

15 Waste Management

15	WASTE MANAGEMENT.....	1
15.1	INTRODUCTION	2
15.2	STUDY METHODOLOGY	2
15.3	THE EXISTING RECEIVING ENVIRONMENT (BASELINE)	3
15.4	CHARACTERISTICS OF THE PROPOSED DEVELOPMENT.....	3
15.5	POTENTIAL IMPACT OF THE PROPOSED DEVELOPMENT	4
15.6	POTENTIAL CUMULATIVE IMPACTS.....	8
15.7	DO NOTHING SCENARIO	9
15.8	RISKS TO HUMAN HEALTH.....	9
15.9	MITIGATION MEASURES	9
15.10	PREDICTED IMPACTS OF THE PROPOSED DEVELOPMENT	14
15.11	MONITORING	14
15.12	REINSTATEMENT	14
15.13	INTERACTIONS	14
15.14	DIFFICULTIES ENCOUNTERED	14
15.15	REFERENCES	14

15.1 Introduction

This chapter of the EIAR has been prepared by Byrne Environmental.

Specifically this chapter has been prepared by Ian Byrne MSc, MIOA, Dip Environmental & Planning Law and presents a waste management plan for the control, management and monitoring of waste associated with a proposed Build - to - Rent Strategic Housing Development on lands (c. 2.14ha) at Cornelscourt Village, Old Bray Road, Cornelscourt Dublin 18.

15.2 Study Methodology

The proposed Construction Waste Management Plan for the development has been prepared to demonstrate how the Construction Phase will comply with the following relevant legislation and relevant Best Practice Guidelines:

- *Waste Management Acts 1996;*
- *Waste Management (Collection Permit) Regulations 2007 (SI No. 820 of 2007).*
- *Waste Management (Collection Permit) Amendment Regulations 2008 (SI No. 87 of 2008).*
- *Department of the Environment, Heritage and Local Government – Best Practice Guidelines on the Preparation of Waste Management Plans for Construction and Demolition Projects – July 2006.*
- *EPA “Guidance on Soil and Stone By-Products in the context of Article 27 of the European Communities (Waste Directive) Regulations – Version 3 June 2019*

The proposed Operational Waste Management Plan for the development has been prepared to demonstrate how the Operational Phase will comply with the following relevant regulations and Kildare County Council’s design standards for waste management in residential developments.

- *Waste Management Acts 1996.*
- *Waste Management (Collection Permit) Regulations 2007 (SI No. 820 of 2007).*
- *Waste Management (Collection Permit) Amendment Regulations 2008 (SI No. 87 of 2008).*
- *Eastern-Midlands Region Waste Management Plan 2015-2021.*
- *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.*
- *DLRCC County Development Plan 2016 – 2022.*

Relevant Waste Policies as detailed in the *Dun Laoghaire Rathdown County Development Plan 2016 – 2022* are as follows:

Policy EI12 - Waste Management Strategy

It is Council policy to conform to the EU and National waste hierarchy as follows:

- waste prevention
- minimisation
- re-use
- recycling
- recovery

- disposal

Policy EI13 - Waste Plans

It is Council policy to publish plans for the collection, treatment, handling and disposal of waste in accordance with the provisions of the Waste Management Act 1996 (as amended) and the Protection of the Environment Act 2003 (as amended).

Policy EI14 - Private Waste Companies

It is Council policy to ensure that all waste that is disposed of by private waste companies is done so in compliance with the requirements of the EPA and the Waste Management Legislation and in accordance with the Planning Code.

Policy EI15 - Waste Prevention and Reduction

It is Council policy to promote the prevention and reduction of waste and to co-operate with industry and other agencies in viable schemes to achieve this.

Policy EI16 - Waste Re-use and Re-cycling

It is Council policy to promote the increased re-use and re-cycling of materials from all waste streams. The Council will co-ordinate with other agencies in viable schemes for the extraction of useful materials from refuse for re-use or re-cycling and will adopt the National Targets as stated in *The Eastern-Midlands Region Waste Management Plan 2015-2021*.

Each section of the Waste Management Plan presents the potential environmental impacts, proposed monitoring methodologies, limit values where applicable, based on the concept of Best Practice and the proposed mitigation measures to be implemented at the development site. Reference to National and International Standards are also included where relevant.

The projection of material assets of human origin was conducted and resource use and management of wastes generated were assessed for both the constructional and operational phases of the proposed development and their associated impacts assessed. Mitigation and best practice waste management are proposed where appropriate.

15.3 The Existing Receiving Environment (Baseline)

A soil sampling and analysis survey was conducted at the site to identify the presence of soil contamination by Ground Investigations Ireland in March 2019. An area of the south-western site has been identified to contain soils that are contaminated by hydrocarbons and these contaminated soils shall be excavated and exported to a suitably licenced facility.

The construction and operation of the proposed residential development will introduce new volumes of waste into the local area in terms of the short-term generation of construction waste and the longer-term generation of domestic waste when the development is occupied.

There are a number of recycling and civic amenity centres in the vicinity of Cornelscourt including The Ballyogan Recycling Park and at a bring bank at Dunnes Stores Cornelscourt. Currently Oxigen and Thorntons and AES provide domestic and commercial waste collection services in the Cornelscourt area.

15.4 Characteristics of the Proposed Development

The current proposal provides for a Build to Rent development consisting:

- 468 residential units (452 apartments and 16 houses) as follow:
 - 41 no. studio apartment units,
 - 257 no. 1 bed apartment units,
 - 136 no. 2 bed apartment units;
 - 18 no. 3 bed apartment units;
 - 10 no. 3 bed semi-detached house units; and
 - 6 no. 1 bed bungalow units.
- A café / restaurant of c. 140 sq m; office space of 149 sq m; concierge of c. 149 sq m; and a residential tenant amenity space of c. 458 sq m is also proposed.
- 274 Car Parking Spaces (273 at basement level and 1 at surface level)
- 12 Motor Cycle Spaces
- 616 Bicycle Parking Spaces
- Public Open Space
- Vehicular Access
- Basement Areas
- Sub Stations and 3 Switch Rooms
- All Associated Site Development Works

Mixed construction waste will arise during the construction phase. General domestic waste will arise during the operational phase and commercial waste will be generated by the creche when operational.

The Waste Management Plan shall be implemented throughout the construction phase and operational stage of the development to ensure the following:

- That all site activities are effectively managed to minimise the generation of waste and to maximise the opportunities for on-site reuse and recycling of waste materials.
- To ensure 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.
- The Waste Management Plan for the Operational Phase of the development which will ensure that users of the development are provided with sufficient facilities to store, segregate and recycle waste.

15.5 Potential Impact of the Proposed Development

Construction Phase

The development of the subject site will initially require the stripping of top and subsoils and the excavation of ground to foundation level. The range of works required for the Construction Phases are summarised in Table 15.1. The expected construction wastes that will be generated throughout the course of the development are described in Tables 15.2 and 15.3.

Construction wastes if not managed and segregated on-site will have the potential to be difficult to separate into different waste streams to allow for further processing, recovery, re-use or to be recycled.

Description of Proposed Development Site Activities

The range of development works to which this Waste Management Plan will be integrated into during the design phase, construction phase and operation phase of the site are summarised as follows:

- Ground preparation works;
- Development of site infrastructure;
- Construction of buildings and hard standing areas;
- Landscaping of entire site including open soft landscaped areas;
- Waste Management for the Operational Phase of the development

Activity Sequence	General Description
Identification of Existing Utility Services	Set up bunting, mark location of live services, including E.S.B., Gas etc.
Removal of Vegetation	e.g. Trees and vegetation
Site stripping	Removal and stockpiling of top and sub soils
Transport of material off site	Segregation of materials on site
Substructure	Rebar, Formwork and Pour
Superstructure	Rebar, Formwork and Pour
Roof	Rebar, Formwork and Pour and Waterproof
External Envelope	Place façade to superstructure
Internal Finishes	Mechanical & Electrical etc.
External Landscaping	Hard and soft landscaping

Table 15.1 - Sequence of Construction Works

Description of Waste	%
Mixed Construction & Demolition Waste	33
Wood	28
Plasterboard (Gypsum materials)	10
Ferrous Metals	8
Concrete	6
Mixed other wastes	15
<i>Total</i>	100

Table 15.2 - Typical Construction Waste Composition

Waste Type	Predicted tonnage to be produced	Re-Use		Recyclable		Disposal	
		Tonnage	%	Tonnage	%	Tonnage	%
Mixed C&D	1,250	125	10	1000	80	125	10
Timber	1,000	400	40	550	55	50	5
Plasterboard	500	150	30	300	60	50	10
Metals	250	12.5	5	225	90	12.5	5
Concrete	200	60	30	130	65	10	5
Mixed waste	800	160	20	480	60	160	20
Total	4,000	907.5		2685		407.5	

Table 15.3 - Predicted General Construction Waste Generation

Soil Excavation

It is estimated that c.80.000 m³ of excavated soils will be generated from the proposed development. An estimated 50% of this excavation material may be re-used for on-site landscaping.

Excavated excess soils that are required to be exported off-site shall be tested to determine their classification as hazardous or non-hazardous in accordance with EPA *Waste Classification – List of Waste & Determining if Waste is Hazardous or Non-Hazardous*. *Non-Hazardous soils may be suitable for re-use in other construction sites and may be declared as a by-product in accordance with Article 27 of the European Communities (Waste Directive) Regulations 2011.*

Where feasible non-hazardous excavation material may be re-used within the proposed scheme as engineering fill or in landscaping. This will be investigated by the contractor and is subject to appropriate testing to ensure material is suitable for its proposed end use. Where excavation material may not be re-used within the proposed scheme the Contractor will endeavour to send material for authorised recovery or recycling so far as is reasonably practicable. All wastes generated from the proposed development will be delivered to authorised waste facilities granted a Waste Licence, Waste Facility Permit or Certificate of Registration.

Operational Phase

The operational phase of the development will consist of:

- 468 residential units comprised of apartments and houses.
- Café/Restaurant of c. 140 sq. m, an office space of c. 140 sq. m, a concierge space of c. 149 sq. m and residential tenant amenity space of c. 458 sq. m. BMC to confirm final areas.

The EPA’s Municipal waste statistics published in 2018 state that persons generate 580Kg of domestic waste per year (1,58Kg of domestic waste per day).

A value of 1,58Kg 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 development as detailed below in Tables 15.4 - 15.6.

House Type	# Units	Occupants	Waste/Day	Waste/week
	No.	No.	Kg	Kg
Residential Units	469	1,315	2078	14,544
Residential Amenity Centre	1	50	40	277
Office	1	5	4	20
Concierge	1	1	1	7
<i>Total for development</i>	<i>n/a</i>	<i>1371</i>	<i>2123</i>	<i>14848</i>

Table 15.4 - Calculated daily domestic waste generation

Waste Type	% Waste	Kg/day	m3/day	m3/week
Organic waste	30.6	631	1.05	7.33
Paper	12.5	258	1.17	8.19
Cardboard	3.6	74	0.35	2.43
Composites	1	21	0.08	0.54
Textiles	15.5	320	2.97	20.78
Plastics	13.6	280	6.98	48.88
Glass	3.4	70	0.09	0.60
Metals	3.1	64	0.72	5.03
Wood	1.2	25	0.28	1.95
Hazardous municipal waste	0.9	19	0.07	0.48
Unclassified combustables	1.4	29	0.11	0.75
Unclassified incombustables	1.2	25	0.09	0.65
Fines	11.7	241	0.90	6.30
Bulky Waste & WEEE	0.3	6	0.02	0.16
<i>Totals</i>	<i>100</i>	<i>2062</i>	<i>15</i>	<i>104</i>

Table 15.5 - Calculated domestic waste composition Residential Units

Waste Type	% Waste	Kg/day	m3/day	m3/week
Organic waste	30.6	14	0.02	0.16
Paper	12.5	6	0.03	0.18
Cardboard	3.6	2	0.01	0.05
Composites	1	0	0.00	0.01
Textiles	15.5	7	0.06	0.45
Plastics	13.6	6	0.15	1.05
Glass	3.4	2	0.00	0.01
Metals	3.1	1	0.02	0.11
Wood	1.2	1	0.01	0.04
Hazardous municipal waste	0.9	0	0.00	0.01
Unclassified combustables	1.4	1	0.00	0.02
Unclassified incombustables	1.2	1	0.00	0.01
Fines	11.7	5	0.02	0.14
Bulky Waste & WEEE	0.3	0	0.00	0.00
<i>Totals</i>	100	44	0.32	2.2

Table 15.6 – Calculated waste composition for Office, Concierge and Residential Amenity Space

15.6 Potential Cumulative Impacts

The residential aspect of the development comprising 469 no. dwellings would result in 14,544 Kg of domestic waste per week.

The legislative and best practice mitigation measures set out above would also be applicable to these projects and the implementation of these measures will ensure that there are no negative cumulative impacts on the environment from the management of waste materials from these projects with the proposed development, should all projects proceed.

The Construction and Operational Waste Management Plans that have been designed for the proposed development will provide the designers the information to ensure that the potential impact of the construction and operational phases of the development will have a negligible impact on the receiving environment. Mitigation measures included above will result in a short term and imperceptible impact in respect of soil removal.

The compliance requirements and mitigation measures set out above and the implementation of these measures will ensure that there are no negative cumulative impacts on the environment from the management of waste materials, during the operational phase.

Other developments in the area will be required to manage waste in compliance with national and local legislation, policies and plans which will minimise/mitigate any potential cumulative impacts associated with waste generation and waste management.

15.7 Do Nothing Scenario

Should the site not be developed for residential use it will continue not to have any impact or demand on local waste services or on the receiving environment. A vacant site may however be subject to unauthorised illegal dumping or fly-tipping.

If waste infrastructure and appropriate waste management systems are not integrated into the design and the operation of the proposed development, domestic waste will not be segregated at source or appropriately managed on-site and the operation of the development will not function in accordance with the waste management policies of DLR County Council or comply with the waste reduction and recycling and re-use targets defined in the *Eastern-Midlands Region Waste Management Plan 2015-2021*.

15.8 Risks to Human Health

Best practice waste management measures are proposed for the management of construction phase wastes which will ensure that materials are segregated and stored appropriately. Waste materials generated during the construction phase will not pose a risk to local human health as a result of their inert nature. Domestic waste generated by construction staff shall be stored in wheelie bins to minimise the presence of vermin on site. Wastes shall be collected on at least a weekly basis.

The management of domestic wastes generated during the operational phase which ensure that wastes are segregated at source in each residential unit to facilitate the diversion of mixed waste away from landfill/incinerator and to maximise the potential for re-use and recycling. Communal waste storage areas shall be designed to provide a clean, safe and mobility impaired accessible area in which residents can place their wastes in one of three bulk waste bins, namely recyclable, organic, mixed non-recyclable. The waste storage areas will be regularly cleaned and disinfected and shall be naturally ventilated to prevent odours occurring. Therefore, the impact of construction waste and operational waste arising associated with the proposed development is likely to be negative, short-term and imperceptible with respect to human health.

15.9 Mitigation Measures

The Construction and Operational Waste Management Plans have been designed to ensure that the construction and operational phases of the proposed development will be managed to reduce the generation of unsegregated wastes, to maximise the potential for recycling, recovery and re-use and to demonstrate how the development will operate in a sustainable manner in terms of waste management and contribute to the achievement of the Regions compliance with the waste reduction targets specified in *The Eastern-Midlands Region Waste Management Plan 2015-2021* (and any subsequent future revisions).

The general principles and key aspects of the Construction and Operational Waste Management Plans are detailed as follows:

Construction Phase Waste Management Plan

The Construction Phase Waste Management Plan prepared by Byrne Environmental (included with the SHD application) specifically addresses the following points:

Waste materials generated by construction activities will be managed according to the Department of the Environment, Heritage and Local Government's 2006 Publication - *Best Practice Guidelines on the Preparation of Waste Management Plans for Construction and Demolition Projects*.

- Analysis of waste arisings / material surpluses
- Specific Waste Management objectives for the Project including the potential to re-use existing on-site materials for further use in the construction phase.
- Methods proposed for Prevention, Reuse and Recycling

- Waste Handling Procedures
- Waste Storage Procedures
- Waste Disposal Procedures
- Record Keeping
- Waste Auditing

Waste minimisation and prevention shall be the primary responsibilities of the Construction Project Manager who shall ensure the following:

Materials will be ordered on an “as needed” basis to prevent over supply

Materials shall be correctly stored and handled to minimise the generation of damaged materials

Materials shall be ordered in appropriate sequence to minimise materials stored on site

Sub contractors will be responsible for similarly managing their wastes

Programme of Waste Management for Construction Works

The Construction Project Manager as part of regular site inspection audits shall determine the effectiveness of the waste management plan and will assist the project manager in determining the best methods for waste minimisation, reduction, re-use, recycling and disposal as the construction phase progresses and waste materials are generated.

Construction Waste Disposal Management

From the outset of construction activities, a dedicated and secure compound containing bins, and/or skips, and storage areas, into which all waste materials generated by construction site activities, will be established within the active construction phase of the development site.

In order to ensure that the construction contractor correctly segregate waste materials, it is the responsibility of the site Construction Project Manager to ensure all staff are informed by means of clear signage and verbal instruction and made responsible for ensuring site housekeeping and the proper segregation of construction waste materials.

It will be the responsibility of the Construction Project Manager to ensure that a written record of all quantities and natures of wastes exported -off site are maintained on-site in a Waste File at the Project office.

It is the responsibility of the Construction Project Manager or his/her delegate that all contracted waste haulage drivers hold an appropriate Waste Collection Permit for the transport of waste loads and that all waste materials are delivered to an appropriately licenced or permitted waste facility in compliance with the following relevant Regulations:

Waste Management (Collection Permit) Regulations 2007 (SI No. 820 of 2007)

Waste Management (Collection Permit) Amendment Regulations 2008 (SI No. 87 of 2008)

Waste Management (Facility Permit and Registration) Regulations S.I.821 of 2007 and the Waste Facility Permit under the Waste Management (Facility Permit and Registration) Amendment Regulations S.I.86 of 2008.

Prior to the commencement of the Construction Project Manager shall identify a permitted Waste Contractor who shall be employed to collect and dispose of all wastes arising from the project works. In addition, the Construction Project Manager shall identify and all waste licensed / permitted facilities that will accept all expected waste exported off-site and will maintain copies of all relevant Waste Permits / Licences as required.

All waste soils prior to being exported off-site, shall be classified as inert, non-hazardous or hazardous in accordance with the EPA's *Waste Classification Guidance – List of Waste & Determining if Waste is Hazardous or Non-Hazardous* document dated 1st June 2015 to ensure that the waste material is

transferred by an appropriately permitted waste collection permit holder and brought to an appropriately permitted or licensed waste facility.

On-Site Waste Reuse and Recycling Management

Construction waste material such as soils, damaged or broken concrete slabs, blocks, bricks and tiles generated that is deemed by the Project Engineer to be suitable for reuse on the Project site for ground-fill material and landscaping. This initiative shall provide a positive environmental impact to the construction phase as follows:

- Reduction in the requirement for virgin aggregate materials from quarries
- Reduction in energy required to extract, process and transport virgin aggregates
- Reduced HGV movements associated with the delivery of imported aggregates to the site
- Reduced noise levels associated with reduced HGV movements
- Reduction in the amount of landfill space required to accept C&D waste
- Reduction in the volume of soils to be exported off-site

Waste Storage Compound

A waste storage compound shall be set up on-site from the commencement of site activities. The compound shall include the following:

Separate waste skips labelled with signage stating the nature of waste materials that can only be placed in the skips

Waste oils / containers shall be placed in dedicated mobile bunds units.

Soils contaminated by accidental on-site spillages of oils / construction hydrocarbons shall be stored in clearly identified hazardous waste storage containers.

Spill kits with instructions shall be located in the waste storage compound.

Soils

The subject development site is currently greenfield and undeveloped with no evidence of historic dumping.. A soil sampling and analysis survey was conducted in March 2019 by Ground Investigations Ireland and identified an area to the southwest of the site that contains hydrocarbon contaminated soils. This area shall be excavated and soils shall be exported off-site as a hazardous waste to a suitably licenced waste acceptance facility. All other soils at the site were classified as non-hazardous.

Top and subsoils shall be re-used on-site for landscaping purposes to minimise the volume of soils to be exported off-site.

Excess soils shall be exported to an appropriately waste permitted/licenced facility.

The project manager shall inform Dun Laoghaire Rathdown County Council of the volume of excess soils generated and the permitted / licenced waste facility they shall be exported to.

Excess soils shall be removed off-site throughout the duration of the construction phase. Prior to being removed off-site the excess soils shall be characterised as being inert, non-hazardous or hazardous in accordance with *Landfill Directive (2003/33/EC)*. The classification of the soils shall be established by WAC testing which shall occur throughout the construction phase.

Excavated excess soils that are required to be exported off-site shall be tested to determine their classification as hazardous or non-hazardous in accordance with EPA *Waste Classification – List of Waste & Determining if Waste is Hazardous or Non-Hazardous*. *Non-Hazardous soils may be suitable for re-use in other construction sites and may be declared as a by-product in accordance with Article 27 of the European Communities (Waste Directive) Regulations 2011*. Article 27 requires that the material classified not a waste but a by-product must meet specific criteria and that that a declaration of a material as a by-product is notified to the EPA.

Contaminated Soils

Where contaminated soils/materials are discovered or occur as a result of accidental spillages of oils or fuels during the construction phase, these areas of ground will be isolated and tested in accordance with the 2002 *Landfill Directive (2003/33/EC)* for contamination, and pending the results of laboratory WAC testing, will be excavated.

Record Keeping

It is the responsibility of the Project Manager or his/her delegate that a written record of all quantities and natures of all wastes reused / recycled and exported off-site and Article 27 declarations during the project are maintained in a Waste File at the Project office.

The following information shall be recorded for each load of waste exported off-site:

- Waste Type EWC Code and description
- Volume of waste collected
- Waste collection contractor's Waste Collection Permit Number and collection receipt including vehicle registration number
- Destination of waste load including Waste Permit / Licence number of facility
- Description of how waste at facility shall be treated : disposal / recovery / export
- Article 27 declarations
- The waste records shall be issued to DLR County Council as required / requested.

Waste Management Auditing

In order to ensure that construction wastes generated during the course of the development are being effectively managed and recorded, a waste management audit shall be conducted on a routine basis by an independent waste management consultant to determine compliance with the Construction Phase Waste Management Plan.

Operational Phase Waste Management Plan

An Operational Phase Waste Management Plan (OWMP) has been prepared as a stand-alone report to accompany this planning application. The OWMP has been prepared to demonstrate how the required infrastructure shall be incorporated into the design and operational management of the development to ensure that domestic wastes will be managed and monitored with the objective of maximizing the quantity of waste segregated at source and maximizing the volume of clean recyclable materials generated by the residents of the development.

The Goal of the OWMP is to achieve a compliance 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 2020.

Reduce to 0% the direct disposal of unprocessed residual municipal waste to landfill.

The Operational Waste Management Plan has been prepared with regard to the strategy, policy and objectives of the *Dun Laoghaire Rathdown County Development Plan 2016 – 2022*.

Key Aspects of the OWMP to achieve Waste Targets:

- All residential 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 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 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.

The apartments which will include a 3 - bin waste segregation at source system 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.*

The proposed 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 the OWMP 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 2020 (and future targets in subsequent Regional Waste Management Plans).

All apartments and houses will have a 3-bin system (non-recyclable, organic and recyclable) in each kitchen to encourage residents to segregate waste at source.

Apartment 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 blocks.

House residents shall engage private waste collection contractors who provide a 3-bin waste collection service.

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 areas for each apartment blocks. 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 signage for the correct disposal and recycling of waste is available for residents.

15.10 Predicted Impacts of the Proposed Development

The management of wastes generated during the construction of the proposed development will be in accordance with a Construction Phase Waste Management Phase (which is included with the SHD application). As long as the construction is completed in accordance with the plan it is envisaged that the impact of the construction (excavation and construction waste) phase will be temporary and slight.

With regard to how it has been demonstrated how construction and domestic wastes will be managed through design, management and waste reduction and recycling initiatives at the proposed development, it is predicted that the impact of the development on the receiving environment, existing material assets and local waste management services will be minor.

With the implementation of the proposed mitigation measures:-

The predicted impact of operational waste will be long term, moderate and negative.

There is likely to be significant available capacity within existing Irish waste management infrastructure to manage operational phase wastes from the proposed development.

The development shall be designed to provide adequate domestic waste storage areas for common residential areas (apartments) and individual houses. This will promote the appropriate segregation at source of domestic generated waste from all residential units at the development.

15.11 Monitoring

Construction Phase

The Contractor shall maintain a record of all quantities and natures of all wastes reused / recycled and exported off-site and Article 27 declarations during the construction phase of the project.

Operational Phase

The Facility Management Company shall prepare an annual report for the Local Authority 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*.

15.12 Reinstatement

No reinstatement is required.

15.13 Interactions

There are no identified interactions.

15.14 Difficulties Encountered

No difficulties were encountered in the preparation of this Chapter of the EIAR.

15.15 References

Waste Management Acts 1996;

Waste Management (Collection Permit) Regulations 2007 (SI No. 820 of 2007).

Waste Management (Collection Permit) Amendment Regulations 2008 (SI No. 87 of 2008).

Department of the Environment, Heritage and Local Government – Best Practice Guidelines on the Preparation of Waste Management Plans for Construction and Demolition Projects – July 2006.

EPA “Guidance on Soil and Stone By-Products in the context of Article 27 of the European Communities (Waste Directive) Regulations – Version 3 June 2019

Waste Management Acts 1996.

Waste Management (Collection Permit) Regulations 2007 (SI No. 820 of 2007).

Waste Management (Collection Permit) Amendment Regulations 2008 (SI No. 87 of 2008).

Eastern-Midlands Region Waste Management Plan 2015-2021.

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.

DLRCC County Development Plan 2016 – 2022.