



OPERATIONAL WASTE MANAGEMENT PLAN

July 2019

GARLAND
Concepts Realised

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Description of change	Originator	Rev	Approval	Date
Initial Release	CR	1st	CR	31/05/19

1.0 INTRODUCTION

Waste Management is an integral requirement essential in the promotion of sustainable development, enhancing good public health and the protection of environment. The following outlines the waste management strategy for the development.

The proposed development will give rise to a variety of waste streams. Given the scale of the development and the volumes of waste that will be generated during the operation of the development, it is imperative to ensure that waste management at the site is tightly controlled and has the least possible impact on the surrounding environment.

The purpose of this Waste Management Strategy is to ensure that waste arising within the development will be managed and disposed of in a way that ensures optimum levels of waste recycling.

The Operational Waste Management Plan will also ensure that waste storage and movement within the development takes place in a manner which complies with relevant legislation and has a minimal impact on the occupants of the development, and nearby existing commercial and residential areas.

It is intended that this plan will be used to ensure efficient and legally compliant waste management for the site. The implementation of this strategy will ensure that the development as a whole operates in a more economically and environmentally sustainable manner, thereby enhancing the environment of the development and the local community.

2.0 TRENDS IN WASTE MANAGEMENT

2.1 Waste Management Trends at a National Level

The Environmental Protection Agency (EPA) produce reports and update estimates for waste generation and the level of recycling, recovery and disposal of materials for households and commercial developments in Ireland, on which this report is largely based.

Figures from these reports are only considered to be estimates, due to low response levels from companies and contractors, and also due to inadequate records kept by producers of commercial waste in Ireland. However, there was a marked increase in data collection and response levels.

The EPA have published *A Resource Opportunity, Waste Management Policy in Ireland*¹, which promotes not just the environmental but also the economic benefits of better waste management. Ireland's waste policy is influenced by a range of EU Directives² most notably The Waste Framework Directive which sets out the management regime applicable to waste in the territory of the community and is enshrined in Irish law by the Waste management act 1996 and the European Communities (Waste Directive) regulations 2011.

Ireland has been compliant with all statutory packaging recovery targets set since 2001³. A recovery rate of 91 per cent was reported for packaging waste in 2015, exceeding the EU target of 60 per cent. Given the young demographic of the expected Build To Rent sector, is it expected that that this type of development will at least match the national figures for recycling and responsible waste disposal and in fact exceed.



Figure 1 The graph above shows the recovery of Packaging Waste figures obtained from EPA

¹ A Resource Opportunity, Waste Management Policy in Ireland, Department of the Environment, Community and Local Government, July 2012

² Packaging Directive (94/62/ec); Waste electrical and electronic equipment (WEEE) Directive (2002/96/ec); restriction of hazardous substances in WEEE Directive (2002/95/ec); end of life vehicles (ELV) Directive (2000/53/ec); batteries Directive (2006/66/ec); landfill Directive (1999/31/ec) and Waste Framework Directive (2008/98/ec)

³ www.epa.ie information last obtained 12/12/2018

In times of economic recession the production of household waste generally decreases. The latest household data figures available show this trend with a sharp decline between the years of 2007 and 2013. In this same period, there has been a greater awareness of environmental issues in Ireland which will lead to more responsible waste consumption per capita, this should somewhat offset the economic recovery we are now experiencing.



Figure 2 The above graph shows the latest figures available from the EPA in relation to household waste generation per capita.

2.2 Waste Management Local Level Policy

A comprehensive set of policies are set are included in *Kildare County Development Plan 2017-2023* to achieve these targets.

In compliance with Chapter 17 of the *Kildare County Development Plan 2017-2023*, each dwelling house shall be served by three ‘wheelie’ bins.

‘Adequate provision shall be made for the storage and collection of waste materials. Each house shall have adequate screened storage for at least 3 number ‘wheelie’ bins.’

Extract 17.4.5 Kildare County Development Plan 2017-2023

The duplex and 1-bed apartments units will be served by communal bin storages units, which will be also segregated into three separate bins, to keep the policy of waste segregation and recycling as per the policy outlined above. As shown in Figure 1 below, the duplex units are provided at four separate locations in the development. Blocks highlighted in yellow on the Figure 1 have the same features in terms of waste management. The bin stores for the 1-bed apartments are located to the rear of the apartment block. Bin storage for the 4 No. apartment blocks are located in the Refuse Store in the under-croft car park below the units. Please refer to Section 4 for details of calculations. The bin storage requirements were passed to the RKD who designed the storage units to size.

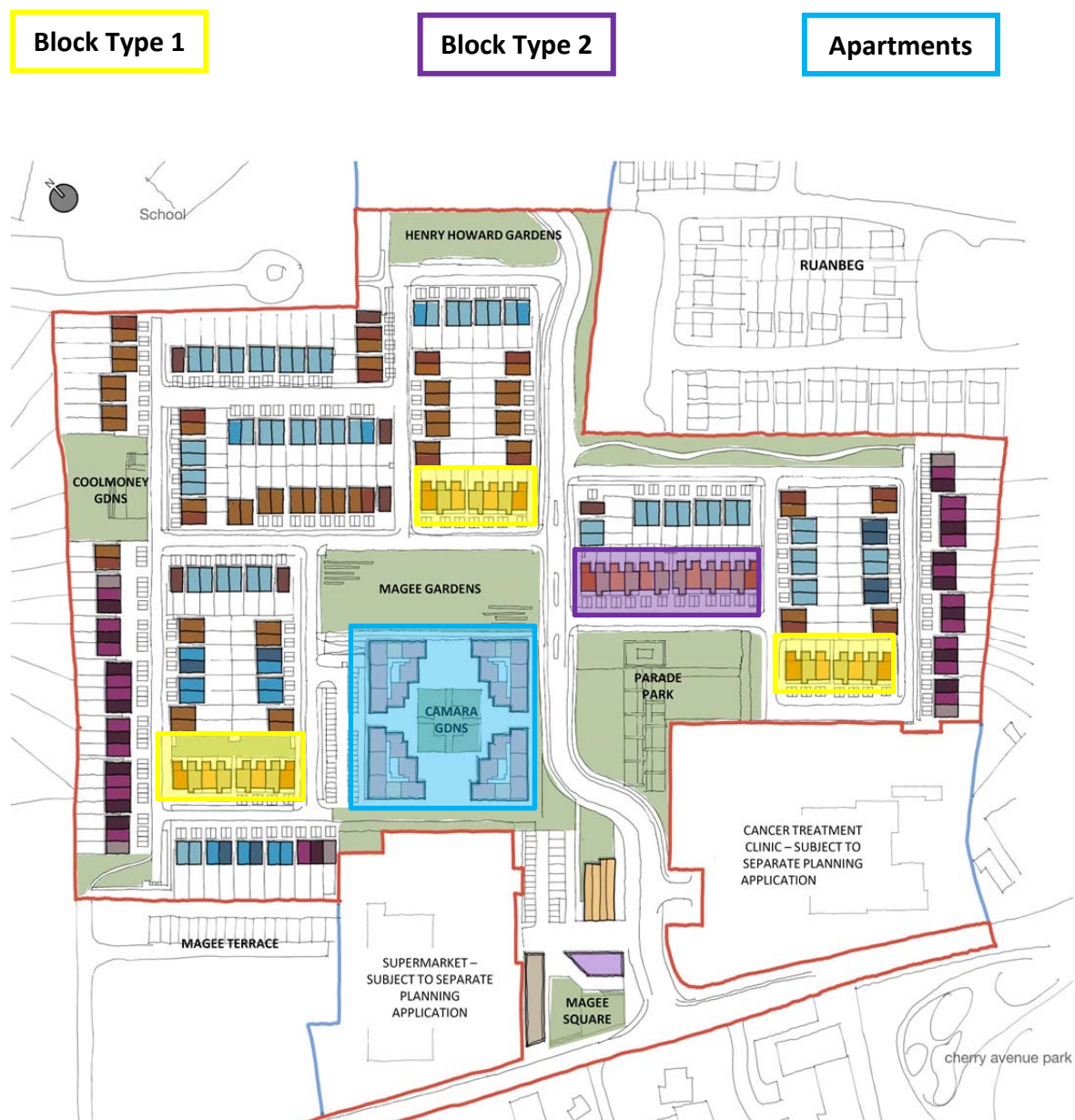


Figure 1 – Duplex, 1-bed Apartment units and Apartment Blocks layout - Phase 1

3.0 WASTE MANAGEMENT LEGISLATION & OBLIGATIONS

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 waste is generated until it is disposed of legally and this includes its method of disposal. The commercial units in the neighbourhood centre will provide adequate waste storage relative to their use.

As it is not practical in most cases for a commercial or residential waste producer to physically transfer all waste from the area where it is produced to the final disposal area, waste contractors are employed to physically transport waste to the final waste disposal site.

The Act also incorporates the “polluter pays” principal, whereby the waste producer is liable to be prosecuted for pollution incidents, which may arise from the incorrect transport of waste produced by the waste producer.

It is therefore imperative that the waste producer ensures that each waste contractor is legally compliant with respect to waste transport and disposal.

In general, each waste contractor must comply with the provisions of the Waste Management Acts of 1996 and 2003 and associated regulations, which require that a contractor handle, transport and dispose of waste in a manner that ensures that no adverse environmental impacts occur as a result of any of these activities.

A permit to transport waste must be held by the relevant contractor and this permit shall be verified with the Permitting Authority (usually the Local Authority although the EPA may also have had a role in issuing the permit).

A contractor shall not be permitted to receive any waste at their site, unless in possession of a waste permit granted by a local authority under the Waste Management (Permit) Regulations, 1998 or a waste licence granted by the EPA. The permit will specify the types of waste a contractor is licensed to receive, store, sort and recycle on their site.

The Waste Storage Area is to comply with the '*Sustainable Urban Housing: Design Standards for New Apartments, Guidelines for Planning Authorities, 2015*'. In terms of Refuse Storage, the following criteria are followed:

- Sufficient communal storage area to satisfy a three-bin system;
- Bins that comply with EN 840-4 2004 must be used, ideally 1,100 litre bins for commercial area or duplex/ apartments (1.23m long x 1.1m wide and 1.3m high).
- Bins that comply with Bins that comply with EN 840-1 2004 must be used, 140 or 240 litre bins for dwelling houses.
- Sufficient space must be provided to accommodate the collection of dry recyclables and organic waste.
- Bin storage areas should be designed so that each bin within the storage area is accessible to occupants/employees of the development (including people with disabilities) and these bins must be able to be moved easily from the storage area to an appropriate collection point on the public street nearby (with no steps and a minimal incline ramp).
- Waste storage areas should not present any safety risks to users and should be well lit.
- Provision of adequate ventilation of waste storage areas so as to minimise odours and potential nuisance from vermin/flyies.
- A waste collection contract must be signed with Kildare County Council or a private waste collector who is the holder of a Waste Collection Permit, prior to the commencement of the collection of waste.

4.0 DEVELOPMENT OVERVIEW

Further details of the proposed redevelopment are provided in the attached planning application with a location map provided in Figure 2.

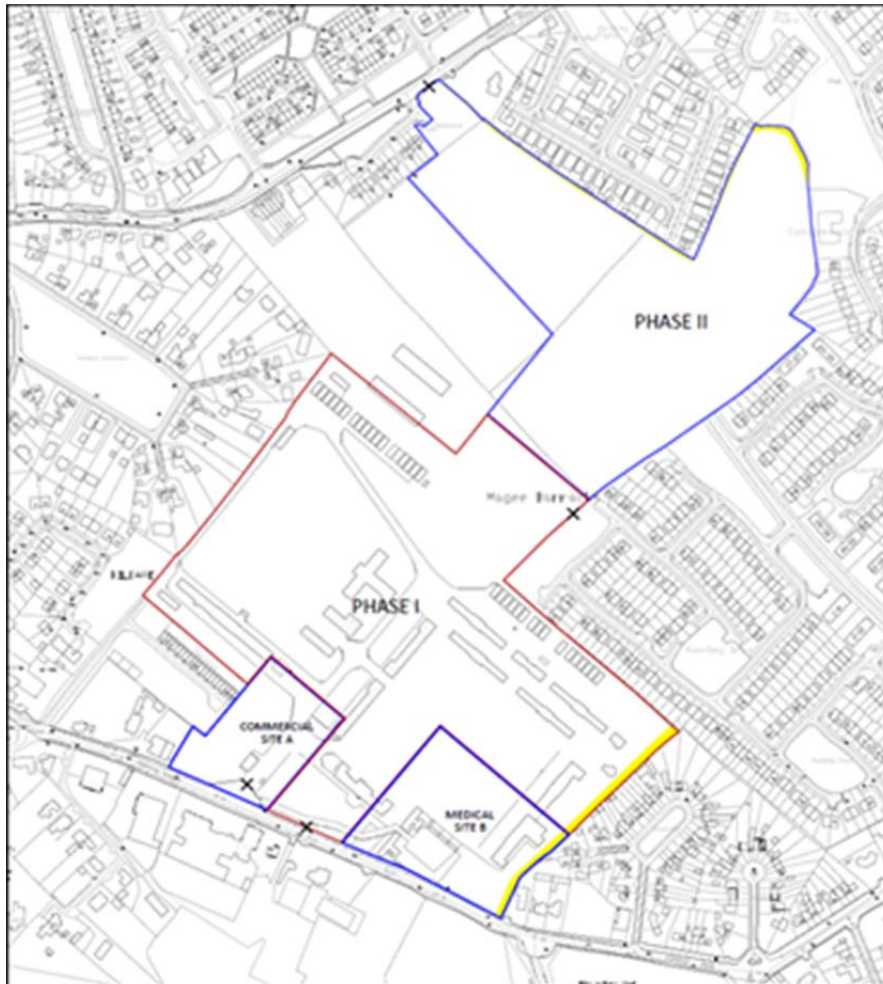


Figure 2 – Location of Proposed Development, Phase 1 development outlined red.

Current List of Household Waste Collectors Operating in Kildare:

AES, 1850 650 655

Mahons Recycling, 046 9481488

Oxigen 045 866838

Ray Whelan 059 914 7678

Thorntons 01 623 5133

5.0 WASTE GENERATION FIGURES

The National Waste Prevention Programme (NWPP) is playing an important enabling role in that necessary transformational change by supporting businesses, households and the public sector to be more resource efficient.

A value of 0.942Kg of waste generated per person per day has been taken for the purposes of this report to estimate the volume of waste to be generated by the residential units; this is based on data obtained from the EPA.

‘The household waste per person in Ireland has been decreasing over the period 2006 to 2012 from 470 kg/person in 2006 to 344 kg/person in 2012.’

Extract from 2013 ‘EPA Publication, National Waste Prevention Programme’

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

- Dry Mixed Recycling;
- Mixed Non-Recycling;
- Organic Material.

In addition to the common waste type outlined above, a residential development generally also generates the following wastes in small quantities:

- Glass;
- Electrical Waste: Electronic Equipment such as televisions, printers, radios, mobile phones and batteries;
- Chemicals: Paints, glues, resins, detergents;
- Textiles;
- Furniture.

Green garden waste from trimmings and cuttings will be dealt with by the landscaping contractor.

5.1 Duplex Units and Apartments

The occupancy rates for the duplex and apartments style buildings have been predicated and are displayed on the schedule of Accommodation in Tables 5.1a, 5.1b and 5.1c below.

Apartment Type	No. Of Persons per Apartment Equ.	No. Of Apartments	No. of Persons Equ.
Type D - 1 Bed Apartment	2	3	6
Type E1 - 2 Bed Duplex	3.5	5	18
Type E2 - 2 Bed Duplex	3.5	2	7
Type F1 - 3 Bed Duplex	3.5	2	7
Type F2 - 3 Bed Duplex	3.5	2	7
Totals		14	45

Table 5.1a - Schedule of accommodation of proposed Duplex Residential and 1-bed Apartments Units development – Block Type 1 (refer to Figure 1)

Apartment Type	No. Of Persons per Apartment Equ.	No. Of Apartments	No. of Persons Equ.
Type D - 1 Bed Apartment	2	14	28
Type E1 - 2 Bed Duplex	3.5	24	84
Type E2 - 2 Bed Duplex	3.5	4	14
Type F1 - 3 Bed Duplex	3.5	10	35
Type F2 - 3 Bed Duplex	3.5	4	14
Totals		56	175

Table 5.1b - Schedule of accommodation of proposed Duplex Residential and 1-bed Apartments Units development – Block Type 2 (refer to Figure 1)

Apartment Type	No. Of Persons per Apartment Equ.	No. Of Apartments	No. of Persons Equ.
1 Bed Apartment – 1A	2	14	28
1 Bed Apartment – 1B	2	4	28
1 Bed Apartment – 1C	2	12	28
2 Bed Apartment – 2A	4	14	56
2 Bed Apartment – 2B	4	14	56
2 Bed Apartment – 2C	4	14	56
2 Bed Apartment – 2D	4	14	56
2 Bed Apartment – 2E	4	28	112
2 Bed Apartment – 2F	4	4	16
2 Bed Apartment – 2G	4	4	16
Totals		122	452

Table 5.1c - Schedule of accommodation of proposed Apartment Block – 4 No. (refer to Figure 1)

Waste Quantum rates for the four main waste streams are identified below and expected quantities are given to inform into the bin storage areas.

Waste Type	Waste Quantum (kg/day)
Organic Waste (34.5%)	14
Mixed Dry Recyclables (37.5%)	16
Non-Recyclables (23%)	10
Glass (5%)	2
Totals	42

Table 5.1d - Estimation of waste generation for four main type of residential waste for the Block Type 1 (refer to Figure 1)

Waste Type	Waste Quantum (kg/day)
Organic Waste (34.5%)	57
Mixed Dry Recyclables (37.5%)	62
Non-Recyclables (23%)	38
Glass (5%)	8
Totals	165

Table 5.1e - Estimation of waste generation for four main type of residential waste for the Block Type 2 (refer to Figure 1)

Waste Type	Waste Quantum (kg/day)
Organic Waste (34.5%)	140
Mixed Dry Recyclables (37.5%)	161
Non-Recyclables (23%)	100
Glass (5%)	20
Totals	421

Table 5.1f - Estimation of waste generation for four main type of residential waste for the Blocks Type 3 (refer to Figure 1)

5.2 Housing Units

In accordance with 'Quality Housing for Sustainable Communities' published by Department of the Environment, Heritage and Local Government Chapter 17 of the *Draft Kildare County Development Plan 2017-2023*, each dwelling house shall be served by three 'wheelie' bins.

House Description	No. Of Houses	Expected Waste Generated (kg per person per day for each house cluster)			
		Organic 34.5%	Mixed-dry recycling 37.5%	Non-recycling 23.0%	Glass 5.0%
Type A: 3 bed (Semi-detached)	80	91	99	61	13
Type B: 3 bed (Terrace)	40	45	49	30	7
Type C: 4 bed (Semi-detached & Detached)	60	78	85	52	11
	180	214	233	143	31

Table 5.2 – Waste generation figures for dwelling houses other that those covered under duplex or apartments.

5.3 Crèche

Persons	Waste Quantum (kg/day)	Waste Quantum (kg/day)			
		Organic Waste (34.5%)	Mixed Dry Recyclables (37.5%)	Non-Recyclables (23%)	Glass (5%)
No. Of Persons	Totals Kg/day generated				
90 Kids and 15 Staff	99	35	38	24	5

Table 5.3a – Waste quantum generation figures

Waste Type	Volume (m3)
Dry Recyclables	0.23
Organic	0.25
Mixed Non Recycling	0.15
Glass	0.03
Total m³ /per day	0.66
Total m³ /per week	4.62

Table 5.3b – Volume of waste storage required for the Crèche facility

The crèche children and staff numbers were coordinated with the Project Architects.

5.4 Neighbourhood Centre

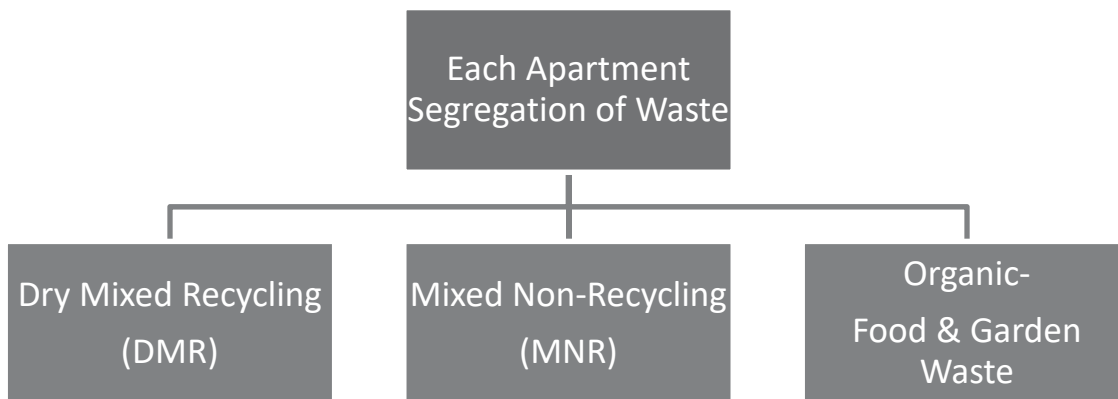
Building Type	Area m ²	Equation for Weekly Waste Arising	Volume of Waste Arising per Week	1100ltr. Bin Equivalent per week
Neighbourhood Retail	320	Volume arising per m ² of sales area (10L per squ. m.)	3,200 ltr.	3
Coffee Shop with Gallery	300	90 Ltr. / 100m ² /day	1,890ltr	3

5.4a – Neighbourhood – retail and coffee shop was quantum's.

The exact retail type of the three retail stores is not known at this stage. The combined area of three retail units is 320m², and it is proposed to have a common bin storage area. Although the coffee shop only requires two bins, we have allowed three bins to cater solely for the coffee shop with gallery, as landlord building owner issues may require this.

6.0 WASTE MANAGEMENT & WASTE MANAGEMENT FACILITIES

Each individual housing unit and business unit will be required to sort their waste into the following segregation categories:



Each resident will be required to segregate their own waste at source. Each dwelling will be provided with a chart explaining exactly how waste materials should be segregated; this can be found in Appendix B. The duplex and apartment residents will then be required to bring the suitable waste streams from their units to the labelled bin storage areas. The different bin types will be clearly colour coded and labelled in Waste Storage Area, further discussed in Section 6.1 below.

In addition to the above waste streams, the chart given to each dwelling will encourage the reuse of the products below. Failing the resident finding a reuse for the products, they will be encouraged to segregate and appropriately disposal of:

- Glass (segregated into clear, brown and green);
- Electrical goods (WEEE);
- Batteries;
- Chemicals (paints, adhesives, resins, detergents);
- Waste cooking oil;
- Textiles;
- Furniture.

Section 6.3 provides information on the local facilities available to deal with the above waste streams.

6.1 Waste Management Facilities within the Development

All housing units will be provided with grey, green and brown waste bin facilities. The crèche shall have designated commercial waste bins which are contained within the building with external access. The retail units and coffee shop with gallery shall have designated commercial waste bins. Waste produced by these units will be dependent on the nature of the retail business and will be served by a commercial waste management contractor.

Waste storage areas will be equipped with wastewater drainage points for cleaning and disinfecting purposes. All storage facilities in the crèche and neighbourhood centres are subject to design and detail of a valid fire safety certificate.

6.1.1 Waste Storage Area for Duplex Units and Apartments

Storage of waste generated by the occupants of the development will be stored in a Waste Storage Area (WSA). The WSA is proposed to be located in the basement with appropriate drainage and ventilation. Access to the WSA will be restricted to the residents and building management company personnel.

Waste from the development will be segregated into:

- Dry recyclables (cardboard, paper and plastic);
- Organic waste;
- Mixed non-recyclable waste (Municipal) (textiles and others).

The tables 6.1a, 6.1b and 6.1c below show a breakdown of the number and type of bins required for the development based on 1 No. collections per week for the Duplex Residential and 1-bed Apartments Units:

Waste Type	Dry Recyclables	Organic	Mixed Non Recycling
Colour Code	Generally Green	Generally Brown	Generally Black
Size	1100 litre	1100 litre	1100 litre
No. of Bins	2 Bins	1 Bin	1 Bin

Table 6.1a - Types and quantities of bins required for 1 No. collection per week for Duplex Residential and 1-bed Apartments Units development – Block Type 1 (refer to Figure 1)

Waste Type	Dry Recyclables	Organic	Mixed Non Recycling
Colour Code	Generally Green	Generally Brown	Generally Black
Size	1100 litre	1100 litre	1100 litre
No. of Bins	5 Bins	1 Bin	3 Bins

Table 6.1b - Types and quantities of bins required for 1 No. collection per week for Duplex Residential and 1-bed Apartments Units development – Block Type 2 (refer to Figure 1)

Waste Type	Dry Recyclables	Organic	Mixed Non Recycling
Colour Code	Generally Green	Generally Brown	Generally Black
Size	1100 litre	1100 litre	1100 litre
No. of Bins	17 Bins	5 Bin	7 Bin

Table 6.1c - Types and quantities of bins required for Apartment Complex – 4 No. (refer to Figure 1)

6.1.2 Waste Storage Area for Residential Units

It is proposed that three wheelie bins will be provided for each dwelling unit with a maximum capacity 240 ltr. The typical dimensions of the bins are given in the figure below. The rear garden is of adequate size to easily facilitate three bins which will have a plan area of approximately 1.8m x 0.75m. **The footpaths servicing the back gardens are of adequate width (when considering waste pipes) to allow for the bins to be stored in the garden and move to the front for collection.**

5.9.4 Refuse and Fuel Storage

All dwellings should be provided with an appropriate location for the storage of refuse containers, including wheeled bins. This will normally be an external location, with convenient access for the occupants and for the refuse collection service. The space should be adequate to cater for the size and number of bins normally allocated to a family in the area. The local authority should be consulted to ascertain the appropriate level of central refuse storage provision that should be made in multiple-occupancy buildings.

Extract from Chapter 5.9.4 'Quality Housing for Sustainable Communities'

Specifications

- Weights:- Rated maximum load 96kg. Dead weight 14.2kg
- Dimensions:-

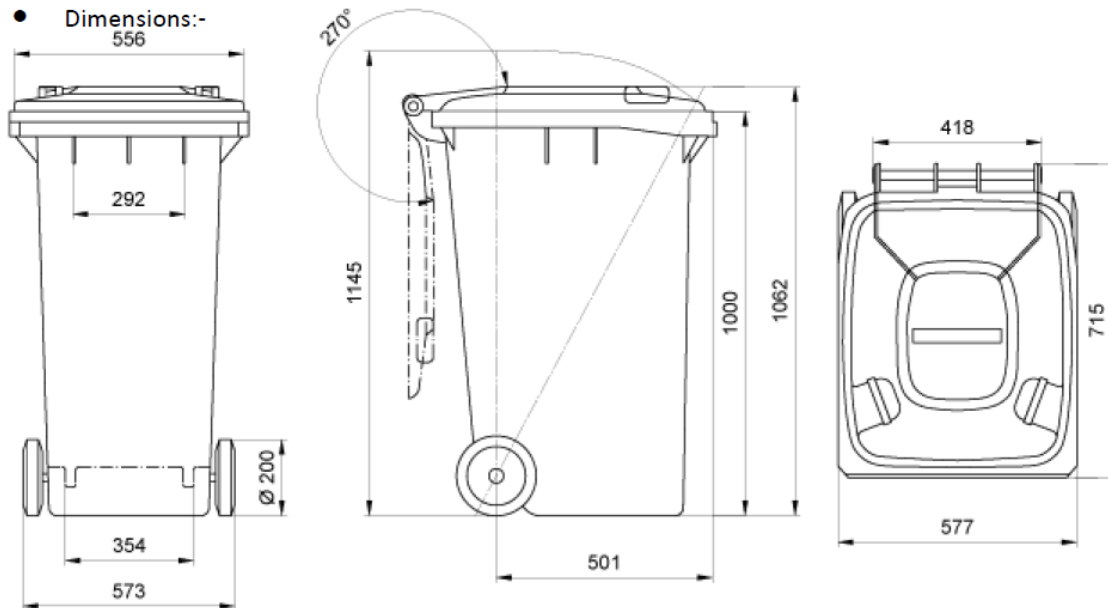


Figure 2 – Dimensionn of typical 240 ltr. Wheelie bins

6.1.3 Crèche

The bin storage facilities for the crèche are provided as part of the main building with external access of removal of bins. The storage capacity required is 4.6m³; which can be easily accommodated in the provided the floor area of approximately 8m².

6.1.4 Small Neighbour Retail and café with gallery

The Small Neighbourhood Retail requires three 1,110 ltr. Bins which would a plan area of approximately (1.11mx1.31m= 1.46m² x 3No. =4.4m²).

The café with gallery is also provided with 3 No. bins (a further 4.4m²).

The bin store area provided is 12.5m² which can easily accommodate the 6 bin provision. The bin store will require 180⁰ hinged doors and be in full compliance with all building regulations.

The final sizing and collection frequency for the neighbourhood retail and coffee shop with gallery will be discussed with the appointed licenced Waste Contractor as the waste generation rates evolve.

6.2 WSA Waste Collection

Only companies who are approved and hold waste collection permits from Kildare County Council will be considered for the collection of the wastes stored in the WSA. This will ensure the wastes are collected and disposed of at an approved facility.

Non-recyclable waste and organic waste will be collected weekly, as there may be odour risks if the waste is left for longer periods before being collected. The dry recycling waste will also be collected weekly and it is acknowledged that it is subject to seasonal spikes such as the post-Christmas and Easter periods. All waste storage bins will be presented for collection in a manner that will not create a hazard to traffic. The movement will be closely co-ordinated to ensure bins are presented for a short period only as not create an excessive odour nuisance or generate litter.

Records of the collections will be maintained by the facilities management company for the development.

6.3 Recycling Facilities

Kildare County Council have an existing network of recycling facilities, bottle banks and bring centres. There are two main recycling centres in Kildare are as follows:

<p>Silliot Hill, Kilcullen, Co.Kildare</p> <p>Site Description: Custom-built centre where householders can bring a wide range of materials for recycling or disposal where necessary.</p>	<p>Gallows Hill is located in Athy</p> <p>Address: Gallows Hill, Athy, Co.Kildare</p>
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Nearest Bring-Bank is located at Tesco Superstore (1.2km away), which facilitates the recycling of:

- Beverage Cans
- Clothes and Textiles
- Glass Bottles and Jars

6.4 Design Quality Audit

Audit Criteria	Proposal Provision
Sufficient communal storage area to satisfy the three-bin system for the collection of mixed dry recyclables, organic waste and residual waste; ⁴	This development provides bins: <ul style="list-style-type: none"> • mixed dry recyclables • residual waste • organic waste • glass
In larger apartment schemes, consideration should also be given to the provision of separate collection facilities for other recyclables such as glass and plastics; ⁴	A detailed guide (such as found in Appendix A) is to be provided above the bins in each apartment to clearly identify the waste streams. The segregation of waste streams will begin in the home, in small segregated bins provided in each apartment.
Waste storage areas must be adequately ventilated so as to minimise odours and potential nuisance from vermin/flies and taking into account the avoidance of nuisance for habitable rooms nearby; ⁴	The external double door set is to be louvred. A mechanically ventilated lobby separates the bin storage area from circulation spaces.
Provision in the layout for sufficient access for waste collectors, proximity of, or ease of access to, waste storage areas from individual apartments, including access by disabled people; ⁴	Please refer to Autotrack analysis conducted and provided in Appendix B. The Autotrack shows that bin lorry can achieve reversing manoeuvres when approaching from west and east on Schoolhouse Lane. The bin storage facilities are accessible to disabled people and gradients or other obstructions identified in TGD M are not to

⁴ Sustainable Urban Housing: Design Standards for New Apartments Guidelines for Planning Authorities March 2018

Audit Criteria	Proposal Provision
	<p>be placed on routes to and from the refuse storage. The refuse storage area is accessible from all apartments without requiring to negotiate steps.</p>
<p>Waste storage areas should not present any safety risks to users and should be well-lit;</p>	<p>Floor Surface: to be fitted with a non-slip coating or suitable finished reinforced screed. The floor level shall not exceed 1:12.</p> <p>Access Doors: access doors are to be of sufficient width to accommodate all users and, where self-closing devices are provided, then they are in accordance with requirements of Technical Guidance M.</p> <p>Fire Safety: All storage facilities in the commercial units are subject to design and detail of a valid fire safety certificate.</p> <p>Vermin Control: The louvres and vents provided shall be of adequate size or meshed to prevent the passage of vermin into the store area. In addition to this, vermin control procedures such as noise deterrents shall be provided in the refuse area.</p> <p>Bin Movement: The handling of the waste from the refuse store to the refuse lorry is by the waste collector. Therefore a battery operated tug is not required. The residents of the development are not to move any</p>

Audit Criteria	Proposal Provision
	<p>bins.</p> <p>Lighting: A minimum LUX rating of 220 is recommended.</p> <p>In addition to providing a well-lit area, it is proposed to provide colour coded signage as well as colour coded bins. See image example below: (source: Key Waste)</p> 
<p>Waste storage areas should not be on the public street, and should not be visible to or accessible by the general public. Appropriate visual screening should be provided, particularly in the vicinity of apartment buildings;⁴</p>	<p>The bin storage area is not visible from the public street (please see Architectural drawing from John Fleming Architects drawing reference P-40-001). In fact, the Architectural design has set back the doors to screen visibility.</p> <p>A sliding gate is proposed to separate the public footpath from access to the bin store area.</p> <p>Access control: Main gate for the proposed development is FOB activated with one supplied to the waste collection provider. The access door to the WSA to be key pad with code provided to the waste collection provider. Quick release</p>

Audit Criteria	Proposal Provision
	(push bar) will be provided to the internal doors of the WSA in accordance with the design and specification laid out in the building's Fire Safety Certificate.
Waste storage areas in basement car parks should be avoided where possible, but where provided, must ensure adequate manoeuvring space for collection vehicles; ⁴	No bin storage provided in the basement.
The capacity for washing down waste storage areas, with wastewater discharging to the sewer. ⁴	A central floor gully is to be provided in the bin storage area for wash down proposes and discharge to the foul drainage network.

7 CONCLUSIONS ON WASTE MANAGEMENT PLAN

This plan aims to ensure minimise waste generation while promoting maximum recycling, reuse and recovery. The plan estimates the amount of waste generated and the storage, handling and collection of dry recyclables, mixed non-recyclables and organic wastes.

Fully implementing the above waste management plan will promote a high level of recycling, reuse and recovery by first promoting segregation at source. This Waste Management Plan is to be incorporated into a larger Operational Estate Management Programme by the building management company to ensure its full implementation. The waste segregation facilities that will be provided for the development will ensure that waste generated at the site will be managed correctly and in compliance with all current waste management legislation.

8 REFERENCES

1. Waste Management Act, 1996. S.I. No. 10 of 1996 (Amended 2001)
2. Joint Waste Management Plan for the south east 2000-2021.
3. The EPA National Waste Database Report 2001, EPA Wexford, 2003.
4. The EPA National Waste Database Report 2004, EPA, Wexford 2003.
5. The EPA National Waste Database Report 2004, EPA, Wexford, 2006.
6. Waste Management - Changing our Ways, a Policy Statement, Department of Environment and Local Government, 1998.
7. Preventing and recycling Waste - Delivering Change, Department of Environment and Local Government, 2002.
8. Making Ireland's Development Sustainable - Review, Assessment and Future Action, World Summit on sustainable Development, August/September 2002.
9. Taking Stock and Moving forward, Department of the Environment and Local government, April 2004.
10. Dublin City Development Plan, Dublin City Council, March 2005.
11. Bye-Laws for the Storage, Collection and Presentation of Commercial Waste, Dublin Corporation, November 2002.
12. Bye-Laws for the Storage, Collection and Presentation of Household Waste, Dublin Corporation, November 2002.
13. Recommendation for the inclusion of Waste Management Requirements in the Planning Process, Engineering Department (Waste Management Services Division), Dublin City Council, June 2002.
14. Sustainable Urban Housing: Design Standards for New Apartments, Guidelines for Planning Authorities, 2015

Appendix A

Waste Prevention & Recycling

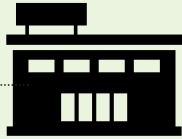
Tricks & Tips

To prevent waste and conserve natural resources please use these helpful tips in your home.



How to lighten your Recycling Bin

Leaving packaging in the shop if allowed. e.g. shoe boxes.



To reduce weight ensure that used food containers are clean and dry

Choose goods in refillable packaging such as detergents & coffee

Look for goods with less packaging

Follow the list of recyclable materials accepted by your waste collection company (they will provide you with a list)

Invest in a refillable water bottle, coffee cup & lunch box to reduce waste when you are on the move

Look out for compostable & recycling symbols on packaging



Place a **NO JUNK MAIL** sticker on your letter box

What can go in your Recycling Bin...

Always make sure all **materials are clean** before putting them in the recycling bin

PAPER

- Newspapers
- Magazines
- Junk mail
- Envelopes
- Paper
- Phone books
- Catalogues
- Tissue boxes
- Sugar bags
- Calendars
- Dairies
- Letters
- Computer paper
- Used beverage
- Juice cartons
- Milk cartons
- Egg boxes
- Holiday brochures
- Paper potato bags



CARDBOARD

- Food boxes
- Packaging boxes
- Cereal boxes
- Kitchen towel tubes



ALUMINIUM & STEEL CANS

- Drink cans
- Steel cans
- Pet food cans
- Food cans
- Biscuit tins
- Soup tins



PLASTIC PACKAGING (PP)

- Yogurt containers
- Margarine tubs
- Rigid food packaging (Except black)
- Liquid soap containers
- Fruit containers



PLASTIC BOTTLES (PET 1)

- Mineral bottles
- Water bottles
- Mouthwash bottles
- Salad dressing bottles



PLASTIC BOTTLES (HDPE2)

- Milk bottles
- Juice bottles
- Cosmetic bottles
- Shampoo bottles
- Household cleaning bottles
- Laundry detergent bottles
- Window cleaning bottles
- Bathroom bottles



All waste service providers are legally required to collect **all** the recyclables listed

How to lighten your Brown Bin

A home garden composter is a way to get rid of garden waste, eggshells/boxes, fruit, vegetables & teabags. For more go to www.stopfoodwaste.ie or www.brownbin.ie

Make sure fruit and veg is stored correctly so you get time to eat it.



Check the **use-by date** before purchasing to ensure you will have time to eat it before it goes out of date.



Keep all **dairy products** in the fridge to preserve them as long as possible.

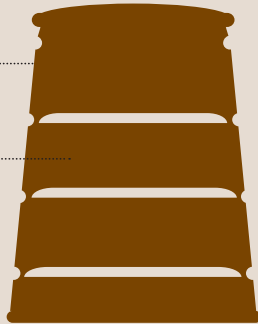


*Use up **leftovers** to make another recipe, or as tomorrow's lunch!

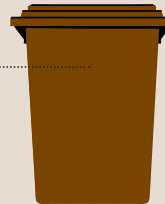
*** Note:** Food safety guidance should be followed when storing and preparing food

When shopping try to make a **list of** what you need and stick to it!

No dairy, bread or meat products should go into your home garden composter.



Use newspapers to line your kitchen caddy or **compostable bin liners** which are widely available to buy (regular biodegradable bin bags are not suitable)



Use your **freezer** - its your ally in preventing food waste



What can go in your **Brown Bin**...

If it once grew, it can go into the brown bin!

Bread & cereals



Coffee grounds & tea bags



Egg & dairy products



Grass clippings, weeds and twigs



Meat, poultry



Wet cardboard
Or paper



Fish, shellfish
& bones



Paper towels & napkins



Plate scrapings
& scraps



Fruit & vegetables



How to lighten your **General Waste Bin**

Remove any **water or liquid** from the item so it is as light as possible.

Anything with a **plug or battery** can be recycled free at your local civic amenity site.

Keep **glass out** and bring it to your bottle bank.



Before you bin anything check to see if its **compostable or recyclable**. Your waste collector can provide a current list of acceptable items for each waste stream.

Timber, Steel and old paint tins are accepted at your local civic amenity site for a small fee.

Old toys, clothes and unwanted furniture could be given away to charity if are in good condition or given away online through sites such as www.freetradeireland.ie

What can go in your **General Waste Bin**...



THINK BEFORE YOU THROW IT OUT!

Before putting waste in any bin, can you...



Fix it
Before you bin it,
can you repair it?



Flog it
Does it have value, if so
can you sell it?
www.donedeal.ie
www.ebay.com
www.gumtree.ie



Donate it
Give reusable items to
family & friends. You
can also donate them to
charity or place them on
www.freetradeireland.ie

*Visit the only Free Banks
in the country!*



Give old clothes a good home and recycle your
glass at your nearest bring bank. It's FREE!



FreeTrade Ireland is a unique public service
allowing you to pass on and pick-up items free
of charge. www.freetradeireland.ie

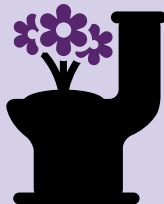
Avoid wasting food!



Prevent food waste by careful
planning and cooking the
correct amounts for you
and your family. More info at
www.stopfoodwaste.ie

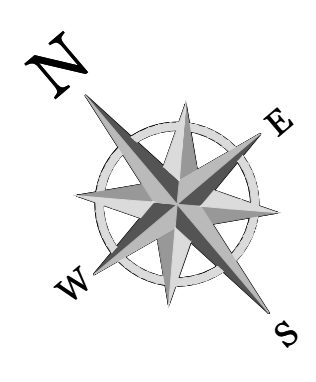


Blue box it
Keep an eye out for
the blue battery
box in all shops
selling batteries.



Upcycle it
Before you bin it,
could it be used for
something else?

Appendix B



ADJOINING GRASSLANDS
3,500 sqm

CANCER TREATMENT CENTRE,
PLANNING REF NO. 18149

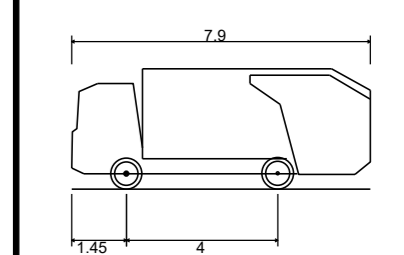
HOSPITAL STREET

PETROL STATION

CRASH /
TAKE-AWAY

QUALITY
NSAI Certified

NOTES
1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE SPECIFICATIONS AND ALL RELEVANT ARCHITECTS AND SERVICES ENGINEERS DRAWINGS.
2. DO NOT SCALE. USE FIGURED DIMENSIONS ONLY.
3. DRAWINGS SHALL BE CHECKED BY CONTRACTOR AND ANY DISCREPANCIES (DIMENSIONS) SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER BEFORE WORK IS COMMENCED.



DB32 Refuse Vehicle
Overall Length 7.900m
Overall Width 2.400m
Overall Body Height 3.183m
Min Body Ground Clearance 0.388m
Max Track Width 2.400m
Lock-to-lock time 6.10s
Curb to Curb Turning Radius 9.625m

REV	DATE	DESCRIPTION	DRG	APP

CLIENT:
BALLYMOUNT PROPERTIES LTD.

ARCHITECT:
PRO ARCHITECTS
59 NORTHUMBERLAND ROAD
DUBLIN 4

GARLAND
DUBLIN LIMERICK WATERFORD INTERNATIONAL
T: +353 1 4846422 F: +353 81 319708 T: +353 81 818111 T: +353 81 319718
E: info@garlandconsultancy.com W: www.garlandconsultancy.com

PROJECT:
RESIDENTIAL AND NEIGHBOURHOOD CENTRE
DEVELOPMENT (PHASE 1) AT FORMER MAGEE
BARRACKS

TITLE:
VEHICLE TRACKING LAYOUT
REFUSE VEHICLE

STATUS:
PLANNING APPLICATION
DRAWN: JC DES: BY: BM
CHK: BY: BM APP: BY: CR
DATE: 07/06/19 JOB No:
AS SCALE: 1:2000 R1831
DRG No: 1007 REV: 1st

Consulting Engineers
Project Management
Safety Management
International

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