

Outline Operational Waste Management Plan

Proposed Development at Barnhill Garden
Village, Dublin 15

DOCUMENT CONTROL

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1. INTRODUCTION

1.1 OPERATIONAL WASTE MANAGEMENT PLAN REQUIREMENT

This outline Operational Waste Management Plan (OWMP) has been prepared on behalf of the applicants, Alanna Homes and Alcove Ireland Four Limited, for the proposed development at Barnhill Garden Village, Dublin 15.

This OWMP has been prepared to ensure that the management of waste during the operational phase of the proposed residential development is undertaken in accordance with current legal and industry standards including, the *Waste Management Act 1996* (as amended) and associated Regulations, *Protection of the Environment Act 2003* (as amended), *Litter Pollution Act 2003* (as amended), the *Eastern-Midlands Region Waste Management Plan 2015 – 2021* and the *Fingal County Council Segregation Storage, Presentation and of Household and Commercial Waste Bye-Laws* (2020). In particular, this OWMP aims to provide a strategy for storing, handling, collection and transport of the wastes generated at site. This OWMP aims to ensure maximum recycling, reuse and recovery of waste with diversion from landfill, wherever possible.

It will be the responsibility of each individual building owner and/or property management company (where used) to ensure the OWMP is implemented within the building(s) they own and/or manage. All shared waste storage areas are contained either within building footprints or where located adjacent to public areas are appropriately designed to ensure bins are screened from view.

A final OWMP will be prepared prior to the commencement of development should a planning permission be 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. The final OWMP should be a working and ever evolving document that reflects changes in waste generation patterns and waste storage requirements.

2. OVERVIEW OF WASTE MANAGEMENT IN IRELAND

2.1 LEGISLATIVE CONTEXT

The Waste Framework Directive (Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste) is a core component 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 prioritises waste prevention, preparation for re-use, recycling, and energy recovery. The Directive requires Member States to adopt waste management plans and waste prevention programmes. A revised Waste Framework Directive (Directive (EU) 2018/851 of the European Parliament, amending Directive 2008/98/EC on waste) was approved by the EU in July 2018 and was transposed into Irish Law in July 2020 through the European Union (Waste Directive) Regulations 2020 (S.I. No. 323 of 2020). The new Waste Framework Directive forms part of the circular Economy Package adopted by the EU requiring Member States to improve their waste management systems, to improve the efficiency of resource use, and to ensure that waste is valued as a resource.



Figure 1: EU Waste Hierarchy

In Ireland, the primary waste legislation is the Waste Management Act 1996 (as amended) and the Protection of the Environment Act 2003 (as amended). The Waste Management Act (as amended), has been brought into effect by making a series of subordinate regulations, covering a range of

specific waste types such as food waste, electrical and electronic equipment waste, batteries etc. The Act has been further amended by enacting regulations, mainly the Waste Directive Regulations which 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, 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 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 residential development 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 a waste contractor handle, transport, and reuse/recover/recycle/dispose of waste in a manner that ensures that no adverse environmental impacts occur as a result of any of these activities.

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 or licensed by the Local Authority or Environmental Protection Agency to accept the waste.

2.2 WASTE POLICY IN IRELAND

A number of policy documents relating to the management of waste in Ireland have been published since 1998, these include;

- 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 Waste Action Plan for a Circular Economy (2020)

'A Waste Action Plan for a Circular Economy: Ireland's National Waste Policy 2020-2025' was published by the Department of Communications, Climate Action and Environment in September 2020. This policy document sets out a number of important actions with the aim of transforming the current economic and waste system from linear to circular. These actions include the following;

- Shift the focus away from waste disposal and treatment to ensure that materials and products remain in productive use for longer thereby preventing waste and supporting reuse through a policy framework that discourages the wasting of resources and rewards circularity;
- Make producers who manufacture and sell disposable goods for profit environmentally accountable for the products they place on the market;
- Ensure that measures support sustainable economic models;
- Harness the reach and influence of all sectors including the voluntary sector, R&D, producers / manufacturers, regulatory bodies, civic society; and
- Support clear and robust institutional arrangements for the waste sector, including through a strengthened role for Local Authorities (LAs)

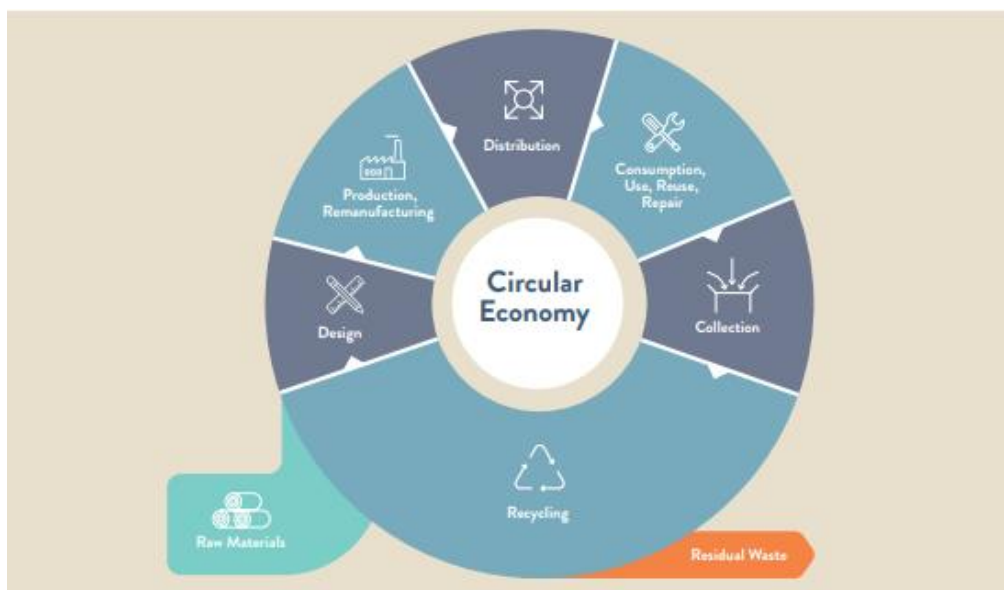


Figure 2: The Circular Economy – National Waste Prevention Programme

Municipal Waste is the waste produced by households, and similar waste produced by businesses. Typically, this waste is collected at kerbside and back door, or brought directly to bring banks or civic amenity sites. Municipal waste only amounts to approximately 10% of the waste generated in the EU (Dept. Communications, Climate Action and Environment 2020), but it is complex to manage as it

is comprised of a number of streams such as general waste, mixed dry recycling, and organic waste, and it has a large number of producers.

The municipal waste recycling rate has remained relatively static in Ireland at 41% from 2012 to 2016, and declined to 40% in 2017, meaning there is still a lot of work to be done to achieve the 2020 target of 50%. In 2017, each person living in Ireland produced, on average, 577 kg of municipal waste, which is well above the European average of 487 kg. (Dept. Communications, Climate Action and Environment 2020).

‘A Waste Action Plan for a Circular Economy: Ireland’s National Waste Policy 2020-2025’ also provides a number of specific actions relating to Municipal Waste, these include;

- Incorporate municipal waste recycling targets as conditions of waste collection permits.
- Improve waste segregation in the commercial sector, including an awareness campaign and enforcement actions.
- Standardise the colour coding of bins across the State
- Ensure that household and commercial waste management will be an operational and enforcement priority for all stakeholders.
- Deliver sustained and visible public campaigns, targeting individuals, business and the public sector to encourage waste prevention and recycling.
- Revisit the existing national standardised list of items acceptable in the mixed dry recycling bin with a view to expanding the list to capture more recyclable materials.
- Examine means to ensure segregated waste receptacles are provided by commercial premises for customers.
- Introduce measures to incentivise the prevention and segregation of waste.
- Work with relevant stakeholders to improve waste segregation in apartment complexes.
- Make the provision of an organic waste bin mandatory as part of a waste collection service for all households.
- Develop a quality waste management assurance scheme for businesses to sign up to.
- Work with stakeholders to ensure the waste sector is responsive to emerging trends and best practice in waste collection and treatment options.

2.2 REGIONAL WASTE MANAGEMENT PLANS

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 region 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 Management Plan (WMP) 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.

2.3 FINGAL COUNTY COUNCIL DEVELOPMENT PLAN 2017-2023

The Fingal Development Plan 2017 – 2023 came into effect in 2017 and sets out a number of policies and objectives for the Fingal region in line with the objectives of the regional waste management plan. Waste objectives with a particular relevance to the proposed development are:

- **Objective WM03** Implement the provisions of the Eastern Midlands Region Waste Management Plan 2015 -2021 or any subsequent Waste Management Plan applicable within the lifetime of the Development Plan. All prospective developments in the County will be expected to take account of the provisions of the Regional Waste Management Plan and adhere to the requirements of that Plan.
- **Objective WM05** Prevent and minimise the generation of waste in accordance with the Eastern Midlands Region Waste Management Plan 2015 -2021 (or any subsequent plans).
- **Objective WM07** Promote the increased re-use of waste in accordance with the Eastern Midlands Region Waste Management Plan 2015-2021 (or any subsequent plan).
- **Objective DMS36** Ensure all new residential schemes include appropriate design measures for refuse storage areas, details of which should be clearly shown at pre-planning and planning application stage. Ensure refuse storage areas are not situated immediately adjacent to the front

door or ground floor window, unless adequate screened alcoves or other such mitigation measures are provided.

2.4 BARNHILL LOCAL AREA PLAN 2019

The Barnhill LAP states that Residential developments should have adequate waste storage space designated for 3 waste streams- residual waste (grey bin), dry recyclables (green bin) and organic waste (brown bin) and should comply with Fingal County Council's Guidelines on the Provision of Waste and Recycling Bins for Residential Developments.

The LAP contains a number of policy objectives relating to appropriate design measures for refuse bins/ storage areas and the distance of waste storage areas to all units.

2.5 FINGAL COUNTY COUNCIL WASTE BYE-LAWS

The Fingal County Council (Segregation Storage, Presentation and of Household and Commercial Waste) Bye-Laws (2020) came into use on the 1st March 2020. These bye-laws repeal the previous Bye-Laws published in 2006. These bye-laws govern a range of issues, including obliging consumers to participate in an authorized waste collection service or provide documentary proof on what alternative means they use to dispose of their waste and encouraging greater segregation of waste to reduce volumes of residual waste collected. This means that from now on, every household must be able to prove that they have a contract in place with an authorized waste collector or that they regularly use a civic amenity site or recycling centre. The Bye-Laws aim to:

- Contribute to meeting the climate challenge
- Improve the quantity and quality of recyclable material collected
- Reduce the amount of waste going to landfill and incineration
- Help conserve planet Earth's finite resources

The Bye-Laws set a number of enforceable requirements on waste holders with regard to storage, separation and presentation of waste within the Fingal County Councils functional area. Key requirements under these Bye-Laws of relevance to the proposed development include the following;

- Kerbside waste presented for collection shall not be presented for collection earlier than 6.00 pm on the day immediately preceding the designated waste collection day;
- All containers used for the presentation of kerbside waste and any uncollected waste shall be removed from any roadway, footway, footpath or any other public place no later than 9:00am on

the day following the designated waste collection day, unless an alternative arrangement has been approved in accordance with bye-law 4;

- Documentation, including receipts, is obtained and retained for a period of no less than one year to provide proof that any waste removed from the premises has been managed in a manner that conforms to these bye-laws, to the Waste Management Act and, where such legislation is applicable to that person, to the European Union (Household Food Waste and Bio-Waste) Regulations 2015; and
- Adequate access and egress onto and from the premises by waste collection vehicles is maintained.

The full text of the Waste Bye-Laws is available from the Fingal County Council website:

<https://www.fingal.ie/council/service/fingal-county-council-segregation-storage-and-presentation-household-and-commercial>

3. PROPOSED DEVELOPMENT

The proposed development comprises construction of 1,243 residential units, a creche, village centre, railway plaza providing access to Hansfield railway station; land set aside for a primary school, a public park, a series of pocket parks throughout the development, plus all ancillary site development works. A full description of the development is provided in the Planning and Design Statement and also in Chapter 2 of the EIAR which accompanies the planning application.

3.1 LOCATION

The application site is located at Barberstown, Barnhill and Passifyoucan, Clonsilla, Dublin 15 and is situated approximately 3 km west of Blanchardstown and approximately 18 km by road to O'Connell Street, Dublin. The site is bounded to the north by the Dunboyne to Clonsilla Rail Line and Hansfield train station and to the east by the Royal Canal and Dublin-Maynooth Railway Line. To the west of the application site is the R149 Clonee-Lucan Road and to the south is Barberstown Lane South. Barberstown Lane North runs through the northern section of the site, providing local access, and linking with the R149 to the west and the Barberstown Lane South to the east.

The surrounding areas and urban centres of Hansfield, Ongar, Clonsilla, Coolmine, Lucan and Blanchardstown will be in easy reach of the completed/ operational development.

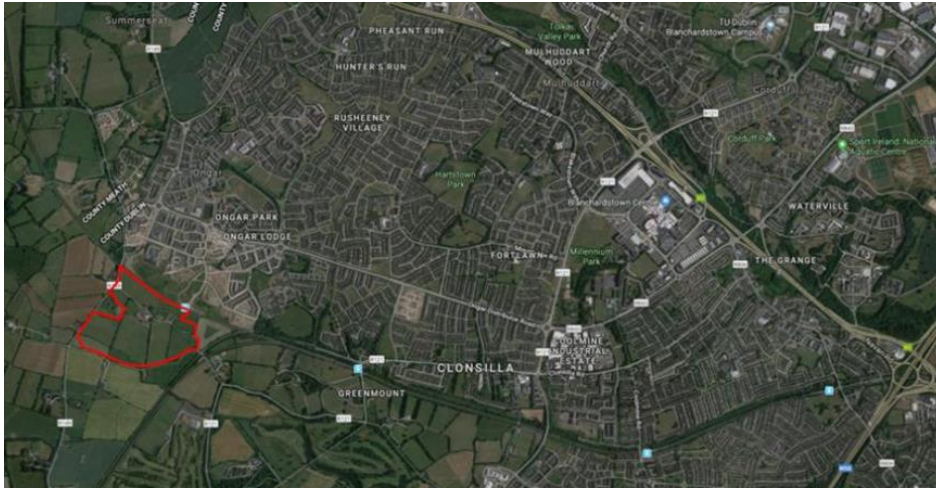


Figure 3: Site Location

3.2 LOCAL RECYCLING FACILITIES

There is a large civic amenity centre in the Coolmine Industrial Estate, approximately 3.5 kilometres from the proposed development, with numerous bring banks situated throughout the region for glass bottles, WEEE and lightbulb recycling.

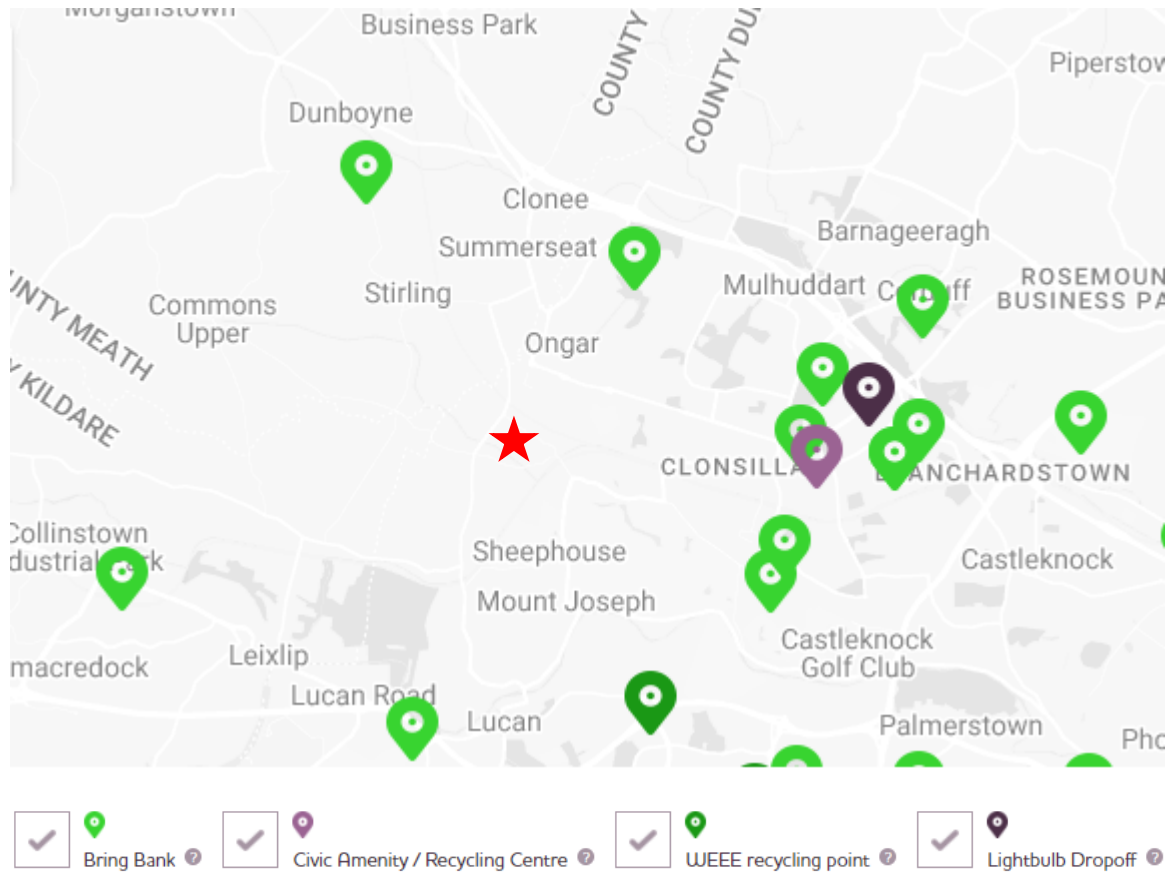


Figure 4: Bring Banks and Civic Amenity Recycling Centre Locations (source: REPAK) – Proposed Development Identified by Red Star

Policy Objective W04 contained in the Barnhill Local Area Plan states the following with regards to bring bank(s) at the proposed development;

‘Facilitate the installation of bring bank(s) at suitable locations within the plan area, which do not adversely affect residential amenity or environmental quality.’

The proposed public car park adjacent to the school site and parklands would be an appropriate location for a bring bank to serve the development. Prior to the commencement of development, the applicant or developer should liaise with Fingal County Council to agree details regarding the location and provision of same.

4. WASTE TYPES

4.1 TYPICAL WASTE TYPES ARISING

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

- Dry Mixed Recyclables (DMR) - includes wastepaper (including newspapers, magazines, brochures, catalogues, leaflets), cardboard and plastic packaging, metal cans, plastic bottles, aluminium cans, tins and Tetra Pak cartons;
- Organic waste – food waste and green waste generated from internal plants/flowers;
- Glass; and
- Mixed Non-Recyclable (MNR)/General Waste.

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

- Green/garden waste may be generated from internal plants or 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.);
- Lightbulbs;
- Textiles (rags);

- Waste cooking oil (if any generated by the residents or commercial tenants);
- Furniture (and from time-to-time other bulky wastes); and
- Abandoned bicycles
- Clinical Waste

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

4.2 WASTE CODES

Correct classification of waste is of the utmost importance 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. In 1994, the European Waste Catalogue and the Hazardous Waste List were published by the European Commission. In 2002, the EPA published a document titled the European Waste Catalogue and Hazardous Waste List, which was a condensed version of the original two documents and their subsequent amendments.

The EPA document ‘Waste Classification – List of Waste & Determining if Waste is Hazardous or Non-Hazardous’ (EPA, 2018) consolidates the legislation and allows the generators of waste to classify the waste as hazardous or non-hazardous and in the process to assign 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 (previously referred to as European Waste Code or EWC) for some of the typical waste materials expected to be generated during the operation of the proposed development are provided below.

Waste Description	Waste Code
Mixed Municipal Waste	20 03 01
Dry Mixed Recyclables	20 03 01
Biodegradable Kitchen Waste	20 01 08
Glass	20 01 02
Bulky Waste	20 03 07

Textiles	20 01 11
Batteries	20 01 34
Waste Electrical & Electronic Equipment	20 01 35 / 21 01 36
Plastic	20 01 39
Metals	20 01 40
Paper & Cardbaord	20 01 01

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.

5. ESTIMATED WASTE ARISING

5.1 ESTIMATED WASTE - RESIDENTIAL

The waste arising from the proposed development and the associated bin storage areas requirements for the residential units have been estimated having regard to British Standards BS 5906:2005 – Waste Management in Buildings – Code of Practice. This code of practice sets out methods of storage, collection, segregation for recycling and recovery for residential and non-residential buildings. Regard has been had to our operational experience in a number of other developments including those located in the Hansfield SDZ to the north of the proposed development.

For residential units BS5906:2005 sets out the typical weekly waste arising from domestic units and the subsequent storage requirements of same as follows;

Number of dwellings X (volume arising per bedroom (70L x average number of bedrooms) + 30L)

Table 1: Houses

House Type	No. of units	No. of bedrooms	No. of bedrooms occupied	Vol of waste generated per bedroom	Additional waste allowance	Total weekly waste all units	Total weekly per unit
3 bed	286	3	3	70l	30l	68,640	240
4 bed	36	4	4	70l	30l	11,160	310
					Total	79,800	550

Table 2: Duplex

House Type	No. of units	No. of bedrooms	No. of bedrooms occupied	Vol of waste generated per bedroom	Additional waste allowance	Total weekly waste all units	Total weekly per unit
1 bed	5	1	1	70l	30l	500	100
2 bed	20	2	2	70l	30l	3,400	170
3 bed	92	3	3	70l	30l	22,080	240
					Total	25,980	510

Table 3: Apartments

House Type	No. of units	No. of bedrooms	No. of bedrooms occupied	Vol of waste generated per bedroom	Additional waste allowance	Total weekly waste all units	Total weekly per unit
1 bed	148	1	1	70l	30l	14,800	100
2 bed	589	2	2	70l	30l	100,130	170
3 bed	63	3	3	70l	30l	15,120	240
4 bed	4	4	4	70l	30l	1,240	310
					Total	131,290	820

The calculations completed in Table 1 to Table 3, conclude that typical overall weekly waste arising is 237,070l. It should be noted that the BS 5906:2005 Standard states “where recycling capacity is provided, the waste capacity may be reduced, but only by up to one quarter of the recycling capacity provided”.

5.2 ESTIMATED WASTE - COMMERCIAL

The British Standard BS5906:2005 Waste management in buildings — Code of practice provides guidance in respect of waste generation for domestic and commercial premises to calculate the storage, containment, and equipment requirements for effective waste management. Calculations provided in this British Standard document have been used to calculate the waste storage capacity requirements for the commercial facilities in the proposed development. The calculation for typical weekly waste arisings and subsequent storage requirements for commercial dwellings is as follows;

$$\text{Volume Per M}^2 \text{ Of Sales Area [10 L] } \times \text{Sales Area}$$

Table 4: Commercial/Retail Units

Commercial Unit	NIA M ²	Capacity Required (litres)
Convenience Retails	278	2,780
Commercial Unit 1	96	960
Commercial Unit 2	96	960
Commercial Unit 3	96	960
Commercial Unit 4	47	470
Commercial Unit 5	43	430
Café	119	1190
Medical Centre	258	2580
Community Space	270	2700
Office Hub	376	3760
Total		16,790

Note: A cautious gross to net ratio of 75:100 has been applied to retail & commercial uses. The capacity of waste storage required should be reassessed prior to the occupation/operation of each unit.

6. WASTE STORAGE & COLLECTION

This section provides information on how waste generated within the development will be stored and how the waste will be collected from the development. This has been prepared with due consideration of the proposed site layout as well as best practice standards, local and national waste management requirements including those of FCC. In particular, consideration has been given to the following documents:

- BS 5906:2005 Waste Management in Buildings – Code of Practice;

- EMR Waste Management Plan 2015 – 2021;
- DoEHLG, Sustainable Urban Housing: Design Standards for New Apartments, Guidelines for Planning Authorities (section 4.8-4.9) (2020);
- Fingal County Council Development Plan 2017 – 2023 (2017); and
- Fingal County Council Segregation Storage, Presentation and of Household and Commercial Waste (2020)

6.1 WASTE STORAGE AREAS

Apartment Blocks:

Shared communal Waste Storage Areas (WSAs) have been allocated within the development design for the each of the residential apartment blocks. All WSAs have been strategically located on the ground floor level or on basement level in close proximity to cores.

Duplex Blocks:

Each duplex unit will have its own individual WSAs located to the front of the unit, shielded from view.

Terraced Units:

Each mid terrace unit will have its own individual WSAs located to the front of the unit.

Maisonette:

Each maisonette block will have a shared WSA. The WSA is located, externally, at ground floor level.

Individual units:

The remaining houses and end of terraced units will have external access to the rear of the unit where there is ample space for bins to be stored.

Childcare Facilities:

The WSA for the proposed creche is located in car park of the Station Plaza apartment building (in which the crèche is located). Signage is to be provided to distinguish the creche bins from those provided for domestic use.

Commercial/Retail/Café/Community/Medical* Units:

Waste storage for the above units is located in 2 WSAs situated at ground floor and basement level of the Village Centre. Signage and colour coding should be used to distinguish these bins from those provided for domestic use.

Please refer to Architectural drawings for locations and design details of the proposed waste storage areas.

Table 5: Required Waste Storage

Area	Bins Required		
	MNR	DMR	Organic
Railway Quarter Apartments (shared)	15 x 1100L	18 x 1100L	10 x 240L
Station Plaza Apartments (shared)	10 x 1100L	14 x 1100L	7 x 240L
Station Quarter South Apartments Large Block (shared)	8 x 1100L	13 x 1100L	6 x 240L
Station Quarter South Apartments Small Block (shared)	1 x 1100L	2 x 1100L	2 x 240L
Village Centre Apartments (shared)	8 x 1100L	11 x 1100L	5 x 240L
Barnhill Cross Apartments (shared)	5 x 1100L	9 x 1100L	6 x 240L
Barnhill Stream Apartment Block 1 (shared)	1 x 1100L	2 x 1100L	2 x 240L
Barnhill Stream Apartment Block 2 (shared)	1 x 1100L	2 x 1100L	2 x 240L
Barnhill Stream Apartment Block 3 (shared)	1 x 1100L	2 x 1100L	2 x 240L
Parkside Apartments (shared)	5 x 660L	5 x 660L	3 x 240L 1 x 660L
Houses (individual)	1 x 240L	1 x 240L	1 x 120L
Duplex (individual)	1 x 240L	1 x 240L	1 x 120L
Maisonettes (shared)	1 x 1100L	1 x 240L	1 x 240L
Creche	1 x 1100L	1 x 1100L	1 x 240L
Commercial/Retail/Office/Community/Medical Centre* (Shared)	6 x 1100L	9 x 1100L	4 x 240L

*Healthcare Risk Waste generated by the Medical Centre should be segregated from general waste stored in appropriate sealed bins in the medical centre and collected by a specialised waste contractor such as Stericycle.

6.2 WASTE STORAGE ARRANGEMENTS – HOUSES

Residents in the Houses, Duplexes and Terrace units will be required to segregate their waste into the following waste categories within their own units:

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

It is anticipated that residents with external access to the rear of the property and will store waste in bins at the back of the units. For units with no external access to the rear, a dedicated shielded area for storage of 2 no. 240l and 1 no. 120l litre wheelie bins have been allocated at the front or side of the property. Residents will be required to place their segregated waste materials into these bins as necessary.

It is anticipated that DMR, MNR and organic waste will be collected on a weekly basis by a waste collection company of their choosing. It will be the responsibility of individual residents to enter into a contract with a waste collection contractor. Glass waste will be required to be brought to the nearest bottle bank for disposal. Other waste materials such as textiles, batteries, printer toner/cartridges 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.

Please refer to the Architects plans for bin store location and designs.

6.3 WASTE STORAGE ARRANGEMENTS – APARTMENTS & DUPLEX

The “Sustainable Urban Housing: Design Standards for New Apartments published by the Department of Housing, Planning and Local Government in December 2020 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 storage areas.

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

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

Apartment residents will be required to take their segregated waste materials to their designated communal residential Waste Storage Area ('WSA') and dispose of their segregated waste into the appropriate bins. Space will be provided in the residential units to accommodate 3 no. bin types to facilitate waste segregation at source. 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 shared WSAs will be restricted to authorised residents, facilities management and waste contractors by means of a key or electronic fob access. As noted previously, each duplex unit will have a bin store front.

Other waste materials such as glass, textiles, batteries, printer toner/cartridges 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.

6.4 SHARED WASTE AREA DESIGN

The shared waste storage areas ('WSA') for the residential apartment/duplex units are located at strategic locations around the development to service each block. The shared WSAs will have the following provisions as minimum:

Access: The WSA will be accessible for the mobility impaired.

Lighting: The WSA will have adequate lighting. Energy saving lighting operated on sensors is envisaged. This is to ensure that waste will not be tipped in dimly lit areas and that the areas do not pose as a safety risk.

Spillage & drainage: A non-slip surface will be provided to prevent slips or falls, and the WSA will have adequate drainage which will be directed to foul sewer.

Security: The WSAs will have restricted access and will be accessible by tenants and residents only. This is to prevent unauthorised access to the bins by the general public.

Ventilation: Ventilation will be provided so that the bin storage areas will not cause an odour nuisance, taking into account the avoidance of nuisance for habitable rooms nearby.

Signage: Pictorial signage will be provided to show residents and tenants what wastes can and cannot be placed in each bin. Signage will indicate local recycling centres and bring banks will also be provided as will information on current waste and recycling targets.

Environmental nuisance: The WSA will be in 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.

Vehicular Access: The development has been designed to ensure that waste collection vehicles can safely access the development to collect the bins.

Please refer to the Architects plans for bin store location and designs.

6.5 WASTE STORAGE REQUIREMENTS - CRECHE

The crèche will generate similar waste types to the domestic dwellings. It is estimated, based on the floor area of the facility, that there will be a requirement for 1 x 1100 Litre bin for recyclables, 1 x 1100 Litre bin for non-recyclable waste (or equivalent number of 240 litre bins) and 1 x 240 litre bins for organic/food waste and glass if required.

The crèche may also generate some office type waste, it will be incumbent on the occupier to arrange collection of materials such as ink cartridges.

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

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

As required, the staff will need to bring segregated DMR, MNR and organic waste to their WSAs.

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 WSA will be restricted to authorised childcare facility staff and building management by means of a key or electronic fob access. DMR, MNR and organic waste will be required to be collected weekly/ bi-weekly. Other waste materials such as glass, textiles, batteries, printer toner/cartridges and WEEE may be generated infrequently by the creche which will be required to identify suitable temporary storage areas for these waste items within the creche and dispose of them appropriately.

Please refer to the Architects plans for bin store location and designs.

6.6 WASTE STORAGE REQUIREMENTS - COMMERCIAL

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

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

Tenants will be required to take their segregated waste materials to their designated WSA and dispose of their segregated waste into the appropriate bins. Locations of all WSAs can be found on the architects' plans submitted with the application. 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 are allocated in unit areas, this will contribute a significant portion of the volume of waste generated on a daily basis, and as such it is important that adequate provision is made for the storage and transfer of waste from these areas to the WSA. If kitchens are required it is anticipated that waste will be generated in kitchens throughout the day, primarily at the following locations:

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

Small bins will be placed adjacent to each of these areas for temporary storage of waste generated during the day. Waste will then be transferred from each of these areas to the appropriate waste store within their unit. All bins/containers in the tenants areas as well as 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 wastes can be put in each. DMR, MNR and organic waste will be collected on a weekly/ bi weekly basis. Other waste materials such as batteries, glass, WEEE 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. Building management may arrange collection depending on the agreement with individual tenants.

The medical centre will have bins internally for general waste. This waste will be taken to the shared bin store as required. Doctor's surgeries generate healthcare waste. Healthcare waste is managed by segregating healthcare risk waste which is potentially infectious and hazardous from the bulk of waste which is domestic in nature. All healthcare waste must be handled, stored, transported and disposed of with care and particular precautions are required with healthcare risk waste due to its hazardous properties. The medical centre will organise specialised collection of this waste from a company such as Stericycle.

Please refer to the Architects plans for bin store location and designs.

6.7 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 the Local Authority Bye-Laws and the Waste Management (Waste Collection Permit) Regulations 2007 as amended. All residents 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.

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

All residential waste from shared WSAs, requiring collection by the appointed waste contractor will be transferred from the WSAs by personnel nominated by the building management company to the collection point. All commercial waste from shared and individual WSAs, requiring collection by the appointed waste contractor will be transferred from the WSAs by personnel nominated by the building management company to the collection point. Residents with individual WSAs will be responsible for transferring their own bins to/from their WSAs to the street for collection. It is recommended that bin collection times/days are staggered to reduce the number of bins required to be emptied at once and the time the waste vehicle is onsite. This will be determined during the process of appointment of a suitable waste contractor.

7. CONCLUSION

In summary, this outline OWMP presents a waste strategy that complies with waste policies and best practice guidelines and demonstrates that the required storage areas have been incorporated

into the design of the development. Implementation of this OWMP will ensure a high level of recycling, reuse and recovery at the development. All recyclable materials will be segregated at source to reduce waste contractor costs and ensure maximum diversion of materials from landfill, thus achieving the targets set out in the EMR Waste Management Plan 2015 – 2021. Adherence to this plan will also ensure that waste management at the development is carried out in accordance with the requirements of the FCC Waste Bye-Laws. The waste strategy presented in this document will provide sufficient storage capacity for the estimated quantity of segregated waste.

The designated area for waste storage will provide sufficient room for the required receptacles in accordance with the details of this strategy. Particularly in the case of apartment and mix use buildings, building management should keep records of waste quantities and types to ensure the appropriate mix of waste storage is provided.

A final OWMP will be prepared on prior to the commencement of development should a planning permission be 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.