
Windmill SHD



Operational Waste Management Plan

Client/ Applicant: Kimpton Vale Ltd.

Address: Windmill, Porterstown,
Clonsilla, Dublin 15

Plan prepared by:
AD Sustainability Consultancy Ltd.



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1.0 INTRODUCTION

This Operational Waste Management Plan (OWMP) has been prepared by AD Sustainability Consultancy Ltd. for a proposed housing development scheme at Windmill, Porterstown, Clonsilla, Dublin 15.

The proposed development relates to the provision of 211 no. apartments in four no. blocks (Blocks J, K, L and M), comprising 10 no. studio units, 68 no. 1 bed units and 133 no. 2 bed units, above an existing basement. Block J is a six storey block, including a penthouse level, containing 46 no. apartments. Block K is a six storey block, including a penthouse level, containing 46 no. apartments. Block L and M is an interlinked L-Shaped part six and part eight storey block, including a penthouse level, containing 119 no. apartments.

A communal residents amenity space is proposed at ground floor level of Block L-M.

The development also proposes the phased completion of the public open space area to the south and south west of the proposed apartments, which will serve both the proposed and existing residential units at Windmill.

The development includes landscaped communal courtyards, with ancillary bin storage, car and cycle parking and lift access to the basement below.

This is the second phase of the Windmill development. Phase 1 comprises a mix of duplex units (76 no. on the eastern part of the site) and 3/4/5 storey apartment blocks in five no. blocks to the north and east of the proposed development.

- Block A- 24 no. units;
- Block B- 21 no. units;
- Block C- 18 no. units;
- Block E- 24 no. units; and
- Block G- 31 no. units,

The main aims of this OWMP are to ensure that waste generated by residents when the development is completed and inhabited is managed so as to;

1. comply with all relevant legal requirements;
2. minimize adverse issues including litter, vermin and contamination; and
3. ensure that quantities of waste diverted from landfill disposal is maximised.

This OWMP outlines the strategy for the handling, transfer, storage and collection of waste.

It also identifies the likely waste streams generated and estimates the amounts of waste which will be generated by the new development when operational.

An Bord Pleanála has also requested that the submission;

1. outlines how the existing development is served in terms of waste management; and
2. confirms that sufficient bin storage facilities are provided for all users.

This has also been included within this OWMP.

As there is currently no specific guidance related to the preparation and content of operational waste management plans, this document has been developed using key sector guidance, best practice case studies and national and regional waste management planning requirements.

2.0 WASTE MANAGEMENT IN IRELAND- POLICY & LEGISLATION

2.1 National & Regional Level Policy

2.1.1 National level

Key waste management policy in Ireland goes back as far as 1998, when the Government's '**Changing Our Ways**' policy statement was launched. The key objective of this was the reduction in the country's reliance on landfill disposal. A key target within the document was at least a 35% of recycling of municipal waste.

'Preventing and Recycling Waste- Delivering Change' then followed in 2002 with the requirement for minimizing waste generation at source a key priority.

'Waste Management- Taking Stock & Moving Forward' was the next key waste management policy from the Irish Government in 2004. This was a review of progress on policy implementation to date.

The most recent policy document '**A Resource Opportunity- Waste Management Policy in Ireland**' in 2012, which is for the period up to 2020, outlined further steps the country was to take with a focus on resource efficiency and the elimination of municipal waste disposal to landfill. A mid term review of progress was completed in 2016 which has yet to be published.

Current waste management policy has been developed to ensure that Ireland meets the European Union's recycling targets for member states.

By way of example, the EU has set the following recycling targets for municipal waste:

- A 50% recycling rate by 2020; and
- A 5 yearly 5% increase in this target until 2035 when the recycling target will be 65%

The Environment Protection Agency also produces waste statistics on an annual basis, with historic trend data available on the 'Ireland's Waste Story' webpage. Annual data as far back as 2001 is presented with 2016 being the last full year's waste data. Key data for this most recent year includes:

- Waste Generated – Ireland produced 2,763,166 tonnes of municipal waste in 2016 (a 6% increase since 2014)
- Waste Recovered – the amount of waste recycled, used as a fuel in incinerators, or used to cover landfilled waste. In 2016, almost three quarters (74%) of municipal waste was recovered, (a 5% decrease from 2014);
- Waste Recycled – the waste broken down and used to make new items. Recycling also includes the breakdown of food and garden waste to make compost. The recycling rate in 2016 was 41% (the same as 2014); and
- Waste Disposed – the waste landfilled or burned in incinerators without energy recovery. Just over a quarter (26%) of municipal waste was disposed of to landfill in 2016.

2.1.2 Regional Level

The proposed development is located in the Local Authority area of Fingal County Council (FCC).

Fingal County Council is one of twelve council areas who form part of the Eastern Midlands Region, which has a waste management plan for the period 2015-2021.

The Plan is a statutory document prepared by the local authorities of the region, and is underpinned by National and European waste legislation

Its main objective is to ensure that waste generated within the region is managed in a safe and sustainable manner, and its primary focus is to view waste as a valuable resource outlining the key efforts required to make a transition from a linear to a circular economy.

The Plan has the following three main strategic targets for the Region.



The Fingal Development Plan 2017 – 2023 also sets out a number of requirements for how waste should be managed in new housing developments. Examples of such requirements include:

- Appropriate design measures for refuse storage areas;
- Source segregation and collection of waste; and
- Well designed facilities to accommodate a three bin collection system.

2.2 Legislative Requirements

Overall responsibility for waste management policy lies with the Department of Communications, Climate Action and Environment.

Waste policy and legislation are implemented largely by the Environmental Protection Agency and local authorities.

The main legislation governing waste management in Ireland is based on associated EU directives.

Key EU waste management directives include:

- The Waste Framework Directive (Directive 2008/98/EC on waste)
- The Landfill Directive (Directive 1999/31/EC on the landfill of waste)
- The Directive on the incineration of waste (Directive 2000/76/EC of 4 December 2000)
- The Packaging Waste Directive (Directive 94/62/EC on packaging and packaging waste)
- The End-of-Life Vehicles Directive (Directive 2000/53/EC on end-of-life vehicles)
- The Directive on waste electrical and electronic equipment (the WEEE Directive 2012/19/EU)

These Directives are implemented in Ireland by the Environmental Protection Agency Act 1992, the Waste Management Act 1996, the Waste Management (Amendment) Act 2001 and the Protection of the Environment Act 2003.

Several statutory instruments then deal with specific aspects of EU Directives.

The primary legislative instrument which governs waste management in Ireland and is applicable to this development project is the Waste Management Act 1996 as amended. It essentially covers all the main requirements for effective, safe and sustainable waste management.

Key Statutory Instruments supporting the Waste Management Act include:

- European Communities (Waste Directive) Regulations 2011 as amended;
- European Union (Waste Electrical and Electronic Equipment) Regulations 2014;
- European Union (Batteries and Accumulators) Regulations 2014 as amended;
- European Union (Household Food Waste and Bio-waste) Regulation 2015;
- European Union (Properties of Waste which Render it Hazardous) Regulations 2015;
- Waste Management (Packaging) Regulations 2014 as amended;
- Waste Management (Food Waste) Regulations 2009, as amended;
- Waste Management (Hazardous Waste) Regulations, 1998 as amended;
- Waste Management (Movement of Hazardous Waste) Regulations, 1998;

The 'Duty of Care' principle

One of the key principles outlined within the Waste Management Act 1996 and other waste legislation is the Duty of Care.

This means that the waste producer is responsible for waste from the time it is generated through until it is processed in the final destination i.e. landfill, treatment facilities.

In summary, key duty of care requirements on waste producers include:

- That waste is handed over to waste collectors who are permitted to collect that waste
- That waste collectors ensure waste is secured during the transportation of that waste to its final destination
- That final destination facilities have the appropriate licences to allow them to handle and process that waste

With this in mind, it is crucial that effective management arrangements are in place to allow the residents to fulfil their duty of care obligations via the management company, waste collection contractors and final waste destination facilities.

2.3 County Council Waste Bye-laws

Bye-Laws for the Storage, Presentation and Collection of Household and Commercial Waste were brought into force by Fingal County Council on 01 January 2007, cited as the '**Fingal County Council Storage, Presentation and Collection of Household Waste Bye-Laws 2006**'.

These Bye-laws outline a series of enforceable requirements on waste holders and collectors within the council area. Key sections within these Bye Laws include

- Storage of Waste
- Types of waste which may be collected
- Separation at source of waste (including dry recyclable waste and organic/bio-waste)
- Presentation of waste for collection
- Designated collection times

2.4 Regional Waste Management Service Providers and Facilities

Various contractors offer waste collection services for the residential sector in the Fingal County Council area.

Waste generated in the existing development is currently collected by Panda Waste.

Details of all the approved waste contractors i.e. those with waste collection permits for the region are available from the National Waste Collection Permit Office (NWCPO).

Having the appropriate waste infrastructure within the Eastern Midlands Region is a clear enabler for improving how waste is managed and processed to allow for more waste being diverted from landfill disposal. The Eastern Midlands Region Waste Management Plan recognizes the need to invest in its waste infrastructure and includes key actions and measures, for example:

'Planning and developing higher quality waste treatment infrastructure such as new processing, biological treatment, thermal recovery and pre-treatment facilities'

In terms of existing facilities present in Fingal County Council area itself, there are two recycling centres (Coolmine and Estuary) and 58 bring banks.

The Coolmine recycling centre is quite close to the development, as is the Blanchardstown Millenium Park bring bank. There are several other bring sites within relatively close vicinity to the development.

3.0 DESCRIPTION OF THE PROJECT

3.1 Location, Size and Scale of the Development

The proposed development relates to the provision of 211 no. apartments in four no. blocks (Block J, K, L and M), comprising of 10 no. studio units, 68 no. 1 bed units and 133 no. 2 bed units, above an existing basement.

- Block J is a six storey block, including a penthouse level, containing 46 no. apartments.
- Block K is a six storey block, including a penthouse level, containing 46 no. apartments.
- Block L and M is an interlinked L-Shaped part six and part eight storey block, including a penthouse level, containing 119 no. apartments. A communal amenity space is proposed at ground floor level of Block L-M.

A communal residents amenity space is proposed at ground floor level of Block L-M.

The development also proposes the phased completion of the public open space area to the south and south west of the proposed apartments, which will serve both the proposed and existing residential units at Windmill.

The development includes landscaped communal courtyards, with ancillary bin storage, car and cycle parking and lift access to the basement below.

This development represents phase 2 of the existing Windmill Park and Terrace section of the overall Windmill residential development.

4.0 ESTIMATED WASTE ARISING

4.1 Typical Waste Streams

The main waste streams that will be generated at the proposed development which will require regular collection include the following:

- Organic (food etc.) waste;
- Dry Mixed Recyclables (DMR) - includes waste paper (newspapers, magazines, leaflets etc.), metal food and drinks cans, cardboard, plastic packaging and bottles, aluminium cans and Tetra Pak cartons; and
- General Waste

In addition to these, there will be other waste streams generated in much lower volumes and/ or frequency. Such potential waste streams are presented in the following table:

Waste stream	Recycling/ Disposal method
Batteries	Batteries can be either taken to the nearest recycling centre or can be returned to retailers. It is a legal requirement for retailers to accept batteries if they sell them in their shops
Bulky items such as furniture, carpets, flooring etc.	Bulky items can be brought to the local recycling centre.
Cooking oil	Cooking oil should be brought to the local recycling centre in appropriate containers so as to minimize the risk of spillage during transport
Glass bottles and jars	Glass should be taken either to the local recycling centre or the nearby Blanchardstown bring bank which can accept glass bottles and jars
Green waste	<p>Green waste, such as waste material from plants etc. within the apartments can be disposed of in the organics waste bins.</p> <p>Other green waste in large volumes will be generated as a result of external landscaping activities. Contractors will be required to take all waste generated with them when they complete the work.</p>
Household hazardous waste, such as medicine, paint/ thinners etc.	<p>The vast majority of this stream in terms of volume is likely to be generated during maintenance works arranged by the management company, who will generally arrange for the appointed contractors to remove any waste materials.</p> <p>Such waste generated by residents should be taken to their local recycling centre.</p> <p>Waste medicine should be returned to the local pharmacy.</p>

Light bulbs/ fittings	Light bulbs/ fittings generated from maintenance activities in communal areas will be taken away by the external contractors completing the work. Light bulbs/ fittings generated by residents should be taken to the local recycling centre.
Textiles	Textiles should be either taken to the local recycling centre or donated at a local charity shop. The nearby Blanchardstown bring bank can accept textiles waste
Waste electrical and electronic equipment (WEEE), such as televisions, computers, printers, white goods etc.	WEEE should be taken to the nearest recycling centre

Table 1 - Other potential waste streams generated

These streams should be segregated at source to ensure compliance with waste legislation, best practice and also to maximise the re-use, recycling and recovery of the waste.

4.2 Estimated Waste Arisings

The amount of waste generated from the proposed development has been estimated using best practice reference sources including **BS 5906:2005 Waste Management in Buildings – Code of Practice** and relevant official waste generation and composition data available for the Republic of Ireland, the UK and the EU.

BS 5906:2005 includes an equation to calculate the weekly waste generated, which is based on the number of bedrooms and the number of dwellings. This has been used to calculate an initial weekly waste generated figure, which has then been uplifted based on the average amount of municipal waste generated in the Republic of Ireland compared to the UK average.

The information on the number of dwellings and number of bedrooms was obtained from the Schedule of Accommodation for this new development.

The estimated waste generation in litres for the main waste types for the proposed development is presented in the following table.

Main waste stream	Estimated weekly waste generated (litres)
Organic	2674.5
Dry Mixed Recycling	18721.5
General	14264
Total waste generated	35660

Table 2- Estimated weekly waste generation

5.0 WASTE STORAGE AND COLLECTION

This section provides information on how waste generated within the development will be segregated and stored and how the waste will be collected from the development.

In addition, and as mentioned previous, An Bord Pleanála has requested information on the current waste management arrangements for the existing development. This is also included within this section.

5.1 Existing waste storage and collection arrangements

There are currently three bin stores for the existing development. The following table summarises the bin numbers and types in each of the stores

Bin Store	Servicing	Number of 1100 litre general waste bins	Number of 1100 litre dry mixed recycling bins	Number of additional 1100 litre bins which could be housed in store
1	Windmill Square	2	1	5
2	Windmill Court	6	2	4
3	Windmill Terrace & Park	11	3	Nil

Table 3- Current waste storage arrangements

The following figure shows the location of each of the three existing bin stores in the context of the proposed new development.



Figure 1- Current waste bin stores

The management company have advised that these bins are fully utilized and are collected on a fortnightly basis, staggered with general waste bins collected one week with the dry mixed recyclables bins collected the next.

A member of the management company's personnel inspect the bin stores regularly and also bring the bins out to the kerbside for the designated collection day. They also return the bins to the stores once the waste collector has arrived on site and emptied the bins.

You can see from the table that bin stores 1 & 2, which serve the duplex units, have adequate additional capacity. Bin store 3, which serves the 118 apartments, has no additional storage capacity available.

5.2 Proposed waste storage and collection arrangements

This section has been prepared with due consideration given to the proposed site layout as well as best practice standards, and local and national waste management requirements including those of Fingal County Council.

In particular, the following guidance has been referenced:

- BS 5906:2005 Waste Management in Buildings – Code of Practice;
- DoEHLG, Sustainable Urban Housing: Design Standards for New Apartments, Guidelines for Planning Authorities (2018);
- Eastern Midlands Region Waste Management Plan 2015 – 2021;
- Fingal Development Plan 2017-2023; and
- Fingal County Council Storage, Presentation and Collection of Household Waste Bye-Laws 2006.

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

- Organic (food/garden) waste;
- Dry Mixed Recyclables (DMR);
- Mixed Non-Recyclables (MNR).

Individual waste bins will be available within each of the apartments to facilitate the source segregation of these three main waste types.

It is proposed that residents for each apartment will bring their waste to the assigned communal bin stores located in the basement area. The basement area will be readily accessible for all residents.

The proposed bin stores will be simple, well ventilated and accessible via cores located throughout the site, in locations convenient to the apartments and for collection by waste contractors. This is in line with objectives DMS 146 & 147 of the **Fingal Development Plan 2017- 2023**.

The proposed bin store locations are shown in Figure 2 on the following page.



Figure 2 Proposed basement layout

Using the predicted waste generation volumes presented in Table 2, the number of required waste bins have been estimated for the new development, which are based on weekly collection of each waste streams. These are presented in Table 4 below.

Segregated waste stream	Estimated waste generated (litres)	Estimated no. of bins
Organic	2674.5	11 * 240 litre
DMR	18721.5	17 * 1100 litre
General	14264	13 * 1100 litre
Total waste generated	35660	

Table 4- Estimated bin numbers per waste stream

The two bin stores have been sized to ensure ample footprint is available for the required number of bins.

Indeed, the bins stores were provisionally designed and sized to store the following number of bins:

- Bin Store 1: 19 * 1100 litre bins
- Bin Store 2: 26 * 1100 litre bins

The following table shows the actual number of bins estimated for each bin store. It also shows which of the blocks will use which bin store.

Bin store	Number of bins	Blocks assigned for use
A	6 * 1100 litre General Waste 7 * 1100 litre Dry Mixed Recyclables 5 * 240 litre Organics	J & K
B	8 * 1100 litre General Waste 11 * 1100 litre Dry Mixed Recyclables 7 * 240 litre Organics	L, M and existing Block G

Table 5- New bin store details

Based on the provisional design and sizing of the bin stores, this table shows that there will be ample storage for these estimated bin numbers.

It is proposed that waste generated within the apartments in the existing Block G is disposed of in the new bin store B in the basement rather than the current bin store 3. Additional bins have been assigned in bin store B to facilitate this. The main reasons for this proposed change are as follows:

1. It will free up some space in bin store 3, which is currently at capacity as advised previous. The revised arrangements will result in four fewer bins requiring storage in bin store 3; and
2. The new bin stores in the basement will be closer to Block G than the current bin store 3, meaning less distance to travel for residents when they need to take their waste to the external bins. Direct access to the basement will be available.

The management company will advise the existing residents of Block G of these proposed new arrangements.

All bins provided shall comply with BS EN 840 2012 to ensure that they can be emptied by the waste collection vehicles. All bins will also have lids to prevent litter escape.

Each bin will be clearly labelled and/ or colour coded to minimize the potential for cross contamination of the different waste streams.

Awareness signage will be also be erected within each of the bin stores and/ or on the bins themselves showing exactly which waste types can be placed in each bin.

Access to the bin stores will be restricted to authorised users (e.g. residents and facility management personnel) by means of a key or electronic fob access.

The residents will receive information from the management company regarding the waste management system in place within the development.

Two bin sizes are proposed for use in the bin stores namely 240 litre bins for organics waste and 1100 litre bins for general waste and mixed dry recycling. Further information on these bins is presented in Figures 2 & 3.

Figure 2 Typical 1110 litre bin- image and dimensions

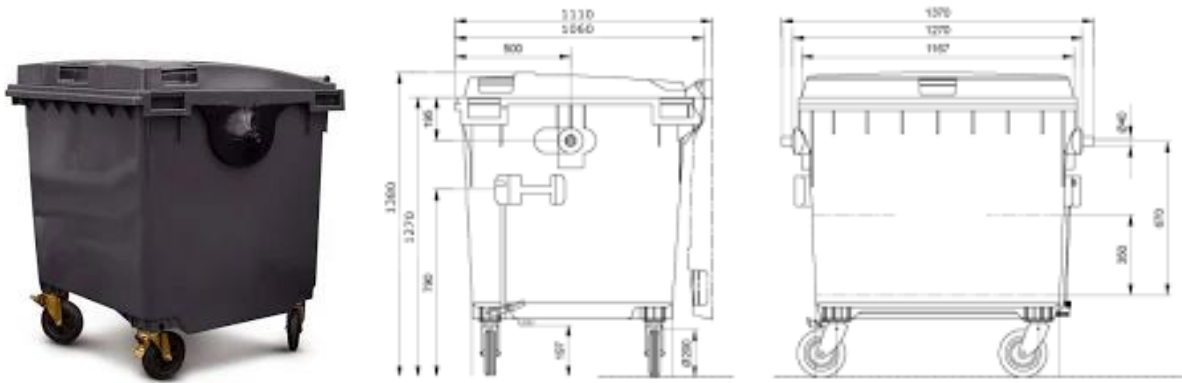
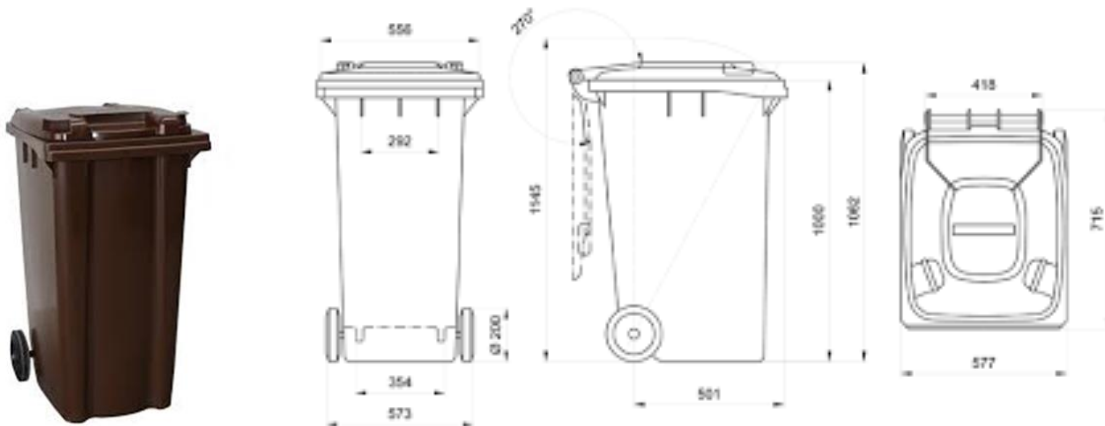


Figure 3 Typical 240 litre bin- image and dimensions



5.3 Waste Collection

There are numerous private contractors that provide residential waste collection in the Fingal County Council area.

The existing waste storage areas and bins are currently serviced by Panda Waste.

Any waste contractors servicing the proposed development must hold a valid waste collection permit for the specific waste types collected. All waste collected must be transported to registered/permited/licensed facilities only.

It is proposed that building management company personnel will remove the bins from each of the bin stores and have them ready for collection by the waste contractor on the scheduled collection day. The bins, when emptied, will then be returned to the bin stores.

Any brakes on the wheels of the larger 1100 litre bins shall be applied when the bins are both in storage and when at the kerbside for servicing by the waste contractor.

The bins will not be stored kerbside in a manner which might result in pathways being restricted or will create any hazard to traffic. Lids will also remain closed so as not to create an odour or litter nuisance.

All residents will be made aware of the waste collection arrangements as part of the waste management system information.

5.4 Waste Storage Area Design

The two bin stores have been designed in accordance with the general design requirements outlined within the '**Sustainable Urban Housing: Design Standards for New Apartments**' and will include key features such as:

- Bin storage for three separate waste streams;
- Adequate ventilation;
- Ample space to manoeuvre bins;
- Secure and safe; and
- Adequate lighting

The management company will be responsible for the upkeep of each of the stores and will be maintained to a high level of cleanliness at all times.

6.0 CONCLUSIONS

This OWMP outlines the proposed approach for the effective management of the waste streams generated from the new development.

It also provides an overview of the waste arrangements in place for the existing development.

An estimation of waste stream arisings and quantities generated has been made using recognized methodologies, case studies and best practice guidance. The estimated quantities of waste and the associated number of waste collection bins required clearly shows that there will be ample storage available to ensure the safe and secure storage of waste.

In relation to the existing waste storage provision across the three bin stores, these will remain in operation following the construction and operation of the new development.

This therefore confirms that there will be sufficient waste storage facilities and wider arrangements in place for the entire site.

The successful implementation of this OWMP will maximise the amount of waste generated in the development being diverted from landfill disposal.

7.0 BIBLIOGRAPHY

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