Voyage Property Limited

Greenpark Development

Operational Waste Management Plan

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Document Control

Project Title:	Greenpark Development
Report Title:	Operational Waste Management Plan
Document reference:	20109-R-003b-02

Client:	Voyage Property Limited

Revision	**Date**	**Authored:**	**Checked:**	**Approved:**
00	14/04/2021	DM/RMcI	TO'S	
	Draft for Comment			
Revision	**Date**	**Authored:**	**Checked:**	**Approved:**
01	08/09/2021	DM/RMcI	TO'S	TO'S
	For submission			
Revision	**Date**	**Authored:**	**Checked:**	**Approved:**
02	10/09/2021	DM/RMcI	TO'S	TO'S
	Comments addressed – reissued for submission			
Revision	**Date**	**Authored:**	**Checked:**	**Approved:**

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1 Introduction

Gavin & Doherty Geosolutions Ltd. (GDG) was instructed to provide an Operational Waste Management Plan (OWMP) on behalf of Voyage Property Limited for a proposed Strategic Housing Development (SHD) at Greenpark in Limerick. The proposed development will consist of 371 residential units (houses, apartments and duplexes), crèche, with associated roads and amenity infrastructure, refer to Figure 1-1 below.

The OWMP will outline the management of waste during the operational phase of the proposed development, to allow compliance with current legal and industry standards as outlined in the Waste Management Act 1996 – 2011, and other related regulations, outlined later in this report.

This OWMP aims to:

- Show how the proposed development will ensure maximum recycling, reuse and recovery of waste, with diversion from landfill wherever possible.
- Provide guidance on the appropriate collection and transport of waste, which aims to prevent issues associated with littering and environmental impact such as contamination of soil or water.
- Provide an estimate of the types and quantities of waste that will be generated during the operation of the proposed development and how best to manage the different waste streams.

In addition to the above aims, it is an objective that the following goals are promoted during the life of the development:

- minimise waste arisings to cut out unnecessary waste and to recycle where possible.
- where possible (e.g. by apartment management company), waste arisings should be monitored and reviewed to actively seek out improvements.

It is however noted that the generation of waste in this development is inevitable and will be managed as described below.

Figure 1-1: Development Layout

2 Overview of Waste Management in Ireland

2.1 National Level

In September 2020, the Irish government published *A Waste Action Plan for a Circular Economy,* which shifts the focus away from waste disposal and moves responsibility back up the production chain, covering the period between 2020 - 2025. The policy includes over 200 measures across various waste sectors, of which the following may be pertinent to the proposed operation of the development; Circular Economy, Municipal Waste, Consumer Protection & Citizen Engagement, Plastics and Packaging, Textiles, Green Public Procurement, and Waste Enforcement.

2.2 Regional Level

The proposed development is located in the Local Authority area of Limerick City and County Council (LCCC). The *Southern Region Waste Management Plan 2015 – 2021* is the regional waste management plan for the south of Ireland including the LCCC area which was published in May 2015.

The regional plan sets out the following strategic targets for waste management in the region:

- A 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 (from 2016 onwards) in favour of higher value pre-treatment processes and indigenous recovery practices.

2.3 Legislation

The primary legislation related to waste management in Ireland, as derived from relevant European Policy and Directives, are:

- Waste Management Act, 1996
- Environmental Protection Act, 1992
- Litter Pollution Act, 1997
- Planning and Development Act, 2020

As outlined in the *Duty of Care* of the *Waste Management Act* (1996), the waste producer is considered to responsible for waste from the time of generation through to its legal disposal. This is not typically practical when considering the end site user of the proposed development, therefore waste contractors are to be employed to physically transfer waste from where it is produced to the final disposal site.

As control of the waste is removed from the producer at such an early stage, it is therefore extremely important that effective management of the waste occurs prior to transfer off site. This responsibility therefore falls to the residents, tenants, or facilities management company. It is also their responsibility to employ suitably permitted/licenced contractors to transfer the waste off-site, in accordance with all legal requirements. This includes the requirement that the waste contractor should handle, transport and reuse/recover/recycle/dispose of waste in a matter than ensures that no adverse environmental impacts occur as a result of any of these activities.

Contractors transporting the waste should hold a collection permit, as issued by the National Waste Collection Permit Office.

Waste receiving facilities must also be appropriate licenced or permitted. The receiving facility must hold an appropriate Certificate of Registration (COR) or waste permit granted by LCC under the *Waste Management (Facility Permit & Registration) Regulations 2007,* or a waste or Industrial Emissions Directive (IED) licence granted by the EPA.

In addition to the aforementioned legislation, the *City and County of Limerick (Segregation, Storage and Presentation of Household and Commercial Waste) Bye-Laws* (2019) should be adhered to. The document outlines bye-laws related to:

- Obligation to participate in a waste collection service.
- Maintenance and management of waste containers.
- Location for container storage.
- Use of waste containers on collection day.
- Waste presentation times and container removal.
- Prohibited waste types.
- Segregation of household waste and contamination prevention.
- Additional provisions for householders not availing of a kerbside collection service.
- Provisions affecting multi-user buildings, apartment blocks, etc.
- Interference with orderly waste collection.

- Additional provisions for commercial waste.
- Enforcement provisions / fix payment notices.

Schedule 1 of the bye-laws presents a list of acceptable recyclable kerbside wastes, which comprises:

- Paper wastes
- Aluminium cans
- Steel cans
- Cardboard
- Plastic pots, trays and tubs
- Plastic bottles (PET 1)
- Plastic bottles (HDPE2)

3 Description of the Project

3.1 General

The proposed SHD will include the construction of residential units (houses, duplex apartments, apartment blocks), a crèche, and public open space, with associated roads, parking, etc.

3.2 Typical Waste Categories

The predicted waste types, both hazardous and non-hazardous that will be generated at the proposed development include the following:

- **Mixed Dry Recyclables (MDR**) – includes Newspaper / General paper Magazines, Cardboard Packaging, Drink (Aluminium) Cans, Washed Food (Steel/Tin) Cans, Washed Tetra Pak Milk & Juice Cartons, Plastic Bottles (Mineral/Milk/Juice/Shampoo/Detergents), Rigid Plastics. (Pots/Tubs/Trays*)
- **Mixed Non-Recyclables (MNR) / All General Waste** – Nappies, food and soiled packaging, old candles, plasters, vacuum cleaner contents, and contaminated plastics
- **Organic waste** – food waste and green waste generated from gardens and amenity/landscaped areas;
- **Glass**

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

- Textiles
- Batteries
- Waste electrical and electronic equipment (WEEE)
- Chemicals (solvents, pesticides, paints, adhesives, resins, detergents, etc.)
- Fluorescent tubes and other mercury containing waste

- Lightbulbs
- Printer cartridges/toners
- Cooking oil
- Furniture (and from time to time other bulky wastes)
- Green/garden waste may be generated from internal plants or external landscaping.

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.

3.3 European Waste Codes

The EPA waste classification system, *Waste Classification – List of Waste & Determining if Waste is Hazardous or Non-Hazardous* (2015), is the basis for Irish waste reporting, such as those associated with waste collection permits, COR's, permits and licences and EPA National Waste Database. The system is based on:

- Commission Decision of 18 December 2014, amending Decision 2000/532/EC on the list of waste pursuant to Directive 2008/98/EC of the European parliament and of the Council (2014/955/EEC)
- Commission Regulation (EU) No 1357/2014 of 18 December 2014, replacing Annex III to Directive 2008/98/EC of the European Parliament and of the Council on waste and repealing certain Directives.

Under the classification system, different types of wastes are fully defined by a code. The List of Waste (LoW) code (also referred to as European Waste Code or EWC) for typical waste materials expected to be generated during the operation of the proposed development are provided in Table 3-1.

Table 3-1 European List of Waste Codes appropriate to operation of proposed development

Waste Material	LoW Code
Paper and Cardboard	20 01 01
Plastic	20 01 39
Metals	20 01 40
Mixed Municipal Waste	20 03 01
Glass	20 01 02
Biodegradable Kitchen Waste	20 01 08
Oils and Fats	20 01 25/26*
Biodegradable garden and park waste	20 02 01
Textiles	20 01 11
Batteries and accumulators*	20 01 33*-34
Printer Toner / Cartridges*	20 01 27* -28
Green Waste	20 02 01
Waste electrical and electronic equipment*	20 01 35*-36
Chemicals (solvents, pesticides, paints & adhesives, detergents etc) *	20 01 13 / 19 /27 / 28 / 29* 3
Fluorescent tubes and other mercury containing waste*	20 01 21*

Bulky wastes	20 03 07

* Refers to mirror entries within the LoW, which are wastes that may be hazardous or non-hazardous

4 Estimated Waste Arisings

A waste generation spreadsheet was developed by GDG and has been used to predict waste types, weights and volumes arising from operations within the proposed development. The spreadsheet incorporates building area and use and combines these with BS 5906:2005 waste generation rates. The estimated quantum/volume of waste that will be generated from the residential units has been determined based on the predicted occupancy of the units and is presented in Table 4-1 and Table 4-2.

Table 4-1 Residential Waste Prediction (L/per week)

Waste Volume (L/week)						
Waste Type	House 2 Bed (37 no. units)	House 3 Bed (110 no. units)	House 4 Bed (10 no. units)	Apartment Block 1 Bed (46 no. units)	Apartment Block 2 Bed (92 no. units)	Totals (L)
Organic Waste	185	550	50	230	460	1,475
Mixed Dry Recyclables	3,145	13,200	1,550	2,300	7,820	28,015
Glass	185	550	50	230	460	1,475
Mixed Municipal Waste	3,145	13,200	1,550	2,300	7,820	28,015
Total	6,660	27,500	3,200	5,060	16,560	58,980

Table 4-2 Residential Waste Prediction for Duplex Units (L/per week)

Waste Volume (L/week)			
Waste Type	Duplex 1+2 Bed (48no. units)	Duplex 2+3 Bed (28no. units)	Totals (L)
Organic Waste	240	140	380
Mixed Dry Recyclables	6,480	5,740	12,220
Glass	240	140	380
Mixed Municipal Waste	6,480	5,740	12,220
Total	13,440	11,760	25,200

The total estimated volume of waste that will be generated from the crèche has been determined as 1,975l/week.

5 Waste Storage and Collection

This section provides information on how waste generated within the development will be stored and subsequently collected from the development. This has been prepared with due consideration of the

proposed site layout as well as best practice standards, local and national waste management requirements including those of Limerick City and County Council. Consideration has been given to the following documents:

- BS 5906:2005 Waste Management in Buildings – Code of Practice;
- EMR Waste Management Plan 2015 – 2021;
- Limerick City and County Council, *Presentation and Storage of Waste Bye-Laws* (2019);
- DoEHLG, Sustainable Urban Housing: Design Standards for New Apartments, Guidelines for Planning Authorities (2018).

5.1 Residential Waste and Recycling Management and Storage Strategy

Dedicated bins will be located at each house and duplex within the development, as follows:

- Mixed Non-Recyclables 240L
- Dry Mixed Recyclable 240L
- Food/Organic (Brown Bin) 240L

Bins will be colour codes for each of the designated waste streams.

Large capacity shared bins will be provided in a dedicated facility at the apartment blocks and crèche. The number and capacity of bins for the apartment block will be in accordance with BS5906 and estimated waste volumes of each block.

5.2 Waste Storage Areas

A dedicated waste storage area will be provided for the Apartment Blocks and Crèche buildings, the design which shall be in accordance with BS5906 and in compliance with Limerick City and County Council Bye-Laws.

With regards the housing. waste containers used for the presentation of kerbside waste shall be held within the curtilage of the premises where the waste is produced. Adequate space shall be provided for waste bins at each property.

5.3 Waste Collection

Waste will be collected by “Authorised Waste Collectors” as defined by Limerick City and County Council Bye-Laws and will be transported to authorised waste facilities. Waste must be transported to registered/permitted/licensed facilities only.

All waste requiring collection by the appointed waste contractor will be collected from the Waste Storage Areas (WSA) / kerbside by nominated waste contractors or facilities management depending on the agreement and will be brought to the temporary waste marshalling/collection areas. The empty bins will be promptly returned to the appropriate WSAs.

All waste receptacles presented for collection will be clearly identified as required by waste legislation and the requirements of the Limerick City and County Council Waste Bye-Laws. Also, waste will be presented for collection in a manner that will not endanger health, create a risk to traffic, harm the environment or create a nuisance through odours or litter.

5.4 Additional Waste Materials

There is likely to be a small component of the overall waste arisings from the proposed development that will comprise other waste streams, such as WEEE, printer and toner cartridges, and fluorescent light tubes. Building maintenance will also give rise to materials such as paints and waste lubricating oils, which will require separate storage in dedicated sealed containers.

This type of waste is termed “unique” as it will not be produced on a regular basis and therefore its management will be on special arrangement with a registered waste handler for the specific waste that is produced. Waste disposal facilities throughout the LCCC area handle and manage this waste, through battery recycling boxes, fluorescent lighting tube ‘coffins’, and other applicable storage containers (e.g., if a liquid is to be stored, even within its own container, this will need to be stored within a second container which holds 110% capacity of the volume of the liquid being stored). As with the glass, the end user of the proposed development will be responsible for disposal of these unique waste streams, with volumes generated anticipated to be minimal.

6 Conclusions

The proposed development will be sustainable with high standards of waste management performance. As such, due consideration has been given to waste which will be generated by the development during its operation.

Waste management within the Proposed Development has the following aims:

- To contribute towards achieving current and long-term government, LCCC and EMR targets for waste minimisation, recycling and reuse;
- To ensure that all legal requirements for the handling and management of waste during the operation of the Proposed Development are complied with;
- To provide tenants with convenient, clean, and efficient waste management systems that enhance the operation of the buildings and promote high levels of recycling.

This Operational WMP outlines the estimated waste volume of waste that will be produced by the residential development during operation, and how waste will be segregated, stored, collected, transferred and re-used/ disposed of.

Regular waste collections will be provided for Mixed Dry Recyclables, Food/Organic waste, glass and general non-recyclable/residual waste. Bins, appropriately sized to the anticipated waste volume, shall be provided to allow residents to segregate waste into these categories.

Residential bins will be provided within dedicated storage areas for each apartment block,. On the day of collection, the waste collection company will be able to access the site and collect refuse from dedicated collection areas and/or kerbside, in order to transfer waste to permitted/licenced waste facilities.

The handling of waste produced by the Proposed Development once operational will be in accordance with LCCC Bye-Laws 2019, *Waste Management (Food Waste) Amendment Regulations 2015 (S.I. No. 190 of 2015)* and the *European Union (Household Food Waste and Bio-Waste) Regulations 2015 (S.I. No. 191 of 2015)*.

In summary, this OWMP presents a waste strategy 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.

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