

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

**JUNCTION OF SANTRY
AVENUE AND SWORDS
ROAD, SANTRY, DUBLIN 9.**

The Tecpro Building,
Clonshaugh Business & Technology Park,
Dublin 17, Ireland.

T: + 353 1 847 4220
F: + 353 1 847 4257
E: info@awnconsulting.com
W: www.awnconsulting.com

Report Prepared For

Dwyer Nolan Developments Ltd

Report Prepared By


Chonail Bradley, Principal Environmental
Consultant

Our Reference

CB/21/121997WMR02

Date of Issue

17 June 2022

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Cork Office



Unit 5, ATS Building,
Carrigaline Industrial Estate,
Carrigaline, Co. Cork.
T: +353 21 438 7400
F: +353 21 483 4606

AWN Consulting Limited
Registered in Ireland No. 319812
Directors: F Callaghan, C Dilworth,
T Donnelly, E Porter
Associate Director: D Kelly

Document History

Document Reference		Original Issue Date	
CB/21/121997WMR02		17 June 2022	
Revision Level	Revision Date	Description	Sections Affected

Record of Approval

Details	Written by	Approved by
Signature		
Name	Chonaiil Bradley	Fergal Callaghan
Title	Principal Environmental Consultant	Director
Date	17 June 2022	17 June 2022

CONTENTS		Page
1.0	INTRODUCTION	4
2.0	OVERVIEW OF WASTE MANAGEMENT IN IRELAND	4
2.1	National Level	4
2.2	Regional Level	6
2.3	Legislative Requirements	8
2.3.1	Dublin City Council Waste Management Bye-Laws	8
2.4	Health Service Executive Waste Policy	9
2.5	Regional Waste Management Service Providers and Facilities	9
3.0	DESCRIPTION OF THE Development	9
3.1	Location, Size and Scale of the Development	9
3.2	Typical Waste Categories	11
3.3	Typical Waste Categories and Waste Minimisation/Segregation	12
3.3.1	Healthcare Non-Risk Waste	12
3.3.2	Non-Clinical Hazardous Waste	13
3.3.3	Healthcare Risk Waste (Hazardous)	14
3.4	European Waste Codes	16
4.0	ESTIMATED WASTE ARISING	17
5.0	WASTE STORAGE AND COLLECTION	18
5.1	Waste Storage – Residential Units	21
5.2	Waste Storage – Café/Commercial & Retail Units	22
5.3	Waste Storage – Medical Unit	23
5.4	Waste Collection	24
5.5	Additional Waste Materials	24
5.6	Waste Storage Area Design	27
6.0	CONCLUSIONS	27
7.0	REFERENCES	29

1.0 INTRODUCTION

AWN Consulting Ltd. (AWN) has prepared this Operational Waste Management Plan (OWMP) on behalf of Dwyer Nolan Developments Ltd. The proposed development provides for 350 no. apartments, comprised of 113 no. 1 bed, 218 no. 2 bed, & 19 no. 3 bed dwellings, in 4 no. seven to fourteen storey buildings, over basement level, with 5 no. retail / commercial units and a community use unit located at ground floor level facing onto Santry Avenue and Swords Road. A one storey residential amenity unit, facing onto Santry Avenue, is also provided for between Blocks A & D.

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 Dublin City Council (DCC) 'Dublin City Council (Storage, Presentation and Segregation of Household and Commercial Waste) Bye-Laws' 2018 ⁵. In particular, this OWMP aims to provide a robust strategy for the storage, handling, collection and transport of the wastes generated at Site.

In addition, the following guidelines were consulted for healthcare specific waste management practice:

- Health Service Executive (HSE), *Waste Policy* (2016) ⁶,
- HSE, *Waste Management Awareness Handbook* (2011) ⁷;
- HSE, and Department of Health and Children (DOHC), *Healthcare Risk Waste Management: Segregation, Packaging and Storage Guidelines for Healthcare Risk Waste, 4th Edition* (2010) ⁸; and
- Environmental Protection Agency (EPA) Green Healthcare, best practice guides for the reduction and segregation of hospital waste ⁹.

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*' ¹⁰, 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 2002¹¹. 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'*¹². This document also stressed the need to decouple 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'*¹³. Covering the period 1998 – 2003, the aim of this document was to assess progress to date with regard to waste management in Ireland, to consider developments since the policy framework and the local authority waste management plans were put in place, and to identify measures that could be undertaken to further support progress towards the objectives outlined in *Changing Our Ways*.

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

In September 2020, the Irish Government published a new policy document outlining a new action plan for Ireland to cover the period of 2020-2025. This plan *'A Waste Action Plan for a Circular Economy'*¹⁴ (WAPCE), was prepared in response to the 'European Green Deal' which sets a roadmap for a transition to a new economy, where climate and environmental challenges are turned into opportunities, replacing the previous national waste management plan *"A Resource Opportunity"* (2012).

The WAPCE sets the direction for waste planning and management in Ireland up to 2025. This reorientates policy from a focus on managing waste to a much greater focus on creating circular patterns of production and consumption. Other policy statements of a number of public bodies already acknowledge the circular economy as a national policy priority.

The policy document contains over 200 measures across various waste areas including circular economy, municipal waste, consumer protection and citizen engagement, plastics and packaging, construction and demolition, textiles, green public procurement and waste enforcement.

One of the first actions to be taken was the development of the Whole of Government Circular Economy Strategy 2022-2023 *'Living More, Using Less'* (2021)¹¹ to set a course for Ireland to transition across all sectors and at all levels of Government toward circularity and was issued in December 2021. It is anticipated that the Strategy will be updated in full every 18 months to 2 years.

Since 1998, the Environmental Protection Agency (EPA) has produced periodic *'National Waste (Database) Reports'*¹⁴ detailing, among other things, estimates for household and commercial (municipal) waste generation in Ireland and the level of recycling, recovery and disposal of these materials. The *2019 National Waste Statistics*, which is the most recent study published, along with the national waste statistics web resource (November 2021) reported the following key statistics for 2019:

- **Generated** – Ireland produced 3,085,652 t of municipal waste in 2019. This is almost a 6% increase since 2018. This means that the average person living in Ireland generated 628 kg of municipal waste in 2019.
- **Managed** – Waste collected and treated by the waste industry. In 2019, a total of 3,036,991 t of municipal waste was managed and treated.
- **Unmanaged** – Waste that is not collected or brought to a waste facility and is, therefore, likely to cause pollution in the environment because it is burned, buried or dumped. The EPA estimates that 48,660 t was unmanaged in 2019.
- **Recovered** – The amount of waste recycled, used as a fuel in incinerators, or used to cover landfilled waste. In 2019, around 83% of municipal waste was recovered – a decrease from 84% in 2018.
- **Recycled** – The waste broken down and used to make new items. Recycling also includes the breakdown of food and garden waste to make compost. The recycling rate in 2019 was 37%, which is down from 38% in 2018.
- **Disposed** – Less than a sixth (15%) of municipal waste was landfilled in 2019. This is an increase from 14% in 2018.

2.2 Regional Level

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

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

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

- A 1% reduction per annum in the quantity of household waste generated per capita over the period of the plan;
- Achieve a recycling rate of 50% of managed municipal waste by 2020; and
- Reduce to 0% the direct disposal of unprocessed residual municipal waste to landfill (from 2016 onwards) in favour of higher value pre-treatment processes and indigenous recovery practices.

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

The *Dublin City Development Plan 2016 – 2022*¹⁶ 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 proposed Development are as follows:

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.*

The Draft *Dublin City Development Plan 2022 – 2028*¹⁷ sets out a number of policies and objectives for Dublin City in line with the objectives of the National climate action policy and emphasises the need to take action to address climate action across all sectors of society and the economy. In the waste sector, policy on climate action is focused on a shift towards a ‘circular economy’ encompassing three core principles: designing out waste and pollution; keeping products and material in use; and regenerating natural systems. Further policies and objectives can be found within the draft development plan.

Policies:

- *CA7 F: minimising the generation of site and construction waste and maximising reuse or recycling.*
- *CA22: The Circular economy: To support the shift towards the circular economy approach as set out in ‘a Waste Action Plan for a Circular Economy 2020 to 2025, Ireland’s National Waste Policy, or as updated.*
- *CA23: To have regard to existing Best Practice Guidance on Waste Management Plans for Construction and Demolition Projects as well as any future updates to these guidelines in order to ensure the consistent application of planning requirements.*
- *SI27: Sustainable Waste Management: To support the principles of the circular economy, good waste management and the implementation of best practice in relation to waste management in order for Dublin City and the Region to become self-sufficient in terms of resource and waste management and to provide a waste management infrastructure that supports this objective.*
- *SI29: Segregated Storage and Collection of Waste Streams: To require new commercial and residential developments, to include adequate and easily accessible storage space that supports the separate collection of as many waste and recycling streams as possible, but at a minimum general domestic waste, dry recyclables and food waste as appropriate.*
- *SI30: To require that the storage and collection of mixed dry recyclables, organic and residual waste materials within proposed apartment schemes have regard to the Sustainable Urban Housing: Design Standards for New Apartments Guidelines for Planning Authorities 2018 (or and any future updated versions of these guidelines produced during the lifetime of this plan).*

Objectives:

- *SIO14 Local Recycling Infrastructure: To provide for a citywide network of municipal civic amenity facilities/ multi-material public recycling and reuse facilities in accessible locations throughout the city in line with the objectives of the circular economy and 15 minute city.*
- *SIO16 Eastern-Midlands Region Waste Management Plan: To support the implementation of the Eastern-Midlands Regional Waste Management Plan*

2015–2021 and any subsequent plans in order to facilitate the transition from a waste management economy towards a circular economy.

2.3 Legislative Requirements

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

- Waste Management Act 1996 (No. 10 of 1996) as amended
- Environmental Protection Act 1992 (S.I. No. 7 of 1992) as amended;
- Litter Pollution Act 1997 (Act No. 12 of 1997) as amended and
- Planning and Development Act 2000 (S.I. No. 30 of 2000) as amended ¹⁸

These Acts and subordinate Regulations transpose the 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 the proposed building management company undertake on-Site management of waste in accordance with all legal requirements and that the facilities management company 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 Industrial Emissions (IE) 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 Management Bye-Laws

The DCC “Dublin City Council (Storage, Presentation and Segregation of Household and Commercial Waste) Bye-Laws (2018)” were brought into force in May 2019. These bye-laws repeal the previous Bye-Laws for the Storage, Presentation and Collection of Household and Commercial Waste. The bye-laws set a number of enforceable requirements on waste holders with regard to storage, separation and presentation of waste within the DCC administrative area. Key requirements under these bye-laws of relevance to the operational phase of the proposed Development include the following:

- Kerbside waste presented for collection shall not be presented for collection earlier than 5.00 pm on the day immediately preceding the designated waste collection day;

- All containers used for the presentation of kerbside waste and any uncollected waste shall be removed from any roadway, footway, footpath or any other public place no later than 10:00 am on the day following the designated waste collection day, unless an alternative arrangement has been approved in accordance with bye-law 2.3;
- Documentation, including receipts, is obtained and retained for a period of no less than one year to provide proof that any waste removed from the premises has been managed in a manner that conforms to these bye-laws, to the Waste Management Act and, where such legislation is applicable to that person, to the European Union (Household Food Waste and Bio-Waste) Regulations 2015; and
- Adequate access and egress onto and from the premises by waste collection vehicles is maintained.

The full text of the bye-laws is available from the DCC website.

2.4 Health Service Executive Waste Policy

The Health Service Executive (HSE) has stipulated within its *Waste Policy* that Waste Management Plans (WMPs) for healthcare facilities should include:

- Strategies to minimise the quantities of healthcare waste generated.
- Methods of segregating, packaging, labelling, storing, and transporting each waste type, both on-site and off-site.

These guidelines will be used to complete this OWMP.

2.5 Regional Waste Management Service Providers and Facilities

Various contractors offer waste collection services for the residential sector 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 all are 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 in Poolbeg in Dublin.

There is a DCC Recycling Centre at the Collins Avenue Bring Centre, Whitehall, located c.970m to the south of the Development Site, which can be utilised by the residents of the proposed Development for other household waste streams while a bottle bank can be found c. 265 m to the south at the Supervalu Santry Carpark.

A copy of all CORs and waste permits issued by the Local Authorities are available from the NWCPO website and all Waste / Industrial Emissions Licenses issued are available from the EPA.

3.0 DESCRIPTION OF THE DEVELOPMENT

3.1 Location, Size and Scale of the Development

Dwyer Nolan Developments Ltd. intend to apply to An Bord Pleanála for permission for a strategic housing development, on a site of c. 1.5 hectares, located at the junction of Santry Avenue and Swords Road, Santry, Dublin 9. The development site is bounded to the north by Santry Avenue, to the east by Swords Road, to the west by Santry Avenue Industrial

Estate, and to the south by the permitted Santry Place development (granted under Dublin City Council Ref's. 2713/17 & 2737/19).

The proposed development provides for 350 no. apartments, comprised of 113 no. 1 bed, 218 no. 2 bed, & 19 no. 3 bed dwellings, in 4 no. seven to fourteen storey buildings, over basement level, with 4 no. retail / commercial units, a medical suite / GP Practice units and a community use unit located at ground floor level facing onto Santry Avenue and Swords Road. A one storey residential amenity unit, facing onto Santry Avenue, is also provided for between Blocks A & D.

The development consists of the following:

- (1) Demolition of the existing building on site i.e. the existing Chadwicks Builders Merchants (c. 4,196.8m²).
- (2) Construction of 350 no. 1, 2, & 3 bed apartments, retail / commercial and community uses in 4 no. buildings that are subdivided into Blocks A-G as follows:
 - Block A is a 7 to 14 storey block consisting of 59 no. apartments comprised of 26 no. 1 bed, 27 no. 2 beds & 6 no. 3 bed dwellings, with 2 no. commercial/retail units located on the ground floor (c. 132.4m² & 173m² respectively). Adjoining same is Block B, which is a 7 storey block consisting of 38 no. apartments comprised of 6 no. 1 bed, 26 no. 2 bed, & 6 no. 3 bed dwellings, with 1 no. commercial/retail units and 1 no. medical suite / GP Practice unit located on the ground floor (c. 162.3m² & 130.4m² respectively). Refuse storage areas are also provided for at ground floor level.
 - Block C is a 7 storey block consisting of 55 no. apartments comprised of 13 no. 1 bed & 42 no. 2 bed dwellings. Refuse storage areas are provided for at ground floor level. Adjoining same is Block D which is a 7 to 10 storey block consisting of 51 no. apartments comprised of 25 no. 1 bed, 19 no. 2 bed, & 7 no. 3 bed dwellings, with 1 no. commercial unit / café located on the ground floor (c. 163.3m²). A refuse storage area is also provided for at ground floor level.
 - Block E is a 7 to 10 storey block consisting of 58 no. apartments comprised of 10 no. 1 bed & 48 no. 2 bed dwellings, with 1 no. community use unit located on the ground floor (c. 188.1m²). A refuse storage area, substation, & switchroom are also provided for at ground floor level. Adjoining same is Block F which is a 7 storey block consisting of 55 no. apartments comprised of 13 no. 1 bed & 42 no. 2 bed dwellings. A refuse storage area & bicycle storage area are also provided for at ground floor level.
 - Block G is a 7 storey block consisting of 34 no. apartments comprised of 20 no. 1 bed & 14 no. 2 bed dwellings. A refuse storage area & bicycle storage area are also provided for at ground floor level.
 - Construction of a 1 storey residential amenity unit (c. 187.9m²) located between Blocks A & D.
 - Construction of basement level car parking (c.5,470.8m²) accommodating 173 no. car parking spaces & 719 no. bicycle parking spaces. Internal access to the basement level is provided from the cores of Blocks A, B, C, D, E, & F. External vehicular access to the basement level is from the south, between Blocks B & C. 36 no. car parking spaces & 58 no. bicycle parking spaces are also provided for within the site at surface level.
 - Public open space of c. 1,915m² is provided for between Blocks C, D, E, & F. Communal open space of c. 3,122m² provided for between (i) Blocks E, F, & G, (ii) Blocks A, B, C, & D, and (iii) in the form of roof gardens located on Blocks A, C, & F and the proposed residential amenity use unit. The development includes for hard and soft landscaping & boundary treatments. Private open spaces are

- provided as terraces at ground floor level of each block and balconies at all upper levels.
- Vehicular access to the development will be via 2 no. existing / permitted access points: (i) on Santry Avenue in the north-west of the site (ii) off Swords Road in the south-east of the site, as permitted under the adjoining Santry Place development (Ref. 2713/17).
 - The development includes for all associated site development works above and below ground, bin & bicycle storage, plant (M&E), sub-stations, public lighting, servicing, signage, surface water attenuation facilities etc.
- (3) Construction of a 1 storey residential amenity unit (c. 187.9m²) located between Blocks A & D.
- (4) Construction of basement level car parking (c.5,470.8m²) accommodating 173 no. car parking spaces & 719 no. bicycle parking spaces. Internal access to the basement level is provided from the cores of Blocks A, B, C, D, E, & F. External vehicular access to the basement level is from the south, between Blocks B & C. 36 no. car parking spaces & 58 no. bicycle parking spaces are also provided for within the site at surface level.
- (5) Public open space of c. 1,915m² is provided for between Blocks C, D, E, & F. Communal open space of c. 3,122m² provided for between (i) Blocks E, F, & G, (ii) Blocks A, B, C, & D, and (iii) in the form of roof gardens located on Blocks A, C, & F and the proposed residential amenity use unit. The development includes for hard and soft landscaping & boundary treatments. Private open spaces are provided as terraces at ground floor level of each block and balconies at all upper levels.
- (6) Vehicular access to the development will be via 2 no. existing / permitted access points: (i) on Santry Avenue in the north-west of the site (ii) off Swords Road in the south-east of the site, as permitted under the adjoining Santry Place development (Ref. 2713/17).
- (7) The development includes for all associated site development works above and below ground, bin & bicycle storage, plant (M&E), sub-stations, public lighting, servicing, signage, surface water attenuation facilities etc.

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 less frequently / in smaller 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.);
- Light bulbs;
- Textiles;
- Waste cooking oil (if any generated by the residents and tenants);
- Furniture (and, from time to time, other bulky wastes); and
- Abandoned bicycles.

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

3.3 Typical Waste Categories and Waste Minimisation/Segregation

The proposed development will give rise to a wide variety of waste streams during operations. Healthcare waste is defined in the HSE and DOHC *Healthcare Risk Waste Management* publication as “solid or liquid waste arising from healthcare”. Waste materials generated will fall into two main categories, namely healthcare non-risk waste (i.e. non-clinical healthcare waste) and HCRW (hazardous) as illustrated in Figure 3.1. Hazardous waste has been further subdivided in this plan into non-clinical hazardous waste and clinical/risk waste.

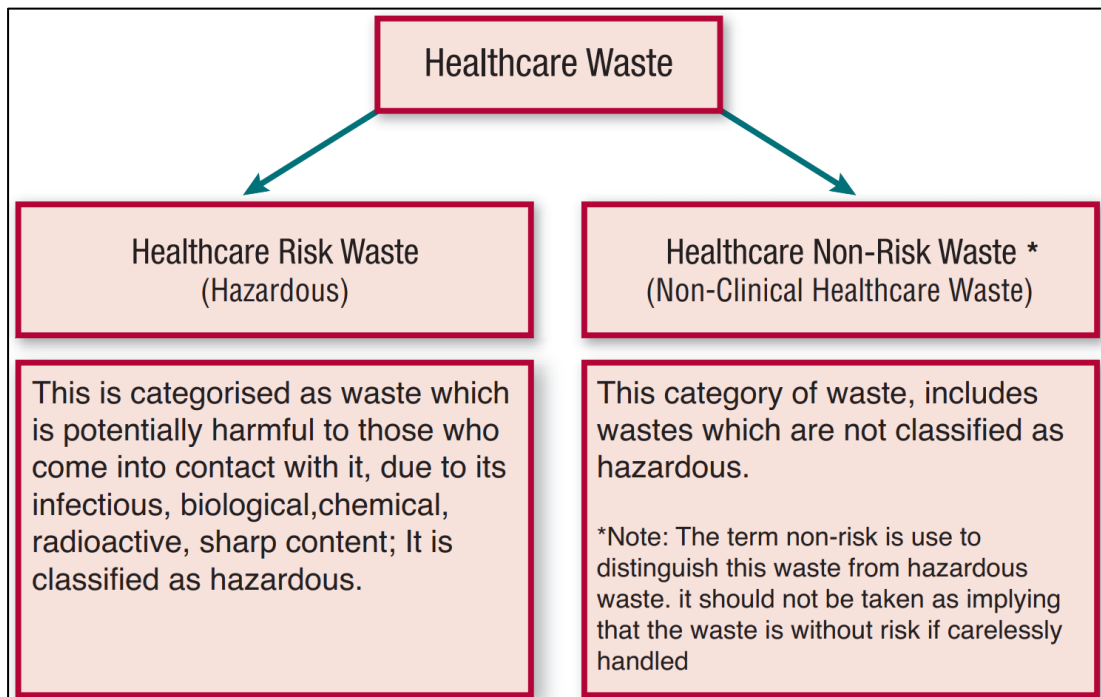


Figure 3.1 Healthcare Waste Categories (Source: HSE, *Waste Management Awareness Handbook* (2010))

3.3.1 Healthcare Non-Risk Waste

The typical non-risk/non clinical non-hazardous waste streams that will be generated at the proposed development will include the following:

- Dry Mixed Recyclables (DMR) – includes cardboard, non-confidential paper, newspaper, leaflets plastic packaging and bottles, aluminium cans, tins and Tetra Pak cartons;
- Confidential paper;

- Mixed Non-Recyclable /General Waste (MNR);
- Organic (food/catering) waste; and
- Glass.

In addition to the typical non-risk/non-clinical non-hazardous waste materials that will be generated at the development on a daily basis, there will be some additional waste types generated less frequently / in smaller quantities which will need to be managed separately including:

- Green / garden waste may be generated from external landscaping;
- Batteries (non-hazardous) *note: hazardous batteries may also be generated which are referred to in Section 3.2.2;*
- Waste electrical and electronic equipment (WEEE) including computers, printers and other ICT equipment (non-hazardous) *note: WEEE containing hazardous components may also be generated which are referred to in Section 3.2.2;*
- Metals, timber and mixed C&D waste generated from operational maintenance activities;
- Polystyrene;
- Textiles;
- Waste cooking oil (if any generated by the commercial tenant); 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.

3.3.1.1 Reducing and Segregating Healthcare Non-Risk Waste

The following steps have been outlined to contribute towards the minimisation and segregation within this waste stream:

- Review your current recycling policy and system
- Make it clear what can be placed in the recycling bags
- Ensure recycling bags are placed in the right location
- Make the recycling bins easy to use
- Use different colour bins for each type of waste
- Prevent contamination with liquid and food

For full details on how to minimise and segregation healthcare non-risk waste, please see *Best Practice Guide Maximise Recycling and Reduce Landfill Waste*⁹.

3.3.2 Non-Clinical Hazardous Waste

The typical non-clinical hazardous waste streams that will be generated will include the following:

- Printer/toner cartridges;
- Batteries (hazardous) *note: non-hazardous batteries may also be generated which are referred to in Section 3.2.1;*
- Waste electrical and electronic equipment (WEEE) including computers, printers and other ICT equipment (containing hazardous components) *note: WEEE not containing hazardous components may also be generated which are referred to in Section 3.2.1;*
- Cleaning chemicals (solvents, pesticides, paints, adhesives, resins, detergents, etc.); and
- Fluorescent bulb tubes and other mercury containing waste.

3.3.3 Healthcare Risk Waste (Hazardous)

HCRW will be generated from any clinical treatment and consultation rooms. Figure 3.2 over shows the classification and colour coding of HCRW as presented in the HSE guidance document.

The HCRW generated at the medical use/ healthcare facility will comprise waste disposed of in yellow bags (such as dressings, swabs, bandages, gloves etc.) and yellow sharps buckets (for waste such as surgical kits, needles, syringes, razors, stitch cutters etc.).

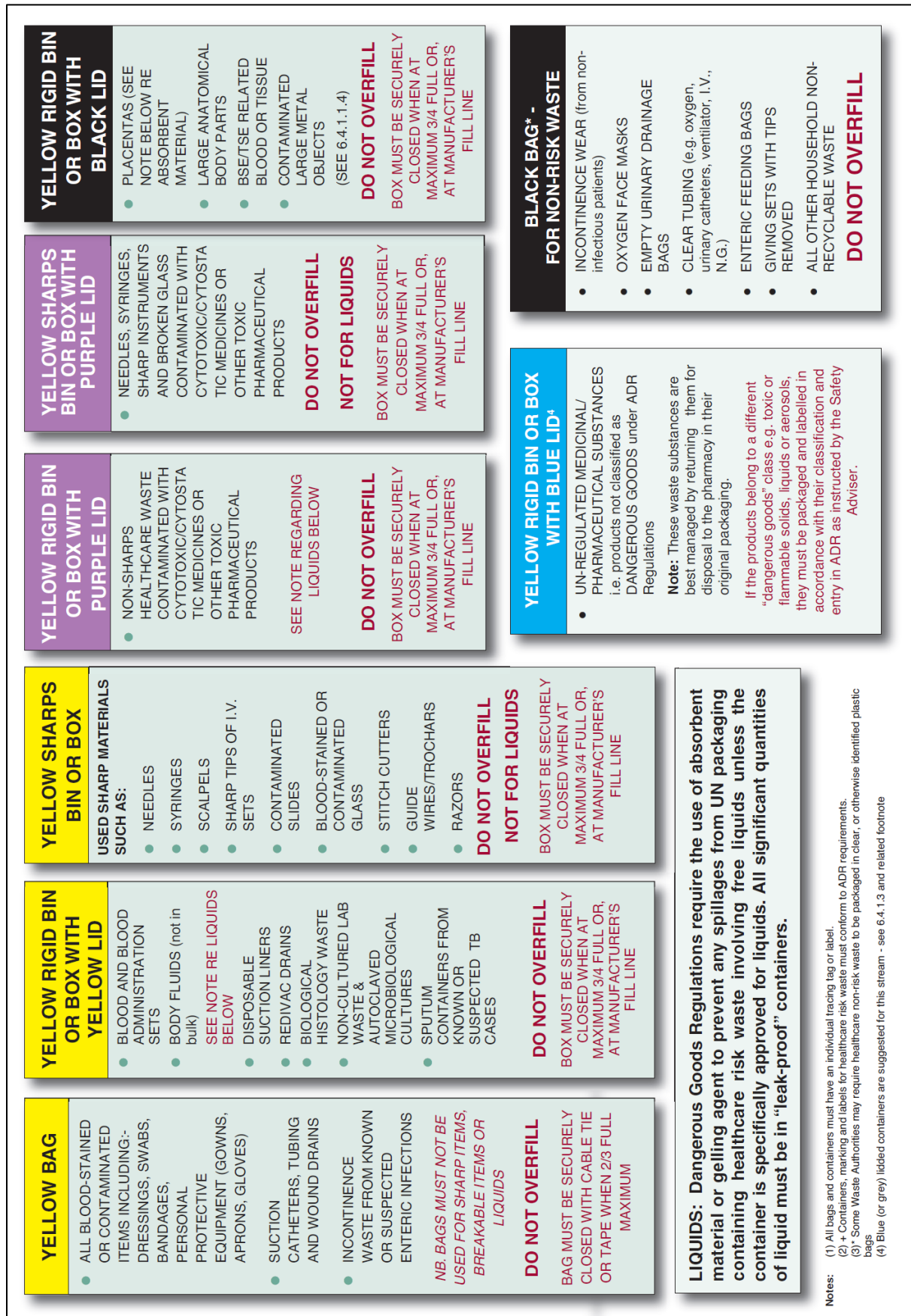


Figure 3.2 Segregation of HCRW (Source: HSE and DOHC, *Healthcare Risk Waste Management* (2010) and HSE, *Waste Management Awareness Handbook* (2011))

3.3.3.1 Reducing Healthcare Risk Waste

The following steps can be taken to reduce the quantity of non-risk waste incorrectly placed in the HCRW bins:

- Review your facility's HCRW classification policy.
- Ensure staff know what is and is not HCRW
- Remove HCRW bins from public access areas e.g. multi-bed wards

On average, 20% of risk waste generated in healthcare facilities is generated in operating theatres. To reduce the amount of risk waste generated these steps have been outlined:

- Prevent the generation of waste – by reviewing what materials and instruments are often not used in a surgical kit during specific treatments, etc.
- Review the HCRW classification policy
- Increase the segregation of recyclables and minimise the non-risk waste content in the healthcare risk waste

For full detail on methods to minimise HCRW please see *Best Practice Guide Healthcare Risk Waste Reduction* and *Best Practice Guide Healthcare Risk Waste Reduction in the Theatre*.

3.4 European Waste Codes

In 1994, the *European Waste Catalogue*¹⁹ and *Hazardous Waste List*²⁰ were published by the European Commission. In 2002, the EPA published a document titled the *European Waste Catalogue and Hazardous Waste List*²¹, 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*'²², applicable since 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 the 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 (EWC)) for typical waste materials expected to be generated during the operation of the proposed development are provided in Table 3.1, below.

Table 3.1 Typical Waste Types Generated and LoW Codes

Waste Material	LoW/EWC Code
Paper and Cardboard	20 01 01
Plastics	20 01 39
Metals	20 01 40
Mixed Non-Recyclable Waste	20 03 01
Glass	20 01 02
Biodegradable Kitchen Waste	20 01 08
Oils and Fats	20 01 25
Textiles	20 01 11
Batteries and Accumulators*	20 01 33* - 34
Printer Toner/Cartridges*	20 01 27* - 28
Green Waste	20 02 01
WEEE*	20 01 35*-36
Chemicals (solvents, pesticides, paints & adhesives, detergents, etc.) *	20 01 13*/19*/27*/28/29*30
Fluorescent tubes and other mercury containing waste*	20 01 21*
Bulky Wastes	20 03 07

* Individual waste type may contain hazardous materials

4.0 ESTIMATED WASTE ARISING

A waste generation model (WGM) developed by AWN has been used to predict waste types, weights and volumes expected to arise from operations within the proposed Development. The WGM incorporates building area and use and combines these with other data, including Irish and US EPA waste generation rates.

The estimated quantum / volume of waste that will be generated from the residential units has been determined based on the predicted occupancy of the units. While the floor area usage (m²) has been used to estimate the waste arising from the crèche and retail units.

The estimated waste generation for the proposed Development for the main waste types is presented in Tables 4.1 – 4.2.

Table 4.1 Estimated Waste Generation for Residential Blocks A – D

Waste Type	Waste Volume (m ³ / week)			
	Block A (Residential)	Block B (Residential)	Block C (Residential)	Block D (Residential)
Organic Waste	0.86	0.64	0.86	0.75
Dry Mixed Recyclables	5.89	4.34	5.87	5.12
Glass	0.17	0.12	0.17	0.14
Mixed Non-Recyclables	3.42	2.53	3.41	2.97
Total	10.34	7.63	10.30	8.98

Table 4.2 Estimated Waste Generation for Residential Block E – G and Commercial Units

Waste Type	Waste Volume (m ³ / week)			
	Block E (Residential)	Block F (Residential)	Block G (Residential)	Commercial (Combined)
Organic Waste	0.92	0.86	0.47	0.39
Dry Mixed Recyclables	6.31	5.87	3.34	4.45
Glass	0.18	0.17	0.09	0.11
Mixed Non-Recyclables	3.67	3.41	1.76	4.45
Medical Waste	-	-	-	0.17
Confidential Paper	-	-	-	0.07
Total	11.08	10.30	5.66	7.45

*BS5906:2005 Waste Management in Buildings – Code of Practice*²³ has been considered in the calculations of waste estimates. AWN's modelling methodology is based on recently published data and data from numerous other similar developments in Ireland and is based on AWN's experience, it provides a more representative estimate of the likely waste arisings from the proposed Development.

5.0 WASTE STORAGE AND COLLECTION

This section provides information on how waste generated within the Site will be stored and collected. 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;
- EMR Waste Management Plan 2015 – 2021;
- Dublin City Council Development Plan 2016 – 2022 (Appendix 10);
- DCC Dublin City Council (Storage, Presentation and Segregation of Household and Commercial Waste) Bye-Laws (2018); *and*
- DoHLGH, Sustainable Urban Housing: Design Standards for New Apartments, Guidelines for Planning Authorities (section 4.8-4.9) (2020)²⁴; *and*
- DoHLGH, Design Manual for Urban Roads and Streets (2019)²⁵

Waste Storage Areas

Locations of all Waste Storage Areas (WSAs) can be viewed on the drawings submitted with the planning application under separate cover.

Residential Block A & B

One (1 no.) shared communal WSA has been allocated within the development design for these residential apartment blocks. The bin store is located at the southern end of Block B. The WSA has been strategically located on the ground floor level, in close proximity to the cores.

Residential Block C

Two (2 no.) shared communal WSAs have been allocated within the development design for the residential apartment block. These have been strategically located on the ground floor level, in close proximity to cores.

Residential Block D

One (1 no.) shared communal WSAs has been allocated within the development design for this residential apartment block. These have been strategically located on the ground floor level, in close proximity to cores.

Residential Block E

One (1 no.) shared communal WSA has been allocated within the development design for this residential apartment block. These have been strategically located on the ground floor level, in close proximity to cores.

Residential Block F

One (1 no.) shared communal WSA has been allocated within the development design for this residential apartment block. These have been strategically located on the ground floor level, in close proximity to cores.

Residential Block G

One (1 no.) shared communal WSA has been allocated within the development design for this residential apartment block. These have been strategically located on the ground floor level, in close proximity to cores.

Café/Commercial and Retail Units Block A, B & D

The café/commercial and retail units (Commercial) in these blocks have been allocated a shared commercial WSA on the ground floor level of Block B.

Bins from the proposed Development will be brought to collection points by the waste contractor or facilities management, immediately prior to collection. All locations for collection can be viewed on the drawings submitted with the planning application under separate cover.

Using the estimated waste generation volumes in Tables 4.1 – 4.2, above, the waste receptacle requirements for MNR, DMR, organic waste and glass have been established for the WSA. It is envisaged that MNR, DMR, organic waste and glass will be collected on a weekly basis for both residential and commercial WSAs.

Medical Unit

The medical unit will be required to allocate its own individual hazardous waste WSA for the storage of general and medical waste at ground floor level within its own unit.

Waste Storage Requirements

Estimated waste storage requirements for the operational phase of the proposed Development are detailed in Table 5.1, below.

Table 5.1 Waste storage requirements for the proposed development

Area/Use	Bins Required			
	MNR ¹	DMR ²	Glass	Organic
Residential Block A & B	6 no. 1100 L	11 no. 1100 L	2 no. 240 L	7 no. 240 L
Residential Block C	3 no. 1100 L 1 no. 240L	6 no. 1100 L	1 no. 240 L	4 no. 240 L
Residential Block D	3 no. 1100 L	5 no. 1100 L	1 no. 240 L	4 no. 240 L
Residential Block E	4 no. 1100 L	6 no. 1100 L	1 no. 240 L	4 no. 240 L
Residential Block F	3 no. 1100 L 1 no. 240L	6 no. 1100 L	1 no. 240 L	4 no. 240 L
Residential Block G	2 no. 1100 L	3 no. 1100 L	1 no. 240 L	2 no. 240 L
Commercial Block A, B & D	2 no. 1100 L	4 no. 1100 L	1 no. 240 L	2 no. 240 L

Note: 1 = Mixed Non-Recyclables
2 = Dry Mixed Recyclables

The waste receptacle requirements have been established from distribution of the total weekly waste generation estimate into the holding capacity of each receptacle type. Waste storage receptacles as per Table 5.1, above, (or similar appropriate approved containers) will be provided by the building management company in the residential WSA.

As outlined in the current *Dublin City Development Plan*, it is preferable to use 1,100 L 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 and 120 L bins, 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 WSA are shown in Figure 5.1. All waste receptacles used will comply with the SIST EN 840-1:2020 and SIST EN 840-2:2020 as the standards for performance requirements of mobile waste containers, where appropriate.



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

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

This plan will be provided to each resident from first occupation of the development i.e. once the first residential unit is occupied. This Plan will be supplemented, as required, by the property management company with any new information on waste segregation, storage, reuse and recycling initiatives that are subsequently introduced.

5.1 Waste Storage – Residential Units

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

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

Residents will be required to take their segregated waste materials to their designated WSA and deposit their segregated waste into the appropriate bins. The location of the WSAs are illustrated in the drawings submitted with the planning application under separate cover.

Provision will be made in all residential units to accommodate 3 no. bin types to facilitate waste segregation at source. An example of a potential 3 bin storage system is provided in figure 5.2 below.



Figure 5.2 Example three bin storage system to be provided within the unit design

Each bin / container 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 waste types can be placed in each bin.

Access to the apartment block WSAs will be restricted to authorised residents, facilities management and waste contractors by means of a key or electronic fob access.

Other waste materials such as textiles, batteries, printer toner / cartridges, light bulbs 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 – Café/Commercial & Retail Units

The commercial tenants will be required to segregate waste within their own units into the following main waste types:

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

As required, the staff will need to bring segregated waste materials to their designated WSA and deposit their segregated waste into the appropriate bins. The location of the WSAs are illustrated in the drawings submitted with the planning application under separate cover.

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

If any kitchens are allocated in unit areas, this will contribute a significant portion of the volume of waste generated on a daily basis, and as such it is important that adequate provision is made for the storage and transfer of waste from these areas to the WSA.

If kitchens are required it is anticipated that waste will be generated in kitchens throughout the day, primarily at the following locations:

- Food Storage Areas (i.e. cold stores, dry store, freezer stores and stores for decanting of deliveries);
- Meat Preparation Area;
- Vegetable Preparation Area;
- Cooking Area;
- Dish-wash and Glass-wash Area; and
- Bar Area.

Small bins will be placed adjacent to each of these areas for temporary storage of waste generated during the day. Waste will then be transferred from each of these areas to the appropriate waste store within their unit.

All bins / containers in the commercial tenants' areas as well as in the WSA will be clearly labelled and colour coded to avoid cross contamination of the different waste streams. Signage will be posted above or on the bins to show exactly which wastes can be put in each.

Other waste materials such as textiles, batteries, lightbulbs, WEEE, cooking oil and printer toner / cartridges will be generated less frequently. The tenant will be required to store these waste types within their own unit and arrange collection with an appropriately licensed waste contractor. Facilities management may arrange collection, depending on the agreement. Further details on additional waste types can be found in Section 5.5.

5.3 Waste Storage – Medical Unit

Waste will be generated from a wide variety of activities throughout the proposed medical centre. Healthcare risk wastes will typically be generated in the doctor surgeries, consulting rooms and treatment rooms. DMR and MNR waste will be generated throughout the building. Confidential and non-confidential paper waste will mainly be generated in offices and staff workstations.

Organic (food) waste will be generated from staff lunches, micro kitchen areas and food brought into the building.

Appropriate colour coded, labelled and secured receptacles will be required for healthcare risk waste generated in the building as set out in the HSE, *Waste Management Awareness Handbook* (and illustrated in Figure 3.2). The required healthcare risk waste receptacles will be:

- Yellow bags (stored in rigid bins e.g. 60L pedal bin)
- Yellow rigid buckets with yellow lid

These waste receptacles will be stored in designated treatment rooms, doctor surgeries, consulting rooms and treatment rooms areas. Facilities or cleaning staff will transfer the risk waste bags/buckets on a regular basis to a dedicated clinical waste room in a segregated area of the medical WSA. This area will have at least 1 no. 240L litre yellow clinical waste bin and 1 no. sharps container.

In addition, clinical waste bags and sharps buckets may be temporarily transferred to utility stores located across the unit during the day prior to transfer to the clinical waste room. Where required, these temporary storage locations should have 60/80 litre pedal bins for yellow risk waste bags and shelf storage for sharps buckets. Facilities or cleaning staff will transfer this waste to the dedicated Clinical Waste Room on a daily basis.

Non-risk waste receptacles for DMR and MNR will be strategically positioned in the treatment rooms, consulting rooms and offices as necessary.

Where suitable, it is proposed that office and work station areas will utilise area waste stations (AWSs) for non-risk waste streams as opposed to using individual receptacles at desks. AWSs should be conveniently located within 10-15m of workstations, where possible, and would typically include:

- 1 no. 60/80 litre receptacle for dry mixed recyclables;
- 1 no. 60/80 litre receptacle for mixed non-recyclables; and
- 1 no. 60/80 litre receptacle for confidential paper.

In addition, smaller bins or caddies for organic and glass waste should be located in the micro kitchen areas.

Other waste materials such as batteries, WEEE, lightbulbs and printer toner/cartridges will be generated less frequently. The tenant will be required to store these waste types within their own unit and arrange collection with an appropriately licensed waste contractor. Facilities management may arrange collection depending on the agreement. Further details on additional waste types can be found in Section 5.5.

5.4 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.

Bins from the development will be brought to collection points by the waste contractor or facilities management, immediately prior to collection. All locations for collection can be viewed on the drawings submitted with the planning application under separate cover.

HCRW from the Healthcare unit will be collected directly from the healthcare risk WSA by a waste contractor appointed directly by the HSE.

The confidential waste paper bin(s) will be collected/emptied directly from the building by an appointed waste contractor.

A trolley / tug or suitable vehicle may be required to convey the bins to and from the collection areas. The building management or waste contractor will ensure that empty bins are promptly returned to the WSAs after collection / emptying.

Suitable access and egress has been provided to enable the bins to be moved easily from the WSA to the waste collection vehicles on the appropriate days. Waste will be collected at agreed days and times by the nominated waste contractors.

All waste receptacles should be clearly identified as required by waste legislation and the requirements of the DCC *Waste Bye-Laws*. Waste will be presented for collection in a manner that will not endanger health, create a risk to traffic, harm the environment or create a nuisance through odours or litter.

It is recommended that bin collection times are staggered to reduce the number of bins required to be emptied at once and the time the waste vehicle is on-Site. 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 gardens, 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 tenants cannot use the civic amenity centre. They must segregate their waste batteries and either avail of the take-back service provided by retailers or arrange for recycling / recovery of their waste batteries by a suitably permitted / licenced contractor. Facilities management may arrange collection, depending on the agreement.

Waste Electrical and Electronic Equipment (WEEE)

The WEEE Directive (Directive 2002/96/EC) and associated Waste Management (WEEE) Regulations have been enacted to ensure a high level of recycling of electronic and electrical equipment. In accordance with the regulations, consumers can bring their waste electrical and electronic equipment to their local 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 tenants cannot use the civic amenity centre. They must segregate their WEEE and either avail of the take-back / collection service provided by retailers or arrange for recycling / recovery of their WEEE by a suitably permitted / licenced contractor. Facilities management may arrange collection, depending on the agreement.

Printer Cartridge / Toners

It is recommended that a printer cartridge / toner bin is provided in the commercial unit, where appropriate. The commercial tenant 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

Chemicals (such as solvents, paints, adhesives, resins, detergents, etc) are largely generated from building maintenance works. Such works are usually completed by external contractors who are responsible for the off-site removal and appropriate recovery / recycling / disposal of any waste materials generated.

Any waste cleaning products or waste packaging from cleaning products generated in the commercial units that is classed as hazardous (if they arise) will be appropriately stored within the tenants' own space. Facilities management may arrange collection, depending on the agreement.

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

Light Bulbs

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

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

Textiles

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

Waste Cooking Oil

If the commercial tenants use cooking oil, waste cooking oil will need to be stored within the unit on a bunded area or spill pallet and regular collections by a dedicated waste contractor will need to be organised as required. Under sink grease traps will be installed in any cooking space.

If the residents generate waste cooking oil, this can be brought to a civic amenity centre or placed in the organic waste bins.

Furniture & Other Bulky Waste Items

Furniture and other bulky waste items (such as carpet, etc.) may occasionally be generated by the commercial tenant. 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 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 or Facilities management will arrange collection by a licensed waste contractor.

Covid-19 Waste

Any waste generated by residential and commercial tenants that have tested positive for Covid-19 should be managed in accordance with the current Covid-19 HSE Guidelines at the time that that waste arises. At the time this report was prepared, the HSE Guidelines require the following procedure for any waste from a person that tests positive for Covid-19:

- Put all waste (gloves, tissues, wipes, masks) from that person in a bin bag and tie when almost full;
- Put this bin bag into a second bin bag and tie a knot;
- Store this bag safely for 3 days, then put the bag into the non-recyclable waste / general waste wheelie bin for collection / emptying.

Please note that this guidance is likely to be updated by the time the proposed Development is open and occupied and the relevant guidance at the time will need to be reviewed.

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;
- Have access for potential control of vermin, if required; and
- Be fitted with CCTV for monitoring.

The building management company, tenants and residents will be required to maintain the resident bins and storage areas in good condition as required by the DCC Waste Bye-Laws.

Access to the Healthcare Risk WSA at ground level should be restricted to authorised staff, be sufficient to allow a 240 litre bin to pass easily into and out of the room for transfer via the service walkway to the waste collection zone. 240 litre bins used in the healthcare waste industry are typically 450mm wide.

In accordance with the HSE publication *National Hospital Office – National Cleaning Manual Appendices*, the following specifications are also required:

- The waste receptacle including all component parts should be clean and well-maintained with no blood or body substances, rust, dust, dirt, debris and spillages.
- Bins should be emptied as appropriate, with fresh liners fitted in accordance with local and national policy. Bags should be removed and labelled/tagged when no more than $\frac{3}{4}$ full and stored appropriately in a secure location.
- There should be an agreed schedule in operation for replacement of sani-bins in place.
- The sani-bin/nappy bin, including all component parts should be clean and well-maintained with no blood or body substances, rust, dust, dirt, debris and spillages.

The project Architects site layout plan indicates the indicative site and building layout, including waste storage areas for planning purposes, more detailed layouts will be produced as part of the detailed design process. The waste storage areas identified on the plans are sufficiently sized to accommodate the waste which will be generated within the development and are appropriately located to allow for collection of this waste.

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 proposed 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 contributing to 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*.

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

7.0 REFERENCES

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