

**OPERATIONAL WASTE
MANAGEMENT PLAN FOR
A SHARED LIVING
DEVELOPMENT**

AT

**BRADY'S PUBLIC HOUSE,
OLD NAVAN ROAD,
DUBLIN 15**

Report Prepared For

Bartra Property (Castleknock) Limited

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CONTENTS		Page
1.0	INTRODUCTION	4
2.0	OVERVIEW OF WASTEMANAGEMENT IN IRELAND	4
2.1	National Level	4
2.2	Regional Level	5
2.3	Legislative Requirements	6
2.3.1	Fingal County Council Waste Bye-Laws	8
2.4	Regional Waste Management Service Providers and Facilities	8
3.0	DESCRIPTION OF THE PROJECT	9
3.1	Location, Size and Scale of the Development	9
3.2	Typical Waste Categories	9
3.3	European Waste Codes	10
4.0	ESTIMATED WASTE ARISING	10
5.0	WASTE STORAGE AND COLLECTION	11
5.1	Waste Storage – Shared Living Accommodation	13
5.2	Kitchen/Living/Dining and Common Areas	14
5.3	Waste Collection	15
5.4	Additional Waste Materials	15
5.5	Waste Storage Area Design	16
6.0	CONCLUSIONS	17
7.0	REFERENCES	18

1.0 INTRODUCTION

AWN Consulting Ltd. (AWN) has prepared this Operational Waste Management Plan (OWMP) on behalf of Bartra Property (Castleknock) Limited, for submission to An Bord Pleanála (ABP) for a proposed residential development. The development will consist of the demolition of the existing structures and hardstanding area on site and the construction of a shared living building along with bicycle parking, landscaping, waste storage areas and services at Brady's Public House, Old Navan Road, Dublin 15.

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 current legal and industry standards including, the *Waste Management Act 1996 – 2011* as amended and associated Regulations ¹, *Protection of the Environment Act 2003* as amended ², *Litter Pollution Act 2003* as amended ³, the '*Eastern-Midlands Region (EMR) Waste Management Plan 2015 – 2021*' ⁴ and the Fingal County Council *Segregation Storage, Presentation and of Household and Commercial Waste (2020)* ⁵. 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 WASTEMANAGEMENT IN IRELAND

2.1 National Level

The Government issued a policy statement in September 1998 titled as '*Changing Our Ways*' ⁶ which identified objectives for the prevention, minimisation, reuse, recycling, recovery and disposal of waste in Ireland. A heavy emphasis was placed on reducing reliance on landfill and finding alternative methods for managing waste. Amongst other things, *Changing Our Ways* stated a target of at least 35% recycling of municipal (i.e. household, commercial and non-process industrial) waste.

A further policy document '*Preventing and Recycling Waste – Delivering Change*' was published in 2002 ⁷. This document proposed a number of programmes to increase recycling of waste and allow diversion from landfill. The need for waste minimisation at source was considered a priority.

This view was also supported by a review of sustainable development policy in Ireland and achievements to date, which was conducted in 2002, entitled '*Making Irelands Development Sustainable – Review, Assessment and Future Action*' ⁸. 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*' ⁹. Covering the period 1998 – 2003, the aim of this document was to assess progress to date with regard to waste management in Ireland, to consider developments since the policy framework and the local authority waste management

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

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

The most recent policy document was published in July 2012 titled 'A Resource Opportunity'¹⁰. The policy document stresses the environmental and economic benefits of better waste management, particularly in relation to waste prevention. The document sets out a number of actions, including the following:

- A move away from landfill and replacement through prevention, reuse, recycling and recovery.
- A Brown Bin roll-out diverting 'organic waste' towards more productive uses.
- Introducing a new regulatory regime for the existing side-by-side competition model within the household waste collection market.
- New Service Standards to ensure that consumers receive higher customer service standards from their operator.
- Placing responsibility on householders to prove they use an authorised waste collection service.
- The establishment of a team of Waste Enforcement Officers for cases relating to serious criminal activity will be prioritised.
- Reducing red tape for industry to identify and reduce any unnecessary administrative burdens on the waste management industry.
- A review of the producer responsibility model will be initiated to assess and evaluate the operation of the model in Ireland.
- Significant reduction of Waste Management Planning Regions from ten to three.

While *A Resource Opportunity* covers the period to 2020, it is subject to a mid-term review in 2016 to ensure that the measures are set out properly and to provide an opportunity for additional measures to be adopted in the event of inadequate performance. In early 2016, the Department of the Environment, Community and Local Government invited comments from interested parties on the discussion paper 'Exporting a Resource Opportunity'. While the EPA have issued a response to the consultation, an updated policy document has not yet been published.

Since 1998, the Environmental Protection Agency (EPA) has produced periodic '*National Waste (Database) Reports*'¹² 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 2017 National Waste Statistics, which is the most recent study published (December 2019), reported the following key statistics for 2017:

- **Generated** – Ireland produced 2,768,043 t of municipal waste in 2017, this is less than a one percent increase since 2016. This means that each person living in Ireland generated 577kg of municipal waste in 2017;
- **Managed** – Waste collected and treated by the waste industry. In 2017, a total of 2,723,543 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 44,500 t was unmanaged in 2017;
- **Recovered** – the amount of waste recycled, used as a fuel in incinerators, or used to cover landfilled waste. In 2017, over three quarters (77%) of municipal waste was recovered, this is an increase from 74% in 2016;

- **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 2017 was 41%, the same as 2014 & 2016; and
- **Disposed** – Less than a quarter (23%) of municipal waste was landfilled in 2017, this is a decrease from 26% in 2016 Regional Level

The proposed development is located in the Local Authority area of Fingal County Council (FCC).

The *EMR Waste Management Plan 2015 – 2021* is the regional waste management plan for the FCC area which was published in May 2015. The regional plan sets out the following strategic targets for waste management in the region:

- 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 €130 - €150 per tonne of waste which includes a €75 per tonne landfill levy introduced under the *Waste Management (Landfill Levy) (Amendment) Regulations 2012*.

The *Fingal Development Plan 2017 – 2023*¹² came into effect on March 2017 and sets out a number of policies and objectives for the Fingal region in line with the objectives of the regional waste management plan.

Waste objectives with a particular relevance to the proposed development are:

Objectives:

- *Objective WM03 Implement the provisions of the Eastern Midlands Region Waste Management Plan 2015 -2021 or any subsequent Waste Management Plan applicable within the lifetime of the Development Plan. All prospective developments in the County will be expected to take account of the provisions of the Regional Waste Management Plan and adhere to the requirements of that Plan.*
- *Objective WM05 Prevent and minimise the generation of waste in accordance with the Eastern Midlands Region Waste Management Plan 2015 -2021 (or any subsequent plans).*
- *Objective WM07 Promote the increased re-use of waste in accordance with the Eastern Midlands Region Waste Management Plan 2015-2021 (or any subsequent plan).*

2.2 Legislative Requirements

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

- Waste Management Act 1996 (No. 10 of 1996) as amended 2001 (No. 36 of 2001), 2003 (No. 27 of 2003) and 2011 (No 20 of 2011). Sub-ordinate and associated legislation includes:
 - European Communities (Waste Directive) Regulations 2011 (S.I. No. 126 of 2011) as amended
 - Waste Management (Collection Permit) Regulations 2007 (S.I. No. 820 of 2007) as amended

- Waste Management (Facility Permit and Registration) Regulation 2007 (S.I No. 821 of 2007) as amended
- Waste Management (Licensing) Regulations 2000 (S.I No. 185 of 2000) as amended
- European Union (Packaging) Regulations 2014 (S.I. No. 282 of 2014) as amended.
- Waste Management (Planning) Regulations 1997 (S.I. No. 137 of 1997) as amended
- Waste Management (Landfill Levy) Regulations 2015 (S.I. No. 189 of 2015)
- European Communities (Waste Electrical and Electronic Equipment) Regulations 2014 (S.I. No. 149 of 2014)
- Waste Management (Batteries and Accumulators) Regulations 2014 (S.I. No. 283 of 2014) as amended
- Waste Management (Food Waste) Regulations 2009 (S.I. No. 508 of 2009) as amended
- European Union (Household Food Waste and Bio-waste) Regulations 2015 (S.I. No. 191 of 2015)
- Waste Management (Hazardous Waste) Regulations 1998 (S.I. No. 163 of 1998) as amended
- Waste Management (Shipments of Waste) Regulations 2007 (S.I. No. 419 of 2007) as amended
- *European Communities (Transfrontier Shipment of Waste) Regulations 1994 (SI 121 of 1994)*
- European Union (Properties of Waste Which Render it Hazardous) Regulations 2015 (S.I. No. 233 of 2015) as amended
- Environmental Protection Act 1992 (S.I. No. 7 of 1992) as amended;
- Litter Pollution Act 1997 (Act No. 12 of 1997) as amended and
- Planning and Development Act 2000 (S.I. No. 30 of 2000) as amended ¹³

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 - 2011* 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 and proposed building 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 IED (Industrial Emissions Directive) 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 Fingal County Council Waste Bye-Laws

The FCC “*Fingal County Council (Segregation Storage, Presentation and of Household and Commercial Waste) Bye-Laws (2020)*” came into use on the 1st of April 2020. These bye-laws repeal the previous ‘Fingal County Council *Bye-Laws for the Storage, Presentation and Collection of Household Waste (2006)*’. The Bye-Laws set a number of enforceable requirements on waste holders with regard to storage, separation and presentation of waste within the FCC functional area. Key requirements under these Bye-Laws of relevance to the proposed 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 9:00am 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.

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

2.3 **Regional Waste Management Service Providers and Facilities**

Various contractors offer waste collection services for the in the FCC 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 FCC Coolmine Recycling Centre is located c. 1.8km to the west and can be utilised by all residents of the development for other household waste streams. Additionally, glass, cans and textiles can also be brought to a smaller bring centre at the Roselawn Tesco car park c.1.10km south east of the development.

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

Bartra Property (Castleknock) Limited intend to apply to An Bord Pleanála for permission for a strategic housing development at this 0.3,170 ha site at Brady's Public House, Old Navan Road, Dublin 15, D15 W3FW.

The development will principally consist of: the demolition of the existing part 1 to part 2 No. storey over partial basement public house and restaurant building (1,243 sq m) and the construction of a part 1 to part 5 No. storey over basement Build-to-Rent Shared Living Residential Development (6,549 sq m) comprising 210 No. bedspaces (182 No. single occupancy rooms, 4 No. accessible rooms and 12 No. double occupancy rooms).

The development also consists of the provision of communal living/kitchen/dining rooms at each floor level to serve the residents of each floor; communal resident amenity spaces for all residents including tv/cinema room at basement level, gymnasium and lounge/reception area at ground floor level, a library/study at third floor level and a private dining room at fourth floor level; external roof terrace at third floor level (78 sq m) facing north-east, north-west and south-west; external communal amenity courtyards at basement (170 sq m) and ground floor level (336 sq m); external amenity space at basement level accessed from the communal living/kitchen/dining room (30 sq m); balconies at third floor level facing north-east/north-west (14.35 sq m); resident facilities including launderette, linen store, accessible WC and bin store; 2 No. accesses to the public park along the north-eastern boundary; 2 No. car-share parking spaces; a lay-by and delivery bay; emergency gate access to the courtyard (north-west boundary); bicycle parking; boundary treatments; hard and soft landscaping; plant; PV panels; substation; switch room; generator; lighting; and all other associated site 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 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 in small quantities which will need to be managed separately including:

- Green/garden waste may be generated from nnexternal 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.);
- Fluorescent tubes and other light bulbs;
- Textiles (rags);
- Waste cooking oil (if any generated by the residents);

- Furniture & other bulky wastes (if generated by residents); 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* ¹⁴ and *Hazardous Waste List* ¹⁵ were published by the European Commission. In 2002, the EPA published a document titled the *European Waste Catalogue and Hazardous Waste List* ¹⁶, 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' ¹⁷ 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, COR's, 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

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
Fluorescent tubes and other mercury containing waste *	20 01 21*
Bulky Wastes	20 03 07

* Individual waste type may contain hazardous materials

Table 3.1 Typical Waste Types Generated and LoW Codes

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 shared living accommodation has been determined based on the predicted occupancy of the units.

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

Waste type	Waste Volume (m ³ /week)
	Shared Living Block
Organic Waste	1.14
DMR	8.39
Glass	0.22
MNR	3.99
Total	13.74

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

It has been assumed that the shared living accommodation will generate similar waste volumes over a seven-day period. Additionally, it is considered that waste generation quantities per person for shared living residents would typically be less than domestic unit dwellings, therein the estimates in Table 4.1 are a likely representation of a worst case scenario.

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 FCC. In particular, consideration has been given to the following documents:

- BS 5906:2005 Waste Management in Buildings – Code of Practice ¹⁸;
- EMR Waste Management Plan 2015 – 2021;
- DoEHLG, Sustainable Urban Housing: Design Standards for New Apartments, Guidelines for Planning Authorities (2018) ¹⁹;
- Fingal County Council Development Plan 2017 – 2023 (2017); and
- Fingal County Council *Segregation Storage, Presentation and of Household and Commercial Waste (2020)*.

A Communal Waste Storage Area (WSA) has been allocated within the development design to accommodate waste arising from the residents. The WSA is located in the south east corner, between the building and the development boundary. All residents will have access to the WSA, but it is envisaged that they will empty their waste into the Area Waste Stations (AWS) located on each floor and will only require access to the WSA, to dispose of Waste Electrical and Electronic Equipment (WEEE), lightbulbs and waste cooking oil. The location of WSA can be seen in figure 5.1.

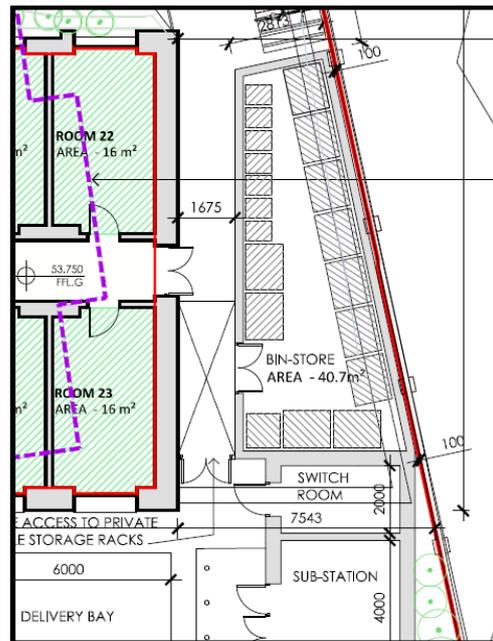


Figure 5.1 Location of the Waste Storage Area

Using the estimated waste generation volumes in Table 4.1, the waste receptacle requirements for MNR, DMR, organic waste, glass, WEEE, lightbulbs and waste cooking oil have been established for the WSA. These are presented in Table 5.1.

Area/Use	Bins Required				
	MNR*	DMR**	Organic	Glass	WEEE, Lightbulbs, Cooking Oil
Shared Living Accommodation	4 x 1100L	7 x 1100L	5 x 240L	1 x 240L	Roll Cage & Bunded Container

Note: * = Mixed Non-Recyclables
 ** = Dry Mixed Recyclables

Table 5.1 Waste storage requirements for the proposed development

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 building management company in the WSA.

The types of bins used will vary in size, design and colour dependent on the appointed waste contractor. However, examples of typical receptacles to be provided in the WSA are shown in Figure 5.2. All waste receptacles used will comply with the IS EN 840 2012 standard for performance requirements of mobile waste containers, where appropriate.



Figure 5.2 Typical waste receptacles of varying size (240L and 1100L)

5.1 Waste Storage – Shared Living Accommodation

Residents in the shared living accommodation will be required to segregate waste into the following main waste streams:

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

Segregated bins for DMR, MNR, organic waste and glass will be provided within the kitchens/dining areas of the shared living units by the building management company. Additional bins for segregation of DMR and MNR will also be provided in the common areas, where appropriate. Resident's bedrooms will have bins for DMR, MNR and organic waste segregation. Residents will be required to segregate their waste as above into the provided receptacles in accordance with the terms of the letting agreements of the Operator.

No food macerators will be installed within any area of the shared living accommodation building.

All bins/containers will be clearly labelled, and colour coded to avoid cross contamination of the different waste streams. Signage will be posted on or above the bins to show which wastes can be put in each bin.

As required, the residents will bring waste from their bedrooms as required to the AWSs located on each floor. Cleaning staff will also empty the bins in the bedrooms waste receptacle on a fortnightly basis. More frequent room servicing can be arranged with building management. If residents need to access the WSA, Residents on the floors above ground level will use the lifts or stairs of their building to bring waste to the ground floor and over to the WSA. Residents will be provided with access fobs/key/code by the Operator to access the WSA, however the majority of waste can be taken to the nearest AWS for disposal. Building cleaning staff will bring waste from the AWSs and common areas to the WSA as required.

Segregated waste bins (as per Table 5.1) will be provided by the building management company in the WSA. Bins will be labelled, and colour coded to minimise cross contamination.

Suitable storage containers will be provided in the Communal WSA to store WEEE, fluorescent tubes, LED light bulbs and waste cooking oil, until collection is arranged by building management.

Other waste materials such as batteries, printer toner/cartridges and textiles may be generated infrequently in the shared living accommodation areas. Residents will be required to identify suitable temporary storage areas for these waste items within their units and dispose of them appropriately. Further details on how these waste types will be managed can be found in Section 5.3.

Using the estimated figures in Table 4.1, DMR, MNR, organic and glass waste will be collected on a weekly basis. WEEE, lightbulbs and cooking oil will be collected as required.

5.2 Kitchen/Living/Dining and Common Areas

One to three shared kitchen/living/dining areas will be located on each floor, other common areas will be spread out throughout the development.

Kitchen/Living/Dining Areas

The kitchen/living/dining areas will generate a significant volume of waste on a daily basis and, as such, it is important that adequate provision is made for the storage and daily transfer of wastes.

Area Waste Stations (AWS) will be required to be provided in the kitchen/dining areas to facilitate segregation at source of waste. The AWS should include a bin for organic (food), DMR, MNR and glass. Alternatively, another larger bin will be provided in the WSA for larger glass collections.

Segregated waste from residents' bedrooms should be brought to the nearest AWS for disposal. It is envisaged that residents will not generally need to access the WSA on ground floor level. However, access to the WSA will be provided to residents so they can dispose of WEEE, light bulbs and waste cooking oil.

An option for the types of bins that could be provided are illustrated in Figure 5.3 below.



Figure 5.3 An Indicative Area Waste Station (AWS) unit

Common Areas

AWSs will be strategically located in the common areas for residents/visitors to dispose of waste. The common area AWSs will be strategically located throughout the development where required and should contain a bin for DMR and MNR.

Facilities cleaning staff will empty the AWS bins each day (or more frequently as required) and will bring the bin bags using trolleys, via the lifts to the dedicated Waste Storage Area(s) (WSA) at ground level.

All bins/containers should be clearly labelled, and colour coded to avoid cross contamination of the different waste streams. Signage should be posted above or on the bins to show exactly which wastes can be put in each.

5.3 Waste Collection

There are numerous private contractors that provide waste collection services in the FCC 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/permited/licensed facilities only.

All waste requiring collection by the appointed waste contractor will be collected directly from the WSA by waste contractors nominated by the building management company and taken to the waste collection vehicle for emptying.

The waste contractor will ensure that empty bins are promptly returned to the WSA after collection/emptying.

It is recommended that bin collection times/days are staggered to reduce the number of bins 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 external landscaping and internal plants/flowers. Green/garden waste generated from landscaping of external areas will be removed by the external landscape contractor. Green waste generated from internal plants/flowers can be placed in the organic waste bins in the WSA.

Batteries

A take-back service for waste batteries and accumulators (e.g. rechargeable batteries) is in place to in order to comply with the *European Union (Batteries and Accumulators) Regulations 2014*. A system for the free take-back of waste batteries from the household waste stream is well established through retail outlets and recycling centres. Alternatively batteries can be taken by residents to the nearest civic centre.

Waste Electrical and Electronic Equipment (WEEE)

The *WEEE Directive 2002/96/EC* and associated *European Union (WEEE) Regulations 2014* have been enacted to ensure a high level of recycling of electronic and electrical equipment. It is the manufacturers' responsibility to take back the WEEE, regardless of whether a replacement product is purchased or not and retailers are required to take back WEEE where a similar product is purchased. WEEE can be taken by the residents to the WSA or to the nearest civic amenity centre. A receptacle (metal

roll cage) for WEEE should be accommodated in the WSA. Collection of WEEE will be arranged as required.

Printer Cartridge/Toners

Waste printer cartridge/toners generated by all residents can usually be returned to the supplier free of charge. Alternatively they can be taken to the nearest civic amenity site.

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

Waste chemicals (such as solvents, pesticides, paints, 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.

If chemicals are generated by the residents they can be taken to the nearest civic centre. It is not envisaged that residents will generate chemicals as the development will be primarily cleaned and maintained by facilities management.

Light bulbs (Fluorescent Tubes, Long Life, LED and Lilament bulbs)

Waste Light bulbs will be generated by external electrical/maintenance contractors servicing the building. It is anticipated that these contractors will be responsible for the off-site removal and appropriate recovery/disposal of these wastes.

It is not envisaged that flurescent tubes will be used at this development, instead moderen LED light fittings will be used.

Fluorescent tubes and LED light bulbs if generated can be taken by residents to the WSA or to the nearest civic centre. A receptacale (Light bulb coffin) will be accommodated in the WSA. Collection of fluorescent tubes (if generated) and LED light bulbs will be arranged as required.

Textiles

Where possible, waste textiles should be recycled or donated to a charity organisation for reuse. Recycling centres (including the bring bank at Roselawn Tesco car park) provide for collection of waste clothes and other textiles.

Waste Cooking Oil

If residents generate waste cooking oil this can be taken to the WSA or to the nearest civic centre. A recepticle (bunded spill pallet) for waste cooking oil will be accommodated in the WSA. Collections by a dedicated waste contractor will need to be organised as required.

Furniture (and other bulky wastes)

The shared living building will be fully furnished and residents will be restricted from bringing additional furniture to the development. If residents wish to dispose of furniture not owned by the development, this can be brought a recycling centre.

Abandoned Bicycles

A bicycle parking area is planned for this 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 WSA should be designed and fitted-out to meet the requirements of relevant design Standards, including:

- Be fitted with a non-slip floor surface;
- Provide ventilation to reduce the potential for generation of odours (unless external) with a recommended 6-10 air changes per hour for a mechanical system;
- Provide suitable lighting – a minimum Lux rating of 220 is recommended;
- Be easily accessible for people with limited mobility;
- Be restricted to access by tenants, building management and waste contractors only;
- Be supplied with hot or cold water for washing of bins;
- Be fitted with suitable power supply for a power washer, if required;
- Have a sloped floor to a central foul drain for bin wash water run-off;
- Have appropriate signage placed above and on bins indicating correct use; and
- Have measures for potential control of vermin, if required.

The building management company will be required to maintain bins and storage areas in good condition as required by the FCC *Waste Bye-Laws*.

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*.

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. Sufficient access egress has been provided to enable bins to be collected by the waste contractor from the delivery bay.

7.0 REFERENCES

1. Waste Management Act 1996 (S.I. No. 10 of 1996) as amended 2001 (S.I. No. 36 of 2001), 2003 (S.I. No. 27 of 2003) and 2011 (S.I. No. 20 of 2011). Sub-ordinate and associated legislation includes:
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 - Waste Management (Collection Permit) Regulations 2007 (S.I. No. 820 of 2007) as amended
 - Waste Management (Facility Permit and Registration) Regulations 2007 (S.I. No. 821 of 2007) as amended
 - Waste Management (Licensing) Regulations 2000 (S.I. No. 185 of 2000) as amended
 - European Union (Packaging) Regulations 2014 (S.I. No. 282 of 2014)
 - Waste Management (Planning) Regulations 1997 (S.I. No. 137 of 1997)
 - Waste Management (Landfill Levy) Regulations 2015 (S.I. No. 189 of 2015)
 - European Communities (Waste Electrical and Electronic Equipment) Regulations 2014 (S.I. No. 149 of 2014)
 - Waste Management (Batteries and Accumulators) Regulations 2014 (S.I. No. 283 of 2014) as amended
 - Waste Management (Food Waste) Regulations 2009 (S.I. No. 508 of 2009) as amended 2015 (S.I. No. 190 of 2015)
 - European Union (Household Food Waste and Bio-waste) Regulations 2015 (S.I. No. 191 of 2015)
 - Waste Management (Hazardous Waste) Regulations 1998 (S.I. No. 163 of 1998) as amended 2000 (S.I. No. 73 of 2000)
 - Waste Management (Shipments of Waste) Regulations 2007 (S.I. No. 419 of 2007) as amended
 - *European Communities (Transfrontier Shipment of Waste) Regulations 1994 (SI 121 of 1994)*
 - European Union (Properties of Waste which Render it Hazardous) Regulations 2015 (S.I. No. 233 of 2015)
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3. Litter Pollution Act 1997 (Act No. 12 of 1997) as amended;
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9. DoEHLG, *Taking Stock and Moving Forward* (2004)
10. DoEHLG, *A Resource Opportunity - Waste Management Policy in Ireland* (2012)
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13. Planning and Development Act 2000 as amended
14. European Waste Catalogue - Council Decision 94/3/EC (as per Council Directive 75/442/EC).
15. Hazardous Waste List - Council Decision 94/904/EC (as per Council Directive 91/689/EEC).
16. EPA, *European Waste Catalogue and Hazardous Waste List* (2002)
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18. BS 5906:2005 Waste Management in Buildings – Code of Practice.
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