OPERATIONAL WASTE MANAGEMENT PLAN

FOR

PROPOSED DEVELOPMENT

AT

CLAREMONT, HOWTH ROAD, HOWTH, CO. DUBLIN

October 2019

ON BEHALF OF

Atlas GP Ltd

Prepared by
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1 INTRODUCTION

Enviroguide Consulting was commissioned to produce an Operational Waste Management Plan (OWMP) at the request of Atlas GP Ltd for a proposed development located at Claremont, Howth Road, Howth, Co. Dublin.

The Applicant is seeking planning permission for the proposed development to include the construction of a mixed-use development of residential, retail/non-retail uses and a childcare facility in 4 no. blocks (A to D), over part basement. Blocks A, B, and C range in height from part three and a half storeys with further floors setback of up to seven storeys in 'U' shaped blocks. Block D is part single storey and part six storey. The residential component will consist of 512 no. residential units. The commercial component in Blocks C and D consists of 4 no. units. Block C consists of an anchor unit at ground floor. Block D consists of a restaurant and retail unit, and café at first floor. Associated communal facilities, resident amenities, a crèche and a commercial element including retail, restaurant and café will also be constructed as part of the proposed development.

The OWMP is designed to ensure that waste arising from the operational phase of the project is managed to incentivise waste prevention and to encourage the segregation of waste so that it can be managed in accordance with the waste hierarchy and in compliance with the Waste Management Act, 1996, as amended, and all regulations made thereunder. Diversion of waste from landfill will be the overarching philosophy adopted. 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 issued by Fingal County Council 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.

The plan will be subject to review if a planning permission is forthcoming and any material-changes in the proposed operational strategy will be subject to agreement with Fingal County Council at project construction and operational stages.

2 OVERVIEW OF WASTE MANAGEMENT IN IRELAND

Operational Waste Management Plans are often required through the planning process in Ireland. The purpose of this Operational Waste Management Plan is to detail and plan how waste generated during the operational phase of a proposed development will be managed. This will

include requirements for waste storage provisions, access to authorised waste collection and proximity to additional recycling facilities.

At present in Ireland there are no national guidelines on Operational Waste Management Plans. The proposed development is located in the Fingal County Council (FCC) Planning district. No specific guidelines have been published by FCC 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.

2.1 European and Irish Legal Context

Waste Legislation in Europe and Ireland is extensive and often complex. Waste framework legislation establishes the legal structure for the prevention and management of waste in Ireland. This legislation also governs the reporting on waste generation, waste treatment and capacity. It also sets down mandatory targets for waste diversion, collection and treatment.

The Waste Framework Directive (Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste) is a pinnacle part of waste regulations across Europe. The Waste Framework Directive (which was transposed into Irish law in 2011 (S.I. No. 126/2011 - European Communities (Waste Directive) Regulations 2011)), encourages the prevention, recycling and processing of waste. It sets out a waste hierarchy which priorities waste prevention, preparation for re-use, recycling and energy recovery. Waste disposal which is the last resort and least favourable option. The Directive requires Member States to adopt waste management plans and waste prevention programmes.

In Ireland the primary platform for waste legislation is the Waste Management Act 1996, as amended and the Protection of the Environment Act 2003, as amended. The Waste Management Act has been brought into effect by making a series of subordinate regulations, covering a range of topics such as food waste, waste electrical and electronic equipment, batteries etc. The Act has been further amended by enacting regulations, mainly the Waste Directive Regulations, that address new EU environmental initiatives and strengthen areas where problems have arisen.

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 waste treatment destination, waste contractors will be

employed to physically transport waste to the final waste destination. It is therefore imperative that property management companies undertake on-site management of waste in accordance with all legal requirements and employ appropriately authorised waste contractors to undertake off-site management of their waste in accordance with all legal requirements. This includes the requirement that an authorised 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.

Each appointed Waste Contractor must hold a valid waste collection permit to transport waste which is issued by the National Waste Collection Permit Office (NWCPO). Waste treatment facilities must also be appropriately permitted by the Local Authority or licensed by the Environ-mental Protection Agency (EPA) to accept the waste. The Management Company appointed will be responsible for ensuring that all Waste Contractors hold the appropriate authorisations.

2.2 Waste Policy in Ireland

In addition to waste regulations, Ireland has adopted waste management policies. Waste management policy is set by the government and is detailed in a set of policy documents which have been produced since 1998:

- Waste Management: Changing Our Ways (1998)
- Preventing and Recycling Waste: Delivering Change (2002)
- Taking Stock & Moving Forward (2004)
- National Strategy on Biodegradable Waste Management (2006)
- A Resource Opportunity – Waste Management Policy in Ireland (2012)

A Resource Opportunity which was published by the DECLG in July 2012, sets out a number of important policy actions in the context of waste management plans, including the following:

- A revised step waste hierarchy which prioritises waste prevention, reuse, recycling and waste to energy before disposal is considered.
- The introduction of household food waste regulations which will require the segregation of household waste, supporting its diversion from landfill to more productive uses.
- Maximise the number of households with access to a waste collection service and maximise householder participation.
- Placing a responsibility on householders to prove they manage their waste in an environmentally sound manner.

- To support households, awareness and education measures will be strengthened; the waste collection industry will be encouraged to play a role in such measures.
- New Service Standards to ensure that consumers receive higher customer service standards from their operator.
- The establishment of a team of Waste Enforcement Officers for cases relating to serious criminal activity will be prioritised.
- A review of the producer responsibility model will be initiated to assess and evaluate the operation of the model in Ireland.
- Significant reduction of Waste Management Planning Regions from ten to three.

2.3 Regional Waste Management Plans & Local Bye-laws

Fingal County Council is located within the Eastern-Midlands Waste Region (EMWR) which is one of Ireland's three waste management regions. The framework for the prevention and management of waste for this regional is set out in the Eastern-Midlands Waste Region Waste Management Plan 2015-2021, a statutory document underpinned by national and EU waste legislation. The strategic vision of the regional waste plan is to rethink the approach to managing wastes. In order to achieve this vision, the WMP has set out three specific and measurable performance targets:

- 1% reduction per annum in the quality of household waste generated per capita over the period of the Eastern Midlands Region Waste Management Plan.
- Reduce to 0% the direct disposal of unprocessed municipal waste to landfill (from 2016 onwards) in favour of higher value pre-treatment processes and indigenous recovery practices.
- Achieve a recycling rate of 50% of managed municipal waste by 2020.

The Fingal County Council Storage, Presentation and Collection of Household Waste Bye-Laws 2006 (hereinafter referred to as 'the bye-laws') place some additional obligations on how waste is stored and managed at the development. Sections 6(a) and 6(c) of bye-laws respectively state that dry-recyclable waste and bio-waste must be source segregated by the waste holder.

3 DESCRIPTION OF THE PROJECT

3.1 Description of the Proposed Development

The proposed development will occur at a site bounded to the south by the Howth Road, to the east by a private dwelling, to the north by the DART line, and to the west by Local Authority

lands. The site incorporates the former Techrete manufacturing facility, the former Beshoff's Motors showroom, and the former Howth Garden Centre.

The proposed development will include the demolition of all structures on site (c.8,162sqm GFA) and excavation of a basement. The proposed development comprises of the provision of a mixed use development of residential, retail/restaurant/cafe uses and a creche in 4 no. blocks (A to D), over part basement. Blocks A, B, C and D with a height up to a maximum of seven storeys of apartments over lower ground floor and basement car parking levels (a total of eight storeys over basement level). The residential component will consist of 512 no. residential units. The proposed development includes the provision of two vehicular entrances on to Howth Road, excavation of basement to provide for car parking, plant, waste storage and ancillary use. Additional car parking spaces shall be provided at lower ground floor level. A total of 439 no. car parking spaces and 1,335 no. bicycle parking spaces, including 49 no. bicycle spaces to cater for the retail units and creche shall be provided. One vehicular access is located at Block A, serving car parking spaces. The second is at Block C, providing access to the basement, residential and retail parking, and a service area for the retail units. A service route will be provided along part of the northern perimeter of the site with access from the western end of the site at a junction with Howth Road and at the main vehicular entrance at Block C;

A publicly accessible walkway/cycleway to the north of the site shall be provided at podium level. A civic plaza will be provided between Blocks D and C, and a landscaped park to the west of Block A. A channel to the sea for the Bloody Stream with associated riparian strip shall be incorporated as a feature within a designed open space between Blocks A and B. Communal gardens will be provided for Blocks A, B and C;

The residential component consists of 512 no. residential units, which includes 4 no. studio, 222 no. one bed, 276 no. two bed, 10 no. three bed apartments, and communal facilities of 708 sqm. Ground floor units onto the Howth Road will have own door access. The units will be served by balconies or terraces on all elevations;

Block A, with a maximum height of seven storeys of apartments over lower ground level car park (a total of eight storeys), will provide for 234 residential units, with residents' amenities to include a gym, residents' lounge, residents' support office, and 2 no. residents' multi-purpose rooms. Block B, with a maximum height of seven storeys of apartments over lower ground floor and basement car park (a total of eight storeys over basement), shall provide for 154 no. units, residents' lounge, residents' multi-purpose room, and creche of 236 sqm with outdoor play area. Own door access will be provided at ground floor. Block C, with a maximum height of seven storeys over basement car parking (a total of seven storeys) will provide for 83 no. residential units in two wings over a retail unit and Block D, with a maximum of 6 storeys over basement, shall provide for 41 no. residential units over retail units;

The commercial component in Blocks C and D consists of 4 no. units with 2,637 sqm gross floor area. In Block C, it consists of a 1,705 sqm anchor unit, accessed from the civic plaza. In Block D, it consists of a restaurant (243 sqm) and retail unit (603 sqm) and café (86 sqm). The restaurant and retail units are accessed from Howth Road, and the café is accessed from the upper level of the civic plaza.

The proposed development includes the provision of public and communal open space, green roofs, landscaping, boundary treatments, set down locations, substations, meter rooms, waste management and all ancillary site works, including upgrading of the public paths along Howth Road and relocation of bus stop in new setback with a bus shelter. Two set down areas are provided at either end of the site;

The gross floor area of the proposed development is 48,252 sqm (excluding enclosed car parking) on a site of 2.68 ha.

A site layout plan of the development is provided in Figure 1. The location of the proposed development is detailed in Figure 2. A detailed site layout plan (as included in Figure 1 is also included in Appendix 1 of this report).

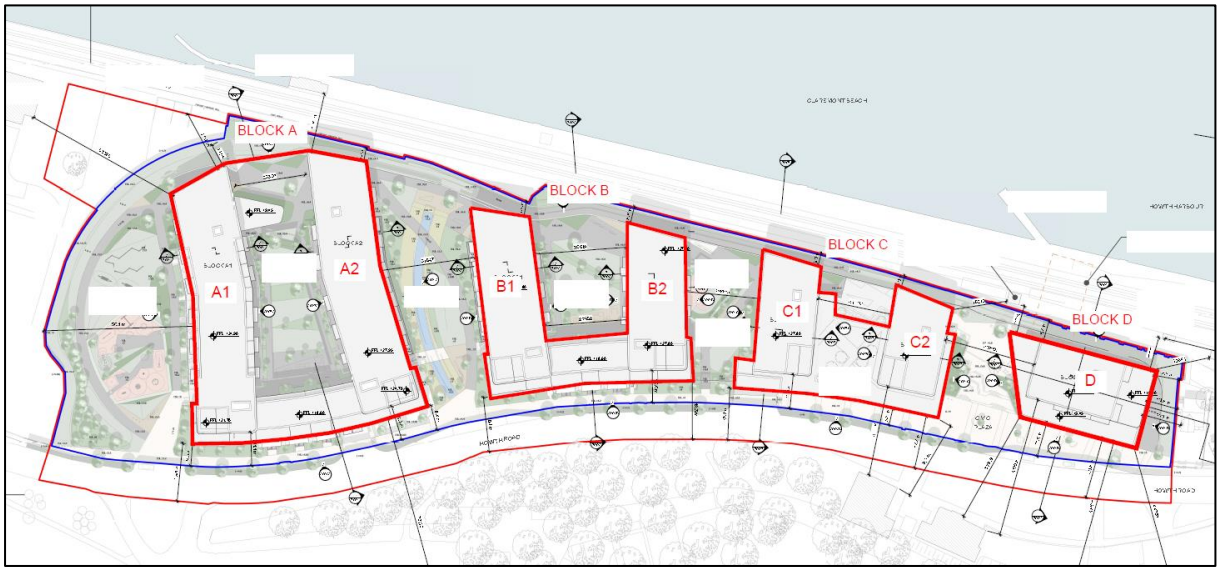


Figure 1 Site Layout Plan

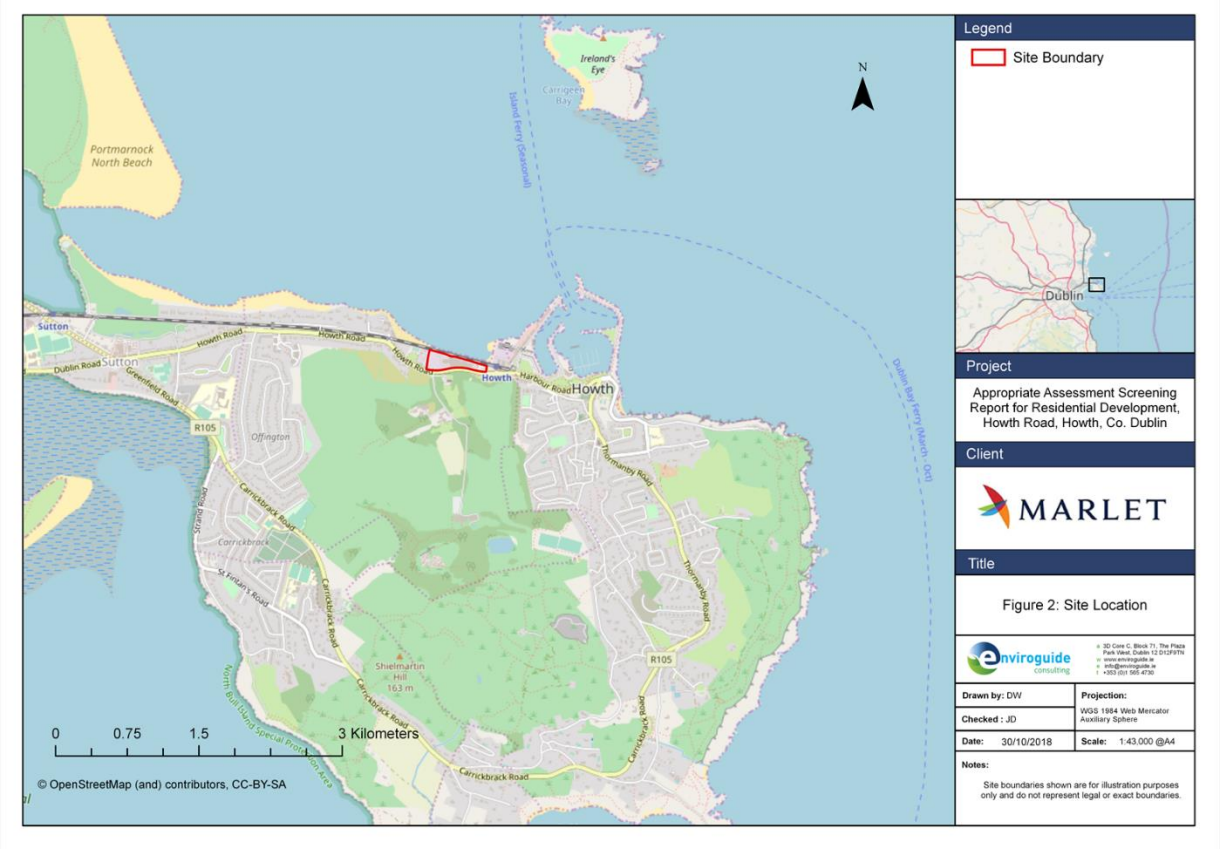


Figure 2 Location of the Proposed Development

3.2 Proximity of the Development to Recycling Facilities

The development site is located at Claremont, Howth Road, Howth, Co Dublin. This site is located in close proximity to local bring bank facilities and within a 15.5km radius of various recycling centres as detailed in Figure 3 and Table 1 below.

Figure 3 presents the proximity of the development site to local bring bank facilities, with the nearest bring bank located 0.3km in Marina Car Park, Howth. The nearest recycling centre located 13.1km from the site, in Collins Avenue, Dublin 9.

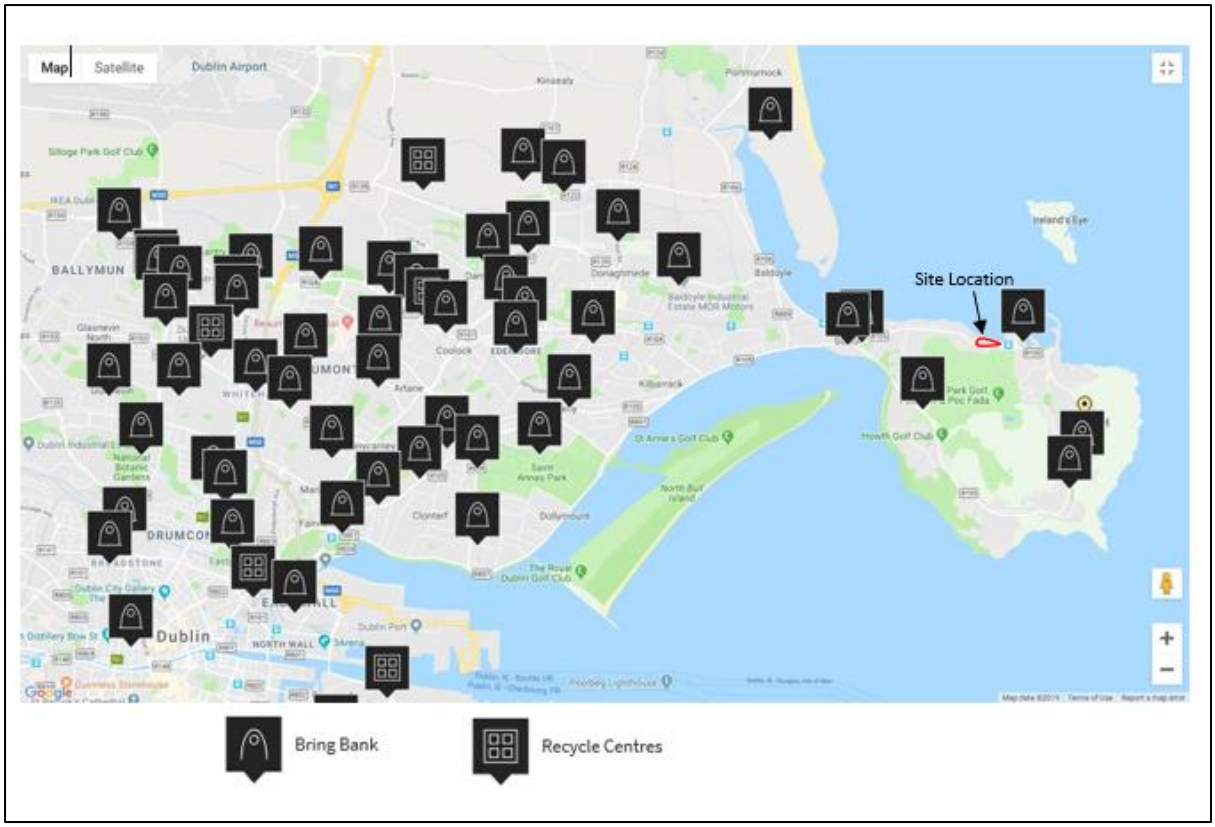


Figure 3 Location of Nearest Bing Banks and Recycling Centres (Source: Adapted from information on Repak Recycling Facilities Search)

Table 1 below provides the details of the bring banks and recycling centres located in closest proximity to the proposed site.

Table 1 Location of Nearest Bring Bank or Recycling (Source: Adapted from information on Repak Recycling Facilities Search)

Waste Facility Location	Opening Hours	Materials Accepted	Distance from Proposed Development
Marina Car Park, Howth, Bring Bank	24 hours	Beverage Cans	0.3km
Sutton Lawn Tennis Club, Bring Bank	24 hours	Beverage Cans, Glass Bottles and Jars	2.3km
Supervalu Car Park, Sutton, Bring Bank	24 hours	Beverage Cans, Food Cans, Glass Bottles and Jars	2.5km
Summit Inn, Howth Bring Bank	24 hours	Beverage Cans	2.9km
St Fintan's Cemetery, Sutton, Bring Bank	24 hours	Beverage Cans, Glass Bottles and Jars	3.1km
The Reservoir Public Car Park, Howth Bring Bank	24 hours	Clothes and Textiles, Glass Bottles and Jars	3.1km
Golf Links Road Car Park, Portmarknock, Bring Bank	24 hours	Glass Bottles and Jars	7.3km
Mulch, Coolock	Not available	Branches, Christmas Trees, Grass, Green Waste, Hedge cuttings, Hedges, Leaves, Plants, Prunings, Trees	11.3km
Collins Avenue, Dublin 9 Recycling Centre	Not available	Batteries, Beverage Cans, Beverage Cartons, Books, Car Batteries, Cardboard, Cards, Clothes and Textiles, Fluorescent Tubes, Food Cans, Glass Bottles and Jars, Grass, Green Waste, Hedge cuttings, Leaves, Magazines, Newspapers, Paper, Plants, Plastic Bottles, Plastic Film, Plastics other, Waste Oil	13.1km
Shamrock Terrace, Dublin 1 Recycling Centre	Not available	Batteries, Beverage Cans, Beverage Cartons, Books, Car Batteries, Cardboard, Cards, Clothes and Textiles, Electrical Waste, Fluorescent Tubes, Food Cans, Glass Bottles and Jars, Grass, Green Waste, Hedge cuttings, Leaves, Magazines, Metal, Mobile phone, Newspapers, Paints, Paper, Plants, Plastic Bottles, Plastic Film, Plastics other, Prunings, Used Gas Cylinders, Waste Oil, Wood	13.4km
Estuary Recycling Centre, Swords Recycling Centre	24 hours	Batteries, Beverage Cans, Beverage Cartons, Books, Branches, Car Batteries, Cardboard, Clothes and Textiles, Electrical Waste, Fluorescent Tubes, Food Cans, Glass Bottles and Jars, Grass, Green Waste, Hedge cuttings, Hedges, Leaves, Magazines, Metal, Mobile phone, Newspapers, Paints, Paper, Plants, Plastic Bottles, Plastic Film, Plastics other, Print Cartridges, Prunings, Used Gas Cylinders, Waste Oil, Wood	15.5km
Ringsend Recycling Centre, Ringsend, Dublin 4 Recycling Centre	Not available	Batterie, Beverage Cans, Beverage Cartons, Books, Car Batteries, Cardboard, Cards, Christmas Trees, Clothes and Textiles, Electrical Waste, Fluorescent Tubes, Food Cans, Glass Bottles and Jars, Grass, Green Waste, Hedge cutting, Leaves, Magazines, Metal, Newspapers, Paints, Paper, Plants, Plastic Bottles, Plastic Film, Plastics other, Used Gas Cylinders, Waste Oil, Wood	15.4km

4 WASTE GENERATION

The proposed development will provide for a new neighbourhood in Howth, consisting of apartments, retail shop, restaurant, café and creche as well as new public and communal spaces. The development can be broken down into two individual waste generating elements;

1. Residential Apartments
2. Commercial Units including a retail shop, restaurant, café and creche

Each element of the development has been addressed individually for the provision of facilities for the storage, separation and collection of waste. The waste streams likely to arise from each element are identified and the proposed measures for the management of this waste will be described.

4.1 List of Waste Codes

Correct classification of waste is the foundation for ensuring that the collection, transportation, storage and treatment of waste is carried out in a manner that provides protection for the environment and human health and in compliance with legal requirements.

In 1994, the *European Waste Catalogue* was published by the European Commission. In 2002, the EPA published a document titled the *European Waste Catalogue and Hazardous Waste List*. This document has been replaced by the EPA '*Waste Classification – List of Waste & Determining if Waste is Hazardous or Non-Hazardous'* which became valid from the 1st June 2015.

The waste classification system applies across the EU and is the basis for all national and international waste reporting obligations such as those associated with waste collection permits, certificates of registration, waste facility permits and EPA Waste and IED licences and EPA National Waste Database.

The EPA document '*Waste Classification – List of Waste & Determining if Waste is Hazardous or Non-Hazardous' (EPA, 2015)* consolidates the legislation and allows the generators of waste to classify the waste as hazardous or non-hazardous and in the process assigning the correct List of Waste entry.

Under the classification system, different types of wastes are fully defined by a code. The List of Waste (LoW) code (also referred to as European Waste Code or EWC) for typical waste materials expected to be generated during the operation of the proposed development are provided in Table 2.

Table 2 Expected Waste Types and List of Waste Codes

Waste Description	List of Waste Code
Mixed Municipal Waste	20 03 01
Mixed Dry Recyclables	20 03 01
Biodegradable Kitchen Waste	20 01 08
Glass	20 01 02
Bulky wastes	20 03 07
Waste electrical and electronic equipment*	20 01 35* 21 01 36
Batteries and accumulators*	20 01 33* 20 01 34
Textiles	20 01 11
Fluorescent tubes and other mercury containing waste*	20 01 21
Pesticides	20 01 19*
Edible oil and fat **Oil and fat other than those mentioned in 20 01 25***	20 01 25 20 01 26*
Paint, inks, adhesives and resins containing hazardous substances* **Paint, inks, adhesives and resins other than those mentioned in 20 01 27**	20 01 27* 20 01 28
Detergents containing hazardous substances* **Detergents other than those mentioned in 20 01 29**	20 01 29* 20 01 30
Cytotoxic and cytostatic medicines* **Medicines other than those mentioned in 20 01 31**	20 01 31* 20 01 32
Plastic	20 01 39
Metals	20 01 40
Paper and Cardboard	20 01 01

**Individual waste type may contain hazardous materials*

4.2 Waste Arising – Residential

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

i. Mixed Municipal Waste (MSW) / General Waste;

ii. Dry Mixed Recyclables (DMR) - includes cardboard, plastic packaging, aluminium cans, tins, paper and Tetra Pak cartons;
iii. Organic (food) waste; and

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

- Glass – bottles and jars.
- Bulky wastes – including furniture, carpets, mattresses;
- Waste electrical and electronic equipment (WEEE);
- Batteries;
- Textiles – clothes or soft furnishings;
- Light bulbs or fluorescent tubes;
- Chemicals – old medicines, paints, detergents; and
- Waste oil - cooking oil.

It shall be a condition of contract with the appointed management company to ensure that all residents will be provided with an information pack from the waste collection provider. This information pack will detail the waste streams that can and cannot be placed in the bins provided in the waste compound so that waste segregation is actively encouraged. A clause will be included in the contract with the waste collection provider to provide this information pack to new residents. Information on nearby recycling facilities will also be provided to residents by the management company appointed as a condition of contract. This information will also be included in information booklets provided to new purchasers of properties on the development.

It will be a condition of any management contract at the development that adequate budgets are in place for the provision of all required waste management services including a three-bin system for the collection of separate food waste, mixed dry recyclables and mixed municipal waste.

4.2.1 Estimated Quantity of Waste Generation - Residential

In order to calculate the expected waste generated each year in the residential units it is necessary to first estimate the expected number of residents for this proposed development. The projected number of residents for the proposed development is calculated to be 1,075 persons (based on average occupancy rates for apartments from the 2016 Census).

Table 3 Breakdown of Residential Units and Estimated Occupancy

Number of Apartments	Expected/Average Occupancy (assuming average occupancy rated from 2016 census)	Expected Total Number of Residents
512	2.1	1,075

Table 3 shows that based on average occupancy rates for apartments, it is expected that the proposed development would accommodate 1,075 residents.

Table 4 contains breakdown of the average total residents per block, as well as the average total residents for the proposed development.

Table 4 Breakdown of Average Number of Residents per Block

Block Number	Residence Type	No. of Residence Units	Expected/Average Occupancy (assuming average occupancy rated from 2016 census)	Average Total Residents Per Block	Average Total Residents
Block A	**1 Bed Apt**	89	**2.1**	491	**1,075**
	2 Bed Apt	134			
	3 Bed Apt	10			
	Studio	1			
Block B	**1 Bed Apt**	63	**2.1**	324	
	2 Bed Apt	88			
	3 Bed Apt	0			
	Studio	3			
Block C	**1 Bed Apt**	45	**2.1**	174	
	2 Bed Apt	38			
	3 Bed Apt	0			
Block D	**1 Bed Apt**	25	**2.1**	86	
	2 Bed Apt	16			
	3 Bed Apt	0			

According to the 2016 statistics on household waste, published by the Environmental Protection Agency, each person produces 580kg of municipal waste per year. At maximum capacity, the 512 no. residential units could accommodate 1,075 (actual numbers may vary), the expected average waste produced per year would be 623,500 kg.

Table 5 illustrates the expected volume of waste to be generated per block, per annum. The average number of bins required per block has been calculated based on weekly collections and taking into account the bye-laws which limit the volume of waste that can be placed in

each bin. Section 7(g) of the bye-laws state that *"waste presented by the holder for collection shall not exceed the following weight limits in respect of the stated waste containers*:

140 litre wheeled bin: *25 Kilogrammes*

240 litre wheeled bin: *40 Kilogrammes*

1100 litre Eurobins: *200 Kilogrammes".*

Table 5 Expected Waste Volumes and Estimated Bin Numbers

Block Number	Average Total Residents Per Block	Volume of Waste Produced Per Person (2016 statistics on household waste, published by the Environmental Protection Agency)	Expected Volume of Waste Per Year/ Per Block	Waste Collection Details	Average Number of Bins Required per week	Breakdown of Waste Type & Bin Numbers
Block A	**491**	580kg	284,780kg	1,100L Bins, Max Storage 200kg; Weekly Collection	**28**	**DMR x 16 MSW x 7 Food x 5**
Block B	**324**	580kg	187,920kg	1,100L Bins, Max Storage 200kg; Weekly Collection	**18**	**DMR x 10 MSW x 5 Food x 3**
Block C	**174**	580kg	100,920kg	1,100L Bins, Max Storage 200kg; Weekly Collection	**10**	**DMR x 6 MSW x 2 Food x 2**
Block D	**86**	580kg	49,880kg	1,100L Bins, Max Storage 200kg; Weekly Collection	**5**	**DMR x 3 MSW x 2 Food x 1**

Section 6.1 of this report details the location and sizes of the bin compound areas.

4.2.2 Recycling Rates & Targets - Residential

Based on the bin ratios detailed in section 4.2.1 of this report, it is anticipated that approximately 26% of the overall waste collected will be municipal solid waste. The remaining 74% (approximate) of waste collected will be recyclable waste streams which will include dry mixed recyclables (packaging, papers, cardboards, plastics, aluminium, metals and tin), and food waste.

All of the municipal solid waste (MSW) collected will be transported for further recovery. No MSW will be transported directly to landfill. All MSW will be consigned to a recovery facility where it will undergo mechanical waste recovery, or it will be consigned to a facility for energy recovery.

On review of bin usage by the appointed Management Company, MSW bins may be replaced with additional food waste or mixed dry recyclable bins to further increase waste segregation at source.

The proposed ratio of bins works towards achieving the targets as set by the Eastern-Midlands Waste Region Waste Management Plan 2015-2021 as well as the European Commission's proposal to introduce 70% re-use and recycling targets for municipal waste by 2030. This waste collection proposal also provides a waste management solution that has sufficient flexibility to support future targets and legislative requirements.

4.3 Waste Arising – Commercial

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

iv. Mixed Municipal Waste (MSW) / General Waste;
v. Dry Mixed Recyclables (DMR) - includes cardboard, plastic packaging, aluminium cans, tins, paper and Tetra Pak cartons;
vi. Organic (food) waste; and
vii. Glass

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

- Glass, waste oil, hygiene waste may be generated on a routine basis depending on the commercial activity. These waste streams will be collected by dedicated and authorised commercial waste contractors. Dedicated waste receptacles will be provided to the commercial units by the waste contractor.
- Bulky wastes, textiles and C&D waste are only expected to be generated if refurbishment works are being completed at a commercial unit. In this instance the contractor appointed for completing the refurbishment works will be responsible for hiring a skip or suitable waste receptacle for the temporary storage and authorised collection and transportation of these waste streams.
- Waste electrical and electronic equipment (WEEE), batteries and light bulbs or fluorescent tubes may be generated when these items become end of life. It is anticipated that each of these waste streams will be classed as B2C equipment under the WEEE Regulations and will be collected, free of charge by the Compliance

Scheme. In the unlikely event that these waste streams are classified as B2B waste, the commercial until will be responsible for financing the collection of these by an authorised waste contractor.

It shall be a condition of contract with the appointed management company to ensure that all commercial tenants will be provided with an information pack from the waste collection provider. This information pack will detail the waste streams that can and cannot be placed in the bins provided in the waste compound so that waste segregation is actively encouraged.

4.3.1 Estimated Quantity of Waste Generation - Commercial

The tenants of the proposed commercial units have not yet been finalised. It is anticipated that municipal solid waste, dry mixed recyclables and organic (food) waste will be generated regardless of the business type. The ratio of the waste volumes may vary depending on the business type, and it is proposed that each of the tenants will manage their own waste or have their own waste storage area. The waste storage area will not be visible to the public and it will conform to the requirements of *BS 5906: 2005 – Waste Management in Buildings – Code of Practice.* This Code of Practice states that "*in order to calculate the storage, containment and equipment requirements for effective waste management, the following should be considered:*

- *need for a temporary designated collection point;*
- *volume and composition of waste;*
- *frequency of collection;*
- *degree of waste segregation required;*
- *degree of container separation required;*
- *type of on-site treatment proposed".*

The commercial components of this proposed development consist of the following:

- Anchor unit (1,864 sq. m).
- Retail unit (603 sq. m),
- Restaurant (243 sq. m),
- Café (86 sq. m).
- Crèche (236 sq. m)
- Gym (337 sq. m)

A Waste Generation Calculation has been developed by Enviroguide Consulting Ltd. to estimate the volume of commercial waste to be generated for each commercial unit. This calculation takes into account the business type, floor area, sales area, EPA statistics on

commercial waste, bye-laws and Regional and European recycling targets. The BS5906:2005 Code of Practice has also been taken into account. Table 6 below summarises the estimated weekly commercial waste generation. The actual volume may vary once the tenant has been finalised. The Tenants environmental practices, purchasing policies and waste management practices and policies may cause variance to these figures.

Table 6 Estimated Weekly Commercial Waste Generation

Commercial Unit Type	Size of Units (Square Meters)	Estimated Weekly Waste Generation (kilograms)
Anchor unit	1,864	13,048
Retail unit	603	4,221
Restaurant	243	1,701
Café	86	602
Crèche	236	1,652
Gym	337	2,359

Table 7 below summarises the number of waste receptacles required to ensure that sufficient capacity is available for the storage of waste on-site prior to waste collections. The actual number of bins and waste receptacle type will need to be reviewed once final tenants are agreed for the commercial units.

Table 7 Number and Type of Waste Receptacles for Commercial Waste

Commercial Unit Type	Estimated Weekly Waste Generation (kilograms)	Waste Collection Details	Number of Bins Required	Breakdown of Waste Type & Bin Numbers
Anchor unit	13,048	16 cubic yard Waste Compactor (Compaction ration 1:4) Weekly Collection	3 (in addition to compactor for MSW)	**DMR x 1 Food x 1 MSW x 1***
Retail unit	4,221	5 cubic yard Waste Compactor (Compaction ration 1:4) Weekly Collection	3 (in addition to compactor for MSW)	**DMR x 1 Food x 1 MSW x 1***
Restaurant	1,701	1,100L Bins, Max Storage 200kg; Weekly Collection	9	**DMR x 5 MSW x 2 Food x 2**
Café	602	1,100L Bins, Max Storage 200kg; Weekly Collection	3	**DMR x 1 MSW x 1 Food x 1**
Crèche	1,652	1,100L Bins, Max Storage 200kg; Weekly Collection	9	**DMR x 5 MSW x 2 Food x 2**
Gym	1,011	1,100L Bins, Max Storage 200kg; Weekly Collection	5	**DMR x 3 MSW x 1 Food x 1**

**This 1,100L bin will be used for the temporary storage of MSW. It will be emptied into the waste compactor once full.*

5 WASTE STORAGE

All tenants (residential and commercial) will be required to segregate waste into the following waste categories:

- Municipal Solid Waste;
- Dry Mixed recyclables; and
- Organic (food) waste.

The layout and design of the proposed development will ensure that there is adequate provision for the temporary storage of segregated materials prior to deposition in communal waste storage areas. Adequate space is allocated in the kitchen areas of apartments to accommodate a three-compartment bin for waste segregation at source. Food waste will be stored in ventilated food waste caddies which will be provided by the appointed waste collection company appointed by the management company. In-sink macerators will not be provided in the apartments. Adequate space is allocated in each commercial unit for the temporary storage of segregated materials prior to deposition to the designated waste storage area.

The Management Company will be responsible for the provision of a leaflet to all new tenants (residential and commercial) encouraging good waste segregation and pictorial information

detailing what waste streams can be placed in what bins. In addition to this, clauses that support waste segregation targets will be included in relevant legal documentation e.g. tenancy agreements where possible.

Various bin compound areas have been allocated for the tenants (residential and commercial) which can be accessed via the elevator or stairwell. It will be the responsibility of the tenants (residential and commercial) to bring their segregated waste to the bin compound and place into the appropriately labelled bins. Each bin will be clearly labelled to identify what wastes can and cannot be placed in the bin and labels will be pictorial. The route to the bin compound area and the area will be wheelchair accessible, adequately lit and appropriately ventilated.

Tenants (residential and commercial) will have secure access to the bin compound area (pin code or fob key). This will prevent unauthorised access to waste bins by the general public.

Any additional household wastes such as bulky waste, WEEE, batteries, textiles etc. must be brought to a local recycling facility.

Separate waste storage areas will be provided for the storage of commercial and household wastes. Figure 4 below shows the most common waste receptacles for organic, recyclables and general waste collection.

Figure 4 Typical Waste Receptacles of Different Size

5.1 Bin Compound Areas

The Department of Housing, Planning and Local Government published guidelines in March 2018 – "*Sustainable Urban Housing: Design Standards for New Apartments, Guidelines for Planning Authorities*". These Guidelines detail the provisions that need to be made for the

storage and collection of waste materials in apartment schemes. These guidelines have been taken into account when preparing the design of the waste compound area.

The bin compounds for this proposed development are located in the basement and ground floor levels of the proposed development, as detailed in Figures 5 and 6 below (a copy of these figures is also included in Appendix 2 of this report).

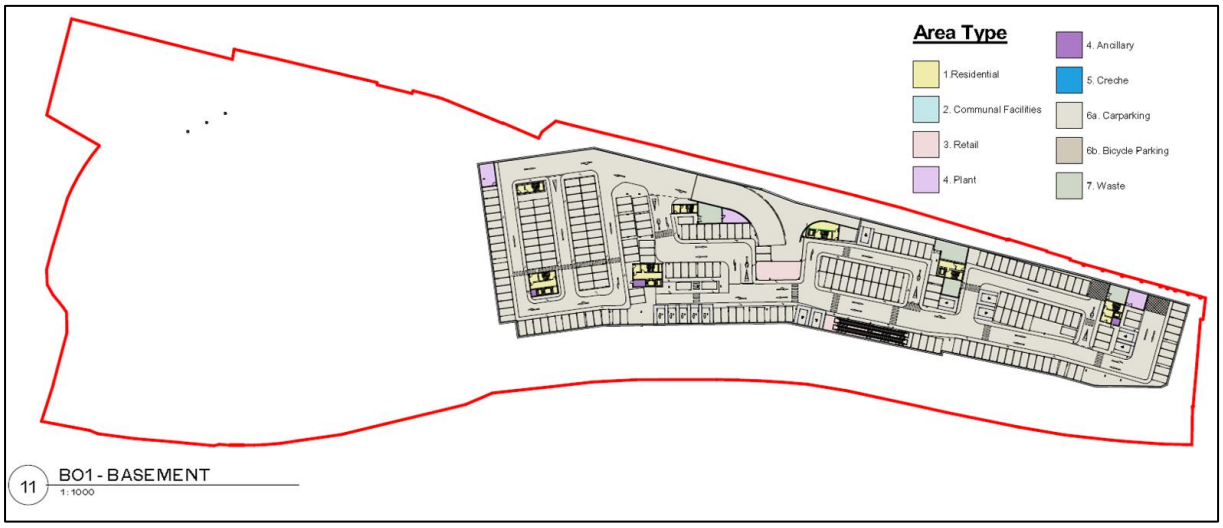


Figure 5 Basement Level Layout Plan

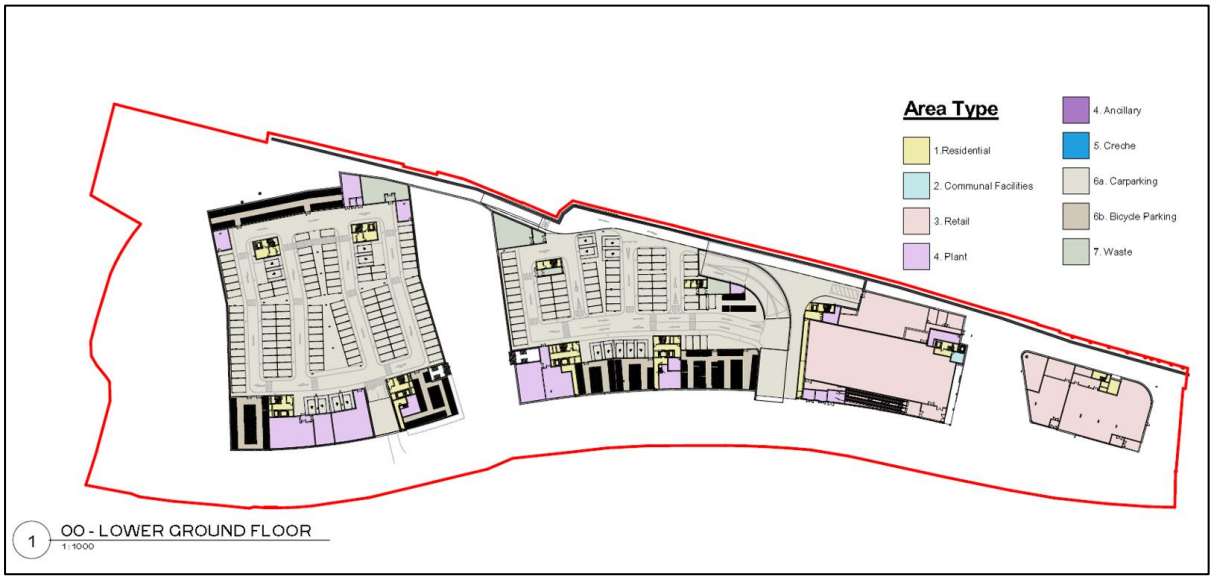


Figure 6 Lower Ground Floor Layout Plan

In total, 8 No. bin compound areas are proposed on the basement and lower ground floor levels. The location and size of each of these bin compound areas is detailed in Table 8 below.

Table 8 Location and Size of Bin Compound Areas

Level of Proposed Development	Block	Area m²
B01 – BASEMENT	Block C	60.5 m²
B01 – BASEMENT	Block C	49.4 m²
B01 – BASEMENT	Block C	32.8 m²
B01 – BASEMENT	Block D	35.0 m²
00 - LOWER GROUND FLOOR	Block A Main	127.6 m²
00 - LOWER GROUND FLOOR	Block B	46.3 m²
00 - LOWER GROUND FLOOR	Block B	20.7 m²
00 - LOWER GROUND FLOOR	Block B Main	142.1 m²
Total Waste Compound Areas		**514.3 m²**

5.1.1 Block A

Block A is comprised of 234 residential units with an expected average occupancy of 491 persons. There is 1 No. bin compound located in this Block (127.6 m²). Table 5 identifies that 28 No. 1100L bins will be required for the storage of onsite waste in this Block, with a maximum capacity of 200kg per 1100L bins, as per the Bye-Laws. This figure is based on weekly bin collections. It is anticipated that based on the current designs, sufficient space will be available for the storage of 28 no.1100L bins.

5.1.2 Block B

Block B is comprised of 154 residential units with an expected average occupancy of 324 persons. There are 3 No. bin compounds located in this Block (46.3m^2, 20.7m^2 and 142.1m^2). Table 5 identifies that 18 No. 1100L bins will be required for the storage of onsite waste in this Block, with a maximum capacity of 200kg per 1100L bins, as per the Bye-Laws. This figure is based on weekly bin collections. It is anticipated that based on the current designs, ample space will be available for the storage of 18 no.1100L bins.

5.1.3 Block C

Block C is comprised of 83 residential units with an expected average occupancy of 174 persons. There are 3 No. bin compounds located in this Block (60.5m^2, 49.4m^2 and 32.8m^2). Table 5 identifies that 10 No. 1100L bins will be required for the storage of onsite waste in this Block, with a maximum capacity of 200kg per 1100L bins, as per the Bye-Laws. This figure is based on weekly bin collections. It is anticipated that based on the current designs, ample space will be available for the storage of 10 no.1100L bins.

5.1.4 Block D

Block D is comprised of 41 residential units with an expected average occupancy of 86 persons. There is 1 No. bin compound located in this Block (35m²). Table 5 identifies that 5 No. 1100L bins will be required for the storage of onsite waste in this Block, with a maximum capacity of 200kg per 1100L bins, as per the Bye-Laws. This figure is based on weekly bin collections. It is anticipated that based on the current designs, ample space will be available for the storage of 5 no.1100L bins.

Commercial bin storage areas will be housed in blocks C and D which have ample space to accommodate the bin storage requirements.

The bin compounds will have the following design provisions as minimum:

i. **Access:** The bin compounds will be accessible for the mobility impaired.
ii. **Lighting:** Bin compounds will have adequate lighting. Energy saving lighting operated on sensors is proposed. This is to ensure that waste will not be tipped in dimply lit areas and that the areas does not pose as a safety risk.
iii. **Spillage & drainage:** A non-slip surface will be provided to prevent slips or falls, and the compounds will have adequate drainage which will be directed to foul sewer.
iv. **Security:** The bin compounds will have restricted access and will be accessible by tenants and residents only. Security measures will be in place and CCTV will be provided in the bin compounds. This is to prevent unauthorised access to the bins by the general public.
v. **Ventilation:** A natural vent will be provided. All vents will be ducted to an external opening so that the bin storage areas will not cause an odour nuisance, taking into account the avoidance of nuisance for habitable rooms nearby.
vi. **Signage:** Pictorial signage will be provided to show residents and tenants what wastes can and cannot be placed in each bin. All signage will be provided by the management company appointed. This will be a requirement in their agreement to ensure this is included in any agreement with a waste contractor or provided by them directly.
vii. **Environmental nuisance:** The compounds will be enclosed areas to avoid environmental nuisances such as litter. Regular waste collections will be required from the waste collection providers to prevent any other environmental nuisances such as odour or vermin. The management company appointed will be required to ensure there is adequate vermin control in place.
viii. **Vehicular Access:** Both compounds have ample space provided for waste collection vehicles to access the development and to collect the bins. Vehicular access for waste collection is included in the traffic management plan for the development.

6 WASTE COLLECTION

All collections must take place in compliance with conditions of the waste contractor's Waste Collection Permit for the region and in line with any Local Authority Bye-Laws and the Waste Management (Waste Collection Permit) Regulations 2007 as amended. All tenants are obliged by law to avail of the waste management service and must comply with local Bye-Laws and Statutory Instruments in relation to the presentation of waste for collection.

Waste collection vehicles will service the bins and the empty bins will be returned to the waste storage area.

Records of the collections will be maintained by the management company for the development including reports from the facilities to which the waste is taken.

Access and egress of the waste collection vehicles will be in accordance with the Traffic Management Plan for the facility. *BS 5906: 2005 – Waste Management in Buildings – Code of Practice* has been taken into consideration when detailing vehicular access and egress to the development for the purposes of waste collection.

7 MANAGEMENT SYSTEM

The Management Company appointed will be required to continually monitor the performance of the waste management system. This will include routine visual checks of the bin compound area to ensure that all bins collected are returned to the bin compound area and to ensure this area is maintained so as not to cause any environmental nuisance to residents. These checks will also assess if the bins are in good condition or need to be replaced where damage is identified.

Provision for bin cleaning will be included in the contract with the waste management contractor appointed to ensure the provision of bin cleaning services or replacement clean bins by the waste contractor.

The Management Company will review all annual waste reports from the Waste Collection Company appointed to ensure that the waste collected is in line with the European recycling targets. Where poor recycling rates are noted information leaflets will be recirculated to all tenants (residential and commercial) which will include information on what materials can be recycled and the waste streams that can be placed in bins. Residents will also be reminded of

legal obligations where applicable. Further communication strategy to engage tenants and owner occupiers in good waste management practices will be adopted if deemed necessary.

Contingency policies will be in place to ensure continuity of service.

8 CONCLUSIONS

By implementing design and actions outlined in this OWMP, a high level of recycling, reuse and recovery will be achieved at the development in line with Irish and European targets. Recyclables and organic waste will be segregated at source to reduce the quantity of residual waste materials requiring off-site recovery or disposal.

The source segregation of waste types as detailed in this report will help to achieve the targets set out in the *EMR Waste Management Plan 2015 – 2021*.

The design of the waste storage areas will meet the requirements as detailed in the *Sustainable Urban Housing: Design Standards for New Apartments, Guidelines for Planning Authorities.*

9 REFERENCES

Waste Management Acts 1996, as amended.

Protection of the Environment Act 2003 as amended.

Litter Pollution Act 1997 as amended.

Eastern-Midlands Waste Region Waste Management Plan, 2015-2021, Eastern-Midlands Region, 2015.

The Fingal County Council Storage, Presentation and Collection of Household Waste Bye-Laws 2006.

Waste Framework Directive (Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste).

European Communities (Waste Directive) Regulations 2011, S.I. No. 126/2011.

Waste Management (Collection Permit) Regulations 2007 (S.I. No. 820 of 2007) as amended

Waste Management: Changing Our Ways, The Department of the Environment and Local Government, 1998.

Preventing and Recycling Waste: Delivering Change, The Department of the Environment and Local Government, 2002.

Taking Stock & Moving Forward, The Department of the Environment and Local Government, 2004.

National Strategy on Biodegradable Waste Management, Department Environment, Heritage and Local Government, 2006.

A Resource Opportunity – Waste Management Policy in Ireland, Department of the Environment, Community and Local Government, 2012.

European Waste Catalogue, European Commission, 2002.

Waste Classification – List of Waste & Determining if Waste is Hazardous or Non-Hazardous, Environment Protection Agency, 2015.

Sustainable Urban Housing: Design Standards for New Apartments, Guidelines for Planning Authorities, Department of Housing, Planning and Local Government, March 2018.

Waste Management in Buildings – Code of Practice, British Standard, BS 5906:2005, 2005.

Mobile Waste and Recycling Containers Part 1: Containers with 2 wheels with a capacity up to 400 l for comb lifting devices — Dimensions and design, British Standard, BS EN 840-1:2012, 2012.

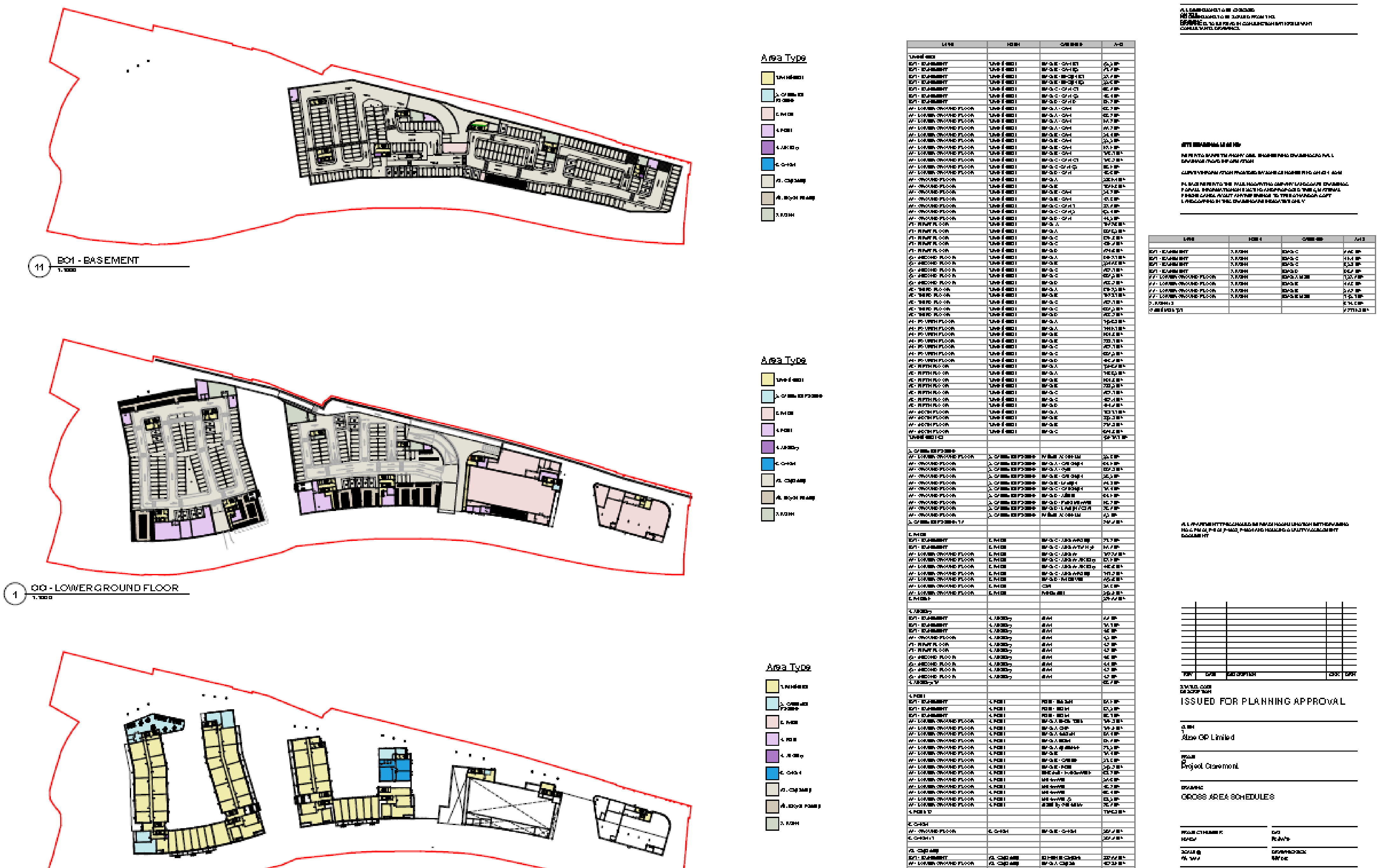
Mobile waste containers. Containers with four wheels with a capacity from 750 l to 1700 l with flat lid(s), for wide trunnion or BG-and/or wide comb lifting devices. Dimensions and design, British Standard, BS EN 840-4:1997, 1997.

Municipal Waste Statistics for Ireland, EPA Waste Data Release, 31 October 2018

APPENDIX 1 – SITE LAYOUT PLAN


BLOCK A
BLOCK B
BLOCK C
BLOCK D
A1
A2
B1
B2
C1
C2
D
N
TITLES IN RED TO BE AGREED
FOR CONSULTANT NAMING
CONVENTION
ISSUED FOR PLANNING APPROVAL

APPENDIX 2 - BASEMENT LEVEL AND LOWER GROUND FLOOR LEVEL LAYOUT PLANS



Area Type
11 B01 - BASEMENT
Area Type
1 00 - LOWER GROUND FLOOR
Area Type
ISSUED FOR PLANNING APPROVAL
Atlas GP Limited
Project Claremont
GROSS AREA SCHEDULES