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OPERATIONAL WASTE MANAGEMENT PLAN

For

PROPOSED RESIDENTIAL DEVELOPMENT BY THE LAND DEVELOPMENT AGENCY ON THE FORMER TEAGASC LANDS, KINSEALY, CO. DUBLIN

Report Ref. 32152-3

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Contents

1.0 INTRODUCTION

This report is an Operational Waste Management Plan (OWMP) for a proposed residential development at Kinsealy, Co Dublin. The development will involve the construction of apartments, duplexes, houses and a crèche as well as the internal roads and associated landscaping works. Once operational the development will give rise to a variety of different waste streams which will require proper management in accordance with the legislation and appropriate guidelines.

The purpose of this OWMP is to ensure that wastes generated within the development will be managed and disposed of in a way that ensures maximum levels of waste recycling and reuse and to minimise the levels of waste diverted to landfill. This OWMP will also ensure that waste storage and movement within the development will occur 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.

2.0 WASTE MANAGEMENT IN IRELAND

2.1 Introduction

The subject site is fully situated within the Fingal local authority area and consequently the proposed development must comply with the waste management requirements of Fingal County Council as well as the relevant National and Regional waste management requirements. This section sets out a summary of the principal National and Regional waste management requirements which must be considered for this development.

2.2 National Waste Policy and the Circular Economy

The Department of Housing, Planning and Local Government has primary responsibility for waste policy and legislation at a national level in Ireland. A significant proportion of national policy is governed by European Union (EU) initiatives. Such initiatives are usually enacted through European Directives which are then transposed into Irish law through our own legislation. National waste management policy in Ireland is contained in the following policy documents:

- *Waste Management Changing our Ways, 1998*;
- *Preventing and Recycling Waste: Delivering Change,* 2002;

- *Taking Stock and Moving Forward,* 2004;
- *A Resource Opportunity – Waste Management Policy in Ireland*, 2012; and
- *A Waste Action Plan for a Circular Economy: Ireland's National Waste Policy 2020-2025;* September 2020

The current national waste policy, *A Waste Action Plan for a Circular Economy: Ireland's National Waste Policy 2020-2025,* was published in September 2020 and sets out policy measures and actions for each waste management option as well as measures and actions for compliance and enforcement of the waste legislation applicable. The new policy document shifts focus away from waste disposal and onto the production chain. The policy document contains over 200 measures across various waste areas including Circular Economy, Municipal Waste, Consumer Protection and Citizen Engagement, Plastics and Packaging, Construction and Demolition, Textiles, Green Public Procurement and Waste Enforcement. The previous national waste policy, *A Resource Opportunity – Waste management policy in Ireland*, (2012), drove delivery on national targets under EU legislation, but the Irish and international framework has changed in the intervening years and change was required.

Irish waste policy is grounded on the European Union's concept of a waste management hierarchy. The European Union's waste management hierarchy is a series of waste management options, presented in decreasing order of environmental and economic desirability. The hierarchy states that the preferred option is prevention, followed by re-use, recycling, recovery, with the least desirable option being landfill. The overall intent of these policy statements is to move Irish waste management away from disposal and towards the more favoured options higher up the hierarchy and ultimately to achieve the full transition to a Circular Economy. The overall objectives of the current Action Plan are as follows:

- To shift the focus away from waste disposal and treatment by ensuring that the useful lifetime of materials and products is prolonged;
- To shift the burden of environmental responsibility for disposable goods to the producer;
- To ensure that measures for supporting sustainability are fostered;

The current legislative framework relies on the Waste Management Act 1996 and the Environment (Miscellaneous Provisions) Act 2011 as the principal vehicles through which

national waste policy is enacted. Further provisions are included in the Circular Economy Act. The Circular Economy and Miscellaneous Provisions Act 2022 underpins Ireland's shift from a "take-make-waste" linear model to a more sustainable pattern of production and consumption, that retains the value of resources in our economy for as long as possible.

2.3 Regional Waste Policy

For the purposes of waste management planning, Ireland is divided into three different regions namely, Eastern-Midlands, Southern and Connacht-Ulster regions with each region led by a Regional Waste Management Planning Office. The Eastern-Midlands Region includes the local authorities of Dublin City, Dún Laoghaire-Rathdown, Fingal, South Dublin, Kildare, Louth, Laois, Longford, Meath, Offaly, Westmeath and Wicklow.

The subject site is within the jurisdiction of Fingal County Council who have adopted the Eastern-Midlands Region Waste Management Plan 2015-2021. The Plan provides a framework for the prevention and management of waste in a sustainable manner in Fingal and the other local authority areas.

The strategic vision of the regional waste plan is to rethink the current approach to managing waste, by viewing waste streams as valuable material resources. It is hoped that making better use of available resources and reducing the leakage of materials as wastes will deliver benefits economically and environmentally to the region.

The plan contains a number of key measures that encourage a positive change in the attitudes and actions of householders, business and industry towards waste prevention. It also seeks to ensure that the Eastern-Midlands Region moves its management of waste from a traditional disposal model to a circular economy model so that waste becomes a future resource.

The Policy actions of the Regional Waste Management Plan include the following:

- A 1% reduction per annum in the quantity of household waste generated per capita over the six year period of the plan;
- A recycling rate of 50% of managed municipal waste by 2020;
- A reduction to 0% for the direct disposal of unprocessed residual municipal waste to landfill commencing in 2016;
- Deliver communication, awareness and on the ground activities which lead to a lasting change in the people's behaviour towards waste;

- Increase the level of source-segregated kerbside collections in the region, with a strong focus on ensuring that a three bin system becomes commonplace at household and commercial levels;
- Enforcement of the regulations related to household and commercial waste to tackle the problem of unmanaged waste;
- Ensure existing and future waste facilities do not negatively impact environmentally sensitive sites through proper assessments and siting;
- Grow the waste management sector into a prosperous and sustainable industry which creates and maintains healthy employment.

These polices have been considered in formulating the Operational Waste Management Plan for the proposed development.

2.4 Local Waste Policy

The Fingal Development Plan 2023 - 2029 sets out a number of objectives and actions for Fingal in line with the objectives of the Regional waste management plan. The Fingal Council Waste Management Strategy is grounded in EU and National policy and can be summarised by the waste hierarchy of prevention, recycling, energy recovery and disposal. The Plan identifies that the primary challenge over the Plan lifetime is to continue to deliver, maintain and expand high quality waste management infrastructure that will adequately cater for a growing resident population and business sector.

Section 11.6 of the Fingal Development Plan 2023 - 2029 sets out the waste policies and objectives in order to comply with the Development Management Standards and Waste Action Plan for a Circular Economy 2020-2025 set for the county with the aim to ensure orderly and sustainable development. The main relevant waste management policy of the County Development Plan is as follows:

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Require the provision of appropriate, well designed, accessible space to support the storage, separation and collection of as many waste and recycling streams as possible in all new commercial and residential developments within the County

Section 14.20.12 of the Fingal Development Plan 2023 - 2029 sets out the principal requirements of waste management to continue to facilitate the implementation of national legislation and national and regional waste management policy having regard to the waste

hierarchy. With respect to waste management the following are required to be considered:

- *The location and design of any refuse storage or recycling facility should ensure that it is easily accessible both for residents and/or public and for bin collection, be insect and vermin proofed, will not present an odour problem, and will not significantly detract from the residential amenities of adjacent property or future occupants.*
- *Provision for the storage and collection of waste materials shall be in accordance with the guidelines for waste storage facilities in the relevant Regional Waste Management Plan and the design considerations contained in Section 4.8 and 4.9 of the Sustainable Urban Housing: Design Standards for New Apartments Guidelines for Planning Authorities (2023).*
- *Refuse storage for houses should be externally located, concealed / covered and adequate to cater for the size and number of bins normally allocated to a household. For terraced houses, the most appropriate area for bins to be stored is to the front of the house, which should be located in well-designed enclosures that do not to detract from visual amenity.*
- *All applications shall clearly identify the waste storage and collection points and detail the anticipated waste collection schedule having regard to the impact on road users both within the development and the surrounding area.*
- *Access to private waste storage in residential schemes should be restricted to residents only.*
- *Ensure all new large-scale residential and mixed-use developments include appropriate facilities for source segregation and collection of waste.*
- *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.*
- *Ensure the maximum distance between the front door to a communal bin area does not exceed 50 metres.*

The *Fingal County Council Segregation, Storage and Presentation of Household and*

Commercial Waste Bye-Laws 2020, came into effect on the 13th March 2020. These Bye-Laws set a number of enforceable requirements on waste holders with regard to storage, presentation and segregation of waste within the Council functional area. Key requirements under these Bye-Laws of relevance to the proposed development include the following:

1) *Containers used for the presentation of kerbside waste shall be maintained in such condition and state of repair that the waste placed therein will not be a source of nuisance or litter.*
2) *Other than on the day before and the designated waste collection day, containers used for the presentation of kerbside waste shall be held within the curtilage of the premises where the waste is produced. They shall not be stored on a roadway, footway, footpath or any other public place unless the location has been expressly authorised in writing by an authorised person.*
3) *Household kerbside waste shall only be presented for collection in an appropriate waste container. The container shall not be over-loaded and the lid shall be securely closed. No waste shall be presented on the top of the lid or adjacent to the waste container.*
4) *Kerbside waste presented for collection shall not be presented for collection earlier than 1800 hours on the day immediately preceeding the designated waste collection day.*
5) *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 0900 hours on the day following the designated waste collection day.*
6) *Household waste that comprises hazardous waste or waste electrical and electronic equipment (WEEE) shall not be placed in any waste container and presented for kerbside collection except for specific WEEE collection events.*
7) *Household kerbside waste shall be segregated into residual household kerbside waste and recyclable household kerbside waste, with these fractions being stored separately. Any such separated recyclable waste shall not be deposited into a container designated for residual household kerbside waste and no such residual waste shall be deposited into a container designated for recyclable household kerbside waste.*
8) *Neither recyclable household kerbside waste nor food waste arising from households shall be contaminated with any other type of waste before or after it has been segregated.*
9) *A management company, or another person if there is no such company, who exercises control and supervision of residential and/or commercial activities in multi-unit developments, mixed-use developments, flats or apartment blocks, combined*

living/working spaces or other similar complexes shall ensure that:

a) *separate receptacles of adequate size and number are provided for the proper segregation, storage and collection of recyclable household kerbside waste and residual household kerbside waste*
b) *additional receptacles are provided for the segregation, storage and collection of food waste where this practice is a requirement of the national legislation on food waste,*
c) *the receptacles referred to in paragraphs (a) and (b) are located both within any individual apartment and at the place where waste is stored prior to its collection,*
d) *any place where waste is to be stored prior to collection is secure, accessible at all times by tenants and other occupiers and is not accessible by any other person other than an authorised waste collector,*
e) *written information is provided to each tenant or other occupier about the arrangements for waste separation, segregation, storage and presentation prior to collection,*
f) *an authorised waste collector is engaged to service the receptacles referred to in this section of these bye-laws, with documentary evidence, such as receipts, statements or other proof of payment, demonstrating the existence of this engagement being retained for a period of no less than two years. Such evidence shall be presented to an authorised person within a time specified in a written request from either that person or from another authorised person employed by Fingal County Council,*
g) *receptacles for kerbside waste are presented for collection on the designated waste collection day,*
h) *adequate access and egress onto and from the premises by waste collection vehicles is maintained.*

These Objectives and Guidelines have also been considered in formulating the Operational Waste Management Plan for the proposed development.

2.5 Design Standards for New Apartments

The Department of Housing, Planning and Local Government published the Sustainable Urban Housing: Design Standards for New Apartments - Guidelines for Planning Authorities in 2015 and were updated in 2018, in December 2020, and December 2022. These Guidelines set out

standards for apartment development particularly with regard to design quality safeguards such as internal space standards for 1-,2- and 3-bedroom apartments, internal storage and amenity space.

The guidelines require provision be made for the storage and collection of waste materials in apartment schemes. Refuse facilities should be accessible to each apartment stair/lift-core and designed with regard to the projected level of waste generation and types and quantities of receptacles required. Within apartments, there should be adequate provision for the temporary storage of segregated materials prior to deposition in communal waste storage and in-sink macerators are discouraged as they place a burden on drainage systems.

The guidelines set out the following general design considerations which should be taken into account in the provision of refuse storage facilities:

- Sufficient communal storage area to satisfy the three-bin system for the collection of mixed dry recyclables, organic waste and residual waste;
- In larger apartment schemes, consideration should also be given to the provision of separate collection facilities for other recyclables such as glass and plastics;
- Waste storage areas must be adequately ventilated so as to minimise odours and potential nuisance from vermin/flies and taking account the avoidance of nuisance for habitable rooms nearby;
- 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;
- Waste storage areas should not present any safety risks to users and should be well-lit;
- 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;
- Waste storage areas in basement car parks should be avoided where possible, but where provided, must ensure adequate manoeuvring space for collection vehicles;
- The capacity for washing down waste storage areas, with wastewater discharging to the sewer.

3.0 WASTE MANAGEMENT OBLIGATIONS

There are currently no specific guidelines in Ireland for the preparation of OWMPs and consequently this document considers national and regional waste policy, legislation and other relevant guidelines.

The Waste Management Act adopts the "polluter pays" principle, 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. Therefore the waste producer is required to ensure that all waste contractors employed by them are legally compliant with respect to waste transport and disposal.

A valid waste permit to transport waste must be held by the relevant waste contractor and 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 Facilities Management Company appointed for the management of the development shall be responsible for the implementation of all aspects of the Operational Waste Management Plan as detailed in this report.

4.0 OVERVIEW OF PROJECT

The overall lands located on the Malahide Road just south of Kinsealy Village and occupy an area of approximately 8.2 Ha (gross site area). The proposed development comprises a residential development of 193 residential units and all associated and ancillary infrastructure and open space provision. The residential element comprises the following:

- 123 No. of 3 Bed Houses
- 30 No. of 2 Bed Houses
- 20 No. of 3 Bed Duplex Units
- 20 No. of 2 Bed Apartments
- A Creche (283 sqm) is also proposed.

5.0 WASTE TYPES

The waste types that will be generated at the development include the following which will typically be discarded on a daily basis:

- Mixed Dry Recyclables (DryR)-is defined as a collection of solid waste materials that can be stored and collected in one bin or in separate bins to increase recycling value. These materials include cardboard, paper, newspaper, plastic film, plastic bottles, steel and aluminium cans.
- Organic Waste - organic waste is defined as waste that is organic in nature and comprises mainly of food, be it cooked or uncooked, from kitchens and other catering establishments and is generally classified as putrescible.
- Mixed Non Recyclables (NonR) – this is the residual waste that is the remaining waste material after separate diversion of waste components though reduction, reuse, recycling and food waste collections.
- Glass.

In addition to the above categories small quantities of the following wastes will also be generated but on a much lower frequency and volume but will also require appropriate management:

- Waste electrical and electronic equipment (WEEE) such as TVs, mobile phones, printers, radios batteries etc;
- Green Waste – organic materials generated from gardens and landscaping;
- Chemicals - paints, adhesives, detergents, etc;
- Lighting – including light bulbs;
- Metal – fixtures and fittings;
- Furniture and Textiles; and
- Bulky wastes – fridges, freezers, washing machines etc.

The EPA have published the 'Waste Classification – List of Waste & Determining if Waste is Hazardous or Non-Hazardous' Guidance which became valid from the 1st June 2015. This document assigns an EWC (European Waste Code) to all wastes. The List of Waste (LoW) codes (also referred to as European Waste Code or EWC) for typical waste materials expected to be generated during the operation of the proposed development are provided in Table 5.1 below.

Table 5.1 European Waste Catalogue

LoW Code	Description	Hazard Level
20 01 01	Paper and Cardboard	Non-Hazardous
20 01 02	Glass	Non-Hazardous
20 01 08	Biodegradable Kitchen Waste	Non-Hazardous
20 01 11	Textiles	Non-Hazardous
20 01 13	Solvents	Hazardous
20 01 19	Pesticides	Hazardous
20 01 25	Oils and Fats	Non-Hazardous
20 01 27	Printer Toner/Cartridges (Hazardous)	Hazardous
20 01 28	Printer Toner/Cartridges	Non-Hazardous
20 01 29	Detergents (Hazardous)	Hazardous
20 01 30	Detergents	Non-Hazardous
20 01 33/34	Batteries and Accumulators	Hazardous
20 01 35/36	WEEEs	Hazardous
20 01 39	Plastics	Non-Hazardous
20 01 40	Metals	Non-Hazardous
20 02 01	Green Waste	Non-Hazardous
20 03 01	Mixed Non-Recyclable Waste	Non-Hazardous
20 03 07	Bulky Waste	Non-Hazardous

The proposed development is likely to produce the wastes included in Table 5.1. The most common wastes remain Mixed Dry Recyclables, Organic Waste, Mixed Non-Recyclables, and Glass. The other wastes will be produced in small quantities and can be disposed at civic amenity centres.

6.0 WASTE QUANTITIES

6.1 Waste Arisings Houses

British Standard 5906:2005 Waste Management in Buildings – Code of Practice sets out typical weekly waste arisings for various types of buildings. For the purposes of the waste storage calculations the waste will be segregated and stored into three designated waste streams namely mixed dry recyclables, organic food waste and residual waste.

When using volume as the unit measurement for waste arisings, it is considered that a

60:25:10:5 split between mixed dry recyclables, mixed non recyclables, organic waste and glass waste is a best estimate fit for waste breakdown for the proposed development and typical residential living. The above equation can be used to estimate the waste arisings for each of the different residential types based on the number of bedrooms present in the dwelling unit. Table 6.1 presents the estimated volume of waste that will be generated each week by each of the residential units based on the number of bedrooms per unit.

Table 6.1 Estimated main waste generation volume for each house per week

Waste Stream	Waste Volume (litres/week)	
	2 bedroom unit	3 bedroom unit
DryR (60%)	102	144
NonR (25%)	43	60
Organic (10%)	17	24
Glass (5%)	9	12
Total	171	240

Assuming full occupancy rates for all 153 houses the total waste arisings for all the houses residential development have been calculated as shown in Table 6.2 below.

Table 6.2 Estimated main waste generation volume for the house per week

Waste Stream	Waste Volume (litres/week)	
	2 bedroom units	3 bedroom units
DryR (60%)	3,077	17,712
NonR (25%)	1,283	7,380
Organic (10%)	513	2,952
Glass (5%)	257	1,476
Total (100%)	5,130	29,520

6.2 Duplex and Apartment Waste

The Code of Practice was also used to estimate the weekly volume of waste generated by the duplexes and apartments in the development using the same methodology as the houses. Assuming full occupancy rates for all units the waste arisings for each apartment and duplex unit has been calculated as shown in Table 6.3 below.

Table 6.3 Estimated main waste generation volume for each duplex and apartment units per week

Waste Stream	Waste Volume (litres/week) 2 bedroom Apartment or Duplex
DryR (60%)	102
NonR (25%)	43
Organic (10%)	17
Glass (5%)	9
Total (100%)	171

The layout for the binstores for the apartments and duplexes is shown in Figure 7.2 in section 7.1. There is a shared garden which houses the bin stores for a total of 4 duplex and 4 apartments. Using the same Code of Practice, each one of the bin stores will have to accommodate the waste calculated in Table 6.4 below.

Table 6.4 Estimated main waste generation volume each duplex and apartment units per week

Waste Stream	Waste Volume (litres/week) Apartment and Duplex Unit
DryR (60%)	816
NonR (25%)	344
Organic (10%)	136
Glass (5%)	72
Total (100%)	1,368

Each apartment and duplex will produce approximately 171 litres of waste per week. In total all 20 apartments and 20 duplexs will produce approximately 6,840 litres of waste per week.

6.3 Crèche Waste

The Code of Practice was also used to estimate the weekly volume of waste generated by the crèche using a similar methodology but with the equation altered to fit the waste arisings associated with a childcare facility with a total floor area of 283 square meters. The crèche is estimated to generate 710 litres of waste per week. The total waste arisings for the crèche have been calculated as shown in Table 6.5 below.

Table 6.5 Estimated main waste generation volume for the crèche per week

Waste Stream	Waste Volume (litres/week)
	Crèche
DryR (60%)	426
NonR (25%)	177.5
Organic (10%)	71
Glass (5%)	35.5
Total	710

6.4 Total Waste

The British Standard 5906:2005 Waste Management in Buildings – Code of Practice was used to determine the total amount of waste produced by the development assuming full occupancy rates of all houses, apartments, duplexes, and the crèche.

It is therefore estimated that a total of 42m^3 of the main waste types will be generated by the proposed development on a weekly basis once full occupancy has been reached.

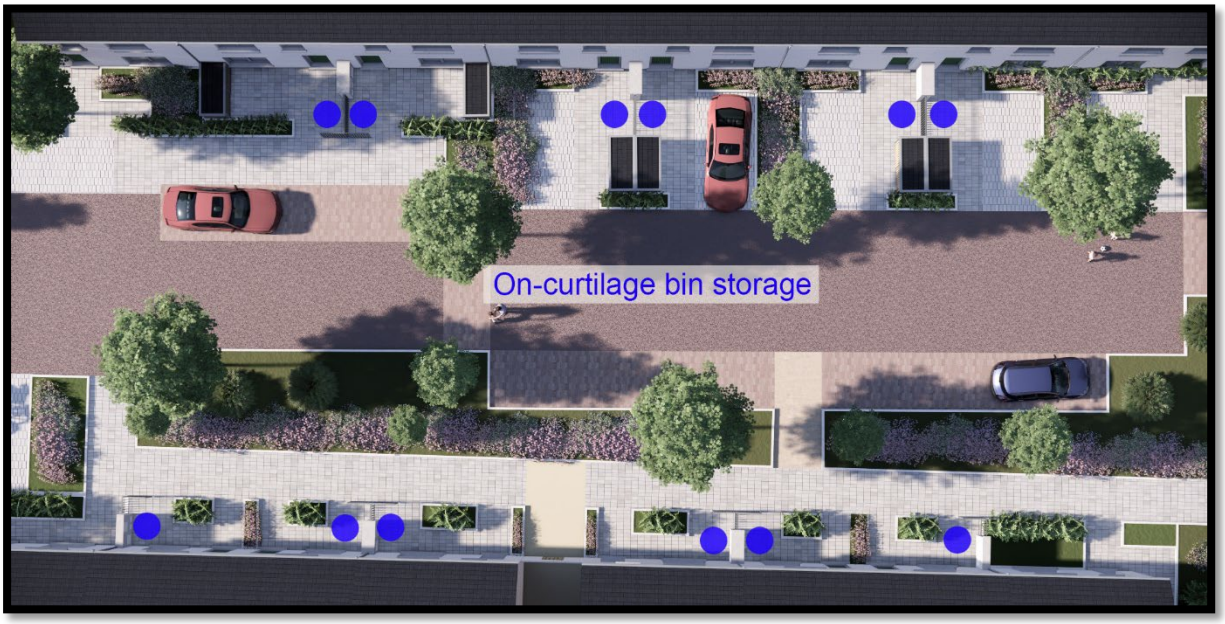
7.0 Waste Management Facilities

7.1 Introduction

The houses in the development will have their own individual external waste storage area located to the rear of the house or to the front if external access to the rear of the property is unavailable. In all cases where the waste storage area is located to the front of houses, the bins will not be observable from the adjacent road. The bins will be collected on the street on the designated collection date each week. The residences are responsible for moving their bins out

for collection while following all of the Bye-laws issued by Fingal County Council.

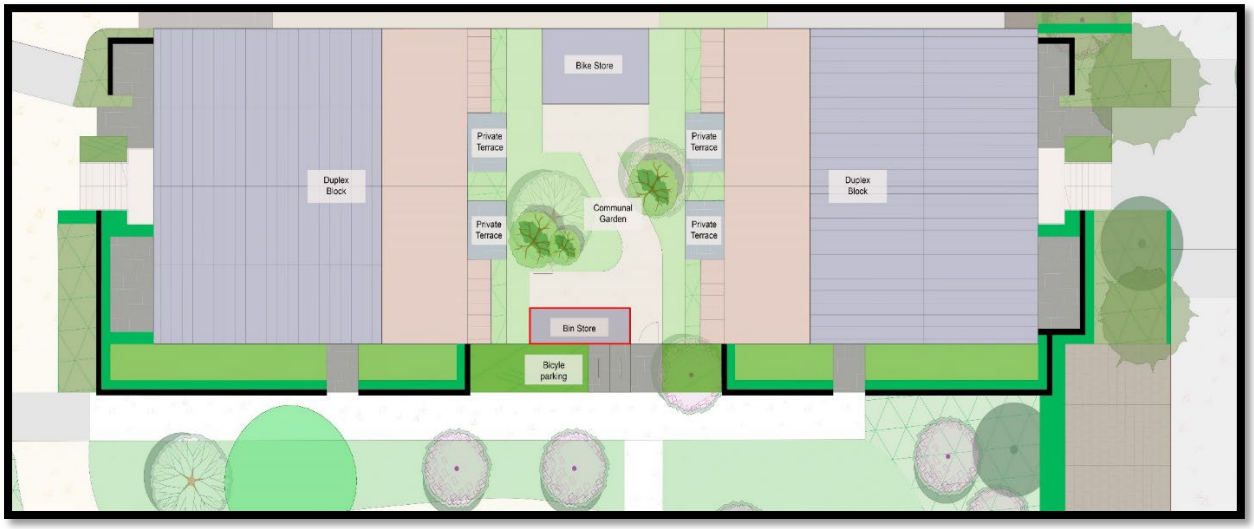
Figure 7.1 Typical bin stores locations for houses with no rear garden access



There are separate bin stores assigned for the duplex and apartment units. The shared garden in-between the duplex and apartment units will house the bin stores for a total of 4 apartments and 4 duplexes. The bin store locations are shown in Figures 7.2 and 7.3 below.

Figure 7.2 Bin store locations duplex and apartment units at the proposed development site

Figure 7.2 Bin store locations duplex and apartment units at the proposed development site



The nominated Facilities Management Company shall be responsible for waste management at the proposed development. All residential units shall be provided with an information brochure outlining the waste management strategy for the development which will show as a minimum the methods of waste segregation, waste storage within the accommodation units and at the centrally located bin stores, recycling initiatives that shall apply to the development and any other waste related matters concerning occupants of the residential units.

7.2 Common Waste Storage Areas (Bin Stores)

The common waste storage areas or bin stores have been designed to ensure safe access for all users in a brightly lit area, spacious enough for easy manoeuvrability, good ventilation and ready access for the control of vermin if required. The bin store also provides for sufficient access and egress to enable the bins to be easily moved from the stores to an appropriate collection point nearby. The bin stores all comply with the following requirements:

- A well-defined pedestrian route shall be marked from the relevant residential units to the nearest waste storage area.
- A non-slip surface shall be provided within the waste storage area.
- Adequate ventilation to avoid the creation of stagnant air or foul odours.
- Sensor controlled lighting.
- Appropriate wastewater drainage to allow for cleaning and disinfection.
- Provision of appropriate signage to inform residents of their obligation to reduce waste, segregate waste and to use the correct bins for each waste.
- The waste storage area shall be designed to provide safe access from the apartment units by mobility impaired persons.
- All waste storage bins shall be clearly labelled with exactly what type of waste materials may be deposited within them. Provision shall be made for sufficient segregated storage of mixed dry recyclables, mixed non-recyclables, organic waste and glass at each bin store.

7.3 Duplexes and Apartments

The duplex and apartment units secure bin storage are provided within the shared garden between each pair of duplex blocks. The bin store is adjacent to the garden gate allowing easy

transfer of bins out to the public realm for collection. Residents will be required to take their segregated waste materials to the designated bin store and to dispose of their segregated waste into the appropriate bins.

The specific bin allocation for the duplex and apartment units bin stores is presented in Table 7.1. This table shows the correct allocation of bin storage to accommodate all the waste that will be generated by the duplex units when operating at full capacity. Table 7.1 assumes a weekly emptying of the bin stores.

Table 7.1 Weekly bin requirement for the duplex and apartment units bin stores

Bin Store Location	Bins required for weekly storage			
	DryR	NonR	Organic	Glass
Duplex and Apartment	1 x 1100 L	1 X 660 L	1 X 240 L	1 X 120 L

7.4 Houses

Each house shall be required to segregate their waste into mixed dry recyclables, mixed non-recyclables, organic waste and glass. For mid-terrace houses, storage space for three bins side by side is provided on the front curtilage enclosed by railings and screened by planting. For end of terrace houses, bins can be stored in rear gardens with independent access. A number of mid-terrace houses also have shared laneway access to rear gardens and therefore have the option to store bins in the garden if desired.

The largest house size in terms of likely occupants is assumed for the three-bedroom house where the bin requirement is one 240 litre wheelie bin and two 140 litre wheelie bins for the mixed dry recyclables, mixed non- recyclables and organic waste respectively. Waste glass shall be stored separately and disposed of at a convenient bottle bank. The nearest bottle bank to the development is at the Clarehall Shopping Centre, which is located less than 3km from the furthest house in the development.

Other waste materials such as waste electrical and electronic equipment, chemicals, lighting, furniture and textiles may be generated infrequently by the house residents. Residents will be required to identify suitable temporary storage areas for these waste items within their own units and dispose of them accordingly.

7.5 Crèche

The crèche facility shall be required to segregate their waste into mixed dry recyclables, mixed non- recyclables, organic waste and glass. The specific bin allocation for the crèche is presented in Table 7.2. This table shows the correct allocation of bin storage to accommodate all the waste that will be generated by the crèche when operating at full capacity. Table 7.2 assumes a weekly emptying of the bin stores.

Table 7.2 Weekly bin requirement for the crèche bin stores

Bin Store Location	Bins required for weekly storage			
	DryR	NonR	Organic	Glass
Creche	1 x 1100 L	1 X 240 L	1 X 240 L	1 X 120 L

Waste will be stored in the crèche in indoor bins which will be regularly emptied into the bins in the bin store. Each bin in the bin store 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 relevant crèche bin store will be restricted to authorised crèche personnel, facilities management and waste contractors.

Other waste materials such as waste electrical and electronic equipment, chemicals, lighting, furniture and textiles may be generated infrequently by the crèche. Creche management will be required to identify suitable temporary storage areas for these waste items within the facility and arrange for collection by an appropriately licensed waste contractor.

7.6 Local Facilities

There is a bring bank located at Clarehall Shopping Centre, less than 3km from the furthest removed residential unit at the development. All glass generated by the housing units at the development can be handled here.

The closest civic amenity centre is located at Estuary Recycling Centre which is located 6.6km northwest of the development site. This civic amenity centre can be used for the disposal of other household wastes as outlined in Section 5. The Site also accepts WEEE, Light bulbs etc.

8.0 CONCLUSIONS

This OWMP has been prepared to show that the proposed residential development at Kinsealy shall be designed and managed to provide residents with waste management infrastructure that will minimise the generation of residual waste and maximise the opportunities for segregating and recycling waste generated by 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 and managed to ensure effective diversion from landfill wherever possible.

The waste management strategy presented in this report provides for sufficient waste storage capacity for the segregated waste types that will be generated at the residential development. Sufficient provision of appropriate waste storage capacity is provided for based on the estimated waste generation levels for the development when at full capacity.

In conclusion this report presents a waste strategy that fully complies with all relevant waste legislation, waste policies and best practice guidelines and will ensure effective waste management at the proposed development site.