

OPERATIONAL WASTE MANAGEMENT PLAN

RE: STRATEGIC HOUSING DEVELOPMENT (SHD)

AT

THE FORMER O'DEVANEY GARDENS SITE, DUBLIN 7

APPLICANT BARTRA ODG LIMITED

13TH MAY 2021



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1.0 INTRODUCTION

This document presents the Operational Waste Management Plan (OWMP) for the control, management and monitoring of waste associated with a proposed residential development at O'Devaney Gardens, Stoneybatter, Dublin 7.

The development will consist of 1,047 no. residential units and all associated ancillary accommodation, site and development works. The Total Gross floorspace of the overall development is 102,940sqm, of which 100,646sqm is residential and 2294sqm are non-residential uses.

The **Objective of this Waste Management Plan** for the operation of the development is to maximise the quantity of waste recycled by providing sufficient waste recycling infrastructure, and to provide waste reduction initiatives and waste collection and waste management information to the residents of the development.

The **Goal of this Waste Management Plan** is to achieve a residential recycling rate of 50% of managed municipal waste by 2020 in accordance with *The Eastern-Midlands Region Waste Management Plan 2015-2021*.

The Waste Management Plan shall be integrated into the design and operation of the development to ensure the following:

- That sufficient waste management infrastructure is included in the design of the development to assist residents minimise the generation of mixed waste streams.
- That the principle of waste segregation at source is the integrated into the development by the provision of separate bin systems, signage and notifications.
- That the development's facility management company shall record the volumes and types of waste generated by the development to assess on an annual basis if the 50% recycling rate is being achieved.
- That all waste materials generated by site activities are removed from site by appropriately permitted waste haulage contractors and that all wastes are disposed of at approved waste licensed / permitted facilities in compliance with the Waste Management Act 1996 and all associated Waste Management Regulations.
- That the Facilities Management Company will manage wastes storage areas and provide annual bulky waste collection services to facilitate residents.

2.0 OPERATIONAL PHASE WASTE MANAGEMENT PLAN

The Operational Phase of the Waste Management Plan has been prepared in accordance with *The Eastern-Midlands Region Waste Management Plan 2015-2021* which defines the following Waste Targets:

- 1% reduction per annum in the quantity of household waste generated per capita over the period of the plan.
- Achieve a recycling rate of 50% of managed municipal waste by 2021.
- Reduce to 0% the direct disposal of unprocessed residual municipal waste to landfill.

The Operational Phase of the Waste Management Plan has been prepared with regard to relevant waste management policies and objectives of the *Dublin City Council Development Plan 2016 – 2022* as detailed below:

It is the Policy of Dublin City Council:

SI19: To support the principles of good waste management and the implementation of best international practice in relation to waste management in order for Dublin city and the region to become self-reliant in terms of waste management.

SI20: To prevent and minimise waste and to encourage and support material sorting and recycling.

SI21: To minimise the amount of waste which cannot be prevented and ensure it is managed and treated without causing environmental pollution.

SI22: To ensure that effect is given as far as possible to the 'polluter pays' principle.

It is an Objective of Dublin City Council:

SIO15: To provide for municipal/public recycling and recovery facilities in accessible locations throughout the city.

SIO16: To require the provision of adequately-sized recycling facilities in new commercial and large-scale residential developments, where appropriate.

SIO19: To implement the Eastern-Midlands Regional Waste Management Plan 2015–2021 and achieve the plan targets and objectives.

The communal waste storage areas shall be designed in accordance with *Appendix 10 – Guidelines for Waste Storage Facilities – Dublin City Council Development Plan 2016 – 2022 as reproduced below:*

10.1 Standards for Apartments

Waste storage issues should be considered at the initial apartment design stage to ensure access for all (including people with disabilities) in a brightly lit, safe and well-signed area, spacious enough for easy manoeuvrability, good ventilation and ready access if required for the control of potential vermin. Where storage is provided in a basement area, sufficient access and egress must be provided to enable receptacles to be moved easily from the storage area to an appropriate collection point on the public street nearby.

The following are also requirements:

- Receptacles that are designed for reuse, with the exception of a specific area designated by a local authority as being only suitable for the collection of non-reusable receptacles such as bags, ideally of 1,100 litre capacity, must be used
- To provide a three-bin collection system for residents in communal collection schemes, for each type of waste: general waste, dry recyclables and organic food/garden waste. A proposal on the three-bin system including bin quantity, type and frequency of collection must be submitted in writing to the Waste Regulation Unit in Dublin City Council for agreement.
- Sufficient space must be provided to accommodate the collection of dry recyclables and organic kitchen waste/ garden waste.
- Suitable wastewater drainage points should be installed in the receptacle bin storage area for cleaning and disinfecting purposes.

Section 3.0 below describes how the waste storage areas of the development shall be designed in accordance with *Appendix 10 – Guidelines for Waste Storage Facilities – Dublin City Council Development Plan 2016 – 2022 as reproduced below:*

The OWMP has been prepared with regard to *British Standard BS 5906:2005 Waste Management in Buildings-Code of Practice* which provides guidance on methods of storage, collection, segregation for recycling and recovery for residential building.

Section 3.0 below defines how the management of domestic wastes including 3 - bin waste systems for the segregation of waste at source together with the communal waste storage areas have been designed with regard to *Section's 4.8 and 4.9 Refuse Storage of The Department of Housing, Planning and Local Government – Sustainable Urban Housing : Design Standards for New Apartments – Guidelines for Planning Authorities. 2018 which is reproduced below.*

Refuse Storage

4.8 Provision shall be made for the storage and collection of waste materials in apartment schemes. Refuse facilities shall 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.

4.9 The following general design considerations 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.

Ref. Section's 4.8 and 4.9 Refuse Storage of The Department of Housing, Planning and Local Government – Sustainable Urban Housing : Design Standards for New Apartments – Guidelines for Planning Authorities. 2018.

Key Aspects to achieve Waste Targets

- All residential apartment units shall be provided with information on the segregation of waste at source and how to reduce the generation of waste by the Facilities Management Company.
- All units shall have sufficient space for the storage of a 3-bin waste system within the kitchen areas to facilitate the segregation of waste at source.
- All waste handling and storage activities shall occur in the dedicated communal apartment waste storage areas.
- The development's Facility Management Company shall appoint a dedicated Waste Services Manager to ensure that waste is correctly and efficiently managed throughout the development.
- The Operational Phase of the Waste Management Plan is defined by the following stages of waste management for both the residential and commercial aspects of the development:

Stage 1	Occupier Source Segregation
Stage 2	Occupier Deposit and Storage
Stage 3	Bulk Storage and On-Site Management
Stage 4	On-site treatment and Off-Site Removal
Stage 5	End Destination of wastes

The operational phase of the WMP has been prepared with regard to *British Standard BS 5906:2005 Waste Management in Buildings-Code of Practice* which provides guidance on methods of storage, collection, segregation for recycling and recovery for residential building and with consideration of Dublin City Council's domestic waste reduction and segregation at source requirements.

3.0 RESIDENTIAL UNITS DOMESTIC WASTE MANAGEMENT

The Facilities Management Company shall be responsible for the implementation of all aspects of the Domestic Waste Management Plan which are detailed as follows.

The Facilities Management Company shall employ an appropriately qualified and experienced staff member who will be responsible for all aspects of waste management at the development.

All accommodation units shall be provided with a Waste Management Information document, prepared by the Facilities Management Company, which shall clearly state the methods of source waste segregation, storage, and recycling initiatives that shall apply to the Management of the development. This Information document shall be issued to all residential units on an annual basis.

Houses / Duplex

The design of the houses / Duplex units shall provide sufficient internal kitchen space for the storage of up to 10kg of general domestic waste, green recyclable waste and organic waste. Each town house shall have sufficient external space to allow the storage of 3 x 220 litre wheelie bins. (Grey, Green & Brown).

Apartments

The design of the residential apartment units shall provide sufficient internal kitchen space for the storage of up to 10kg of general domestic waste, green recyclable waste and organic waste. Each apartment / unit shall include waste storage bins which will be of such a size that will allow their easy manual handling to be brought to the communal waste storage areas.

It shall be the responsibility of the Facilities Management Company to ensure that appropriate signage is provided in each apartment lobby/entrance hall notifying apartment residents of their obligations to recycle domestic waste items in accordance with the requirements of the contracted Waste Collection contractor and to inform residents of the location of the closest civic amenity centres and bring- banks (Grangegorman and Collins Avenue) and the nature of waste material that can be accepted.

It shall be the responsibility of the Facilities Management Company to ensure that all domestic waste generated by apartment residents is managed to ensure correct storage prior to collection by an appropriately waste permitted waste collection company on a weekly basis.

Domestic kitchen 3 bin waste systems



Apartments - Common Waste Storage Areas

The residential apartment blocks shall be served by 4 no. individual communal waste storage areas at basement level and shall include clearly visible guidelines on the appropriate segregation of different waste types.

Signage to inform residents indicating the location of the local Recycling Centres and the nature of waste materials that can be brought and deposited there.

Signage to inform residents of their obligations to reduce waste, segregate waste within the home and dispose of waste in the correct bin will be clearly posted within the waste storage area.

All waste storage bins shall be clearly labelled with exactly what type of waste materials may be deposited within them.

The communal waste storage areas shall be designed to include the following aspects:

- A defined pedestrian route shall be marked from the apartment buildings to the waste storage area.
- A non-slip surface shall be provided within the waste storage area.
- The waste storage area shall be located in a delineated area adjacent the apartment building.
- The waste storage shall be passively ventilated.
- The waste storage area shall be fitted with sensor lighting.
- The waste storage area shall be fitted with CCTV cameras and associated signage.
- The waste storage area shall be designed to provide safe access from the apartment units by mobility impaired persons.
- A dedicated and clearly labelled area shall be provided in which mobility impaired persons may place wastes into receptacles at a lower level which will be subsequently transferred to the bulk storage bins on a daily basis by the Facilities Management Company.
- The waste storage area shall include ground drainage to allow for its regular cleaning and disinfection.
- The Facilities Management Company shall engage a mobile bin cleaning service provider to clean waste bins on a monthly basis.
- Sufficient domestic waste storage areas shall be provided throughout the development.
- Each communal waste storage area shall contain brown organic waste bulk bins. Appropriate signage shall be placed on all brown bins informing residents of the exact nature of organic waste that can be placed in the bin. Signage will also state that all organic waste must be placed within biodegradable bags before placing in the bulk bin.
- Each communal waste storage area shall contain a biodegradable waste bag dispenser which will facilitate and encourage residents of apartments and duplexes to separately segregate food and organic waste within their apartments in a dedicated bin.
- A waste battery box shall be provided in each bin store area which shall be periodically emptied by the Facility Management Company at a facility that accepts waste batteries.

The Facilities Management Company shall conduct at least weekly inspections of the waste storage areas and shall sign a weekly check list which shall be displayed within the area.

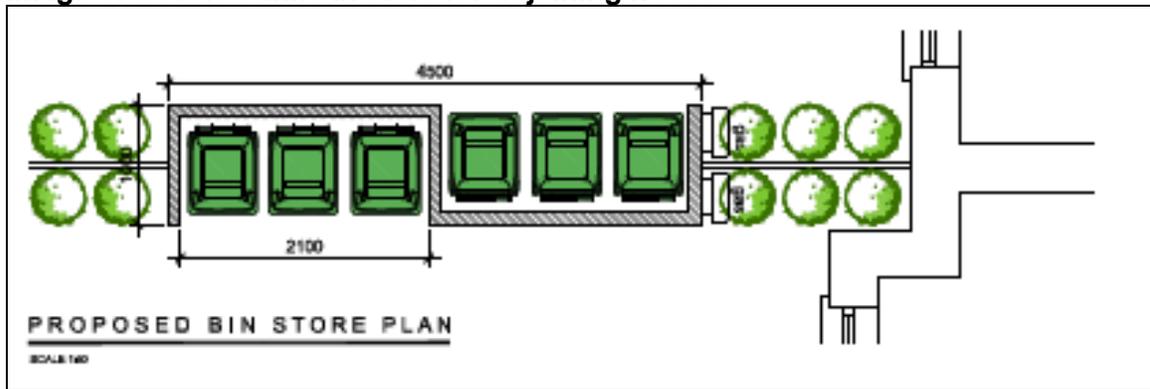
The Facilities Management Company shall ensure that an adequate supply of biodegradable organic waste bags are in place at all times.

It shall be the responsibility of the Facilities Management Company to maintain and ensure the cleanliness of all waste storage areas to prevent odours and the attraction of vermin.

Image of a communal waste storage area



Image of double bank bin store for adjoining houses



Waste Collection Contractor

The Facilities Management Company shall appoint a Waste Collection contractor capable of collecting Grey (mixed waste bins), Green (dry recyclable bins) and Brown (organic waste bins) from the waste storage areas on a weekly basis. The name of the waste collection contractor once appointed shall be forwarded to the Environment Department of Dublin City Council.

Waste Management & Record Keeping

The Facilities Management Company shall maintain a weekly register detailing the quantities and breakdown of general mixed domestic waste, recyclable waste and organic waste wastes removed from the development. Supporting documentation shall be provided by the Waste Collection Contractor on a monthly basis. This will allow for waste recycling targets to be tracked to achieve the 50% recycling target.

The Facilities Management Company shall prepare an annual information report for all residential units detailing the quantities and waste types generated by the development for the previous year. The report shall include reminder information on the correct segregation at source procedures and the correct placement of wastes in the waste storage area. Other aspects of ongoing waste management continuous improvement shall also be stated. This annual report shall also be submitted to Dublin City Council's Environment Department.

Annual Bulky Waste & WEEE Collections

The Facilities Management Company shall provide a bulky waste and WEEE collection and transport service to the closest recycling centres on an annual basis which will allow residents to have bulky items such as appliances and furniture removed from their houses and apartments and transported to a licenced facility. This initiative will also reduce the potential for illegal waste collections and fly-tipping in the local area.

4.0 WASTE MANAGEMENT DUTIES OF THE FACILITY MANAGEMENT COMPANY

The Facilities Management Company shall be responsible for the implementation of all aspects of the Domestic and Amenity Areas Waste Management Plan which are detailed as follows:

- The Facilities Management Company shall employ an appropriately qualified and experienced staff member who will be responsible for all aspects of waste management at the development.
- All accommodation units shall be provided with a Waste Management Information document, prepared by the Facilities Management Company, which shall clearly state the methods of source waste segregation, storage, and recycling initiatives that shall apply to the Management of the development. This Information document shall be issued to all residential units on an annual basis.
- It shall be the responsibility of the Facilities Management Company to ensure that appropriate signage is provided in each apartment lobby/entrance halls notifying apartment residents of their obligations to recycle domestic waste items at source.
- It shall be the responsibility of the Facilities Management Company to ensure that all domestic waste generated by apartment residents is managed to ensure correct storage prior to collection by an appropriately waste permitted waste collection company on a weekly basis.
- The Facilities Management Company shall conduct daily inspections of the waste storage areas and shall sign a daily check list which shall be displayed within the area.
- The Facilities Management Company shall ensure that an adequate supply of biodegradable organic waste bags are in place at all times.
- It shall be the responsibility of the Facilities Management Company to maintain and ensure the cleanliness of all waste storage areas to prevent odours and the attraction of vermin.
- The Facilities Management Company shall engage a specialist cleaning contractor on a regular basis to clean and sterilise all communal waste storage areas.
- The name of the waste collection contractor(s) once appointed shall be forwarded to the Environment Department of Dublin City Council.
- The Facilities Management Company shall be responsible for the maintenance of all waste bins located in the following communal spaces :
 - Meeting Rooms
 - Residents amenity spaces
 - Communal garden, terraces and courtyards

- The Facilities management company shall manage waste generated at all communal spaces and shall similarly be segregated into grey (mixed waste), green (dry recyclable), brown (organic) and cardboard packaging waste.

5.0 WASTE MANAGEMENT IN COMMUNAL AREAS

The communal areas of the development will include 3-bin waste segregation systems.

Colour coded and clearly labelled waste bins for plastics, paper & cardboard, organic materials and non-recyclable general waste shall be installed in communal areas/rooms for easy and clear segregation by residents, an example of which is shown below.

Image of internal communal space waste segregation recycling system



Image of external communal areas waste segregation recycling system



6.0 WASTE MANAGEMENT AT THE CRECHE

Waste generated by the creche shall be separately managed by the operators of the creche who shall engage a commercial waste contractor to collect waste generated.

Wastes from the creche shall be stored within the curtilage of the premises and shall be segregated into grey (mixed waste), green (dry recyclable), brown (organic) and cardboard packaging waste. It is predicted that up to 320kg of waste would be generated per week at the creche.

7.0 WASTE MANAGEMENT AT THE RETAIL UNITS & CAFE

Waste generated by the retail units and cafe shall be managed by the operators of the unit who shall engage a commercial waste contractor to collect waste generated.

Wastes from the retail and café units shall be stored within a dedicated, separate and lockable commercial waste area within the basement bin store and shall be segregated into grey (mixed waste), green (dry recyclable), brown (organic) and cardboard packaging waste. It is predicted that up to 11,000 litres of waste would be generated per week by the retail units.

8.0 WASTE TYPES & QUANTITIES GENERATED

The 2016 EPA Publication, *National Waste Prevention Programme, 2015 Annual Report* states,

“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. This indicates success in national campaigns and awareness as regards waste minimisation – though effects of reduced consumption are also likely to have contributed. In addition, it suggests an economy and society that are improving the efficiency of consumption patterns with respect to waste generation.”

A value of 0.942Kg of waste generated per person per day has been therefore assumed for the purposes of this report to estimate the volume of waste to be generated at the proposed residential development.

The total weekly domestic waste generated by the fully occupied development is calculated to be c. 131m³/week.

Table 1 Domestic waste generation per day/week

Waste Type	% Waste	Kg/week	Kg/day
Organic waste	30.6	7476	1068
Paper	12.5	3054	436
Cardboard	3.6	880	126
Composites	1	244	35
Textiles	15.5	3787	541
Plastics	13.6	3323	475
Glass	3.4	831	119
Metals	3.1	757	108
Wood	1.2	293	42
Hazardous municipal waste	0.9	220	31
Unclassified combustables	1.4	342	49
Unclassified incombustables	1.2	293	42
Fines	11.7	2858	408
Bulky Waste & WEEE	0.3	73	10
Totals	100	24431	3490

9.0 COMMUNAL WASTE STORAGE AREA DESIGN

The development shall have 4 no. basement level communal bin storage areas.

The dimensions of standard 1100 litre bin are:

Width (mm)	1.4
Depth (mm)	1.2
Height (mm)	1.5
Floor Area per bin (m ²)	1.7

To allow free access to the bins and provide sufficient space for their movement, the required bin store area = bin floor area x 1.5.

Table 2 Communal Bin Store Area Minimum Requirements

ODG Block Ref	Total Bin Area (m ²)
B02	28
B03 Creche	10
B05	127
B06	34
B07	88
B08	9
B09	59
B10	34

10.0 WASTE COLLECTION STRATEGY

All bulk waste bins shall be brought from the apartments communal bin storage areas to the designated demarcated bin collection areas within the development at road-level by the Facilities Management staff.

The development shall include 8 No. waste bin collection points as follows:

Collection Point 1	Serving Block 02	(Area 7m ²)
Collection Point 2	Serving Block 05	(Area 29m ²)
Collection Point 3	Serving Block 06	(Area 9m ²)
Collection Point 4	Serving Block 07	(Area 22m ²)
Collection Point 5	Serving Block 08	(Area 4m ²)
Collection Point 6	Serving Block 09	(Area 14m ²)
Collection Point 7	Serving Block 10	(Area 9m ²)

Emptied bins shall be returned to the bin storage areas immediately following collection.

Domestic waste bins shall be separately collected from houses.

Appendix II presents the waste collection vehicle dimensions and turning dimensions.

Bulk bin transport from bin stores to collection point



11.0 BRING BANK AREA DESIGN

A charity related bring bank shall be installed within the development to facilitate the segregation of glass and aluminium within the development and to further assist residents divert these waste streams away from mixed waste.

The Bring Bank will be comprised of 3 glass bins and 1 aluminium can bins. The bring bank shall be located set back from an internal roadway on a concrete plinth to allow for collection vehicles to safely empty the bins.

A standard 2,500 litre glass/can recycling bin dimensions are:

L	1400mm
W	1200mm
H	1750mm
Bin Footprint Area	1.7m ²
4 Bin Footprint Area	6.8m ²

Image of glass and aluminium recycling bring bank



12.0 CONCLUSIONS

The proposed O'Devaney Gardens residential development shall be designed and managed to provide residents with the required waste management infrastructure to minimise the generation of un-segregated domestic waste and maximise the potential for segregating and recycling domestic waste fractions.

The **Objective** of this Waste Management Plan is to maximise the quantity of waste recycled by residents by providing sufficient waste recycling infrastructure, waste reduction initiatives and waste collection and waste management information services to the residents of the development.

The **Goal** of this Waste Management Plan is to achieve a residential recycling rate of 50% of managed municipal waste by 2021 (and future targets in subsequent Regional Waste Management Plans).

Residents will be provided with waste recycling and waste disposal information by the development's Facility Management Company who will be responsible for providing clean, safe and mobility impaired accessible communal waste storage areas for the apartment block.

The Facility Management Company shall maintain a register of all waste volumes and types collected from the development each year including a break-down of recyclable waste and where necessary, shall introduce initiatives to further encourage residents to maximise waste segregation at source and recycling. They shall also provide an annual bulky waste and WEEE collection service for all residents.

The development shall be designed to provide adequate domestic waste storage and segregation space for each residential unit as a 3-bin kitchen system. This will promote the appropriate segregation at source of domestic generated waste from all residential units at the development.

Communal waste bin storage areas shall be designed in a manner to ensure that appropriate information and signage for the correct disposal and recycling of waste is available for residents.

The Facility Management Company shall prepare an annual report for Dublin City Council and residents of the development on the quantities of waste generated within the development to demonstrate how waste reduction and recycling targets are being achieved with regard to the targets defined in *The Eastern-Midlands Region Waste Management Plan 2015-2021*.

APPENDIX I

Bin Store Locations



APPENDIX II

Bin Collection Vehicle dimensions and minimum turning requirements

