

APPENDIX 15.2 OPERATIONAL WASTE MANAGEMENT PLAN

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**OPERATIONAL WASTE
MANAGEMENT PLAN FOR A
PROPOSED MIXED-USE
DEVELOPMENT**

AT

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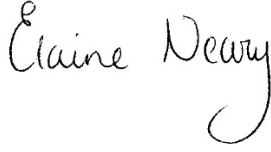
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1.0 INTRODUCTION

AWN Consulting Ltd. (AWN) has prepared this Operational Waste Management Plan (OWMP) on behalf of Castlethorn Construction. for a proposed mixed-use development located at Dunshaughlin, Co. Meath.

The subject site forms part of the Applicant's wider landholding of c. 18.8 Ha extending north and beyond the Drumree Road. These lands are irregularly shaped and largely comprise two distinct sites within the western part of the Dunshaughlin Local Area Plan and are bisected by Drumree Road and Dunshaughlin Link Road and comprise a total area of c. 14.8 Ha (which includes the lands zoned F1 – Open Space).

The proposed development is set out in three character areas. Character Area 6 (c. 3.75 Ha) comprises a greenfield site which lies north of Drumree Road and to the west of the Dunshaughlin Link Road. A single private dwelling adjoins the subject site along the south eastern boundary.

Character Areas 3 & 4 (c. 8.47 Ha) are generally bounded to the west by the existing Dunshaughlin Link Road, to the south and east by lands zoned for open space, to the north by Phase 1 lands (currently under construction by the Applicant) and lands identified for neighbourhood centre use.

In summary, the proposed Strategic Housing Development broadly comprises: -

- 415no. residential units (254no. houses, 55no. duplex and 106no. apartments) in buildings ranging in height from 2 to 5-storeys.
- 1no. childcare facilities (c. 413 sq. m gross floor area).
- Provision of access from Drumree Road (Character Area 6) and Dunshaughlin Link Road – R125 (Character Areas 3 & 4) and provision of internal road network including pedestrian and cycle links.
- Provision of public open space.
- Provision of SuDS infrastructure.
- Provision of wastewater infrastructure including connections to main sewers on Drumree Road and to foul networks in permitted Phase 1 development.
- All associated and ancillary site development and infrastructural works, hard and soft landscaping and boundary treatment works.

A full project description is provided in Chapter 3: Description of Proposed Development.

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 – 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 Meath County Council (MCC) *Waste Management (Segregation, Storage & Presentation of Household and Commercial Waste) Bye-Laws (2018)* 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 WASTE MANAGEMENT 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 2002⁷. This document proposed a number of programmes to increase recycling of waste and allow diversion from landfill. The need for waste minimisation at source was considered a priority.

This view was also supported by a review of sustainable development policy in Ireland and achievements to date, which was conducted in 2002, entitled '*Making Ireland's Development Sustainable – Review, Assessment and Future Action*'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; and
- 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*'¹¹ 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.

2.2 Regional Level

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

The *EMR Waste Management Plan 2015 – 2021* is the regional waste management plan for the MCC area which was published in May 2015.

The regional plan sets out the following strategic targets for waste management in the region that are relevant to the proposed 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 2013*.

The *Draft Meath County Development Plan 2020 – 2026*¹² sets out a number of policies and objectives for County Meath in line with the objectives of the regional waste management plan. The plan identifies waste prevention and minimisation will be a priority and there will be increased focus on the schools, community and business sectors to reduce waste arisings. Waste policies and objectives with a particular relevance to the proposed development are:

Policies:

- *INF POL 64: To encourage and support the expansion and improvement of a three bin system (mixed dry recyclables, organic waste and residual waste) in order to increase the quantity and quality of materials collected for recycling in conjunction with relevant stakeholders.*
- *INF POL 65: To adopt the provisions of the waste management hierarchy and implement policy in relation to the County's requirements under the current or any subsequent Waste Management Plan. All prospective developments in the County shall take account of the provisions of the regional waste management plan and adhere to the requirements of the Plan. Account shall also be taken of the proximity principle and the inter-regional movement of waste.*
- *INF POL 66: To ensure that hazardous waste is addressed through an integrated approach of prevention, collection, and recycling and encourage the development of industry-led producer responsibility schemes for key waste streams.*
- *INF POL 67: To continue to promote and encourage education and awareness on all issues associated with waste management, at school, household, enterprise and community level.*

Objectives:

- *INF OBJ 57: To support developments necessary to manage food waste in accordance with the requirements of the current Waste Management (Food Waste) Regulations and the regional Waste Management Plan.*
- *INF OBJ 58: To continue to expand environmental awareness initiatives designed to create increased public awareness of waste prevention, minimisation, reuse and resource efficiency.*
- *INF OBJ 59: To co-operate with the Department of Communications, Climate Action and the Environment, the Environmental Protection Agency and other relevant stakeholders in implementing proposals which discourage or illegal or improper disposal of waste and promote the diversion of recyclable items from the waste streams including "bottle return and refund" schemes.*
- *INF OBJ 65: To ensure that during the assessment of planning applications through the Development Management process that provision for household waste recycling is adequately addressed in all new residential developments.*
- *INF OBJ 69: To support the development of facilities to cater for commercial waste not provided for within the kerbside collection system such as the WEEE, C & D type waste and hazardous materials in accordance with the requirements of the Eastern Midlands Regional Waste Management Plan.*
- *INF OBJ 70: To continue to reduce incidents of littering through the continued implementation and updating of the Councils Litter Management Plan.*

2.3 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); and
 - 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 amended¹³

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 residential tenants, commercial tenant 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 Meath County Council Waste Bye-Laws

The MCC "Meath County Council Waste Management (Storage, Presentation and Segregation of Household and Commercial Waste) By-Laws (2018)" came into effect on the 12th of November 2018. These by-laws set a number of enforceable requirements on waste holders with regard to storage, separation and presentation of waste within the MCC functional area. Key requirements under these by-laws of relevance to the proposed development include the following:

- Kerbside waste presented for collection shall not be presented for collection earlier than 6.00pm 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 8:00am on the day following the designated waste collection day;
- 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 Meath County Council;
- Adequate access and egress onto and from the premises by waste collection vehicles is maintained; and
- Written information is provided to each tenant or other occupier about the arrangements for waste separation, segregation, storage and presentation prior to collection,

The full text of the waste by-laws is available from the MCC website.

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

Various contractors offer waste collection services for the residential and commercial sectors in the MCC 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.

There is a Repak center off at the County Council Office, off of Drumree Road, Dunshaughlin, Co. Meath, which accepts waste types including cardboard, newspaper, glass (green, brown, clear), aluminium, drink cans, textiles (e.g. clothes), and wood. There are no recycling centres that accept a wider range of waste types in Dunshaughlin. However, the nearest recycling centres are at Oxigen, in Trim, Co. Meath and Thorton's Waste, in Dunboyne Business Park, Co. Meath.

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

The subject site forms part of the Applicant's wider landholding of c. 18.8 Ha extending north and beyond the Drumree Road. These lands are irregularly shaped and largely comprise two distinct sites within the western part of the Dunshaughlin Local Area Plan and are bisected by Drumree Road and Dunshaughlin Link Road and comprise a total area of c. 14.8 Ha (which includes the lands zoned F1 – Open Space).

The proposed development is set out in three character areas. Character Area 6 (c. 3.75 Ha) comprises a greenfield site which lies north of Drumree Road and to the west of the Dunshaughlin Link Road. A single private dwelling adjoins the subject site along the south eastern boundary.

Character Areas 3 & 4 (c. 8.47 Ha) are generally bounded to the west by the existing Dunshaughlin Link Road, to the south and east by lands zoned for open space, to the north by Phase 1 lands (currently under construction by the Applicant) and lands identified for neighbourhood centre use.

In summary, the proposed Strategic Housing Development broadly comprises: -

- 415no. residential units (254no. houses, 55no. duplex and 106no. apartments) in buildings ranging in height from 2 to 5-storeys.
- 1no. childcare facilities (c. 413 sq. m gross floor area).
- Provision of access from Drumree Road (Character Area 6) and Dunshaughlin Link Road – R125 (Character Areas 3 & 4) and provision of internal road network including pedestrian and cycle links.
- Provision of public open space.
- Provision of SuDS infrastructure.
- Provision of wastewater infrastructure including connections to main sewers on Drumree Road and to foul networks in permitted Phase 1 development.
- All associated and ancillary site development and infrastructural works, hard and soft landscaping and boundary treatment works.

A full project description is provided in Chapter 3: Description of Proposed Development.

3.2 Typical Waste Categories

The typical non-hazardous and hazardous wastes that will be generated at the proposed development will include the following:

- Dry Mixed Recyclables (DMR) - includes waste paper (including newspapers, magazines, brochures, catalogues, leaflets), cardboard and plastic packaging, metal cans, plastic bottles, aluminium cans, tins and Tetra Pak cartons;

- Organic waste – food waste and green waste generated from internal plants/flowers;
- Glass; and
- Mixed Non-Recyclable (MNR)/General Waste.

In addition to the typical waste materials that will be generated at the development on a daily basis, there will be some additional waste types generated in small quantities which will need to be managed separately including:

- Green/garden waste may be generated from internal plants, gardens or external landscaping;
- Batteries (both hazardous and non-hazardous);
- Waste electrical and electronic equipment (WEEE) (both hazardous and non-hazardous);
- Printer cartridges/toners;
- Chemicals (paints, adhesives, resins, detergents, etc.) ;
- Light bulbs (Fluorescent Tubes, Long Life, LED and filament bulbs);
- Textiles (rags);
- Waste cooking oil (if any generated by the residents or commercial tenant);
- 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*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, 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.

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 residential units has been determined based on the predicted occupancy of the units.

The waste generation for the crèche unit is based on waste generation rates per m² floor area for the proposed area uses.

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

Waste type	Waste (m ³ /week)			
	Residential Area 3 and Area 4	Residential Area 6	Crèche	Retail
Organic Waste	4.98	2.86	0.04	0.14
DMR	34.03	19.58	1.63	0.37
Glass	0.96	0.55	0.01	0.01
MNR	22.63	13.02	0.72	0.38
Total	62.6	36.0	2.4	0.9

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

The BS5906:2005 Waste Management in Buildings – Code of Practice¹⁸ was considered in the estimations of the waste arising. The predicted total waste generated from the residential units based on the Code of Practice is c. 92.7m³ per week for the residential units. Whereas the AWN waste generation model estimates c. 98.6m³ per week from the residential units. AWN's modelling methodology is based on data from

recent published data and data from numerous other similar developments in Ireland and based on Awn' experience it is a more representative estimate of the likely waste arisings from the development.

It has been assumed residential units will generate similar waste volumes over a seven-day period, while the crèche and retail unit will operate over a five-day period. It is anticipated that the conservative estimation of waste quantities from the residents will be sufficient to cover the small quantities likely to be generated in the community facilities on a weekly basis.

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

- BS 5906:2005 Waste Management in Buildings – Code of Practice;
- EMR Waste Management Plan 2015 – 2021;
- Meath County Council Development Plan 2013 – 2016
- MCC, Waste Management (Storage, Presentation and Segregation of Household and Commercial Waste) Bye-Laws (2018); *and*
- DoEHLG, Sustainable Urban Housing: Design Standards for New Apartments, Guidelines for Planning Authorities (2018)¹⁹.

All apartment unit residents will share Waste Storage Areas (WSAs), which are located at the ground floor level.

Residents of mid terraced houses will store their bins in a dedicated bin store in front of their homes.

End terrace and detached house residents will store their bins at the back of their house and move the bins to kerbside the day of collection.

All Duplexes will share external communal waste storage areas. They will be dispersed throughout the Proposed Development as to be close to all duplex residents. The WSAs can be seen on the drawings submitted with this application.

Separate WSAs has also been allocated for the crèche and retail units. The retail unit WSA will be located on the ground floor level. The crèche unit WSA will be located externally.

These WSAs can be viewed on the drawings submitted with the planning application.

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 WSAs. These are presented in Table 5.1.

Area/Use	Bins Required			
	Organic	DMR**	MNR*	Glass
Houses	1 x 120L	1 x 240L	1 x 240L	Bottle Bank
Block 1 Apartments	3 x 240	4 x 1100L	3 x 1100L	Bottle Bank
Block 2 Apartments	3 x 240L	4 x 1100L	3 x 1100L	Bottle Bank
Block 3 Apartments	3 x 240L	4 x 1100L	3 x 1100L	Bottle Bank
Area 6 Type 1 and 2 Communal WSA	2 x 240L	2 x 1100L	2 x 1100L	Bottle Bank
Area 6 Type 1 Duplex	1 x 120L	1 x 240L	1 x 240L	Bottle Bank
Area 3 Type 1 Duplex WSA 1	1 x 120L	2 x 240L	1 x 240L	Bottle Bank
Area 3 Type 1 Duplex WSA 2	1 x 120L	2 x 240L	1 x 240L	Bottle Bank
Area 4 Type 1 Duplex WSA 1	1 x 120L	2 x 240L	1 x 240L	Bottle Bank
Area 4 Type 1 Duplex WSA 2	1 x 120L	2 x 240L	1 x 240L	Bottle Bank
Retail	1 x 240L	2 x 240L	2 x 240L	1 x 120L
Crèche	1 x 120L	2 x 1100L	1 x 1100L	1 x 120L

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 facilities management company in the residential WSAs.

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 IS EN 840 2012 standard for performance requirements of mobile waste containers, where appropriate.



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

5.1 Waste Storage – Houses

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

- Dry Mixed Recyclables (DMR);
- Mixed Non-Recyclables (MNR);
- Organic waste; and
- Glass.

Residents of mid terraced houses will store their bins in a dedicated bin store in front of their homes. End terrace and detached house residents will store their bins at the back of their house and move the bins to kerbside the day of collection.

It is anticipated that DMR, MNR and organic waste will be collected on a weekly basis, glass waste will be required to be brought to the nearest bottle bank or recycling centre.

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 5.5.

5.2 Waste Storage – Residential Apartment Units and Duplexes

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

- Dry Mixed Recyclables (DMR);
- Mixed Non-Recyclables (MNR).
- Organic waste; and
- Glass;

Residents from the residential apartment units will be required to take their segregated waste materials to their allocated designated residential WSAs located in the basement, and dispose of their segregated waste into the appropriate bins. The WSAs for duplex residents are located throughout the site, as to be close all duplex residents. Locations of these WSAs can be viewed on the drawings submitted with the planning application.

Each bin/container in the WSA will be clearly labelled and colour coded to avoid cross contamination of the different waste streams. Signage with pictures and lettering will be posted above or on the bins to show exactly which waste types can be placed in each bin.

Access to the residential WSAs will be restricted to authorised residents, facilities management and waste contractors by means of a key or electronic fob access. Using the estimated figures in Table 5.1, DMR, MNR, and organic waste will be collected on a weekly basis. Glass will be brought to the nearest bottle bank by the residents. Bins will be taken from the shared WSAs directly to the collection point on the road closest to the WSA.

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 5.5.

5.3 Waste Storage – Crèche and Retail

The crèche and retail unit will be required to segregate waste within the development into the following main waste types:

- Dry Mixed Recyclables (DMR);
- Mixed Non-Recyclables (MNR).
- Organic waste; and
- Glass.

The staff will bring the segregated waste materials to the commercial WSAs. The crèche WSA is located externally. The retail WSA is located on the ground floor level.

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

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

Using the receptacles outlined in Table 5.1, it is anticipated that DMR, MNR, organic waste, and glass will be collected on a weekly basis.

Other waste materials such as batteries, WEEE and printer toner/cartridges will be generated less frequently. An area has been allocated in the WSA for temporary storage of these items pending collection by a suitable waste contractor. The crèche and retail's nominated personnel will be required to bring these waste types from their units to the WSA as required. Facilities management may arrange collection depending on the agreement.

5.4 Waste Collection

There are numerous private contractors that provide waste collection services in the Meath County 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.

All waste requiring collection by the appointed waste contractor will be collected from the WSAs by facility management or the waste contractor (depending on the agreement) and taken to the designated waste collection point for that area.

The facility management or waste contractor will ensure that empty bins are promptly returned to the WSAs 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.

5.5 Additional Waste Materials

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

Green waste

Green waste may be generated from external landscaping and internal plants/flowers. Green waste generated from landscaping of external areas will be removed by external

landscape contractors. Green waste generated from gardens internal plants/flowers can be placed in the organic waste bins.

Batteries

A take-back service for waste batteries and accumulators (e.g. rechargeable batteries) is in place in order to comply with the Waste Management Batteries and Accumulators Regulations 2014 as amended. In accordance with these regulations consumers are able to bring their waste batteries to their local civic amenity centre or can return them free of charge to retailers which supply the equivalent type of battery, regardless of whether or not the batteries were purchased at the retail outlet and regardless of whether or not the person depositing the waste battery purchases any product or products from the retail outlet.

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

Waste Electrical and Electronic Equipment (WEEE)

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

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

Printer Cartridge/Toners

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

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

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

Chemicals (such as solvents, 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.

Any waste cleaning products or waste packaging from cleaning products generated in the commercial units that are classed as hazardous (if they arise) will be appropriately stored within the tenant's own space. Facilities Management may arrange collection depending on the agreement held with the tenant.

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

Light Bulbs (Fluorescent Tubes, Long Life, LED and Filament bulbs)

Waste light bulbs may be generated by lighting at the commercial units. It is anticipated that the commercial units will be responsible for the off-site removal and appropriate recovery/disposal of these wastes. Facilities Management may arrange collection depending on the agreement held with the tenant.

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

Textiles

Where possible, waste textiles should be recycled or donated to a charity organisation for reuse.

Waste Cooking Oil

If the commercial units use cooking oil, waste cooking oil will need to be stored within the unit on a bunded area or spill pallet and regular collections by a dedicated waste contractor will need to be organised as required.

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

Furniture (and other bulky wastes)

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

Abandoned Bicycles

Bicycle parking areas are planned for the development. As happens in other developments, residents and tenants 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.

5.6 Waste Storage Area Design

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

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

The facilities company(s) will be required to maintain the waste storage areas in good condition as required by the MCC Waste By-Laws.

6.0 CONCLUSIONS

In summary, this OWMP presents a waste strategy that addresses all legal requirements, waste policies and best practice guidelines and demonstrates that the required storage areas have been incorporated into the design of the 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 of the *MCC Waste By-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 (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:
 - 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) 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); and
 - European Union (Properties of Waste which Render it Hazardous) Regulations 2015 (S.I. No. 233 of 2015).
2. Environmental Protection Act 1992 (Act No. 7 of 1992) as amended;
3. Litter Pollution Act 1997 (Act No. 12 of 1997) as amended;
4. Eastern-Midlands Waste Region, *Eastern-Midlands Region (EMR) Waste Management Plan 2015 – 2021* (2015)
5. Meath County Council (MCC) Waste Management (Segregation, Storage & Presentation of Household and Commercial Waste) By-Laws (2018).
6. Department of Environment and Local Government (DoELG) *Waste Management – Changing Our Ways, A Policy Statement* (1998)
7. Department of Environment, Heritage and Local Government (DoEHLG) *Preventing and Recycling Waste - Delivering Change* (2002)
8. DoELG, *Making Ireland's Development Sustainable – Review, Assessment and Future Action (World Summit on Sustainable Development)* (2002)
9. DoEHLG, *Taking Stock and Moving Forward* (2004)
10. DoECLG, *A Resource Opportunity - Waste Management Policy in Ireland* (2012)
11. Environmental Protection Agency (EPA), *National Waste Database Reports 1998 – 2012*.
12. MCC, *Meath County Development Plan 2020 – 2026* (2020)
13. Planning and Development Act 2000 (S.I. No. 30 of 2000) as amended 2010 (S.I. No. 30 of 2010) and 2015 (S.I. No. 310 of 2015).
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)

17. EPA, *Waste Classification – List of Waste & Determining if Waste is Hazardous or Non-Hazardous* (2015)
18. BS 5906:2005 *Waste Management in Buildings – Code of Practice*.
19. DoEHLG, *Sustainable Urban Housing: Design Standards for New Apartments, Guidelines for Planning Authorities* (2018).