

**OPERATIONAL WASTE
MANAGEMENT PLAN FOR
RATHDOWN ROAD
STUDENT
ACCOMMODATION
DEVELOPMENT, DUBLIN 7**

Report Prepared For

NTM ROI Seed Capital LP

Report Prepared By

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1.0 INTRODUCTION

AWN Consulting Ltd. (AWN) has prepared this Operational Waste Management Plan (OWMP) on behalf of NTM ROI Seed Capital LP. The proposed development will comprise the demolition of the existing buildings on site and the provision of 289 no. student accommodation units over 2 no. blocks ranging in height from 3 no. storeys to 7 no. storeys, along with student amenities, landscaping and ancillary services. Vehicular access will be off Grangegorman Lower and Marne Villas, with a pedestrian link proposed directly onto the Luas stop at Grangegorman.

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 Dublin City Council (DCC) *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 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*' 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 2014 National Waste Statistics, which is the most recent study published, reported the following key statistics for 2014:

- 2,575 kilotonnes of municipal waste was managed in 2014 (4% increase compared to 2012).
- 79% of managed municipal waste was recovered (59% in 2012). Recovery includes treatment processes such as recycling, use as a fuel (incineration and co-incineration) and backfilling.
- 41% of managed municipal waste was recycled (40% in 2012). Recycling includes reprocessing of waste materials into products, composting and anaerobic digestion.
- 21% of managed municipal waste was disposed (41% in 2012).

2.2 Regional Level

The proposed development is located in the Local Authority area of Dublin City Council (DCC).

The *EMR Waste Management Plan 2015 – 2021* is the regional waste management plan for the DCC 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 €120 per tonne of waste which includes a €75 per tonne landfill levy introduced under the *Waste Management (Landfill Levy) (Amendment) Regulations 2013*.

The *Dublin City Development Plan 2016 – 2022*¹⁴ sets out a number of policies and objectives for Dublin City 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 policies and objectives with a particular relevance to this development are:

Policies:

- *SI19: To support the principles of good waste management and the implementation of best international practice in relation to waste management in order for Dublin city and the region to become self-reliant in terms of waste management.*
- *SI20: To prevent and minimise waste and to encourage and support material sorting and recycling.*
- *SI21: To minimise the amount of waste which cannot be prevented and ensure it is managed and treated without causing environmental pollution.*
- *SI22: To ensure that effect is given as far as possible to the “polluter pays” principle.*

Objectives:

- *SIO16: To require the provision of adequately-sized-recycling facilities in new commercial and large scale residential developments, where appropriate.*
- *SIO18: To implement the current Litter Management Plan through enforcement of the litter laws, street cleaning and education and awareness campaigns.*
- *SIO19: To implement the Eastern-Midlands Waste Management Plan 2015 - 2021 and achieve the plan targets and objectives.*

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)*
- 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;
- 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(s) 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 Dublin City Council Waste Bye-Laws

Bye-Laws for the Storage, Presentation and Collection of Household and Commercial Waste were brought into force by DCC in May 2013. The Bye-Laws set a number of enforceable requirements on waste holders and collectors with regard to storage, separation, presentation and collection of waste within the DCC functional area. Key requirements under these bye-laws are:

- A management company must ensure that adequate numbers of waste containers are available for use by holders in a multi-use development;
- Segregation of organic waste (Brown Bin) is required for holders of household & commercial waste; and
- Outside the Central Commercial District (CCD) collections are only to take place between 6am and 9pm. This is restricted to 8am to 8pm on weekends and bank holidays. Waste is not to be presented for collection before 6pm on the day before collection.
- The management company of a multi-unit development and its managing agent shall ensure that adequate access and egress is available for the collection of waste from that multi-unit development

The proposed development is outside the CCD so it will be necessary to meet the requirements of the bye-laws as outlined above.

The full text of the Waste Bye-Laws and map showing the CCD area is available from the DCC website.

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

Various contractors offer waste collection services for the residential and commercial sectors in the DCC 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 civic amenity centre located c.100 meters to the south of the development, on Upper Grangegroman Road which can be utilised by the student residents of the development for other household waste streams.

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 development will comprise the demolition of the existing buildings on the site, extending to 0.43 ha, and the provision of 289 no. student accommodation

units over 2 no. blocks ranging in height from 3 no. storeys to 7 no. storeys and comprising 47 no. clusters comprising a variety of 4, 6, 7 and 8 no. bedrooms respectively. 6 no. disabled access rooms are provided. Block A to the west extends to 3 no. storeys, with Block B to the east falling in height from 7 no. storeys at its most northerly point to 5 no. storeys moving south. Total gross floor area equates to 8,595.6 sq.m.

The proposed development includes a reception and administrative area, laundry room, gym, internal amenity areas, study rooms in both blocks and a TV room. Internal amenity space totals 538.5 sq.m, external landscaped amenity space is provided through a combination of shared surfaces, recreational and sports areas and seating, in combination with balconies and a roof terrace at fifth storey level, totalling 1602.4 sq.m. Total amenity space equates to 2,140.9 sq.m.

A specified set down area is located in the southern part of the site in close proximity to the entrance. 90 no. secure bicycle parking spaces are also provided. All ancillary servicing, refuse storage, and infrastructure is included within the application site, with plant enclosed at roof level at Block B.

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 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 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.);
- Fluorescent tubes and other mercury containing waste;
- Textiles (rags);
- Waste cooking oil (if any generated by the residents);
- Furniture (and from time to time other bulky wastes); and
- Abandoned bicycles. A bicycle parking area is planned for the development (at ground floor level). As happens in other developments, residents sometimes abandon faulty or unused bicycles and it can be difficult to determine their ownership. However, it is proposed that these bicycles would be donated to charity so they are unlikely to become a waste.

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 student 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) |
|---------------|-------------------------------------|
| Organic Waste | 1.58 |
| DMR | 11.54 |
| Glass | 0.30 |
| MNR | 6.40 |
| Total | 19.81 |

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

It has been assumed that the student accommodation areas will generate similar waste volumes over a seven-day period. This is considered to be a 'worst case' scenario as the student accommodation areas may not always be fully occupied on weekends. Additionally, it is considered that waste generation quantities per person for students would typically be less than domestic dwellings. It is anticipated that the conservative estimation of waste quantities from the student residents will be sufficient to cover the small quantities likely to be generated in the administration office 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 DCC. 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;
- Dublin City Council Development Plan 2016 – 2022 (Appendix 10);
- DCC, Bye-Laws for the Storage, Presentation and Collection of Household and Commercial Waste (2013); *and*
- DoEHLG, Sustainable Urban Housing: Design Standards for New Apartments, Guidelines for Planning Authorities (2018) ¹⁹.

A dedicated communal Waste Storage Area (WSA) has been allocated within the development design for the student accommodation. The student WSA is located externally, to the south, between the buildings and the development entry/exit point. The WSA is shown in 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 WSA. These are presented in Table 5.1.

| Area/Use | Bins Required | | | |
|-----------------------|---------------|------------|----------|----------|
| | MNR* | DMR** | Organic | Glass |
| Student Accommodation | 6 x 1100L | 10 x 1100L | 6 x 240L | 2 x 240L |

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. Additional allowance has been provided for glass storage in the student accommodation WSA to account for student specific lifestyles.

Waste storage receptacles as per Table 5.1 above (or similar appropriate approved containers) will be provided by the building management company in the student accommodation WSA.

As outlined in the current *Dublin City Development Plan*, it is preferable to use 1,100 litre wheelie bins for waste storage, where practical. However, in the case of organic and glass waste, it is considered more suitable to use smaller waste receptacles due to the weight of bins when filled with organic and glass waste. The use of 240 litres as recommended in Table 5.1 will reduce the manual handling impacts on the building management personnel and waste contractor employees.

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 – Student Accommodation

Students in the accommodation building as well as building management staff in their offices 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 of the student cluster units by the building management company. Additional bins for segregation of DMR and MNR will also be provided in the common areas, where appropriate. Students 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 (The Student Housing Company). Similarly, the management personnel will be required to segregate their waste into the above waste streams in the office areas.

No food macerators will be installed within any area of the student 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 students will be required to bring waste from within their clusters to the dedicated Waste Storage Area (WSA) as shown on the drawings. Students on the

floors above ground level will use the lifts or stairs of their building to bring waste to the ground floor. Students will be provided with access fobs/key/code by the Operator to access the WSA. Building cleaning staff will bring waste from within the common areas and offices to the WSA on a daily basis or more frequently, as required.

Facilities management will be responsible for managing the waste generated in any cluster that is occupied by a student with a disability. Any student with a disability will not be required to access the WSA.

Larger waste receptacles segregated (as per Table 5.1) will be provided by the building management company in the student accommodation WSA. Receptacles here will also be labelled, and colour coded to avoid cross contamination.

Other waste materials such as batteries, printer toner/cartridges and WEEE may be generated infrequently in the student accommodation areas. Students will be required to identify suitable temporary storage areas for these waste items themselves and dispose of them appropriately. The DCC Grangegorman Bring Centre is located approximately 100 meters to the south of the development and can be used by students to dispose of this waste. The building management staff will also be required to identify suitable temporary storage areas for these waste items and arrange for their collection by authorised waste contractor(s), as required.

Using the estimated figures in Table 4.1, DMR will be collected twice a week, while MNR, organic waste and glass waste be collected on a weekly basis.

5.2 Waste Collection

There are numerous private contractors that provide waste collection services in the Dublin City 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 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.

5.3 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 within the apartments. 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.

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. Residents can avail of the one-for-one return scheme at any EEE retailer or bring WEEE waste to their local recycling centre.

Printer Cartridge/Toners

Waste printer cartridge/toners generated by residents can usually be returned to the supplier free of charge.

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.

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 recycling centre.

Fluorescent Tubes (and other mercury containing waste)

Fluorescent tubes (and other mercury containing waste) 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.

If residents have tubes/lamps for disposal, these can be brought to the recycling centre.

Due to the changing nature of lightbulbs it is not envisaged that fluorescent tubes will be used at this development, instead modern LED light fittings will be used.

Textiles

Where possible, waste textiles should be recycled or donated to a charity organisation for reuse. Recycling centres (including the civic amenity centre at Upper Grangegorman Road) provide for collection of waste clothes and other textiles.

Waste Cooking Oil

If the residents generated waste cooking oil, this can be brought to a recycling centre.

Furniture (and other bulky wastes)

Furniture and other bulky waste items (such as carpet etc.) may occasionally be generated by the residents. If residents wish to dispose of furniture, this can be brought a recycling centre.

Abandoned Bicycles

A bicycle parking area is planned for the development. As happens in other developments, residents sometimes abandon faulty or unused bicycles and it can be difficult to determine their ownership. Abandoned bicycles should be donated to charity if they arise.

5.4 Waste Storage Area Design

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

- fitted with a non-slip floor surface and mechanical ventilation to minimise odours;
- be brightly lit and spacious enough for easy manoeuvrability;
- be easily accessible for people with limited mobility;
- be fitted with vermin baiting equipment, where required;
- be provided with power supply (suitable for a wet environment) for bin washing and disinfecting;
- have a hot or cold water supply; and
- have a floor sloped to a central foul drain to facilitate cleaning and disinfection of bins.

The building management company will be required to maintain bins and storage areas in good condition as required by the *DCC 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*.

Adherence to this plan will also ensure that waste management at the development is carried out in accordance with the requirements of the *DCC Waste Bye-Laws*, *Waste Management (Food Waste) Amendment Regulations 2015 (S.I. No. 190 of 2015)* and the *European Union (Household Food Waste and Bio-Waste) Regulations 2015 (S.I. No. 191 of 2015)*.

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
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9. DoEHLG, *Taking Stock and Moving Forward* (2004)
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12. DCC, *Dublin City Development Plan 2016 – 2022* (2016)
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).