



FASSAROE SHD PHASE 1

Operational Waste Management Plan



OCTOBER 2021
PRESENTED BY
KeyWaste Management Ltd.



Report Prepared on Behalf of:	Cosgrave Property Group
Date	October 1 st 2021
Subject	Operational Waste Management Plan

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1. Introduction

KeyWaste Management Ltd. has been requested by Cosgrave Property Group to prepare this Operational Waste Management Plan for the proposed SHD development at Fassaroe, Bray, Co. Wicklow.

This plan sets out, include general strategy for managing operational waste at the site through reduction, reuse and recovery of waste as well as details for the storage and collection of operational waste. It also identifies the nature of waste which will be generated by the operation of the various proposed elements of the development.

All waste will be collected in accordance with the relevant by-laws and EU Directives. We propose the following requirements based on our in-depth knowledge of waste management, benchmarking off existing and future portfolios. We propose carrying out site visits during the construction and finishing stage to ensure the provisions proposed are suitably provided for on site.

The latest technologies with fleet tracking/on-board CCTV, hand held PDA's for drivers to capture data/pictures/updates etc. will be available. While this Plan sets out proposals for the initial operational waste management at the site, it should be noted that as technologies and industry practice progress in the future the management of waste on site will be kept under review. In this regard, during the operation of the development clients will be kept up to date with any exciting or innovative changes in the industry that may present more sustainable or efficient waste management options for occupants. In the background we use the most up to date technologies and eco-friendly methods of disposing of waste. All bins receptacles are chipped and bar coded and weights recorded.

2. Sustainability/Corporate Responsibility

Ireland is one of the leading countries within the EU for recycling and reducing our dependence on landfill. KeyWaste Mgmt. Ltd. are committed to ensuring that our waste methods and practices are in line with all EU directives. We endeavour to over achieve and grow the green credentials for our clients.

The 'Operational Waste Management Plan' proposed addresses the circular economy and takes into consideration Irelands future targets.

3. Legislative and Policy Background

The strategy and proposals for managing operational waste at Fassaroe are developed in line with the requirements and objectives of relevant EU legislation and national and local policy provision including the EU Waste Framework Directive, the Waste Action Plan for a Circular Economy Ireland's National Waste Policy 2020 – 2025, the Eastern-Midlands Region Waste Management Plan 2015 – 2021 and the Wicklow County Development Plan 2016 – 2022.



EU Waste Framework Directive

The foundation of EU waste management is the five-step “waste hierarchy”, established in the Waste Framework Directive. It establishes an order of preference for managing and disposing of waste as follows: prevention, reuse, recycling, recovery and finally disposal.



Eastern-Midlands Region Waste Management Plan 2015 – 2021

The three key objectives of the Eastern-Midlands Region Waste Management Plan are:

1. Prevent waste: a reduction of one per cent per annum in the amount of household waste generated over the period of the plan.
2. More recycling: increase the recycle rate of domestic and commercial waste from 40 to 50 per cent by 2020.
3. Further reduce landfill: eliminate all unprocessed waste going to landfill from 2016.



'A Waste Action Plan for a Circular Economy Ireland's National Waste Policy 2020-2025'

Outlined below are some highlights/extracts from Irelands Waste Action Plan.

General Waste (Municipal Waste or Municipal Solid Waste (MSW))

HOUSEHOLD AND BUSINESS

 **RECYCLING TARGETS FOR WASTE COLLECTORS**

 **STANDARDISED BIN COLOURS ACROSS THE STATE: GREEN FOR RECYCLING, BLACK FOR RESIDUAL AND BROWN FOR ORGANIC WASTE**

 **WASTE RECOVERY LEVY TO ENCOURAGE RECYCLING**

WASTE OVERSIGHT BODY TO MANAGE CONSUMER RIGHTS 

 **EDUCATION AND AWARENESS CAMPAIGN TO IMPROVE WASTE SEGREGATION**

The Challenge

Recent revisions to the Waste Framework Directive introduced the following recycling targets for MSW:

- 55% by 2025
- 60% by 2030
- 65% by 2035

In addition, the Landfill Directive has been amended to require that by 2035 no more than 10% of MSW goes to landfill.

Food Waste (Compost/Organic)

FOOD WASTE

 **HALVE OUR FOOD WASTE BY 2030**

 **WASTE SEGREGATION INFRASTRUCTURE FOR APARTMENT DWELLERS**

SUSTAINABLE FOOD WASTE MANAGEMENT OPTIONS FOR ALL HOMES AND BUSINESSES 

The Food Waste Hierarchy

The following waste hierarchy sets out the priority order in food waste prevention and management:

- Prevention - avoid generating food waste
- Feed People - redistribute surplus food
- Feed livestock – use excess food, unsuitable for human consumption as animal feed where appropriate and in accordance with feed safety regulations
- Anaerobic Digestion – convert unavoidable food waste to bio-fertiliser and energy
- Compost – make compost from unavoidable food waste
- Disposal – landfill or incineration are last resorts for food waste



Recycling (Plastic and Packaging Waste)

PLASTIC, PACKAGING AND SINGLE USE PLASTIC (SUP)

DEPOSIT AND RETURN SCHEME FOR PLASTIC BOTTLES AND ALUMINIUM CANS

SINGLE USE ITEMS BANNED FROM JULY 2021:

- COTTON BUD STICKS, CUTLERY, PLATES, STIRRERS, CHOPSTICKS, STRAWS, POLYSTYRENE CONTAINERS AND OXO-DEGRADABLE PLASTIC PRODUCTS

SIGNIFICANTLY REDUCE SUPS BEING PLACED ON THE MARKET BY 2026

ALL PACKAGING REUSABLE OR RECYCLABLE BY 2030

The Challenge

Table 1: Our EU Targets for Packaging and Recycling by 2025 and 2030

All Packaging Recovery and Recycling Targets		
	By 2025	By 2030
Recovery	Nil	Nil
Recycling	65%	70%
Material Specific Recycling Targets (and prepared for reuse from 2025)		
Materials	By 2025	By 2030
Glass	70%	75%
Paper and Cardboard	75%	85%
Metal	70%	80%
Plastic	50%	55%
Wood	25%	30%
Aluminium	50%	60%
Packaging	65%	70%

Glass/Textiles/Single Use

The Challenge

Under our transposition of the SUP Directive, the following SUP items will be banned from being placed on the Irish market from 3 July 2021:

- Cotton Bud Sticks
- Cutlery
- Plates
- Stirrers
- Chopsticks
- Straws
- Expanded polystyrene single use food and beverage containers
- All oxo-degradable plastic products

In addition, under the SUPD, any beverage container (bottles, cartons etc.) up to 3 litres in size will be banned from the Irish market from 3 July 2024 unless its cap is attached to the main part of the container. Beverage producers will also be prohibited from placing any SUP polyethylene terephthalate (PET) bottle up to 3 litres in size on the Irish market from January 2025 unless it contains a minimum of 25% recycled plastic. They will also be prohibited from placing any SUP bottle up to 3 litres in size on the Irish market from January 2030 unless it contains a minimum of 30% recycled plastic.

By 5 January 2023, producers of packaging will also be required to cover the costs of litter clean up associated with the following SUP items:

- food containers
- packets
- wrappers
- beverage containers
- cups
- light weight carrier bags

TEXTILES

TEXTILE ACTION GROUP TO EXPLORE OPTIONS TO IMPROVE FUTURE CIRCULARITY IN TEXTILES

CONSIDER GLOBAL IMPACTS OF THE INTERNATIONAL TRADE IN USED TEXTILES

WORK WITH IRISH DESIGNERS AND RETAILERS TO PROMOTE ECO-DESIGN FOR CLOTHING AND TEXTILES



Wicklow County Development Plan 2016 - 2022

Section 9.3.2 of the Wicklow County Development Plan 2016 – 2022 It is the policy of the Council, as set out in the Regional Waste Management Plan, to:

- prevent or minimise the production of waste in the first instance
- reduce, re-use and recycle to the maximum extent possible
- endeavour to recover energy from waste where possible; and
- ensure the efficient and safe disposal of any residual waste.

Objective WE2 of the County Development Plan is:

“to require all new developments, whether residential, community, agricultural or commercial to make provision for storage and recycling facilities (in accordance with the standards set out in Development & Design Standards of this plan).”

Section 9 of the Development Design Standards requires as follows with regard to residential development:

- The design and layout of all individual and multi house developments shall provide for on site waste storage (including recyclables) and composting facilities
- For traditional housing layouts, this will normally require the inclusion of sufficient space to the side or rear of a dwelling for the storage of waste, including up to 4 wheelie bins (recyclables, glass, organic and residual waste)

For commercial development it requires that:

- details of waste storage areas, including areas for the storage of recyclables shall be detailed. Such areas shall be suitably located and screened on site so as to minimise impacts on visual or residential amenity and noise impact.



4. Overall Operational Waste Management Strategy

A 'Zero To Landfill' policy is proposed for the development. To achieve this the overall approach to the general proposals of the waste management plan in line with the circular economy and waste hierarchy are explained in the table below.

Waste Management Process	General Objectives	Proposals within Fassaroo SHD development to support hierarchy objectives
Prevention	Minimize the amount of waste through various means of control.	Information will be provided to future residents on means of minimizing waste generation in the first instance. This information will be provided to residents through the following methods: <ul style="list-style-type: none"> • Via Management Companies • At the general Community Concierge facility at the Neighbourhood Centre • Posted at Communal Waste Bin Areas and at Bring Centre
Re-Use	Checking, cleaning or repairing operations, by which products or components of products that have become waste are prepared so that they can be re-used without any other pre-processing	A local Bring Centre is proposed to be provided at the development which will collect clothes and glass items. Many of the items collected within clothes banks will in turn be prepared for re-use where appropriate, generally through charitable organisations. Where not appropriate for reuse they will be recycled. Information will be provided at the local Bring Centre and through Management Companies advising of nearby local authority Amenity Centres / Bring Centres which serve a wider range of waste re-use and recycling options.
Recycling	Recycling is usually when the material is returned to its pure state to use for something else. This includes composting if it meets quality protocols.	Waste collection provisions in all parts of the development provide for segregated waste collection with separate collection units for general dry recyclable waste and also composting materials. More specific details on the onward recycling operations are provided in the Waste Collection Section of this report below. As the industry evolves with the ability to recycle increasing proportions of waste streams Residents will be kept informed of materials which can be recycled. Information will be provided at the local Bring Centre and through Management Companies advising of nearby local authority amenity centres which serve a wider range of waste re-use and recycling options.
Recovery	Combustible waste is a resource for energy extraction. Although this step destroys the resource it is preferred to disposal by landfill or combustion without gaining the benefit of energy extraction	Residual Municipal Solid Waste (MSW) will be sent to a facility where it will be transferred into energy. Some food waste will be sent to an anaerobic digestion facility where it will be transferred to energy.
Disposal	As a final step, deposit at a registered landfill or incineration without energy recovery.	No residual disposal to landfill is proposed for the development. A 'Zero to Landfill' policy is proposed as all waste streams will be addressed at higher levels of the waste hierarchy.



5. Waste Generation

5.1 The Proposed Development

The proposed Fassaroe Phase 1 development comprises as follows:

- Apartment Development – Total 409 No. Units

Apartment Block	Apartment Type			Total
	1 Bed Units	2 Bed Units	3 Bed Units	
Block 1	13	77	6	96
Block 2	18	82	6	106
Block 3	47	53	12	112
Block 4	5	23	4	32
Neighbourhood Centre Apts	16	44	3	63
Total	99	279	31	409

- Housing Development – Total 241 No. Units

House Type	No. Units
3 Bed	50
4 Bed	88
5 Bed	103
Total	241

- Creche – 733 sq.m.

The proposed creche will have a capacity for 138 No. childcare spaces approx. and will have a staff of approx. 27 No.

- Neighbourhood Centre Phase 1

The proposed development incorporates 1,050sq.m. of retail space and a 335sq.m. café.

5.2 Waste Types Generated

The typical wastes generated at a residential development are as follows:

- Dry Mixed Recycling – paper, cardboard, plastic, Tetra Pak, aluminium cans, etc;
- Mixed Non-Recycling – general non-recyclable waste;
- Organic Material – food waste or green waste from plants / grass.
- Glass

The majority of waste produced at the creche and the Neighbourhood Centre will also fall within these categories.



These four main waste streams will make up around 85-90% of the annual operational waste services at Fassaroe. In addition to the common waste types outlined above, a residential development generally also generates the following wastes in small quantities:

- Electrical Waste: Electronic Equipment such as televisions, printers, radios, mobile phones
- Batteries;
- Light bulbs
- Chemicals: Paints, glues, resins, detergents;
- Textiles;
- Furniture.
- Waste cooking oils

Green garden waste from landscaping will also arise.

Together these streams will account for about 10-15% of total waste.

The European Waste Catalogue (EWC) waste classification system applies across the EU and is the basis for all national and EU waste reporting. The typical waste types that may be generated at the Fassaroe lands are listed below with the relevant EWC code.

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
Edible Oil and Fat *	20 01 25 – 26*
Textiles	20 01 11
Batteries and Accumulators*	20 01 33* - 34
Printer Toner/Cartridges*	20 01 27* - 28
Green/Garden 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



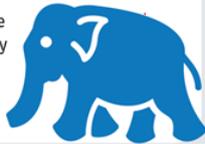
5.3 Waste Volumes

There are a number of factors in calculating waste usage per household in Ireland. The ratios and amounts of each waste stream is constantly evolving as our culture changes. According to the latest EPA waste data release '16 September 2021'. Latest reference year 2019. The diagram below outlines the average Hold Waste Statistics.

Household Waste Statistics 2019

The average Irish person produced 330 kg waste in 2019.

That's about the weight of a baby elephant!



Plastic packaging accounted for 11% of household waste collected in 2019.



Irish households put over 245,000 tonnes of food waste into household bins in 2019.

That's almost the weight of 19,000 double decker buses, enough buses to span the distance from Dublin to Galway!



Household waste generation in Ireland has increased over the last 10 years.

Room to Improve

We need to put our waste in the right bins to maximise recycling.



Black bin waste could be reduced by **57%** with proper segregation.



32% of waste in recycling bin should NOT be there.



63% of household food waste is still going into the black and green bins.



Despite improved brown bin services & use, only **half** of Irish households had access to a brown bin in 2019.

These materials don't belong in household bins.

 <p>textiles</p>	 <p>batteries & WEEE</p>
 <p>glass</p>	 <p>hazardous e.g. aerosols, household/garden chemicals.</p>

Use Bring Centres!

Take these materials to recycling centres to ensure your waste gets managed properly.






Coupled with the information above along with the benchmarking off existing development data for similar sites . We have estimated the waste usage for the development broken down per section. Below would be the top end calculation of the average usage per household estimated for the proposed Fassaroe Development (Consideration on real world 2021 data, 'The covid impact, and ongoing cultural change etc.). The figures below are on a guide and will constantly evolve.

- General 728kg per annum per unit
- Recycling 260kg per annum per unit
- Glass 312kg Per annum per unit
- Compost 182 kg Per annum Per unit

6. Waste Segregation and Storage Proposals

6.1 General Approach to Waste Segregation and Storage Proposals

The typical waste streams generated at the development are set out in section 5 above.

Wastes will 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 to achieve the 'Zero to Landfill target.

Waste segregation and storage facilities will be provided at the following locations:

- Each dwelling house
- Each apartment block and at apartments within the Neighbourhood Centre
- Serving the retail provision at the Neighbourhood Centre
- Creche
- Proposed kiosk at district park
- Local Recycling Bring Centre at District Park car park

Going forward the quality of recycled waste will be an area of major focus within the industry. There will be zero tolerance from international trading markets regarding contamination of recycled waste. An increase in composting/recycling, proper source segregation and in turn overall reduction in general waste will prevail. A focus on developing a uniformed approach to managing the waste by tenants/cleaners/management companies is required. The aim of this Operational Waste Management Plan is to have the clients at Fassaroe ahead of the trends. The bin areas and sizes have been designed within the proposed development to accommodate flexibility to increase recycling and composting ratios in line with these emerging and likely future trends in the industry.



General Proposals for Bin Rooms / Waste Areas - Apartment Buildings and Neighbourhood Centre

General proposals for the bin rooms proposed to serve the apartments and neighbourhood centre are set out below and illustrated in some typical images:

- It is proposed to provide basic drainage for the bin areas. This is to allow for up keep/power washing of the areas. The detailed specification for this drainage will be advised to the contractor at construction and fit-out stage.
- Mechanical ventilation is proposed at bins rooms / waste areas in line with relevant regulations.
- Adequate lighting is proposed, which is above the standard requirement. to allow for a brighter, safer environment. Lux of 350-450 advised minimum.
- A waste brush and pan set be shall be kept in all bin rooms. This allows the tenants to keep the rooms clean if a bag spills.
- A Grey waterproof epoxy paint will be used on the floors and 5ft up wall the remainder to ceiling in white. This allow for spillages to be easily cleaned, but also for greatly improved aesthetics.
- Recycling guidelines and policy information displays for residents will be provided.
- Air fresheners and hand sanitisers will be installed, to make for a better experience.

Proposed Bin Colour Types





Uniformed Signage And Posters For Bins/Bin Rooms

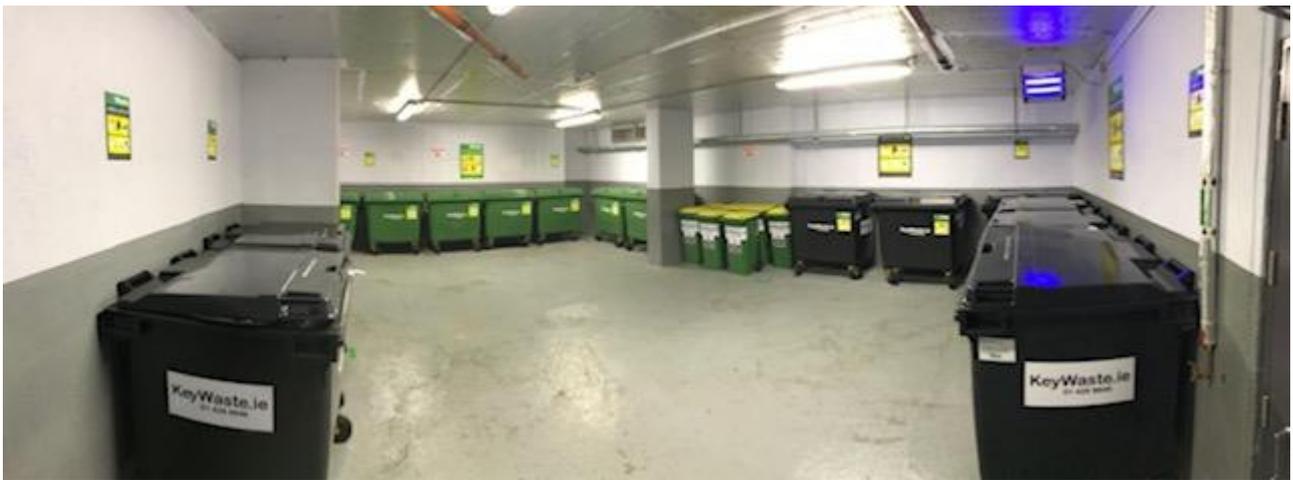


Bin Size Dimensions





Examples of Bin Rooms:





Recycling Centre Information Example ('Boghall Rd. Recycling Centre' nearest facility)

Ringsend Recycling Centre

Pigeon House Road, Ringsend, Dublin 4.
(01) 614 4750



Household use only

Opening Hours: **March 1st – Oct 31st**
 Mon – Fri 9am – 8pm
 Sat / Bank Holidays 9am – 4pm
 Sundays Closed

Opening Hours: **Nov 1st – Feb 28th**
 Mon – Fri 9am – 5pm
 Sat / Bank Holidays 9am – 2pm
 Sundays Closed

Water Butts (190 litres)
Available to purchase on site



To comply with Health and Safety Regulations users of this facility must exercise due care.
Children must be under the care of an adult at all times.

Please note

- Commercial waste will NOT be accepted on site.
- Full large or commercial vans will NOT be accepted.
- No illegal dumping – offenders will be prosecuted.
- Under no circumstances should material be removed from the facility without written consent from Dublin City Council

Bring Centres – North City

Dublin City Council
Waste & Recycling
Recycling Centres

To comply with Health and Safety Regulations users of Dublin City Council Bring Centres must exercise due care. There is a 5MPH/8KMH site speed limit at all sites as listed. Children must be under the care of an adult at all times.
To save you time and effort – please have your recyclables separated prior to arriving at the facility. Please be patient when containers are being serviced.

DISCLAIMER
All vehicles (including their contents and accessories) while parked at this premises are at the sole risk of the owner/driver. Dublin City Council, its servants or agents, do not accept any responsibility whatsoever for any injury, loss or damage to vehicles, property and/or persons howsoever caused, whether caused by their respective servants or agents or otherwise, whilst such vehicles, property and/or persons are on the premises. For further information Tel: 222 2222

Location	Opening hours	Materials accepted
Grangegorman, Upper Grangegorman Road, Dublin 7 (Off North Circular Road)	Mon – Thurs 9am – 4pm Fri 9am – 1pm Sat 10am – 4pm Closed Bank Holidays Open every Sunday from 3 rd June until Sunday 2 nd Sept 10am – 2pm	Paper, Cans, Cardboard, Tetra Pak, Plastics, Textiles, Light bulbs, Glass, Flat glass, Cooking oil, Waste engine oil *Green waste
Collins Avenue, Dublin 9 (Opposite entrance to DCU)	Mon – Thurs 9am – 4pm Fri 9am – 1pm Sat 10am – 4pm Closed Bank Holidays Open every Sunday from 3 rd June until Sunday 2 nd Sept 10am – 2pm	Paper, Cans, Cardboard, Tetra Pak, Plastics, Textiles, Batteries, Light bulbs, Glass, Flat glass, Cooking oil, Waste engine oil *Green waste
Oscar Traynor Road, Coolock, Collins Avenue, Dublin 5	Mon – Thurs 9am – 4pm Fri 9am – 1pm Sat 10am – 4pm Closed Bank Holidays Open every Sunday from 3 rd June until Sunday 2 nd Sept 10am – 2pm	Paper, Cans, Cardboard, Tetra Pak, Plastics, Textiles, Batteries, Light bulbs, Glass, Flat glass, Books, Cooking oil, Waste engine oil *Green Waste

*The following charges apply for the disposal of green waste – €2 per 80 litre bag & €16 per 1m³ skip bag. Commercial Green Waste will not be accepted.

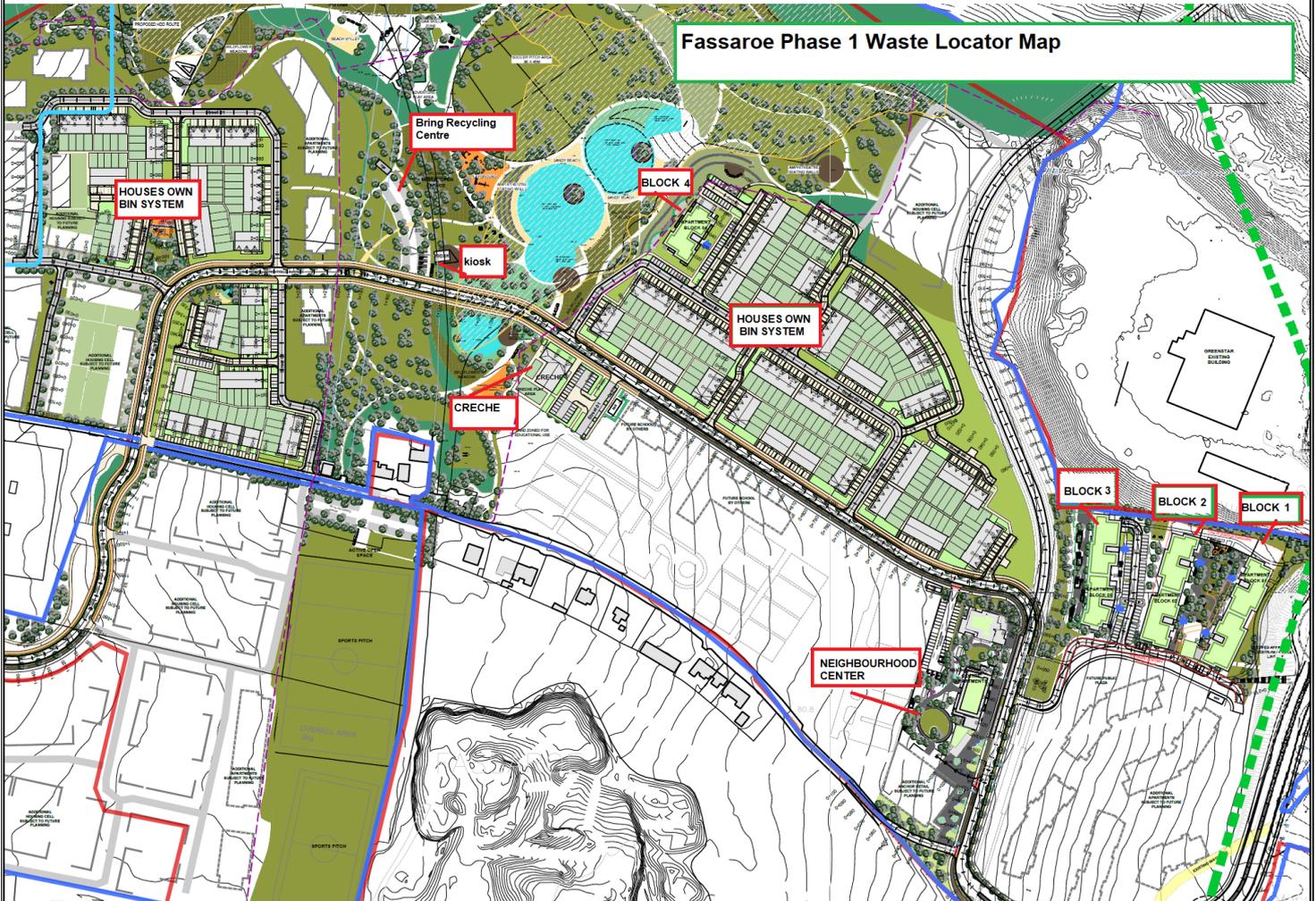
6.2 Site Breakdown for Proposed Waste Management Measures

Total 650 Residential Units. Commercial/Retail/Creche. broken down as follows:

- 241 x Individual Houses
- 409 x Apartments
- Commercial/Retail/Creche
- Bring Recycling Centre



Site Map below for ref purposes only to identify bin locations.

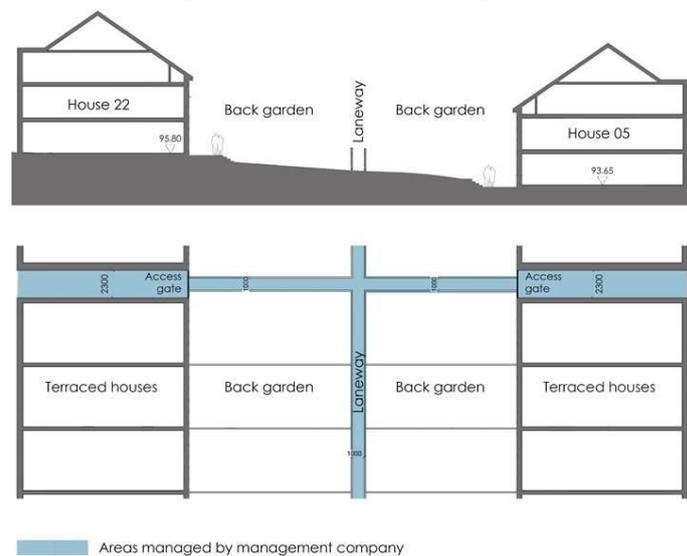


6.2.1 241 houses

A three bin system (with individual house owners using the 'Bring Centre' at the development for glass) will be used. No bins will be placed or collected to the front of the houses.

All houses will leave bins on collection day to the end of the rear laneways for collection. See example picture and drawing below from a comparable existing development with the same access provisions as the proposed Fassaroe development.

Type of Waste	Container	Total Per Week	Frequency Of Collection
General Waste	240lt	241	Every Two Weeks
Mixed Recycling	240lt	241	Every Two Weeks
Compost/Food	140lt	241	Every Two Weeks
Compost Caddie	5lt	241	Provided
Glass	Use Bottle Banks at Bring Centre		As Required



6.2.2 409 Apartments (Block 1 96 Units, Block 2 106 units)

Blocks 1 and 2

A 1100lt bin system will be provided within each of the bin stores serving Blocks 1 and 2. The following number of bin collections will be provided for at these bins stores:

Block 1

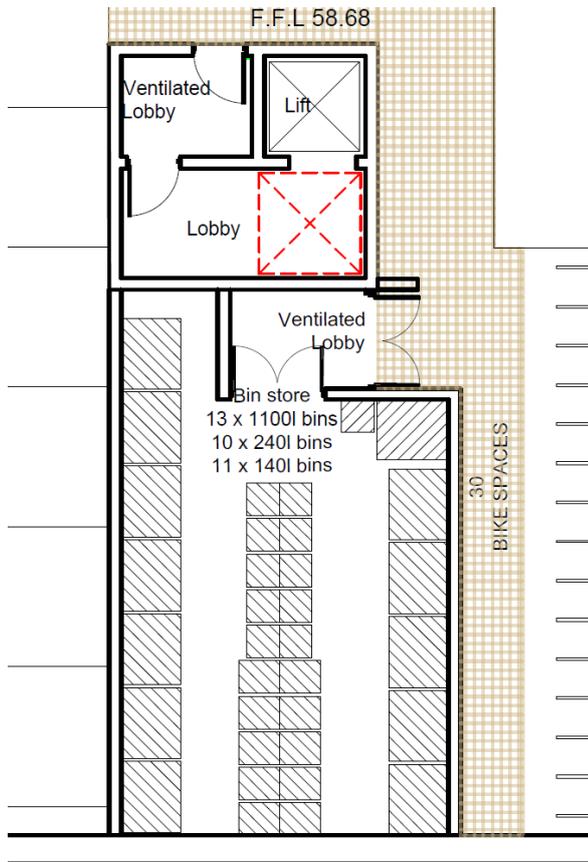
Type of Waste	Container	Total Per Week	Frequency Of Collection
General Waste	1100lt	10-12	Up To Twice Weekly
Mixed Recycling	1100lt	7-8	Once Weekly
Compost/Food	140lt	2-3	Once/BI Weekly
Mixed Glass	240lt	3-4	Bi Weekly
Compost Caddies	5lt	96	Provided



Block 2

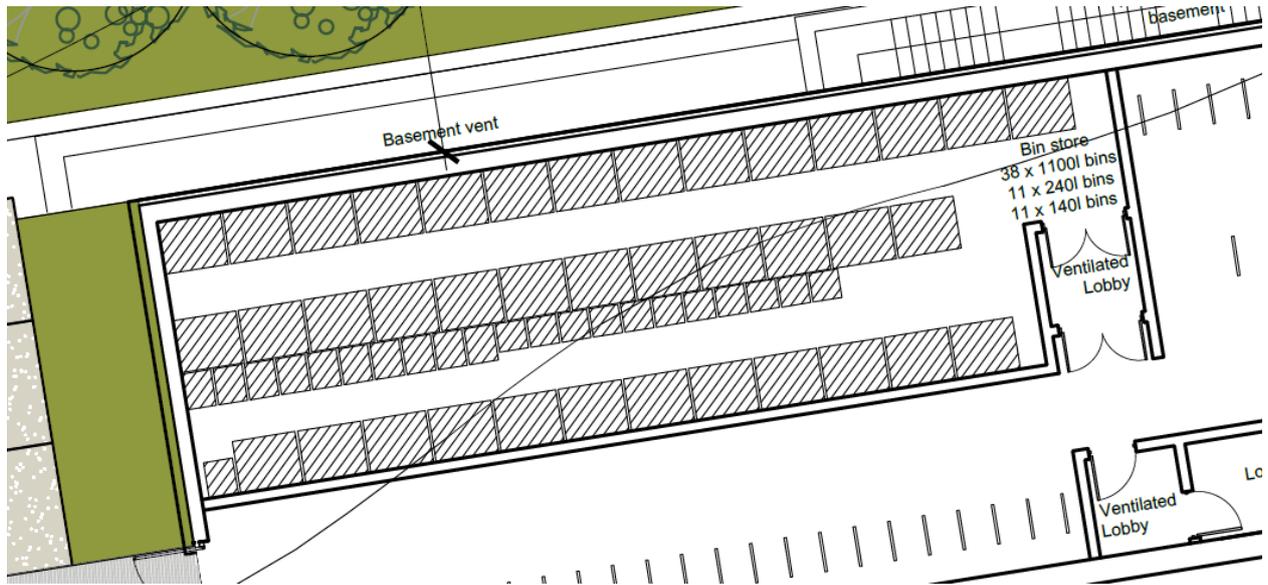
Type of Waste	Container	Total Per Week	Frequency Of Collection
General Waste	1100lt	12-13	Up To Twice Weekly
Mixed Recycling	1100lt	8-9	Once Weekly
Compost/Food	140lt	2-3	Once/BI Weekly
Mixed Glass	240lt	3-4	Bi Weekly
Compost Caddies	5lt	106	Provided

Block 1 Bin Room:





Block 2 Bin Room:



Potential Future Option for Mini Waste Compactor Bag system

As Blocks 1 and 2 share a common basement area it could potentially be possible in the future (depending on Management Company preferences) to provide a 'Mini Waste compactor Bag' system in the bin room under Block 2 to serve both blocks. The Block 1 bin room would be used for the storage of bags, equipment and overflow. This system would comprise

- 1 x general Waste compactor
- 1 x recycling compactor
- Compost/glass bins

Typical waste compactor and bag system - possible future option for consideration at Blocks 1 and 2

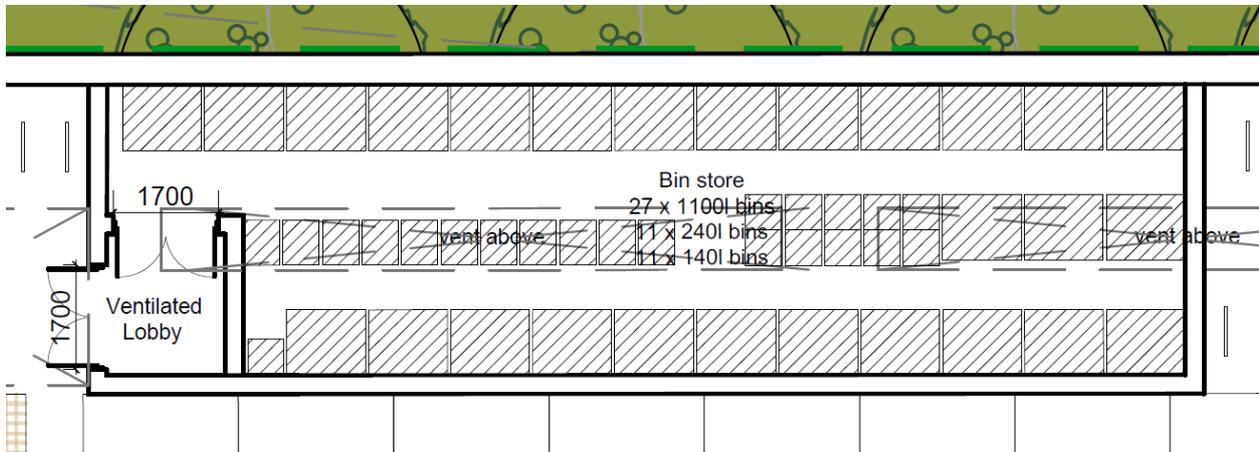




Block 3 112 Units

A 1100lt bin system is proposed at Block 3.

Block 3 semi basement (Social Housing)



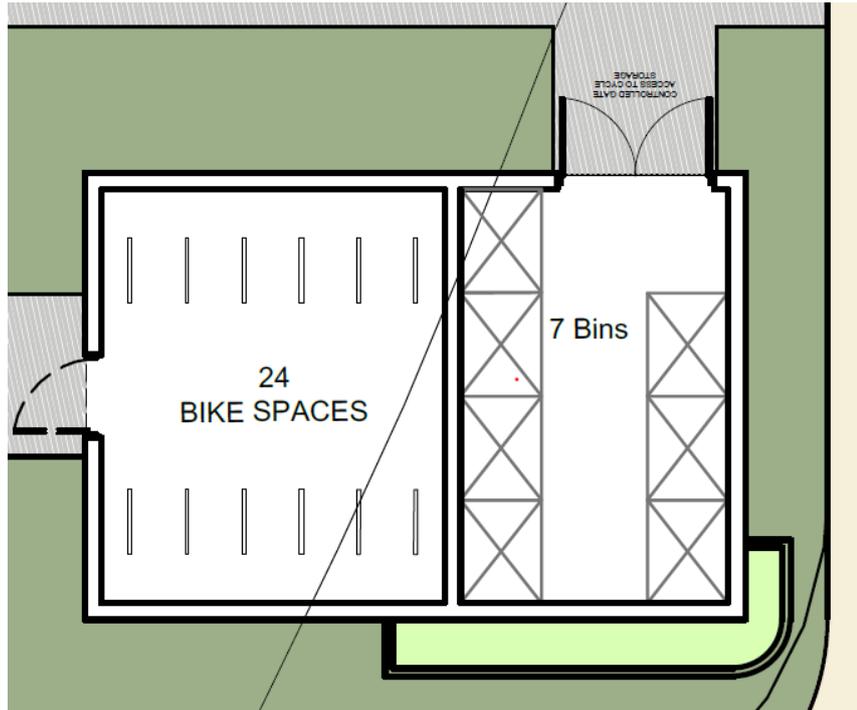
Proposed Bins

Type of Waste	Container	Total Per Week	Frequency Of Collection
General Waste	1100lt	8	Up To Twice Weekly
Mixed Recycling	1100lt	6 plus	Once Weekly
Compost/Food	140lt	2	Once Weekly
Mixed Glass	240lt	3-4	Bi Weekly
Compost Caddies	5lt	112	Provided

Block 4 32 Units

A 1100lt bin System is proposed at Block 4.

1 bin store located outside beside bike storage.



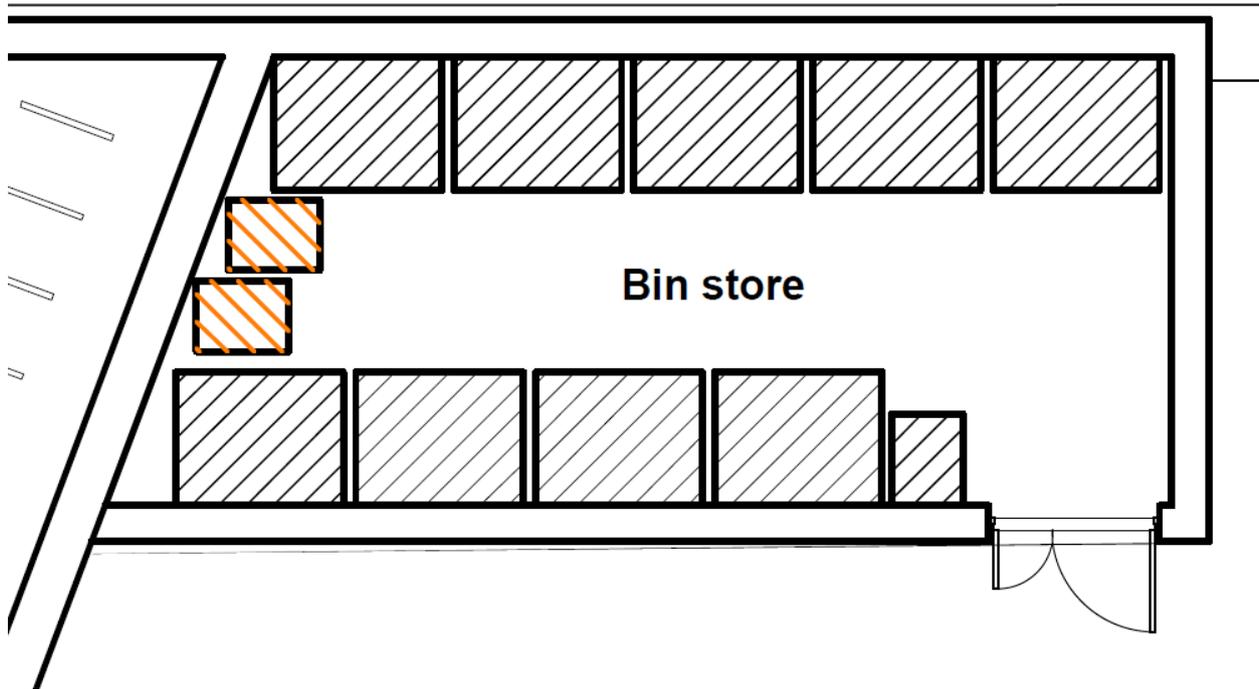
Type of Waste	Container	Total Per Week	Frequency Of Collection
General Waste	1100lt	4	Weekly
Mixed Recycling	1100lt	3	Once Weekly
Compost/Food	140lt	1	Once/BI Weekly
Mixed Glass	240lt	2	Bi Weekly
Compost Caddies	5lt	32	Provided

Neighbourhood Centre Apartments

A 1100lt bin System is proposed to serve the Neighbourhood Centre. There are 2 bins stores proposed – one resident bin store and one commercial bin store.

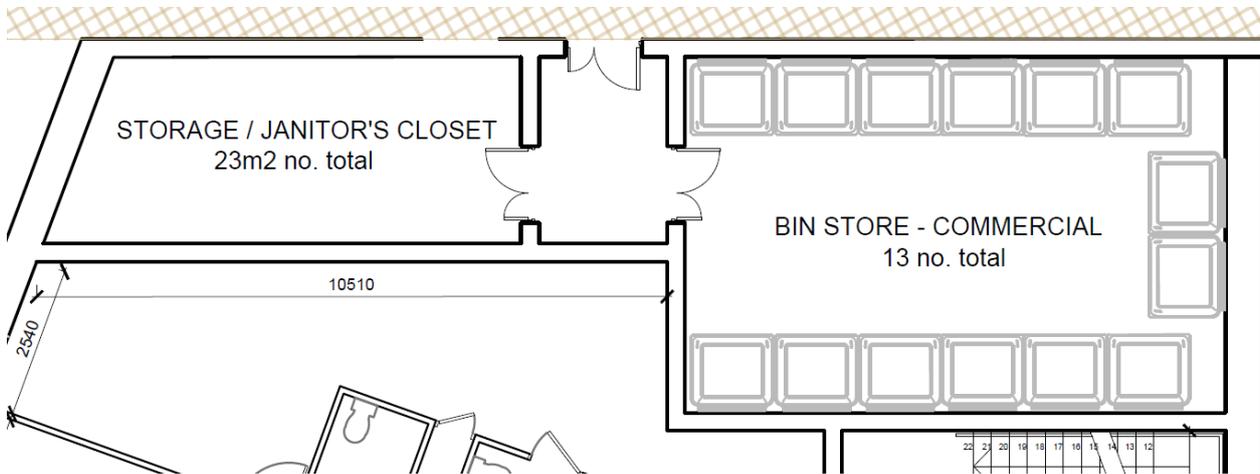
Resident bin store podium 63 Units

Type of Waste	Container	Total Per Week	Frequency Of Collection
General Waste	1100lt	5	Weekly
Mixed Recycling	1100lt	4	Once Weekly
Compost/Food	140lt	2	Once/BI Weekly
Mixed Glass	240lt	4	Bi Weekly
Compost Caddies	5lt	63	Provided



6.2.3 Neighbourhood Centre Commercial

Ground floor commercial bin room (café 300sq m, Retail)



NB: Final bin amounts decided based on commercial tenant requirements

Type of Waste	Container	Total Per Week	Frequency Of Collection
General Waste	1100lt	6	Weekly
Mixed Recycling	1100lt	6	Once Weekly
Compost/Food	140lt	2	Once/BI Weekly
Mixed Glass	240lt	4	Bi Weekly
Compost Caddies	5lt	63	Provided

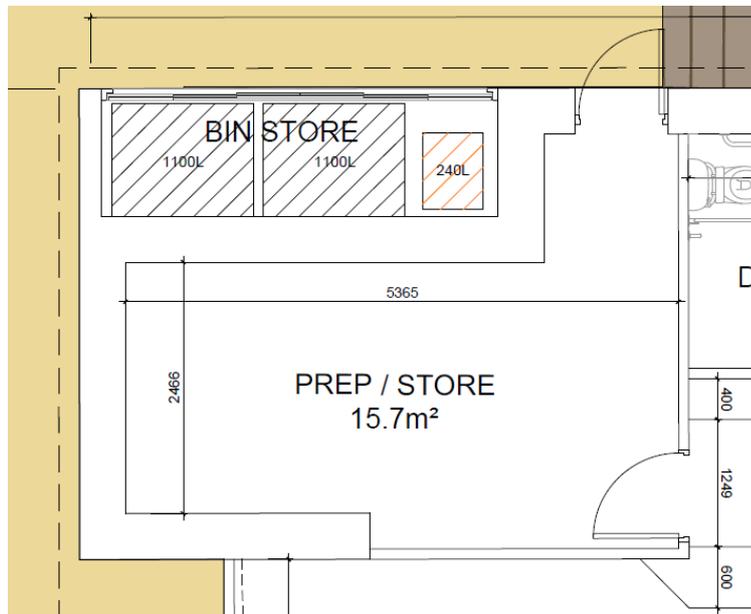


6.2.4 Creche



Type of Waste	Container	Total Per Week	Frequency Of Collection
General Waste	1100lt	1	Weekly/Bi Weekly
Mixed Recycling	1100lt	1	Once Weekly
Compost/Food	140lt	1	Once/Bi Weekly
Compost Caddies	5lt	2	Provided

6.2.5 Kiosk Coffee Shop





Type of Waste	Container	Total Per Week	Frequency Of Collection
General Waste	1100lt	1	Weekly/Bi Weekly
Mixed Recycling	1100lt	1	Once Weekly
Compost/Food	140lt	1	Once/Bi Weekly
Compost Caddies	5lt	2	Provided

6.2.6 Bring Centre

A Bring Centre is proposed within the car parking area of the District Park. This will enhance 'community engagement' around recycling with the following services provided.

- Glass bottle banks (Used by Individual Houses)
- Clothing banks
- Recycling education and event days

As the culture and nature of recycling evolves, this area could be utilised for further ideas and promotion.



- WEEE and 'non domestic' waste can be removed on request. To ensure sustainability and cost effectiveness, this is taken when it reaches a certain amount.
- Use of local recycling centres should be promoted to residents.
- Additional collections can be provided for each service if needed.



7. Waste Collection

There are a number of waste collection services that operate within the Bray area. All waste contractors servicing the proposed development must hold a valid waste collection permit for the specific waste types collected. All waste collected will be transported to registered/permited/licensed facilities only.

Access provisions and the numbers of waste collections for each waste storage area proposed within the development are set out in section 6 of this report. Waste Management Vehicles will operate using the multiply collection points and parking/loading areas, giving priority to health and safety and traffic and parking by laws. The waste company will have access codes/fobs/GSM for the relevant bin stores to eliminate time on site and smooth running.

When collected waste will be sorted as necessary for onward transport to recycling and recovery facilities. The main four waste streams of domestic waste will be recycled and recovered as follows:

General Waste

General waste will be sent to the recently opened 'Waste to Energy Plant' in Poolbeg Dublin 4, where it will be transferred into energy and provide electricity for homes. (Providing future heating when the infrastructure is developed).

Recycling/Cardboard

Fully processed, recycled and shipped to mills and recycling plants.

Glass

This is brought to a world class facility in Kildare. There it is turned into glass cullet and eventually is recycled back into glass bottles.

Food Waste (Enhanced Anaerobic Digestion)

Composting for apartment blocks has been very difficult to manage in recent years for a number of reasons. There is much more of an appetite now to ensure residents are correctly separating their waste. Food waste can be treated to create a Biogas, used to generate renewable electricity and an alternative sustainable vehicle fuel called Biomethane.

Food waste also produces a natural fertiliser, used by farmers to replace harmful chemicals; offering a full green circular experience.

Food waste will be transported to Granville Eco Park. This plant was awarded '**Best Large AD Plant**' at the 'World Biogas Summit Awards in 2020.

8. Management of Operational Waste

Operational waste collections will be managed for the entire development, i.e. Houses, Apartments, Neighbourhood centre and Creche by the appointed management company. The appointed management company would intern elect the waste management operator. This will eliminate the possibility of multiple waste operators, thereby reducing traffic, enhancing safety and minimising the overall carbon foot print of waste services



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