REPORT

Operational Waste Management Plan

Project Title: Belgard Square East, Belgard Road and Old Blessington Road, Tallaght, Dublin 24

CLIENT	DOCUMENT REFERENCE	DATE
Midsal Homes Limited	247501.0543WMR02	11/11/2025

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DOCUMENT CONTROL SHEET

Document Control Sheet	
Our Reference	247501.0543WMR02
Original Issue Date	11/11/2025
Client:	Midsal Homes Limited

Revision	Revision Date	Description

Details	Written by	Approved by
Signature		
Name	Chonaill Bradley	Fergal Callaghan
Title	Principal Environmental Consultant	Director
Date	11/11/2025	11/11/2025

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1. INTRODUCTION

AWN Consulting, a Trinity Consultants Company, has prepared this Operational Waste Management Plan (OWMP) on behalf of Midsal Homes Limited. The proposed development principally comprises: the demolition and removal of existing boundary walls and railings on the main development site's eastern, western and northern sides; and the construction of a mixed-use development in 2 No. blocks (A to the south and B to the north) with a gross floor area of 23,540 sq m (excluding basement of 275 sq m) and ranging in height from 1 No. to 7 No. storeys (with mezzanine level) over basement.

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 as amended and associated Regulations [1], Environmental Protection Agency Act 1992 as amended [2], Litter Pollution Act 1997 as amended [3], *the* National Waste Management Plan for a Circular Economy 2024 - 2030 (NWMPCE) (2024) [4] and the South Dublin County Council (SDCC) *County of South Dublin (Segregation, Storage and Presentation 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 national 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. OVERVIEW OF WASTE MANAGEMENT IN IRELAND

2.1 National level

The Irish Government issued a policy statement in September 1998 entitled '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 2002 [11]. 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) [15] 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.

The Circular Economy and Miscellaneous Provisions Act 2022 [16] was signed into law in July 2022. The Act underpins Ireland's shift from a "take-make-waste" linear model to a more sustainable pattern of production and consumption, that retains the value of resources in our economy for as long as possible and that will to significantly reduce our greenhouse gas emissions. The Act defines Circular Economy for

the first time in Irish law, incentivises the use of recycled and reusable alternatives to wasteful, single-use disposable packaging, introduces a mandatory segregation and incentivised charging regime for commercial waste, streamlines the national processes for End-of-Waste and By-Products decisions, tackling the delays which can be encountered by industry, and supporting the availability of recycled secondary raw materials in the Irish market, and tackles illegal fly-tipping and littering.

Since 1998, the Environmental Protection Agency (EPA) has produced periodic 'National Waste (Database) Reports' which as of 2023 have been renamed Circular Economy and Waste Statistics Highlight Reports [17] 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 2024 National Circular Economy and Waste Statistics web resource, which is the most recent study published, along with the national waste statistics web resource (2024) reported the following key statistics for 2022:

- Generated – Ireland produced 3,190,000 t of municipal waste in 2022. This is a slight increase since 2021. Of this, 55% came from households and 45% came from commercial and public service sources.
- Managed –In 2022, a total of 1.76 million Household waste collected and treated by the waste industry.
- Unmanaged – An estimated 36,970 tonnes of household waste was unmanaged waste i.e., not disposed of in the correct manner in 2022.
- Recovered – A rounded 1.3 million tonnes of Ireland's municipal waste went for incineration with energy recovery in 2022. This tonnage is 43% of municipal waste managed and a marginal increase on the 42% achieved in 2021.
- Recycled –Some 1.3 million tonnes of municipal waste generated in Ireland was recycled in 2022, resulting in a recycling rate of 41% . This indicates that we face significant challenges to meet the upcoming EU recycling targets for 2025 to 2035
- Of the municipal waste recycled in 2022, over 825,000 tonnes went for material recycling (approximately the same as 2021) and over 480,000 tonnes were treated by composting/anaerobic digestion (approximately the same as 2021 but up 37% on 2020). The large increase of composted/anaerobically digested biowaste from 2020 is mainly due to a change in our way of estimating home composting.
- Disposed – Ireland's landfill rate for municipal waste managed was 15% in 2022. This is a 1% decrease from 2021's rate of 16%.
- Reuse – 54,800 tonnes of second-hand products we estimated by the EPA to have been reused in Ireland in 2021. The average annual Reuse rate per person in Ireland is 10.6 kg per person.

2.2 Regional Level

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

The Eastern Midlands Region (EMR) Waste Management Plan 2015 – 2021, which previously governed waste management policy in the SDCC area, has been superseded as of March 2024 by the NWMPCE 2024 – 2030, the national waste management plan for Ireland.

The NWMPCE does not dissolve the three regional waste areas. The NWCPCE sets the ambition of the plan to have a 0% total waste growth per person over the life of the Plan with an emphasis on non-household wastes including waste from commercial activities and the construction and demolition sector.

This Plan seeks to influence sustainable consumption and prevent the generation of waste, improve the capture of materials to optimise circularity and enable compliance with policy and legislation.

The national plan sets out the following strategic targets for waste management in the country that are relevant to the development:

National Targets

- 1A. (Residual Municipal Waste) 6% Reduction in Residual Municipal Waste per person by 2030
- 2A. (Contamination of Materials) 90% of Material in Compliance in the Dry Recycling Bin
- 2B. (Material Compliance Residual) 10% per annum increase in Material Compliance in the residual bin. (90% by the end of 2030)
- 3A. (Reuse of Materials) 20kg Per person / year – Reuse of materials like cloths or furniture to prevent waste.

Municipal landfill charges in Ireland are based on the weight of waste disposed. In the Leinster Region, charges are approximately €140-160 per tonne of waste, which includes a €85 per tonne landfill levy introduced under the Waste Management (Landfill Levy) (Amendment) Regulations 2015 [18]. *The Circular Economy (Waste Recovery Levy) Regulations 2024* [19]*will also add a levy of €10 per tonne to waste accepted for recovery.*

The *South Dublin County Development Plan 2022– 2028* [20] sets out a number of objectives and policies for the South Dublin area in line with the objectives of the waste management plan.

Policy and Objectives

- ***Policy IE7: Waste Management***
  Implement European Union, National and Regional waste and related environmental policy, legislation, guidance and codes of practice to improve management of material resources and wastes.

- ***IE7 Objective 1***
  To encourage a just transition from a waste management economy to a green circular economy to enhance employment and increase the value, recovery and recirculation of resources through compliance with the provisions of the Waste Action Plan for a Circular Economy 2020 – 2025 and to promote the use of, but not limited to, reverse vending machines and deposit return schemes or similar to ensure a wider and varying ways of recycling.

- ***IE7 Objective 2***
  To support the implementation of the Eastern Midlands Region Waste Management Plan 2015-2021 or as amended by adhering to overarching performance targets, policies and policy actions.

- ***IE7 Objective 4***
  To provide for and maintain the network of bring infrastructure (e.g. civic amenity facilities, bring banks) in the County to facilitate the recycling and recovery of hazardous and non-hazardous municipal wastes.

- ***IE7 Objective 7***
  To require the appropriate provision for the sustainable management of waste within all developments, ensuring it is suitably designed into the development, including the provision of facilities for the storage, separation and collection of such waste.

- ***IE7 Objective 8***
  To adhere to the recommendations of the National Hazardous Waste Management Plan 2014-2020 and any subsequent plan, and to co-operate with other agencies including the EPA in the planning, organisation and supervision of the disposal of hazardous waste streams, including hazardous waste identified during construction and demolition projects.

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 as amended;*
- *Environmental Protection Agency Act 1992 as amended;*
- *Litter Pollution Act 1997 as amended;*
- *Planning and Development Act 2000 as amended* [21]*;*
- *Circular Economy and Miscellaneous Provisions Act 2022.*

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 as amended 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, creche operators and any proposed facilities 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 contactor 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 Licence granted by the EPA. The COR / permit / licence held will specify the type and quantity of waste able to be received, stored, sorted, recycled, recovered and / or disposed of at the specified site.

2.3.1 South Dublin County Council Waste Management Bye-Laws

The SDCC *"County of South Dublin (Storage, Presentation and Segregation of Household and Commercial Waste) Bye-Laws (2018)"* came into effect in December 2018. These Bye-laws repeal the previous SDCC bye-laws*; South Dublin County Council Household Waste Bye-Laws 2012* and *South Dublin County Council (Storage, Separation at Source, Presentation and Collection of Commercial Waste) Bye-Laws 2007*. 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 SDCC functional area. Key requirements under these Bye-laws are:

- Kerbside waste presented for collection shall not be presented for collection earlier than 8.00pm on the day immediately preceding the designated waste collection day;
- All containers used for the presentation of kerbside waste and any uncollected waste shall be removed from any roadway, footway, footpath or any other public place no later than 8:00am on the day following the designated waste collection day;
- Neither recyclable household kerbside waste nor food waste arising from households shall be contaminated with any other type of waste before or after it has been segregated; and

- A management company, or another person if there is no such company, who exercises control and supervision of residential and/or commercial activities in multi-unit developments, mixed-use developments, flats or apartment blocks, combined living/working spaces or other similar complexes shall ensure that:
  - separate receptacles of adequate size and number are provided for the proper segregation, storage and collection of recyclable household kerbside waste and residual household kerbside waste;
  - additional receptacles are provided for the segregation, storage and collection of food waste where this practice is a requirement of the national legislation on food waste;
  - the receptacles referred to in paragraphs (a) and (b) are located both within any individual apartment and at the place where waste is stored prior to its collection;
  - any place where waste is to be stored prior to collection is secure, accessible at all times by tenants and other occupiers and is not accessible by any other person other than an authorised waste collector,
  - written information is provided to each tenant or other occupier about the arrangements for waste separation, segregation, storage and presentation prior to collection; and
  - an authorised waste collector is engaged to service the receptacles referred to in this section of these bye-laws, with documentary evidence, such as receipts, statements or other proof of payment, demonstrating the existence of this engagement being retained for a period of no less than two years. Such evidence shall be presented to an authorised person within a time specified in a written request from either that person or from another authorised person employed by South Dublin County Council.

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

2.4 Regional Waste Management Service Providers and Facilities

Various contractors offer waste collection services for the residential sector in the SDCC 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.

The Ballymount Civic Amenity Centre is, located c. 4 km north east of the development site, can be utilised by residents of the proposed development for other household waste streams. This centre can accept mixed dry recyclables, plastic, paints, furniture, electrical items, batteries, wood, textiles, metal and glass. There is also a bring centre located c. 160m west of the development on old Blessington road, where glass and aluminium cans can be deposited.

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

3. DESCRIPTION OF THE DEVELOPMENT

3.1 Location, Size and Scale of the Development

Midsal Homes Limited intends to apply for permission for a Large-Scale Residential Development (LRD) at a site of approximately 1.19 Ha at Belgard Square East, Belgard Road and Old Blessington Road, Tallaght, Dublin 24. The main development site (approximately 0.91 Ha) is generally bound: to the north by Old Blessington Road; to the east by Belgard Road (R113); to the south by McDonald's Restaurant property (D24 HW74); and to the west by Belgard Square East. The site also includes parts of the carriageways and verges of Belgard Square East, Belgard Road and Old Blessington Road (approximately 0.28 Ha) for the provision of landscaping, 2 No. pedestrian crossings, accesses/junctions, minor road and footpath works, cycle infrastructure and water services infrastructure.

The proposed development principally comprises: the demolition and removal of existing boundary walls and railings on the main development site's eastern, western and northern sides; and the construction of a mixed-use development in 2 No. blocks (Block A to the south and Block B to the north) with a gross floor area of 23,540 sq m (excluding basement of 275 sq m) and ranging in height from 1 No. to 7 No. storeys (with mezzanine level) over basement.

The development includes a total of 199 No. residential dwellings (6 No. studios, 47 No. 1-bed, 98 No. 2-bed and 48 No. 3-bed) in the 2 No. blocks, with Block A comprising 49 No. 'senior living' apartment units and Block B comprising 150 No. 'standard' apartment units. The development also includes 2,123 sq m of non-residential floor space, with the following uses proposed: 4 No. retail units (totalling 331 sq m); 4 No. class 1 / class 2 commercial units (totalling 387 sq m); a bicycle sales and repair shop (81 sq m); an off-licence (64 sq m); a bar (151 sq m); a café (87 sq m); a medical centre (210 sq m); a dental practice (72 sq m); a pharmacy (195 sq m); a beauty/health salon (195 sq m); and a crèche (350 sq m) with external play area.

The development also comprises: an undercroft car park accessed via a new entrance/exit at Belgard Square East which provides 58 No. car parking spaces; a gated service lane to the south of Block A, with entrances/exits off Belgard Square East and Belgard Road; 2 No. pedestrian/cycle crossings, at Belgard Square East and Belgard Road; continuation of the northbound cycle lane from Belgard Road onto Old Blessington Road; alteration to the median and northbound right turn at Belgard Road onto Abberley Square; cycle parking; internal communal amenity spaces for the senior living units; hard and soft landscaping, including public open space, communal amenity space and incidental spaces; private amenity spaces (as balconies and terraces facing all directions); boundary treatments; 2 No. sub-stations; plant/operational rooms; bin stores; public lighting; blue roofs; rooftop PV arrays; lift overruns and rooftop opening vents atop both blocks; 4 No. 0.3 m diameter microwave link dishes mounted on 2 No. steel support poles affixed to the Block B lift overrun, all enclosed in radio-friendly GRP shrouds; and all associated works above and below ground..

3.2 Typical Waste Categories

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

- Dry Mixed Recyclables (DMR) - includes waste paper (including newspapers, magazines, brochures, catalogues, leaflets), cardboard and plastic packaging, metal cans, plastic bottles, aluminium cans, tins and Tetra Pak cartons;
- Organic waste – food waste and green waste generated from internal plants / flowers, landscaping and gardens;
- 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:

- Drink Cans and Bottles (Deposit Return Scheme)
- 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 or commercial 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.

3.2.1 Typical Medical Unit 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.

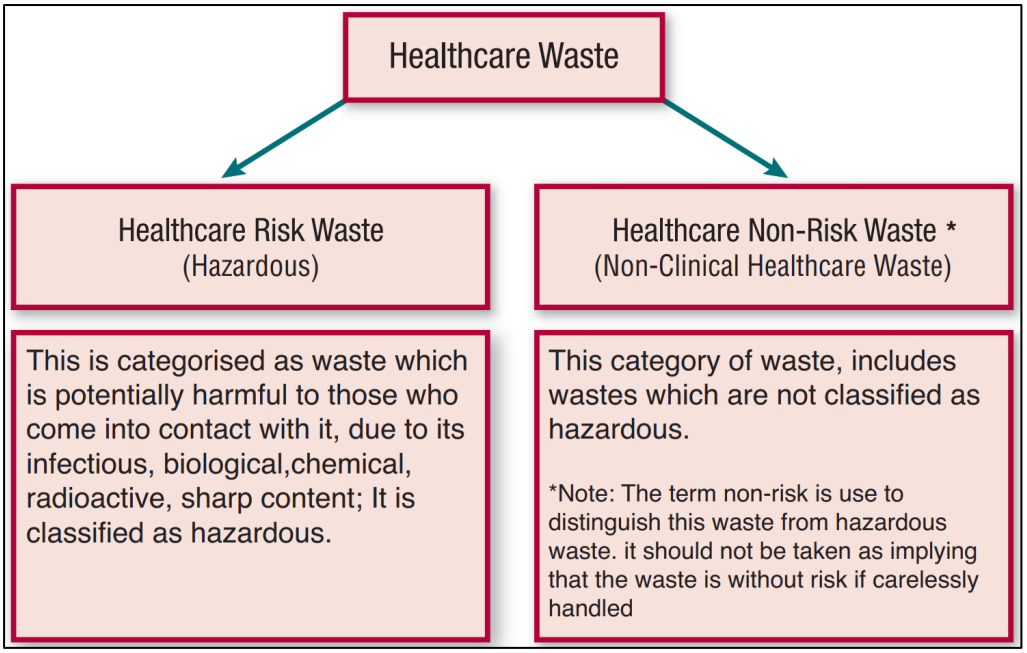

Figure 3.1 Healthcare Waste Categories (Source: HSE, Waste Management Awareness Handbook (2010)

3.2.2 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.

3.2.3 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.*

3.2.4 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.

3.2.5 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))

3.2.6 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*.

3.3 List of Waste Codes

In 1994, the *European Waste Catalogue* [22] and *Hazardous Waste List* [23] were published by the European Commission. In 2002, the EPA published a document titled the *European Waste Catalogue and Hazardous Waste List* [24], 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'* [25] 2018. 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 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 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. 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 commercial units (medical centre, bicycle shop, café/bar, crèche, pharmacy and beauty / health salon) are based on waste generation rates per m^2 floor area for the proposed area uses.

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

Table 4.1 Estimated Waste Generation for the proposed development

Waste Type	Waste Volume (m^3 / week)				
	Block A Residential (Combined)	Block B Residential (Combined)	Block A Commercial (Combined)	Block B Commercial (Combined)	Creche Unit
Organic Waste	0.70	2.50	0.13	0.36	0.04
DMR	4.99	17.73	2.65	7.18	1.29
Glass	0.14	0.48	0.07	0.20	0.00
MNR	2.62	9.33	1.10	2.99	0.70
Medical	-	-	0.12	0.24	-
Total	**8.45**	**30.05**	**4.08**	**10.98**	**2.04**

BS5906:2005 Waste Management in Buildings – Code of Practice [26] 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. 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 SDCC. In particular, consideration has been given to the following documents:

- BS 5906:2005 Waste Management in Buildings – Code of Practice,
- The NWMPCE (2024);
- SDCC, South Dublin County Development Plan 2022 – 2028; and
- SDCC, County of South Dublin (Segregation, Storage and Presentation of Household and Commercial Waste) Bye-laws (2018).

Waste Storage Areas

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

Shared Residential WSA

Six (6 no.) shared WSAs have been allocated within the development design for the residential apartments. These have been strategically located on the ground floor level, in internal locations. The WSAs are located internally at ground floor level, in close proximity to residential cores.

Commercial Units

Three (3 no.) shared WSAs have been allocated within the development design for the commercial units. These have been strategically located on the ground floor level, in internal locations.

Creche Unit

The Creche operator will have their own individual WSA allocated. This WSA is located adjacent to their unit in an internal location at ground floor level.

Facilities management will supply all residents and commercial units with a document that shall clearly state the methods of source waste segregation, storage, reuse and recycling initiatives that shall apply within the development for units sharing waste storage areas.

The waste receptacles from the WSAs will be collected directly from the WSA by the facilities management company or waste contractor depending on the agreement and taken to the staging and collection points. Upon emptying they will be removed immediately and returned the appropriate waste storage area.

The collection points are such that they will not obstruct traffic or pedestrians (allowing a footway path of at least 1.8m, the space needed for two wheelchairs to pass each other) as is recommended in the *Design Manual for Urban Roads and Streets* (2019) [27].

Using the estimated waste generation volumes in Table 4.1, above, the waste receptacle requirements for MNR, DMR, organic waste and glass have been established for the WSAs. It is envisaged that all waste will be collected on a weekly basis while additional waste types as covered in section 5.6 will be taken to the nearest bring centre (residential units only) or collected by a suitably licensed waste contractor (Residential and commercial units).

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	Additional
Block A Residential Bin Store (Combined)	3 no. 1100 L	5 no. 1100 L	1 no. 240 L	3 no. 240 L	-
Block B Residential Bin Store (Combined)	9 no. 1100 L	16 no. 1100 L	2 no. 240 L	11 no. 240 L	-
Block A Commercial Bin Store (Combined)	1 no. 1100 L	3 no. 1100 L	1 no. 120 L	1 no. 240 L	120L Medical Bin (Pharmacy)
Block B Commercial Bin Store (Combined)	3 no. 1100 L	7 no. 1100 L	1 no. 120 L	2 no. 240 L	2. no 240L Medical Bin (Medical)
Creche Unit (Individual)	1 no. 1100 L	1 no. 1100 L 1 no. 240L	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 warehouse and office operator in the WSA.

The types of bins and bailers 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 (240L and 1100L)

Receptacles for organic, DMR, glass and MNR will be provided in the WSA's prior to first occupation of the development i.e. prior to the first residential unit or commercial unit being occupied.

This Plan will be provided to all residential and commercial units from first occupation of the development i.e. once the first l 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

5.2 Waste Storage – Residential Units

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

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

Residents in Block A and Block B have been allocated communal WSAs on ground level in an internal locations.

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

Graphical signage will be erected by facilities management, above or on the bins to show exactly which wastes can be put in each. Bins/containers will also be colour coded to avoid cross contamination of the different waste streams.

Other waste materials such as textiles, batteries, printer toner/cartridges, cooking oil 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 5.3.

5.3 Waste Storage –Off License, Bicycle Shop, Café/Bar, Crèche and Beauty / Health Salon

Staff will be required to segregate their waste into the following waste categories within their own units:

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

As required, the staff will need to bring segregated DMR, MNR, glass and organic waste to their dedicated commercial WSAs as covered in section 5.0.

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

If any kitchens/food preparation areas 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;

Small bins will be placed adjacent to each of these areas for temporary storage of waste generated during the day.

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 WSAs will be restricted to authorised staff, facilities management and waste contractors by means of a key or electronic fob access.

Other waste materials such as textiles, batteries, printer toner/cartridges and WEEE may be generated infrequently by the residents. Tenants 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.

5.4 Waste Storage – Pharmacy, Dental and Medical Units

Waste will be generated from a wide variety of activities throughout the medical unit and pharmacy. Healthcare risk wastes will typically be generated in the consulting and treatment rooms, along with expired medicines from the pharmacy. DMR and MNR waste will be generated throughout the units. Confidential and non-confidential paper waste will mainly be generated in 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 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 commercial WSA. This area will be secure from the rest of the commercial bins.

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 medical waste bins 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 workstation 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. Facilties management may arrange collection depending on the agreement. Further details on additional waste types can be found in Section 5.6.

5.5 Waste Collection

There are numerous private contractors that provide waste collection services in the South Dublin area. All waste contractors servicing the proposed development must hold a valid waste collection permit for the specific waste types collected. All waste collected must be transported to registered / permitted / licensed facilities only.

The waste receptacles from the shared residential and commercial WSAs will be collected by facilities management or the waste contractor depending on the agreement, and brought to where the bins will be staged temporarily awaiting collection. The staging areas are such that they will not obstruct traffic or pedestrians (allowing a footway path of at least 1.8m, the space needed for two wheelchairs to pass each other) as is recommended in the *Design Manual for Urban Roads and Streets* (2023). All locations for collection can be viewed on the drawings submitted with the planning application under separate cover and in the appendix of this report.

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

All waste receptacles will be clearly identified as required by waste legislation and the requirements of the SDCC *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.

5.6 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.

Deposit Return Scheme
Most drinks containers can be recycled via the deposit return scheme, such as bottles, cans and tins made from plastic, aluminium or steel can be returned once they are between 150ml and 3 litres in size and have the Re-turn logo on them.

At the shops you can either return the containers:

Using a Reverse Vending Machine (RVM)
Manually in the shop

If a shop does not have a RVM but they sell containers with the Re-turn logo, the shop may allow you to manually return containers in store, unless they have a take back exemption.

Locations of RVM machines can be found via the Re-turn website (www.re-turn.ie)

Green waste
Green waste may be generated from external landscaping and internal plants/flowers. Green waste generated from landscaping of external areas will be removed by external landscape contractors. Green waste generated from gardens internal plants/flowers can be placed in the organic waste bins.

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

The commercial 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 suiltably permited/licenced contractor. Facilties management may arrange collection depending on the agreement.

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

As noted above, the commercial 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 suiltably permited/licenced contractor. Facilties 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 units, where appropriate. The commercial tenants tenants will be required to store this waste within their unit and arrange for return to retailers or collection by an authorised waste contractor, as required.

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

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

Any waste cleaning products or waste packaging from cleaning products generated in the commercial units that is classed as hazardous (if they arise) will be appropriately stored within the tenants own space. Facilties 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 (Fluorescent Tubes, Long Life, LED and Lilament bulbs)
Waste light bulbs may be generated by lighting at the commercial tenants. It is anticipated that commercial tenants will be responsible for the off-site removal and appropriate recovery/disposal of these wastes. Facilties 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.

Waste Cooking Oil
If the comercial 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.

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

5.7 Waste Storage Area Design

The WSAs will 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 400 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 operator will be required to maintain the bins and storage areas in good condition as required by the SDCC Waste Bye-Laws.

5.8 Facility Management Responsibilities

It shall be the responsibility of the Facilities Management Company to ensure that all waste generated by residents and commercial tenants is managed to ensure correct storage prior to collection by an appropriately permitted waste management company.

Facilities Management should provide the following items*:*

- Provision of a Waste Management Plan document, prepared by the Facilities Management Company to all residential units and commercial tenants, which shall clearly state the methods of source waste segregation, storage, reuse and recycling initiatives that shall apply to the management of the development;
- Provision and maintenance of appropriate graphical signage to inform residents and tenants of their obligation to reduce waste, segregate waste and in the correct bin;
- Preparation of an annual waste management report for all residential units and commercial tenants;
- Designation of access routes to common waste storage areas to ensure safe access from the apartment units by mobility impaired persons;
- Provision of an appropriately qualified and experienced staff member, who will be responsible for all aspects of waste management at the development;
- Daily inspection of waste storage areas and signing of a daily check list, which shall be displayed within the area; and
- Maintenance of a weekly register, detailing the quantities and breakdown of wastes collected from the development and provision of supporting documentation by the waste collector to allow tracking of waste recycling rates.

5.9 Pest Management

A pest control operator will be appointed as required to manage pests onsite during the operational phase of this development. All waste generated within the development will be stored in closed waste receptacles both within units and within the shared WSAs. Any waste receptacles will be carefully managed to prevent leaks, odours and pest problems.

All shared WSAs will have access for potential control of vermin, if required, be supplied with hot or cold water, drainage point and will be regularly inspected by facilities management to deter pests.

6. SUMMARY AND CONCLUSION

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 and the *NWMPCE 2024 – 2030.*

Adherence to this plan will also ensure that waste management at the development is carried out in accordance with the requirements outlined in the *SDCC 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. REFERENCES

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24. EPA, *European Waste Catalogue and Hazardous Waste List* (2002)
25. EPA, *Waste Classification – List of Waste & Determining if Waste is Hazardous or Non-Hazardous* (2018)
26. BS 5906:2005 Waste Management in Buildings – Code of Practice.
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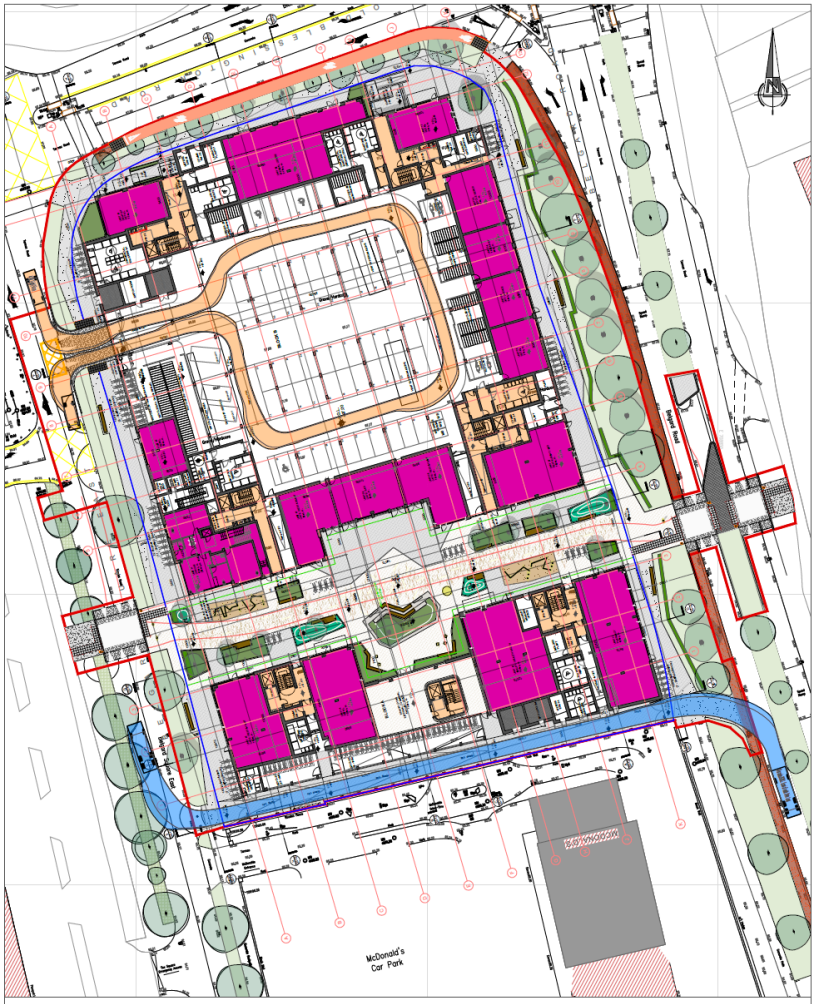
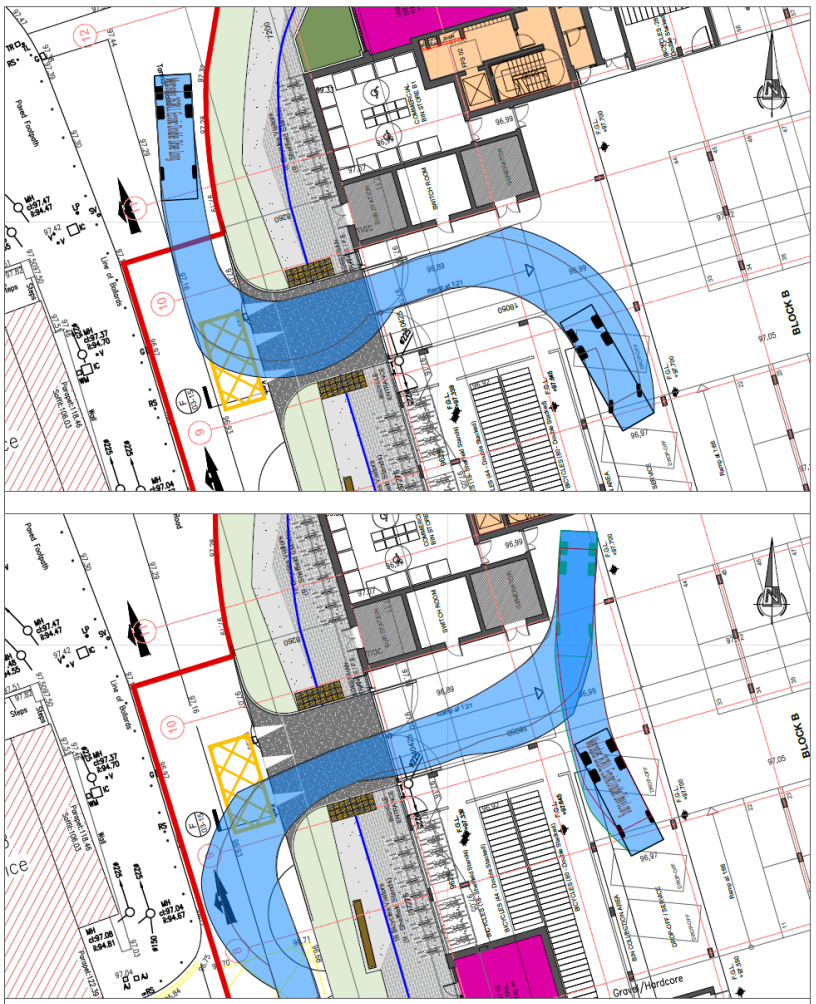
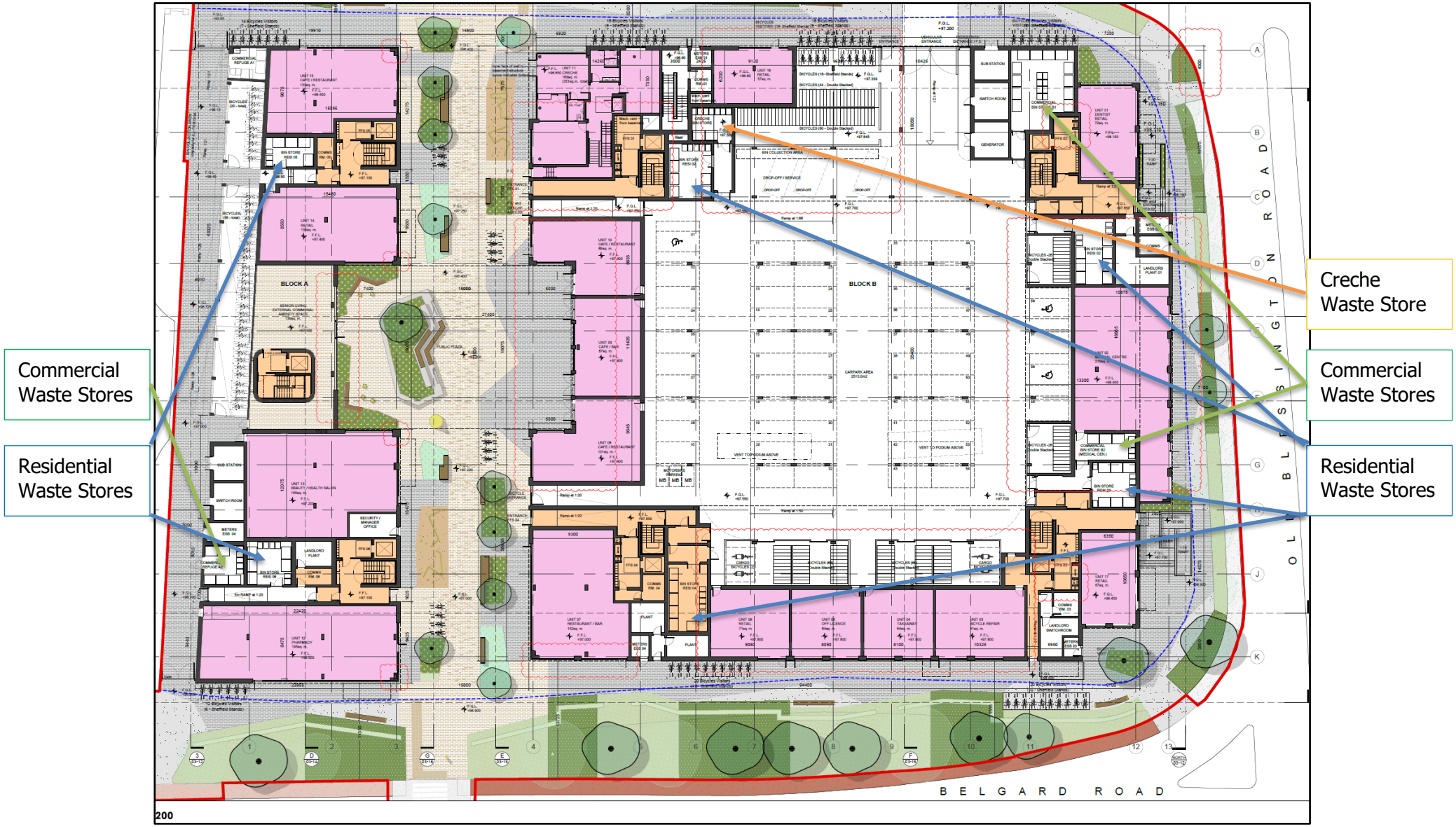
APPENDIX A. ROAD SWEEP ANALYSIS FOR REFUSE TRUCK





APPENDIX B. WASTE STORAGE AREA LOCATION