021. It is anticipated that the Strategy will be updated in full every 18 months to 2 years.

Since 1998, the Environmental Protection Agency (EPA) has produced periodic 'National Waste (Database) Reports'<sup>13</sup> 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 *2019 National Waste Statistics*, which is the most recent study published, along with the national waste statistics web resource (November 2021) reported the following key statistics for 2019:

- **Generated** – Ireland produced 3,085,652 t of municipal waste in 2019. This is almost a 6% increase since 2018. This means that the average person living in Ireland generated 628 kg of municipal waste in 2019.
- **Managed** – Waste collected and treated by the waste industry. In 2019, a total of 3,036,991 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 48,660 t was unmanaged in 2019.
- **Recovered** – The amount of waste recycled, used as a fuel in incinerators, or used to cover landfilled waste. In 2019, around 83% of municipal waste was recovered – a decrease from 84% in 2018.
- **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 2019 was 37%, which is down from 38% in 2018.
- **Disposed** – Less than a sixth (15%) of municipal waste was landfilled in 2019. This is an increase from 14% in 2018.

## 2.2 Regional Level

The development is located in the Local Authority area of Dún Laoghaire Rathdown County Council (DLRCC).

The *EMR Waste Management Plan 2015 – 2021* is the regional waste management plan for the DLRCC area which was published in May 2015. Currently the EMR and other regional waste management plans are under review and the Regional Waste Management Planning Offices expect to publish the final plan in 2022.

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

- Achieve a recycling rate of 50% of managed municipal waste by 2020; and
- Reduce to 0% the direct disposal of unprocessed residual municipal waste to landfill (from 2016 onwards) in favour of higher value pre-treatment processes and indigenous recovery practices.

Municipal landfill charges in Ireland are based on the weight of waste disposed. In the Leinster Region, charges are approximately €130 – €150 per tonne of waste which includes a €75 per tonne landfill levy introduced under the *Waste Management (Landfill Levy) (Amendment) Regulations 2015*.

The *Dún Laoghaire-Rathdown County Development Plan 2022 – 2028*<sup>14</sup> sets out a number of policies for the Dún Laoghaire-Rathdown area in line with the objectives of the waste management plan.

Proposed waste policies with a particular relevance to the development are as follows:

### ***Policy Objective EI12: Resource Management***

*It is a Policy Objective to implement the Eastern-Midlands Region Waste Management Plan 2015-2021 and subsequent plans, in supporting the transition from a waste management economy towards a circular economy, to enhance employment and increase the value recovery and recirculation of resources. Underpinning this objective is the requirement to conform to the European Union and National Waste Management Hierarchy of the most favoured options for waste as illustrated below subject to economic and technical feasibility and Environmental Assessment.*

### ***Policy Objective EI13: Waste Management Infrastructure, Prevention, Reduction, Reuse and Recycling***

- To support the principles of the circular economy, good waste management and the implementation of best international practice in relation to waste management in order for the County and the Region to become self-sufficient in terms of resource and waste management and to provide a waste management infrastructure that supports this objective.
- To provide for civic amenity facilities and bring centres as part of an integrated waste collection system in accessible locations throughout the County and promote the importance of kerbside source segregated collection of household and commercial waste as the best method to ensure the quality of waste presented for recycling is preserved.
- To ensure any waste amenity facilities adhere to the Waste Regional Offices Waste Management Infrastructure siting guidelines.

- To develop a County wide network of multi material recycling centres, bring centres and a re-use centre and to require the provision of adequately-sized recycling facilities in new commercial and large-scale residential developments, where appropriate.
- To require the inclusion of such centres in all large retail developments to maximise access by the public. To ensure new developments are designed and constructed in line with the Council's Guidelines for Waste Storage Facilities

#### **Policy Objective EI14: Hazardous Waste**

It is a Policy Objective to adhere to the recommendations of the 'National Hazardous Waste Management Plan 2014-2020' and any subsequent plan, and to co-operate with other agencies, to plan, organise, authorise and supervise the disposal of hazardous waste streams, including hazardous waste identified during construction and demolition projects.

### **2.3 Legislative Requirements**

The primary legislative instruments that govern waste management in Ireland and applicable to the project 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 <sup>15</sup>.

These Acts and subordinate Regulations enable the transposition of 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, crèche tenants and the proposed facilities management company undertake on-site management of waste in accordance with all legal requirements and employ suitably permitted/licenced contractors to undertake off-site management of their waste in accordance with all legal requirements. This includes the requirement that a waste contractor handle, transport and reuse/recover/recycle/dispose of waste in a manner that ensures that no adverse environmental impacts occur as a result of any of these activities.

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

The DLRCC “Dún Laoghaire-Rathdown County Council (Storage, Presentation and Segregation of Household and Commercial Waste) Bye-Laws (2019)” were brought into force on the 1st of February 2020. These Bye-laws repeal the previous DLRCC waste Bye-laws. The Bye-laws set a number of enforceable requirements on waste holders with regard to storage, separation and presentation of waste within the DLRCC functional area. Key requirements under these Bye-laws of relevance to the development include the following:

- Kerbside waste presented for collection shall not be presented for collection earlier than 6.00 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 10:00am on the day following the designated waste collection day, unless an alternative arrangement has been approved in accordance with bye-law 4;
- 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.

Provisions affecting Multi-user Buildings, Apartment Blocks, etc.:

*A management company, or another person if there is no such company, who exercises control and supervision of residential and/or commercial activities in multi-unit developments, mixed-use developments, flats or apartment blocks, combined living/working spaces or other similar complexes shall ensure that:*

- a. *separate receptacles of adequate size and number are provided for the proper segregation, storage and collection of recyclable kerbside waste, residual kerbside waste and food waste,*
- b. *the receptacles referred to in paragraph (a) are located both within any individual apartment and at the place where waste is stored prior to its collection,*
- c. *any place where waste is to be stored prior to collection is secure, accessible at all times by tenants and other occupiers and is not accessible by any other person other than an authorised waste collector,*
- d. *written information is provided to each tenant or other occupier about the arrangements for waste separation, segregation, storage and presentation prior to collection,*
- e. *an authorised waste collector is engaged to service the receptacles referred to in this section of these bye-laws, with documentary evidence, such as receipts, statements or other proof of payment, demonstrating the existence of this engagement being retained for a period of no less than two years. Such evidence shall be presented to an authorised person within a time specified in a written request from either that person or from another authorised person employed by Dún Laoghaire-Rathdown County Council,*
- f. *receptacles for kerbside waste are presented for collection on the designated waste collection day,*
- g. *adequate access and egress onto and from the premises by waste collection vehicles is maintained*



The full text of the Waste Bye-Laws is available from the DLRCC website.

## **2.4 Local Authority Guidelines**

DLRCC's Waste Management Division have issued *Guidance Notes for Waste Management Planning for Residential and Commercial Developments (2022)* which provide good practice guidance for the storage and collection of waste for new build high density developments. The objective of the guidelines is to allow developers to demonstrate to local planning and waste management authorities that they have considered how the design and the operation of waste management services will enable the occupiers and managing agents to effectively manage their wastes arising.

The ultimate goal of the guidelines is that the implemented waste strategy will achieve a 70% reuse and recovery target in accordance with the European Commission's proposal to introduce 70% reuse and recycling targets for municipal waste by 2030 and while also providing sufficient flexibility to support future targets and legislative requirements.

This OWMP has been prepared to demonstrate exactly that and aims to do so in a comprehensive manner.

The guidelines and form are available on the DLRCC website.

## **2.5 Regional Waste Management Service Providers and Facilities**

Various contractors offer waste collection services in the DLRCC 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 are all operated by the private sector. There are a number of other licensed and permitted facilities in operation in the region including waste transfer stations, hazardous waste facilities and integrated waste management facilities. There are two existing thermal treatment facilities, one in Duleek, Co. Meath and a second facility in Poolbeg in Dublin.

The DLRCC Ballyogan Recycling Centre, located c. 2.67km south east of the development site, can be used by residents of the proposed development for other household waste streams. This centre can accept batteries, paper, plastic, wood, textiles, garden (green) waste, hazardous waste and electrical items. There is also a bring bank located c. 228m north of the development on Arkle Road, Sandyford, 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/IE licenses issued are available from the EPA.

## **3.0 DESCRIPTION OF THE PROJECT**

### **3.1 Location, Size and Scale of the Development**

Atlas GP Ltd, intend to apply to An Bord Pleanála for planning permission for a strategic housing development at this site of c.0.99 ha at the 'Former Avid Technology site', at the junction of Blackthorn Road and Carmanhall Road Sandyford, Dublin 18.

The proposed development consists of 334 Build to Rent residential apartment units within 4 no. apartment blocks and as follows:

- 79 No. Studio

- 175 No. 1 bed
- 80 No. 2 bed
- All residential units provided with private balconies/terraces to the north/south/east and west elevations
- Crèche 272 sq.m.
- Residential amenity spaces 893 sq.m. (including a unit of 146.5 sqm open to the public, resident's gym, business centre, multipurpose room, staff facilities, multimedia/cinema room, shared working space, concierge, and games room)
- Height ranging from 5 to 16 storeys (over basement)
- Landscaped communal space in the central courtyard
- Provision of a new vehicular entrance from Carmanhall Road and egress to Blackthorn Road
- Provision of pedestrian and cycle connections
- 125 No. Car Parking, 6 No. Motorcycle Parking and 447 cycle spaces at ground floor/undercroft and basement car park levels
- Plant and telecoms mitigation infrastructure at roof level

The development also includes 2 no. ESB substations, lighting, plant, storage, site drainage works and all ancillary site development works above and below ground.

### 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 wastepaper (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 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 in small quantities which will need to be managed separately including:

- Green/garden waste may be generated from internal plants / flowers;
- 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 (rags);
- Waste cooking oil (if any generated by the residents or crèche tenants);
- Furniture (and from time to time other bulky wastes); and
- Abandoned bicycles.

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

### 3.3 European Waste Codes

In 1994, the *European Waste Catalogue* <sup>16</sup> and *Hazardous Waste List* <sup>17</sup> were published by the European Commission. In 2002, the EPA published a document titled the *European Waste Catalogue and Hazardous Waste List* <sup>18</sup>, 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 & Determining if Waste is Hazardous or Non-Hazardous' <sup>19</sup> which became valid from the 1st June 2015. This waste classification system applies across the EU and is the basis for all national and international waste reporting, such as those associated with waste collection permits, 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 (also referred to as European Waste Code or EWC) for typical waste materials expected to be generated during the operation of the proposed development are provided in Table 3.1 below.

**Table 3.1** Typical Waste Types Generated and LoW Codes

Waste Material	LoW/EWC 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
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 arising 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 (m<sup>2</sup>) has been used to estimate the waste arising from the crèche unit.

Waste generated from the shared communal residential amenities been included in the waste figures for the apartment block and will be stored within the residential waste bins.

The estimated waste generation for the development for the main waste types is presented in Table 4.1, below.

**Table 4.1** Estimated waste generation for the proposed development for the main waste types

Waste Type	Waste Volume (m <sup>3</sup> / week)				
	Block D (Combined)	Block E (Combined)	Block F (Combined)	Block G (Combined)	Crèche
Organic Waste	1.52	1.28	0.86	0.68	0.03
DMR	10.79	8.78	6.12	4.82	1.21
Glass	0.29	0.25	0.17	0.13	<0.01
MNR	5.68	5.11	3.22	2.53	0.53
<b>Total</b>	<b>18.28</b>	<b>15.42</b>	<b>10.37</b>	<b>8.16</b>	<b>1.77</b>

The DLRCC *Guidance Notes for Waste Management in Residential and Commercial Developments* recommends calculating residential waste using Section 4.7 of *BS5906:2005 Waste Management in Buildings – Code of Practice*<sup>20</sup>. The predicted total waste generated from the residential units based on the Code of Practice is c. 39.00 m<sup>3</sup> per week for the residential units. Whereas the AWN waste generation model estimates c. 52.25 m<sup>3</sup> per week from the residential units. AWN's modelling methodology is based on data from recent published data from the EPA (*Environmental Protection Agency (EPA) National Waste Database Reports 1998 – 2012; EPA National Waste Statistics Summary Report for 2019*) and is a more representative estimate of the likely waste arisings from the development, as *BS5906:2005* was published in 2006.

## 5.0 WASTE STORAGE AND COLLECTION

This section provides information on how waste generated within the development will be stored and how the waste will be collected from the development. This has been prepared with due consideration of the proposed site layout as well as best practice standards, local and national waste management requirements including those of DLRCC. In particular, consideration has been given to the following documents:

- BS 5906:2005 Waste Management in Buildings – Code of Practice;
- DLRCC Guidance Notes for Waste Management in Residential and Commercial Developments;
- DLRCC, Dún Laoghaire Rathdown County Council Segregation, Storage and Presentation of Household and Commercial Waste) Bye-laws (2019).
- EMR Waste Management Plan 2015 – 2021; and
- DoHLGH, Sustainable Urban Housing: Design Standards for New Apartments, Guidelines for Planning Authorities (2020)<sup>21</sup>.

Three (3 no.) Waste Storage Areas (WSAs) have been allocated in the design of this development. One (1 no.) WSA has been allocated for residential use, and is located at lower ground floor level beneath Block G. One (1 no.) WSA, also located at lower ground floor level beneath Block G, will only be accessible by facilities management and will be used for the storage of compactor waste bags. One (1 no.) WSA has been allocated for use by the crèche unit, and is located at lower ground floor level beneath Block G. The locations of the WSAs can be viewed on the drawings submitted with the planning application under separate cover.

Facilities management will supply all residents with a document that shall clearly state the methods of source waste segregation, storage, reuse and recycling initiatives that shall apply within the development.

### Waste Storage Requirements

Using the estimated waste generation volumes in Table 4.1, the waste receptacle requirements for MNR, DMR, organic waste and glass have been established for the

shared residential WSA and crèche WSA. These are presented in Tables 5.1 and 5.2. The WSAs have been appropriately sized to accommodate the weekly waste requirements for waste receptacles. It is envisaged that all waste types will be collected on a weekly basis.

**Table 5.1** Waste storage requirements for residential units

Area/Use	Bins Required				
	Epac Compactor	Compacted Waste Containers (circa 2m <sup>3</sup> each) MNR <sup>1</sup>	Compacted Waste Containers (circa 3m <sup>3</sup> each) DMR <sup>2</sup>	Organic	Glass
Residential WSA (Blocks DEFG) (Combined)	1 no. for MNR <sup>1</sup> 1 no. for DMR <sup>2</sup>	2	2	19 x 240L	4 x 240L

Note: <sup>1</sup> = Mixed Non-Recyclables

<sup>2</sup> = Dry Mixed Recyclables

**Table 5.2** Waste storage requirements for the crèche unit

Area/Use	Bins Required			
	MNR <sup>1</sup>	DMR <sup>2</sup>	Glass	Organic
Crèche WSA	1 no. 1100 L	1 no. 1100 L 1 no. 240 L	1 no. 120 L	1 no. 120 L

Note: <sup>1</sup> = Mixed Non-Recyclables

<sup>2</sup> = 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 Tables 5.1 and 5.2 above (or similar appropriate approved containers) will be provided by the facility management company in the shared residential WSA and crèche WSA.

It is proposed that facilities management will avail of a commercially available mini compactor for the DMR and MNR waste streams in the residential WSA, referred to as an Epac compactor in this OWMP.

This option will significantly reduce the volume of waste and as such the number of bins stored on site and the number of bins that will need to be transported for collection. It compresses/compacts the waste into 2m<sup>3</sup> and 3m<sup>3</sup> bags.

Alternative options can be considered in future by the facilities management company, as technologies are developed. Solely for the purpose of ensuring the residential WSA is sufficiently sized, this plan assumes that the Epac option will be utilised.

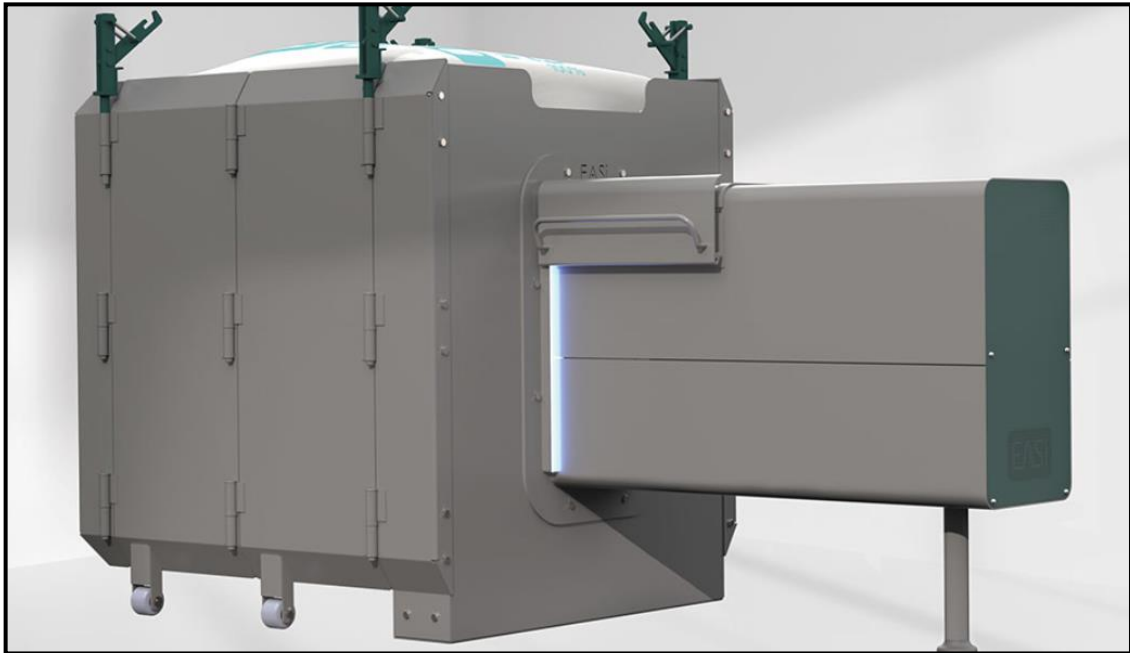
The types of bins used will vary in size, design and colour dependent on the appointed waste contractor. However, examples of typical receptacles to be provided in the WSAs are shown in Figure 5.1. All waste receptacles used will comply with the SIST

EN 840-1:2020 and SIST EN 840-2:2020 standard for performance requirements of mobile waste containers, where appropriate.



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

The Epac compactor referred to in the list of bins/equipment in the residential WSA is a compactor that compresses/compacts the waste into 2m<sup>3</sup> and 3m<sup>3</sup> skip bags (also called Flexible Intermediate Bulk Containers or FIBCs). A photo of the Epac mini compactor is provided as Figure 5.2.



**Figure 5.2** Photo of an Epac Mini Compactor (Source: bnmrecycling Website)

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

This Plan will be provided to each resident and the crèche tenants from first occupation of the development i.e. once the first residential unit or crèche 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 Apartment Units

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

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

Provision will be made in all residential apartment 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 5.3 below.



**Figure 5.3** Example three bin storage system to be provided within the 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 locations of the shared residential WSA is illustrated in the drawings submitted with the planning application under separate cover.

Each bin / container in the shared residential WSA 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 shared residential WSA will be restricted to authorised residents, facilities management and waste contractors by means of a key or electronic fob access.

Other waste materials such as textiles, batteries, printer toner/cartridges 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 – Crèche Unit

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

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

As required, the staff will need to bring segregated DMR, MNR, glass and organic waste to the dedicated crèche WSA.

Each bin/container in the crèche WSA 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 crèche WSA will be restricted to authorised crèche and facilities management by means of a key or electronic fob access.

Based on the recommended bin requirements in Table 5.1, DMR, MNR and organic waste will be required to be collected weekly and glass will be collected as required.

Other waste materials such as textiles, batteries, printer toner/cartridges and WEEE may be generated infrequently by the crèche tenants. Crèche tenants 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.

### 5.3 Waste Collection

There are numerous private contractors that provide waste collection services in the DLRCC 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 / FIBCs from the proposed development will be brought to a collection area adjacent to the central vehicular ramp by the waste contractor or facilities management immediately prior to collection. The lower ground floor level car park is insufficient in height for a waste truck to access, therefore all waste will be collected at grade. Bins / FIBCs will be returned to the WSAs immediately following collection. The collection area is such that it 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 (2019) <sup>22</sup>.

It is recommended that bin / FIBC collection times/days are staggered to reduce the number of bins / FIBCs required to be emptied at once and the time the waste vehicle is onsite. 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/garden waste

Green/garden waste may be generated from internal plants/flowers. Green waste generated from internal plants/flowers can be placed in the organic waste bins in the WSA. If substantial green waste is produced by the crèche tenants this can be removed by 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 / recycling 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 crèche 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 / licensed 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 civic amenity / 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 crèche 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

It is recommended that a printer cartridge / toner bin is provided in the crèche unit, where appropriate. The crèche 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 / recycling centre.

#### Chemicals (solvents, pesticides, paints, adhesives, resins, detergents, etc)

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 crèche unit that are classed as hazardous (if they arise) will be appropriately stored within the tenant's 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 should be brought to a civic amenity / recycling centre.

#### Light Bulbs

Waste light bulbs (flourescent, incandescent and LED) may be generated by lighting at the crèche unit. It is anticipated that the crèche tenants will be responsible for the off-site removal and appropriate reovery / disposal of these wastes. Facilities management may arrange collection, depending on the agreement.

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

#### Textiles

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

#### Waste Cooking Oil

If the crèche 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 / recycling centre or placed in the organic bin.

#### Furniture (and other bulky wastes)

Furniture and other bulky waste items (such as carpet, etc.) may occasionally be generated by the residents and crèche tenants. The collection of bulky waste will be arranged, as required, by the crèche tenants. If residents wish to dispose of furniture, this can be brought a civic amenity / recycling 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.

### **5.5 Waste Storage Area Design**

The shared apartment WSAs and crèche WSA will 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;
- Provide suitable lighting – a minimum Lux rating of 400 is recommended;
- Appropriate sensor controlled lighting;
- 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 graphical and written signage placed above and on bins indicating correct use;
- Have access for potential control of vermin, if required;
- Robust design of doors to bin area incorporating steel sheet covering where appropriate; and
- Be fitted with CCTV for monitoring.

The facility management company will be required to maintain bins and storage areas in good condition as required by the DLRCC *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 apartment residents is managed to ensure correct storage prior to collection by an appropriately permitted waste management company.

Facilities Management should provide the following items in accordance with the DLRCC *the Guidance Notes for Waste Management in Residential and Commercial Developments*:

- Provision of a Waste Management Plan document, prepared by the Facilities Management Company to all residential 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 of their obligation to reduce waste, segregate waste and in the correct bin;
- Preparation of an annual waste management report for all residential units;
- 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;
- Daily inspection of waste storage areas and signing of a daily check list, which shall be displayed within the area; and
- Maintenance of a weekly 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.

## 6.0 CONCLUSIONS

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

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 achieving the targets set out in the *EMR Waste Management Plan 2015 – 2021*.

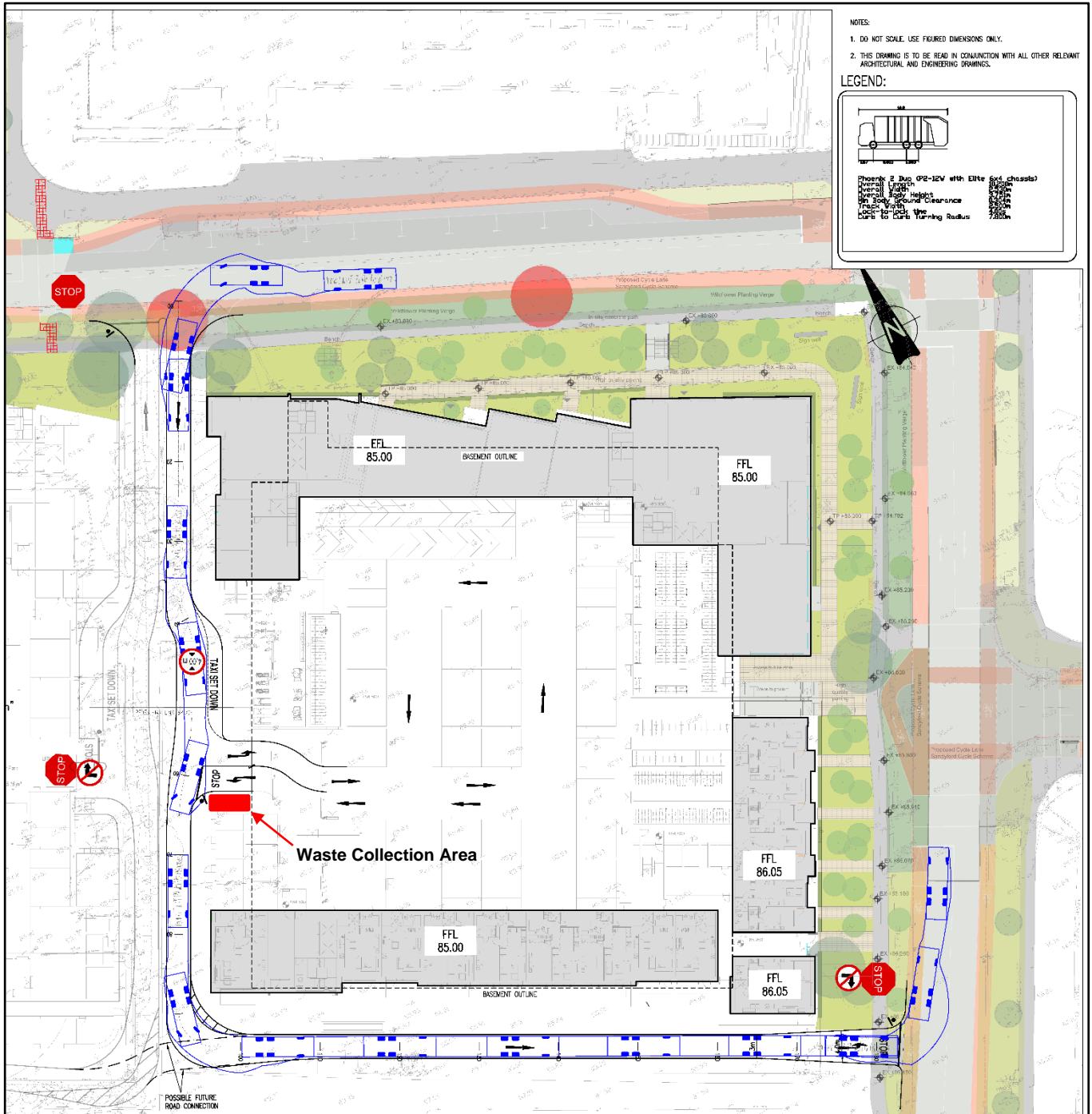
Adherence to this plan will also ensure that waste management at the development is carried out in accordance with the requirements outlined in the DLRCC Guidance Notes for Waste Management in Residential and Commercial Developments and the *DLRCC Waste Bye-Laws*.

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

## 7.0 REFERENCES

1. Waste Management Act 1996 as amended.
2. Litter Pollution Act 1997 (Act No. 12 of 1997) as amended;
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7. Department of Environment and Local Government (DoELG) *Waste Management – Changing Our Ways, A Policy Statement* (1998).
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13. Environmental Protection Agency (EPA), *National Waste Database Reports 1998 – 2012*.
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16. European Waste Catalogue - Council Decision 94/3/EC (as per Council Directive 75/442/EC).
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20. BS 5906:2005 Waste Management in Buildings – Code of Practice.
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22. Department of Transport, Tourism and Sport and Department of Housing, Planning and Local Government, *Design Manual for Urban Roads and Streets* (2019).

### 8.0 APPENDIX 1: ROAD SWEEP ANALYSIS FOR REFUSE TRUCK



9.0 APPENDIX 2: ROUTES TO WASTE STORAGE AREAS

7.4 | WASTE MANAGEMENT



**Bin Stores**

One secure, covered, communal bin store with a waste compactor has been provided on the lower ground floor of the development, within 50 m from each stair core. It has been sited to be easily accessible by residents of all blocks but also screened from view of a passerby.

The proposed location allows for an easy waste collection with a close proximity of the set down area.



- Waste Compactor
- Creche Bin Store
- Store
- Collection Area
- Set down area
- ➔ Residents route
- ➔ Creche route
- ➔ Waste collection route

