

OPERATIONAL WASTE MANAGEMENT PLAN

FOR A PROPOSED RESIDENTIAL DEVELOPMENT

AT

CITY WEST, DUBLIN 24

**“FORTUNESTOWN LANE &
GARTER LANE
RESIDENTIAL
DEVELOPMENT”**

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1.0 INTRODUCTION

AWN Consulting Ltd. (AWN) has prepared this Operational Waste Management Plan (OWMP) on behalf of Greenacre Residential DAC for submission to An Bord Pleanála (ABP). The proposed development is a residential development in City West, Dublin 24. The project will consist of two phases of construction, with phase 1 being comprised of approximately c.68,901m² (gross floor area) comprised of 526 residential houses, duplexes, units and common areas. Phase 2 will consist of approximately 450 residential apartments with a similar gross floor area to phase 1. Phase 2 plans will be formalised in a separate planning application. Phase 1 and 2 will also include roads, landscaping, service infrastructure and amenities. The waste figure estimations in the OWMP are only for phase 1 of the development, a separate OWMP will be prepared for the phase 2 planning submission.

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 South Dublin County Council *Bye-Laws for the Storage, Presentation and Collection of Household and Commercial Waste (2013)*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 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 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.
- 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. This mid-term review 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 2012 National Waste Report, which is the most recently published report, reported the following key statistics for 2012:

- The total quantity of municipal waste generated in 2012 was 4.6% lower than 2011. The total quantity of municipal waste managed in 2012 was 2.7% lower than 2011.
- The percentage tonnage of municipal waste managed for recovery (59%) exceeded the percentage tonnage managed for disposal (41%) for the first time in 2012. This is largely due to the increased use of residual waste as a fuel.
- 34% of municipal waste managed in Ireland was exported for recovery in 2012. This includes municipal waste exported for energy recovery and for recycling. Export of municipal waste for energy recovery increased by 36% between 2011 and 2012.

- Ireland's recycling rate (40%) in 2012 was close to the EU28 average (42%).

2.2 Regional Level

The proposed development is located in the Local Authority area of South Dublin County Council (SDCC).

The *EMR Waste Management Plan 2015 – 2021* is the regional waste management plan for the DCC area which was published in May 2015. This plan replaces the previous Dublin region plan due to changing National policy as set out in *A Resource Opportunity: Waste Management Policy in Ireland* and changes being enacted by the *Waste Framework Directive (2008/98/EC)* ¹².

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 €115 - €120 per tonne of waste which includes a €75 per tonne landfill levy introduced under the *Waste Management (Landfill Levy) (Amendment) Regulations 2013*.

The *South Dublin County Development Plan 2016 – 2022* ¹³ sets out a number of objectives and actions for the South Dublin area in line with the objectives of the regional waste management plan. The plan identifies a need to further reduce the role of landfilling in favour of higher value recovery options.

Waste objectives and actions with a particular relevance to this development are:

Objectives:

- **IE5 Objective 1:** *To support the implementation of the Eastern–Midlands Region Waste Management Plan 2015-2021 by adhering to overarching performance targets, policies and policy actions.*
- **IE5 Objective 2:** *To support waste prevention through behavioural change activities to de-couple economic growth and resource use.*
- **IE5 Objective 8:** *To secure appropriate provision for the sustainable management of waste within developments, including the provision of facilities for the storage, separation and collection of such waste.*

Actions:

- *Support and facilitate the separation of waste at source into organic and non-organic streams or other waste management systems that divert waste from landfill and maximise the potential for each waste type to be re-used and recycled or composted and divert organic waste from landfill, in accordance with the National Strategy on Biodegradable Waste (2006).*
- *Implement the objectives of the National Waste Prevention Programme at a local level with businesses, schools, householders, community groups and within the Council's own activities.*
- *Promote an increase in the amount of waste re-used and recycled consistent with the Regional Waste Management Plan and Waste Hierarchy and facilitate*

recycling of waste through adequate provision of facilities and good design in new developments.

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 2011 and 2016 (S.I. No. 323 of 2011)
 - Waste Management (Collection Permit) Regulations 2007 (S.I. No. 820 of 2007) as amended 2008 (S.I. No 87 of 2008) and 2016 (S.I. 24 of 2016)
 - Waste Management (Facility Permit and Registration) Regulation 2007 (S.I. No. 821 of 2007) as amended 2008 (S.I. No. 86 of 2008), 2014 (S.I. No. 310 and S.I. No. 546 of 2014) and 2015 (S.I. No. 198 of 2015)
 - Waste Management (Licensing) Regulations 2000 (S.I. No. 185 of 2000) as amended 2004 (S.I. No. 395 of 2004) and 2010 (S.I. No. 350 of 2010)
 - 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 2014 (S.I. No. 349 of 2014) and 2015 (S.I. No. 347 of 2015)
 - 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 by European Communities (Shipments of Hazardous Waste exclusively within Ireland) Regulations 2011 (S.I. No. 324 of 2011)
 - European Communities (Transfrontier Shipment of Waste) Regulations, 1994 (S.I. No. 221 of 1994)
 - European Union (Properties of Waste Which Render it Hazardous) Regulations 2015 (S.I. No. 233 of 2015)
- Environmental Protection Act 1992 (S.I. No. 7 of 1992) as amended by the Protection of the Environment Act 2003 (S.I. No. 27 and S.I. No. 413 of 2003) and amended by the Planning and Development Act 2000 (S.I. No. 30 of 2000) as amended;
- Litter Pollution Act 1997 (Act No. 12 of 1997) as amended by the Litter Pollution Regulations 1999 (S.I. No. 359 of 1999) and Protection of the Environment Act 2003 and
- 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

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 (phase 1) and building management company (phase 2) 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 South Dublin County Council Waste Bye-Laws

*South Dublin County Council Household Waste Bye-Laws*¹⁵ were brought into force by SDCC 2012. The Bye-Laws set a number of enforceable requirements on waste holders with regard to storage, separation and presentation of waste within the SDCC functional area. Key requirements under these Bye-Laws of relevance to the proposed development include the following

- Any waste management measures undertaken by the holder of household waste who is not availing of a regular waste collection service shall -
 - Ensure that segregation at source of the household waste takes place in accordance with Section 7 of these Bye-Laws.
 - Ensure that the dry recyclable fraction is taken to an approved waste recycling centre or treatment facility.
 - Ensure that organic waste is composted within the curtilage of the household or taken to an approved biological recycling centre or treatment facility; and
 - Provide for the disposal of residual waste to an approved waste treatment or disposal facility
- For apartments or combined living/working spaces, the management company must-
 - Provide appropriate waste containers of adequate size and number for the proper segregation, storage and collection of dry recyclable household waste, organic waste and residual household waste both within the individual apartments and in the designated appropriate waste container storage area.
 - Ensure that the appropriate waste containers, in the designated appropriate waste container storage area should not be accessible to non-residents of the apartments.
 - Provide adequate information in relation to requirements for tenants to segregate waste.

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

2.4 Regional Waste Management Service Providers and Facilities

Various contractors offer waste collection services for the residential and commercial sector in the South Dublin County Council region. Details of waste collection permits (granted, pending and withdrawn) for the region are available from the NWCPO.

As outlined in the new 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 closest bring banks to the development are located at Roadstone group sports centre to the north (2km), Avoca shopping centre to the West (2km) and Jobstown community centre to the East (3km)

A copy of all CORs and waste permits issued by the Local Authorities are available from the NWCPO website and all waste/IED licenses issued are available from the EPA.

3.0 DESCRIPTION OF THE PROJECT

3.1 Location, Size and Scale of the Development

The proposed residential development will be comprised of approximately 950 residential units, all associated roads, landscaping and service infrastructure. This development will be separated into two phases. The gross floor area of the proposed phase 1 development is approximately 68,901m². The phase 2 gross floor area has yet to be confirmed and a separate planning application will be lodged at a later date.

A detailed description of the development is presented in Chapter 3 of the Environmental Impact Assessment Report (EIAR).

3.2 Typical Waste Categories

The predicted waste types that will be generated at the proposed development include the following:

- Dry Mixed Recyclables (DMR) - includes waste paper (including newspapers, magazines, brochures, catalogues, leaflets), metal cans, cardboard, plastic packaging and bottles, aluminium cans, tins and Tetra Pak cartons;
- Mixed Non-Recyclable (MNR) / General Waste;
- Organic (food) waste; and
- Glass;

In addition to the typical waste materials that will be generated on a daily basis, there will be some additional waste types generated less regularly that will need to be managed separately including:

- Green/garden waste will be generated from gardens and landscaped areas;
- Textiles;

- Batteries;
- Waste electrical and electronic equipment (WEEE);
- Chemicals (solvents, pesticides, paints, adhesives, resins, detergents, etc.);
- Fluorescent tubes and other mercury containing waste;
- Textiles; and
- Furniture (and from time to time other bulky wastes)

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* ¹⁵ and *Hazardous Waste List* ¹⁶ were published by the European Commission. In 2002, the EPA published a document titled the *European Waste Catalogue and Hazardous Waste List* ¹⁷, 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' ¹⁸ 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
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 has been used to predict waste types, weights and volumes arising from the operation of the proposed development. The model incorporates building area and use and combines these with other data including Irish and US EPA waste generation rates.

Waste estimates for the houses, duplexes and apartments is based upon the predicated occupancy rates of each of the units.

The estimated waste generation for the houses, duplexes and apartments in phase 1 for the main waste types are presented in Table 4.1, and is based on the Schedule of Areas issued by the project architects Darmody Architecture (April 2017).

Waste Type	m ³ per week		
	2 bed (54)	3 bed (278)	4 bed (180)
Dry Mixed Recyclables	0.17	0.19	0.24
Mixed Non-Recyclables	0.03	0.03	0.04
Organic	0.02	0.02	0.02
Glass	0.01	0.01	0.01
Total	0.23	0.25	0.31

Table 4.1

Estimated operational waste generation for individual dwellings in phase 1

5.0 WASTE STORAGE AND COLLECTION

This section provides information on how waste generated within the residential units 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 South Dublin County Council. In particular, consideration has been given to the following documents:

- BS 5906:2005 Waste Management in Buildings – Code of Practice ¹⁹;
- EMR Waste Management Plan 2015 – 2021;
- DoEHLG, Sustainable Urban Housing: Design Standards for New Apartments, Guidelines for Planning Authorities (2015) ²⁰;
- South Dublin County Council Development Plan 2016 – 2022 (2016); and
- South Dublin County Council, *South Dublin County Council Household Waste Bye-Laws* (2012).

There are waste storage areas for each residential dwelling in phase 1 at the front of each dwelling, proposed locations are shown on the architect's drawings. All bins areas will be enclosed and screened from public view. Using the predicted waste generation volumes presented in Table 4.1, waste receptacle requirements have been established for the WSAs. This is presented below in Table 5.1.

Area/Use	Bins Required			
	MNR ¹	DMR ²	Glass	Organic
2 Bed	1 x 240L	1 x 240L	Bottle Bank	1 x 120L
3 Bed	1 x 240L	1 x 240L	Bottle Bank	1 x 120L
4 Bed	1 x 240L	1 x 240L	Bottle Bank	1 x 120L

Note: ¹ = Mixed Non-Recyclables

² = Dry Mixed Recyclables

Table 5.1 Waste storage requirements for phase 1 of the proposed development

Waste storage receptacles required as per Tables 5.1 above will vary in size, design and colour dependent on the appointed waste contractor. However, typical receptacles to be used 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 (120L, 240L and 1100L)

The waste storage and collection arrangements for each space are described in more detail below.

5.1 Waste Storage - Residential

Residents 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.

It is anticipated that residents in houses, duplexes and apartments in phase 1 will have a dedicated enclosed area for storage of 3 no. 240 litre wheelie bins allocated at the front of the property. Residents will be required to place their segregated waste materials into these bins as necessary. It is anticipated that dry mixed recyclables, mixed non-recyclables and organic waste will be collected on a fortnightly basis. Residents will be required to bring their glass to the nearest bring centre

5.2 -Waste Collection

There are numerous private contractors that provide residential collection in the South Dublin County Council 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.

The residents in the houses will need to present their bins for collection along the roadway. It is recommended that collection times are staggered to avoid multiple bins being staged along the road.

All residents tenants should be made aware of the waste collection arrangements and all waste receptacles must be clearly identified and maintained in good condition as required by waste legislation and the requirements of the South Dublin County Council Waste Bye-Laws.

5.4 Additional Waste Materials

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

Green waste

Green waste may be generated from landscaping or internal plants. Green waste will be placed in the organic waste bins where possible or arranged for collection by a waste contractor as required.

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. Waste batteries must be separately collected for recycling and recovery of resources and the producer is responsible for arranging and financing this. Residents can bring batteries to civic amenity sites.

Waste Electrical and Electronic Equipment (WEEE)

The *WEEE Directive 2002/96/EC* and associated Waste Management (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. Residents can bring WEEE to civic amenity sites.

Fluorescent Tubes (and other mercury containing waste)

Fluorescent tubes (and other mercury containing waste) will typically be generated by external electrical/maintenance contractors servicing the development. However it is noted that modern light fittings are moving away from these types. Nonetheless, where waste light bulbs are generated, it is anticipated that maintenance contractors will be responsible for the off-site removal and appropriate recovery/disposal of these wastes.

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

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

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 disposal of any waste materials generated. Waste materials generated by residents in the residential dwellings can also be taken to a Civic Amenity Centre.

Textiles

Where possible, waste textiles should be recycled or donated to a charity organisation for reuse. Bring banks and Local Authority amenity centres often provide for collection of waste clothes and other textiles.

6.0 CONCLUSIONS

This OWMP provides a strategy for segregation (at source), storage and collection of wastes generated within the development including dry mixed recyclables (DMR), organic waste, glass and mixed non-recyclable (MNR) waste as well as management strategies for green waste, batteries, WEEE, chemicals, textiles, bulky waste and light bulbs.

Waste bins will be conveyed to the dedicated waste collection point and/or to the roadway by residents or waste contractors (depending on agreement).

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 for waste materials 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*.

7.0 REFERENCES

1. 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 2011 and 2016 (S.I. No. 323 of 2011)
 - Waste Management (Collection Permit) Regulations 2007 (S.I. No. 820 of 2007) as amended 2008 (S.I. No 87 of 2008) and 2016 (S.I. 24 of 2016)
 - Waste Management (Facility Permit and Registration) Regulations 2007 (S.I. No. 821 of 2007) as amended 2008 (S.I. No. 86 of 2008), 2014 (S.I. No. 310 and S.I. No. 546 of 2014) and 2015 (S.I. No. 198 of 2015)
 - Waste Management (Licensing) Regulations 2000 (S.I. No. 185 of 2000) as amended 2004 (S.I. No. 395 of 2004) and 2010 (S.I. No. 350 of 2010)
 - 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 2014 (S.I. No. 349 of 2014) and 2015 (S.I. No. 347 of 2015)
 - 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 by European Communities (Shipments of Hazardous Waste exclusively within Ireland) Regulations 2011 (S.I. No. 324 of 2011)
 - European Communities (Transfrontier Shipment of Waste) Regulations, 1994 (S.I. No. 221 of 1994)
 - 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 by the Protection of the Environment Act 2003 (Act No. 27 and S.I. No. 413 of 2003) and amended by the Planning and Development Act 2000 (Act No. 30 of 2000) as amended;
3. Litter Pollution Act 1997 (Act No. 12 of 1997) as amended by the Litter Pollution Regulations 1999 (S.I. No. 359 of 1999) and Protection of the Environment Act 2003
4. Eastern-Midlands Waste Region, *Eastern-Midlands Region (EMR) Waste Management Plan 2015 – 2021* (2015)
5. South Dublin County Council (SDCC), *South Dublin County Council Household Waste Bye-laws* (2012)
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