Operational Waste Management Plan

for

SHD Development at Newtown, Malahide Road

Doc No. WS-07-A

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1.0 Introduction

1.1. Background

Joseph O'Reilly Consulting Engineers were commissioned by Claregrove Developments Ltd to prepare this Operational Waste Management Plan (OWMP) for the proposed Strategic Housing Development at Newtown, Malahide Road, Dublin 17. The OWMP has been prepared to ensure that the management of waste during the operational phase of the proposed development is undertaken in accordance with current legal and industry standards including, the Waste Management Act 1966-2011 as amended and associated Regulation, Protection of the Environment Act 2003, Litter Pollution Act 2003, The Eastern Midlands Region (EMR) Waste Management Plan 2015-2021 and the Dublin City Council (Storage, Presentation and Segregation of Household and Commercial Waste) Bye Laws (2018). This OWMP aims to provide an extensive strategy for storing, handling, collection and transport of the wastes generated at site.

The OWMP aims to ensure maximum recycling, reuse and recovery of waste with diversion from landfill, wherever possible. The OWMP also seeks to provide guidance on the appropriate collection and transport of waste to prevent issues associated with litter or more serious environmental pollution (e.g. contamination of soil or water resources). The plan estimates the type and quantity of waste to be generated from the proposed development during the operational phase and provides a strategy for managing the different waste streams.

2.0 Project Description

The application site contains a Circle K filling station and vacant commercial buildings, including a former motor showroom (Crossan Motors) with offices, a tyre centre and a commercial workshop and office. The site is bound by a local residential access road and Clare Village residential apartments to the east and south east, Grove Lane to the south west, a tyre centre (Fast Fit) to the north and Malahide Road (R107) to the west. The location of the proposed development site is shown in Figure 1 below

Figure 1

2.1 Site Location & Existing Land Use

The application site contains a Topaz filling station and vacant commercial buildings, including a former motor showroom (Crossan Motors) with offices, a tyre centre and a commercial workshop and office. The site is bound by a local residential access road and Clare Village residential apartments to the east and south east, Grove Lane to the south west, a tyre centre (Fast Fit) to the north and Malahide Road (R107) to the west.

The topography of the site slopes from the southwest to the northeast with a slope across the site from the northwest (Malahide Road) to the southeast (rear Access Road). There is approximately 2.4m fall between the highest and lowest parts of the site.

2.2 Size and Scale of the Proposed Development

The proposed development will consist of 331 residential units, built in two blocks (Block A to the southwest and Block B to the north), ranging in height from 8 to 10 storey's. The 331 no. units proposed consist of the following:

- 82 no. 1-bedroom units
- 239 no. 2 bedroom units

- 10 no. 2-bedroom duplex units

Block A contains a double height ground floor level containing two no. commercial units (for Class 1- Shop / Class 2- Office / Restaurant / Café use), a reception area, and an internal / undercroft ground floor car park accessed off Grove Lane incorporating bicycle parking and refuse storage areas. 2 no. duplex units over two levels are located to the rear of Block A;
Block B contains a double height ground floor level containing ancillary communal support facilities and amenities, which includes a reception area, a shared work space, a gym and a laundry, a commercial unit (for Class 1- Shop / Class 2- Office / Restaurant / Café use), and a childcare facility, with associated outdoor play area. 8 no. duplex units are located to the rear of Block B over two levels. Block B includes an internal / undercroft car park area over four levels (including partial basement) to be accessed from the Malahide Road and incorporating car, motorcycle, bicycle parking and refuse storage areas;
Block B contains an internal communal amenity space at seventh floor level, lettable storage space from first to eighth floor level and office space from first to sixth floor level and eighth floor level.

2.3 Typical Waste Categories:

The typical non-hazardous and hazardous wastes that will be generated at the proposed development will include the following;

- Organic waste – food waste and green waste generated from plants/flowers.
- Dry mixed recyclables (DMR) – includes waste paper(including newspapers, magazines, brochures, catalogues, leaflets) cardboard and plastic packaging, metal cans, plastic bottles, aluminium cans, tins and Tetra Pak cartons;
- Mixed Non-Recyclable (MNR)/General Waste.
- Glass

In addition to the typical waste materials that will be generated at the development on a daily basis, there will be some additional waste types generated in small quantities which will need to be managed separately including;

- Green/garden waste may be generated from internal plants and external landscaping;
- Waste electrical and electronic equipment (WEEE) (both hazardous and non-hazardous);
- Chemicals (paints, adhesives, detergents, etc.).
- Light bulbs;
- Textiles (rags);
- Waste cooking oil (if any generated by the residents); and
- Furniture (and from time to time other bulky wastes).
- Printer cartridges/toners.
- Batteries (both hazardous and non-hazardous).

Wastes should be segregated into the above waste types to ensure compliance with waste legislation and guidance while maximising the re-use, recycling and recovery of waste with diversion from landfill wherever possible.

3.0 Proposed Development Estimated Waste Quantities

The estimated waste quantities below were calculated in accordance with Section 4.7 of BS5906:2005 Waste Management in Buildings – Code of Practice and are based on figures from recent published data and data from numerous other similar developments in Ireland. The estimated volume of waste that will be generated from the residential units has been determined based on the predicted occupancy of the units, while the floor area of the creche unit and retail units has been used to predict waste estimates.

The estimated waste for the development is shown in the table 3.1 below;

Total Estimated Waste for Block A & Block B

Waste Type	Residential (Combined)	Retail Units (2no Combined)	Restaurant /Café	Creche	Services & Amenities
No. of Units/ floor area	331 Units	160m²	233m²	198m²	1203m²
Organic Waste	4.63	0.05	0.24	0.02	0.13
DMR	34.99	1.01	0.57	0.72	1.19
Glass	0.93	0.03	0.01	0.00	2.90
MNR	19.53	0.42	0.64	0.32	1.26
Waste Vol (m³/week)	**60.08**	**1.504**	**1.46**	**1.06**	**5.48**

Total Estimated Waste for Block A

Block A			
Waste Type	Residential	Retail Units (2no Combined)	Restaurant /Café
No. of Units/ floor area	93	64m²	233m²
Organic Waste	1.30	0.02	0.24
DMR	9.83	0.40	0.57
Glass	0.26	0.01	0.01
MNR	5.49	0.17	0.64
Waste Vol (m³/week)	**16.88**	**0.6016**	**1.46**

Total Estimated Waste for Block B

Block B				
Waste Type	Residential	Retail Units (2no Combined)	Creche	Services & Amenities
No. of Units/ floor area	238	96m²	198m²	547m²
Organic Waste	3.33	0.03	0.02	0.06
DMR	25.16	0.60	0.72	0.54
Glass	0.67	0.02	0.00	1.32
MNR	14.04	0.25	0.32	0.57
Waste Vol (m³/week)	**43.20**	**0.9024**	**1.06**	**2.49**

Table 3.1

The predicted total waste generated from the residential units based on the Code of Practice is as follows:

- Block A – 17.31m³
- Block B - 52.73m³

4.0 Proposed Waste Storage and Collection

This section provides information on how waste generated within the development will be stored and how the waste will be collected from the development. This has been prepared with consideration of the proposed site layout as well as the local and national waste management requirements including those of Dublin City Council. In particular, consideration has been given to the following documents;

- BS 5906:2005 - Waste Management in Buildings – Code of Practice.
- Dublin City Council Development Plan 2016 – 2022 (Appendix 10)
- Dublin City Council : Waste Bye Laws for the Storage, Presentation and Collection of Household and Commercial Waste (2018);
- EMR Waste Management Plan 2015-2021: and
- DoEHLG, Sustainable Urban Housing; Design Standards for New Apartments, Guidelines for Planning Authorities (2018).

4.1 Proposed Waste Storage Areas

Two dedicated communal Waste Storage Areas (WSA's) have been allocated within the development design for the residents. The WSAs are located internally, on the ground floor carpark for both Block A & Block B. Initially there was 3 x WSA's in Block B, located beside the lift cores but due to the high number of 1100L bins required it was decided to install 2 x Epac mini compactors which reduced the number of WSA's from three to one in Block B.

In finalising this report it was identified that an additional shared WSA is required in Block B for commercial waste from the retail units and creche. A suitable location would be the proposed motorcycle storage room which is located beside the lift core on the western side of Block B beside the crèche. It is considered that the inclusion of such an additional waste area could be provided for by way of condition on any grant of permission.

Block A's WSA is located beside the lift shaft and entrance to Block A carpark. It can be accessed easily by the tenants/residents and the bins can be removed for collection without hindering members of the public/pedestrians. These bins can be easily transported outside for collection by the licensed waste contractor. Due to space restrictions, Block A's WSA will be shared by the residents and the retail units. The bins required for commercial waste will be kept separated from the residential bins by having a designated section of the WSA which will have restricted access. The property management will monitor the WSA to ensure commercial waste is not mixed up with residential waste.

The location of Block B's WSA was discussed and it was agreed to locate it to the east side of Block B as it would not interfere with carpark operations. The compacted bales can be stored/collected without interface with the general public, the collection truck can access the WSA from the private access road to the east of Block B where a forklift can operate safety as this area will be restricted from the public and the WSA can also be vented at two

walls due to its location with both walls not facing pedestrian areas thus reducing potential odour issues.

Property management will supply all tenants with a document that shall clearly state the methods of source waste segregation, storage, reuse and recycling initiatives that shall apply within the development.

4.2 Types of Waste Wheelie Bins

The types of wheelie bins used will vary in size, design and colour dependent on the appointed waste contractor. However examples of typical receptacles to be provided in the WSA's are shown in figure 4.1. All waste wheelie bins used will comply with the IS EN 840 2012 standard for performance requirements of mobile waste containers. Signage should be posted above or on the bins to show exactly which waste can be put in each.

Figure 4.1 Typical Waste Wheelie Bins

4.3 Waste storage – Residential Units

Residents will be required to segregate their waste into the following main waste categories within their own units;

- Organic Waste
- DMR
- Glass; and
- MNR

The residents will be required to provide and maintain appropriate waste receptacles within their units to facilitate segregation at source of these waste types. As required, the residents will need to bring these segregated wastes from their apartments to the dedicated communal WSAs. Space will be provided in the residential units to accommodate three bins for waste segregation.

Access to the residential WSAs will be restricted to the residents, personnel nominated by the facility management company and the waste contractor(s). All residents should be made aware of the waste segregation requirements and waste storage arrangements.
Other waste materials such as batteries and small items of WEEE may be generated infrequently in the residential units, a bin and battery box will be provided within the WSAs to accommodate collection of these wastes.
Based on the waste generation rates presented in Table 3.1, it is proposed that organic waste, DMR, MNR and glass waste will be collected on a weekly basis. Batteries and WEEE will be collected on and as needed basis.
Below is a summary of the waste storage requirements for the residential units at Block A & Block B.

Location	MNR	DMR	Organic	Glass
Block A - Residential	5 x 1100L	9 x 1100L	6 x 240L	1 x 240L & 1 X 120L

Location	MNR	DMR	Organic	Glass
Block B - Residential	Compactor (2 x pallets)	Compactor (3 x pallets)	14 x 240L	9 x 240L

4.4 Waste Storage – Gym area, Amenity area, Works space area

The property management company shall be responsible for ensuring that the following bins are provided in the common public areas and are emptied on a daily basis if required. All waste generated by these bins shall be deposited in the residential WSA by the property management team.

- DMR
- MNR
- Glass
- Organic Waste

4.5 Waste Storage – Retail Units

The tenants for the retail units will be required to segregate their waste into the following waste categories within their own unit:

- DMR
- MNR
- Glass
- Organic Waste

As required, the retail tenants will need to bring segregated DMR, MNR, glass and organic waste to the shared WSA located in the carpark. Waste materials such as batteries, WEEE and printer toner/cartridges may be generated within the unit so if required temporary

storage can be arranged within the unit or the shared WSA with the tenants making their own arrangements to have these items collected by an licenced waste collector.

Location	MNR	DMR	Organic	Glass
Block A - Retail x 2	1 x 1100L	1 x 1100L	1 x 240L & 1 x 120L	1 x 240L

Location	MNR	DMR	Organic	Glass
Block B - Retail x 2	2 x 1100L	2 x 1100L	1 x 240L & 1 x 120L	2 x 120L

4.6 Waste Storage – Creche

The creche staff will be required to segregate their waste into the following waste categories within their own unit:

- DMR
- MNR
- Glass
- Organic Waste

As required, the creche staff will need to bring segregated DMR, MNR, glass and organic waste to the shared WSA located in the carpark. Waste materials such as batteries, WEEE and printer toner/cartridges may be generated within the unit so if required temporary storage can be arranged within the unit or the shared WSA with the tenants making their own arrangements to have these items collected by an licenced waste collector.

Location	MNR	DMR	Organic	Glass
Block B - Creche	1 x 1100L	1 x 1100L	1 x 120L	1 x 120L

4.7 Compactor Details AES Epac Mini Compactor

Due to the high number of 1100L bins required for Block B, two Epac mini compactors were selected to manage the mixed non-recyclables (MNR) & the dry mixed recyclables (DMR). This would significantly reduce the space required for waste storage and also reduce the number of WSA's for residential waste from three to one. One compacted bale fits on a standard pallet and is the equivalent to ten 1100L bins. The compacted bale can be moved to storage by a standard pallet truck. This greatly reduces the space required for waste storage and reduces manual handling requirements. It also reduces collection frequency requirements and as the compacted bales are sealed it reduces the chances of odour/leakage. The compactor runs by automated operation, so the tenant just places the rubbish in the hatch and walks away. The property management would monitor the compactor and change the compacted bale when required.

It would be our recommendation to use AES as the waste collector contractor as we have sized Block B waste storage area to suit their compactor.

AES Epac Mini-Compactor

4.8 Waste Collection

There are numerous private contractors that provide waste collection services in the Dublin City Council Area. All 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/permitted/licensed facilities only.

The property management will select a suitable waste contractor to collect the residential waste on a weekly basis. The commercial waste collection will be arranged by the tenants of the units and will be coordinated with the property management. This may be collected twice weekly depending on the source of commercial waste.

It is recommended that bin collection times/days are staggered to reduce the number of bins required to be emptied at once and the time the waste vehicle is on site. This will be determined during the process of appointment of a waste contractor.

The frequency of collection times can be monitored by the waste contractor & the property management to determine if the number of collections need to be increased or decreased depending on the quantity of waste produced.

4.9 Additional Waste Materials

There will be some additional waste types generated from time to time that will need to be managed separately.

List of additional waste materials:

- Waste Electrical and Electronic Equipment (WEEE)
- Chemical(solvents, paints, adhesives, resins, detergents etc)
- Printer Cartridge/Toners
- Green Waste
- Textiles:
- Batteries:
- Waste Cooking Oil
- Furniture (and other bulky wastes)
- Light Bulbs

Waste Electrical and Electronic Equipment (WEEE)

The WEEE Directive 2002/96/EC and associated Waste Management (WEEE) Regulations have been enacted to ensure a high level of recycling of electronic and electrical equipment. In accordance with the regulations, consumers can bring their waste and electronic equipment to their local recycling centre. Retailers are also obliged to collect WEEE within 15 days of delivery of a new item, provided the item is disconnected from all mains, does not pose a health and safety risk and is readily available for collection. A box will be allocated in the residential WSAs to collect WEEE.

Chemicals (solvents, paints, adhesives, resins, detergents etc)

Chemicals (such as solvents, paints, adhesives, detergents etc) are largely generated from building maintenance works. Such works are usually completed by external contractors who are responsible for the off-site removal and appropriate recovery/recycling/disposal of any waste materials generated.

Any waste cleaning products or waste packaging from cleaning products generated in the childcare unit that are classed as hazardous (if they arise) will be appropriately stored within the tenants own space. Creche/retail tenants will be required to store products within the cleaning storage areas, and arrange for collection by an authorised waste contractor as required.

Any waste cleaning products or waste packaging from cleaning products that are classed as hazardous (if they arise) generated by the residents should be brought to a civic amenity centre.

Printer Cartridge/Toners

It is recommended that a printer cartridge/toner bin is provided in the commercial units, where appropriate, tenants will be required to store this waste within their unit and arrange for return to retailers or collection by an authorised waste contractor, as required. Waste printer cartridge/toners generated by residents can usually be returned to the supplier free of charge or can be brought to a civic amenity centre.

Green Waste

Green waste generated from external landscaping will be removed by external landscaping contractors. Green waste generated from internal plants/flowers can be placed in the organic waste bins in the WSAs.

Textiles:

Where possible, waste textiles should be recycled or donated to a charity organisation for reuse.

Batteries:

A take-back service for waste batteries and accumulators (e.g. rechargeable batteries) is in place in order to comply with the Waste Management Batteries and Accumulators Regulations 2014 as amended. In accordance with these regulations consumers are able to bring their waste batteries to their local civic amenity centre or can return them free of charge to retailers which supply the equivalent type of battery. This can be done regardless of whether or not the batteries were purchased at the retail outlet and regardless of whether or not the person depositing the waste battery purchase any product or products from the retail outlet. A box will be allocated in the residential WSAs to collect batteries.

Waste Cooking Oil

If the creche/retail units use cooking oil, waste cooking oil will need to be stored within the tenants unit on a bunded area or spill pallet and regular collections by a dedicated waste contractor will need to be organised as required. Waste cooking oil generated by the retail/retail services/offices tenants must be collected from the unit by an authorised waste contractor.

Furniture (and other bulky wastes)

Furniture and other bulky waste items (such as carpet etc) may occasionally be generated by the retail/creche units. The collection of bulky waste will be arranged as required by the tenants. If residents wish to dispose of furniture, this can be brought a civic amenity centre.

Light Bulbs:

Light bulbs (incl.LEDs) and Flourescent tubes) will typically be generated by external electric/maintenance contractors servicing the public areas. Where waste light bulbs are

generated, it is anticipated that maintenance contractors will be responsible for the off-site removal and appropriate recovery/disposal of these wastes.
Light bulbs generated by residents should be taken to the nearest civic amenity centre for appropriate storage and recovery/disposal. It is assumed light bulbs from the retail/creche units will be removed by external electrical/maintenance contractors. Otherwise they should be stored appropriately within the units pending collection by a suitably permitted/licenced waste contractor.

4.10 Waste storage Area Design

The WSA should be designed and fitted-out to meet the requirements of relevant design Standards including;

- Be fitted with a non-slip floor surface.
- Provide ventilation to reduce the potential for generation of odours with a recommended 6-10 air changes per hour for a mechanical system for internal WSA:
- Provide suitable lighting – a minimum Lux rating of 220 is recommended;
- Be easily accessible for people with limited mobility;
- Be restricted to access by nominated personnel only.
- Be supplied with hot or cold water for disinfection and washing of bins;
- Be fitted with suitable power supply for power-washers;
- Have a sloped floor for a central foul drain for bins washing run-off.
- Have appropriate graphical signage placed above and on bins indicating correct use;
- Have access for potential control of vermin, if required; and
- Be fitted with CCTV for monitoring.

The facility management company will be required to maintain bins and storage areas in good condition as required by Dublin City Council Waste Bye Laws.

5.0 Conclusions

This Operational Waste Management Plan (OWMP) presents a waste management proposal that complies with all legal requirements, waste policies and best practice guidelines and demonstrates that the required storage areas have been incorporated into the design of the development.

The waste management proposed in this document will provide sufficient storage capacity for the estimated quantity of segregated waste. The designated area for waste storage will provide sufficient room for the required waste storage bins. 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 to reduce waste contractor costs and ensure maximum diversion of materials from landfill, thus achieving the targets set out in the EMR Waste Management Plan 2015-2021.

By implementing the proposed operational waste management plan, it will ensure that waste management at the development is carried out in accordance with the requirements

- Dublin City Council Guidance Notes for Waste Management Planning,
- Dublin City Council Waste Bye-Laws,
- Waste Management (food waste) Amended Regulations 2015 (S.I. No. 190 of 2015) and the European Union (Household Food Waste and Bio-Waste) and Regulations 2015(S.I. No. 191 of 2015)
- Dublin City Council Guidance Notes for Waste Management Planning.