



PART 3

GOOD SHEPHERD LRD

VOLUME III | EIAR

Appendices

GOOD SHEPHERD LRD

VOLUME III | **Appendices**

CHAPTER ELEVEN | **Waste Management**

APPENDIX 11-1 Resource & Waste Management Plan

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CHAPTER ELEVEN

WASTE MANAGEMENT

APPENDIX 11-1 Resource & Waste Management Plan
APPENDIX 11-2 Operational Waste Management Plan

APPENDIX 11-1 Resource & Waste Management Plan



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Resource & Waste Management Plan

Project Title: Good Shepherd Student Development RWMP Located in Sunday's Well, Cork.

CLIENT	DOCUMENT REFERENCE	DATE
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1. INTRODUCTION

AWN Consulting, a Trinity Consultants Team, has prepared this Construction and Demolition (C&D) Resource & Waste Management Plan (RWMP) on behalf of Bellmount Developments Ltd. The proposed development will include the conservation, conversion and extension of the former Good Shepherd Convent, Home Building, Orphanage Building, Well Site, Gate Lodge, and Bakehouse to provide student accommodation and ancillary services.

A full description is included in Chapter 2 of this EIAR and in the statutory notices.

This plan provides information necessary to ensure that the management of C&D waste at the site is undertaken in accordance with the current legal and industry standards including the *Waste Management Act 1996* as amended and associated Regulations ¹, *Environmental Protection Agency Act 1992* as amended ², *Litter Pollution Act 1997* as amended ³, the National Waste Management Plan for a Circular Economy 2024 - 2030 (NWMPCE) (2024) ⁴. In particular, this plan aims to ensure maximum recycling, reuse and recovery of waste with diversion from landfill, wherever possible. It also provides appropriate measures in relation to the collection and transport of waste from the site to prevent issues associated with litter or more serious environmental pollution (e.g. contamination of soil and/or water).

This RWMP includes information on the legal and policy framework for C&D waste management in Ireland, estimates of the type and quantity of waste to be generated by the proposed development and prescribes measures for the management of different waste streams. The RWMP should be viewed as a live document and will be regularly revisited throughout the project's lifecycle so that opportunities to maximise waste reduction / efficiencies are exploited throughout, and that data is collected on an ongoing basis so that it is as accurate as possible.

2. OVERVIEW OF WASTE MANAGEMENT IN IRELAND

2.1 National level

The Irish Government issued a policy statement in September 1998, *Changing Our Ways*⁵, which identified objectives for the prevention, minimisation, reuse, recycling, recovery and disposal of waste in Ireland. The target for C&D waste in this report was to recycle at least 50% of C&D waste within a five year period (by 2003), with a progressive increase to at least 85% over fifteen years (i.e. 2018).

In response to the *Changing Our Ways* report, a task force (Task Force B4) representing the waste sector of the already established Forum for the Construction Industry, released a report entitled '*Recycling of Construction and Demolition Waste*'⁶ concerning the development and implementation of a voluntary construction industry programme to meet the Government's objectives for the recovery of C&D waste.

In September 2020, the Irish Government published a policy document outlining a new action plan for Ireland to cover the period of 2020-2025. This plan, '*A Waste Action Plan for a Circular Economy*'⁷ (WAPCE), replaces the previous national waste management plan, '*A Resource Opportunity*' (2012), and was prepared in response to the 'European Green Deal' which sets a roadmap for a transition to an altered economical model, where climate and environmental challenges are turned into opportunities.

The WAPCE sets the direction for waste planning and management in Ireland up to 2025. This reorientates policy from a focus on managing waste to a much greater focus on creating circular patterns of production and consumption. Other policy statements of a number of public bodies already acknowledge the circular economy as a national policy priority.

The policy document contains over 200 measures across various waste areas including circular economy, municipal waste, consumer protection and citizen engagement, plastics and packaging, construction and demolition, textiles, green public procurement and waste enforcement.

One of the first actions to be taken was the development of the *Whole of Government Circular Economy Strategy 2022-2023 'Living More, Using Less'* (2021) ⁸ to set a course for Ireland to transition across all sectors and at all levels of Government toward circularity and was issued in December 2021. It is anticipated that the Strategy will be updated in full every 18 months to 2 years.

The Circular Economy and Miscellaneous Provisions Act 2022 ⁹ was signed into law in July 2022. The Act underpins Ireland's shift from a "take-make-waste" linear model to a more sustainable pattern of production and consumption, that retains the value of resources in our economy for as long as possible and that will work to significantly reduce our greenhouse gas emissions. The Act defines Circular Economy for the first time in Irish law, incentivises the use of recycled and reusable alternatives to wasteful, single-use disposable packaging, introduces a mandatory segregation and incentivised charging regime for commercial waste, streamlines the national processes for End-of-Waste and By-Products decisions, tackling the delays which can be encountered by industry, and supporting the availability of recycled secondary raw materials in the Irish market, and tackles illegal fly-tipping and littering.

The Environmental Protection Agency (EPA) of Ireland issued '*Best Practice Guidelines for the Preparation of Resource & Waste Management Plans for Construction & Demolition Projects*' in November 2021 ¹⁰. These guidelines replace the previous 2006 guidelines issued by The National Construction and Demolition Waste Council (NCDWC) and the Department of the Environment, Heritage and Local Government (DoEHLG) in 2006 ¹¹. The guidelines provide a practical approach which is informed by best practice in the prevention and management of C&D wastes and resources from design to construction of a project, including consideration of the deconstruction of a project. These guidelines have been followed in the preparation of this document and include the following elements:

- ▶ Predicted C&D wastes and procedures to prevent, minimise, recycle and reuse wastes;
- ▶ Design teams roles and approach;
- ▶ Relevant EU, national and local waste policy, legislation and guidelines;
- ▶ Waste disposal/recycling of C&D wastes at the site;
- ▶ Provision of training for Resource Waste Manager (RM) and site crew;
- ▶ Details of proposed record keeping system;
- ▶ Details of waste audit procedures and plan; and
- ▶ Details of consultation with relevant bodies i.e. waste recycling companies, Local Authority, etc.

Section 3 of the Guidelines identifies thresholds above which there is a requirement for the preparation of a bespoke RWMP for developments. The new guidance classifies developments on a two-tiered system. Developments which do not exceed any of the following thresholds may be classed as Tier 1 development, which require a simplified RWMP:

- ▶ New residential development of less than 10 dwellings.
- ▶ Retrofit of 20 dwellings or less.
- ▶ New commercial, industrial, infrastructural, institutional, educational, health and other developments with an aggregate floor area less than 1,250m².
- ▶ Retrofit of commercial, industrial, infrastructural, institutional, educational, health and other developments with an aggregate floor area less than 2,000m²; and
- ▶ Demolition projects generating in total less than 100m³ in volume of C&D waste.

A development which exceeds one or more of these thresholds is classed as Tier-2 development.

This development requires a RWMP as a Tier 2 development as it is above following criterion:

- ▶ New residential development of less than 10 dwellings.
- ▶ Demolition projects generating in total less than 100m³ in volume of C&D waste.

The Department of Housing, Local Government and Heritage authored *Sustainable Residential Development and Compact Settlements - Guidelines for Planning Authorities (2024)*¹². Suggest the below thresholds at which the need for supplemental information such as the RWMP should be considered.

- ▶ 30 or more residential units,
- ▶ 1,000 sq. meters of mixed-use development.

Other guidelines followed in the preparation of this report include 'Construction and Demolition Waste Management – a handbook for Contractors and Site Managers'¹³, published by FÁS and the Construction Industry Federation in 2002 and the previous guidelines, 'Best Practice Guidelines for the Preparation of Waste Management Plans for Construction and Demolition Projects' (2006).

These guidance documents are considered to define best practice for C&D projects in Ireland and describe how C&D projects are to be undertaken such that environmental impacts and risks are minimised and maximum levels of waste recycling are achieved.

2.2 Regional Level

The proposed development is located in the Local Authority administrative area of Cork City Council (CCC).

The *Southern Region Waste Management Plan 2015 – 2021* which previously governed waste management policy in the CCC has been superseded as of March 2024 by the NWMPCE 2024 – 2030, the new national waste management plan for Ireland.

The NWMPCE does not dissolve the three regional waste areas. The NWCPCE sets the ambition of the plan to have a 0% total waste growth per person over the life of the Plan with an emphasis on non-household wastes including waste from commercial activities and the construction and demolition sector. This Plan seeks to influence sustainable consumption and prevent the generation of waste, improve the capture of materials to optimise circularity and enable compliance with policy and legislation.

The national plan sets out the following strategic targets for waste management in the country that are relevant to the development:

National Targets

1B. (Construction Materials) 12% Reduction in Construction & Demolition Waste Generated by 2030.

3B. (Reuse Facilities) Provide for reuse at 10 Civic Amenity Sites, minimum.

Municipal landfill charges in Ireland are based on the weight of waste disposed. In the Munster Region, charges are approximately €140-160 per tonne of waste, which includes a €85 per tonne landfill levy introduced under the Waste Management (Landfill Levy) (Amendment) Regulations 2015 (as amended)¹⁴. *The Circular Economy (Waste Recovery Levy) Regulations 2024*¹⁵ will also incur a levy of €10 per tonne for waste accepted for recovery. This will include backfilling at authorised recovery sites and at municipal waste landfills.

The *Cork City Development Plan 2022 – 2028*¹⁶ is guided by the National Planning Framework along with several other national and regional plans, including the current regional waste management plan and the Waste Action Plan for a Circular Economy. Waste has been addressed under Chapter 5 Climate Change and Environment, Chapter 9 Environmental Infrastructure and Chapter 11 Placemaking and Managing Development with the following objectives:

Objectives:

- ▶ Objective 5.13 Waste Management – Construction and Operation of Development: All development proposals should minimise waste and maximise the recycling and re-use opportunities during the construction and operation phases.
- ▶ Objective 9.12 Waste management:
 - a) To support the sustainable management of waste in line with the objectives of the Southern Region Waste Management Plan 2015-2021 and the National Waste Management Plan for a Circular Economy (NWMPCE) when published, which will replace the existing Regional Waste Management Plans.
 - b) To facilitate the transition to a circular economy facilitating the value recovery and recirculation of resources in order to generate minimal waste.
 - c) Continue to fulfil duties under the Waste Management (certification of historic unlicensed waste disposal and recovery activity) Regulations 2008 (S.I. No 524 of 2008), including those in relation to the identification and registration of closed landfills.
 - d) To encourage the recycling of construction and demolition waste and the reuse of aggregate and other materials in future construction projects. Applications for large infrastructure projects shall be accompanied by a Construction and Environmental Management Plan that includes details of how construction and demolition waste generated is to be managed and, where reuse/recycling is not practicable, disposed of, in line with legislative requirements.
- ▶ Objective 11.3 Housing Quality and Standards:
 - Waste: Housing should be designed with adequate and easily accessible storage space that supports the separate collection of dry recyclables, food waste and residual waste;

2.3 Legislative Requirements

The primary legislative instruments that govern waste management in Ireland and applicable to the development are:

- ▶ *Waste Management Act 1996 as amended;*
- ▶ *Environmental Protection Agency Act 1992 as amended;*
- ▶ *Litter Pollution Act 1997 as amended;*
- ▶ *Planning and Development Act 2000 as amended* ¹⁷;
- ▶ *Circular Economy and Miscellaneous Provisions Act 2022.*

One of the guiding principles of European waste legislation, which has in turn been incorporated into the *Waste Management Act 1996* as amended and subsequent Irish legislation, is the principle of "Duty of Care". This implies that the waste producer is responsible for waste from the time it is generated through until its legal recycling, recovery or disposal (including its method of disposal). As it is not practical in most cases for the waste producer to physically transfer all waste from where it is produced to the final destination, waste contractors will be employed to physically transport waste to the final destination. Following on from this is the concept of "Polluter Pays" whereby the waste producer is liable to be prosecuted for pollution incidents, which may arise from the incorrect management of waste produced, including the actions of any contractors engaged (e.g. for transportation and disposal/recovery/recycling of waste).

It is therefore imperative that the Developer ensures that the waste contractors engaged by demolition and construction contractors are legally compliant with respect to waste transportation, recycling, recovery and disposal. This includes the requirement that a contractor handle, transport and recycle/recover/dispose of waste in a manner that ensures that no adverse environmental impacts occur as a result of any of these activities.

A collection permit to transport waste must be held by each waste contractor which is issued by the National Waste Collection Permit Office (NWCPO). Waste receiving facilities must also be appropriately permitted or licensed. Operators of such facilities cannot receive any waste, unless in possession of a Certificate of Registration (COR) or waste permit granted by the relevant Local Authority under the *Waste Management (Facility Permit & Registration) Regulations 2007 as amended* or a Waste Licence granted by the EPA. The COR / permit / licence held will specify the type and quantity of waste able to be received, stored, sorted, recycled, recovered and/or disposed of at the specified site.

3. DESIGN APPROACH

The client and the design team have integrated the 'Best Practice Guidelines for the Preparation of Resource & Waste Management Plans for Construction & Demolition Projects' guidelines into the design workshops, to help review processes, identify and evaluate resource reduction measures and investigate the impact on cost, time, quality, buildability, second life and management post demolition and construction. Further details on these design principals can be found within the aforementioned guidance document.

The design team have undertaken the design process in line with the international best practice principles to firstly prevent wastes, reuse where possible and thereafter sustainably reduce and recover materials. The below sections have been the focal point of the design process and material selections and will continued to be analysed and investigated throughout the design process and when selecting material.

As noted in the EPA guidelines, the approaches presented are based on international principles of optimizing resources and reducing waste on construction projects through:

- ▶ *Prevention;*
- ▶ *Reuse;*
- ▶ *Recycling;*
- ▶ *Green Procurement Principles;*
- ▶ *Off-Site Construction;*
- ▶ *Materials Optimisation; and*
- ▶ *Flexibility and Deconstruction.*

3.1 Designing For Prevention, Reuse and Recycling

Undertaken at the outset and during project feasibility and evaluation the Client and Design Team considered:

- ▶ Establishing the potential for any reusable site assets (buildings, structures, equipment, materials, soils, etc.);
- ▶ The potential for refurbishment and refit of existing structures or buildings rather than demolition and new build;
- ▶ Assessing any existing buildings on the site that can be refurbished either in part or wholly to meet the Client requirements; and
- ▶ Enabling the optimum recovery of assets on site.

3.2 Designing for Green Procurement

Waste prevention and minimisation pre-procurement have been discussed and will be further discussed in this section. The Design Team will discuss proposed design solutions, encourage innovation in tenders and incentivise competitions to recognise sustainable approaches. They will also discuss options for packaging reduction with the main Contractor and subcontractors/suppliers using measures such as 'Just-in-Time' delivery and use ordering procedures that avoid excessive waste. The Green procurement extends from the planning stage into the detailed design and tender stage and will be an ongoing part of the long-term design and selection process for this development.

3.3 Designing for Off-Site Construction

Use of off-site manufacturing has been shown to reduce residual wastes by up to 90% (volumetric building versus traditional). The decision to use offsite construction is typically cost led but there are significant benefits for resource management. Some further considerations for procurement which are being investigated as part of the planning stage design process are listed as follows:

- ▶ Modular buildings as these can displace the use of concrete and the resource losses associated with concrete blocks such as broken blocks, mortars, etc.;
- Modular buildings are typically pre-fitted with fixed plasterboard and installed insulation, eliminating these residual streams from site.
- ▶ Use of pre-cast structural concrete panels which can reduce the residual volumes of concrete blocks, mortars, plasters, etc.;
- ▶ The use of prefabricated composite panels for walls and roofing to reduce residual volumes of insulation and plasterboards;
- ▶ Using pre-cast hollow-core flooring instead of in-situ ready mix flooring or timber flooring to reduce the residual volumes of concrete/formwork and wood/packaging, respectively; and
- ▶ Designing for the preferential use of offsite modular units.

3.4 Designing for Materials Optimisation During Construction

To ensure manufacturers and construction companies adopt lean production models, including maximising the reuse of materials onsite as outlined in section 3.1, structures should be designed with the intent of designing out waste. This helps to reduce the environmental impacts associated with transportation of materials and from waste management activities. This includes investigating the use of standardised sizes for certain materials to help reduce the amount of offcuts produced on site, focusing on promotion and development of off-site manufacture.

3.5 Designing for Flexibility and Deconstruction

Design flexibility has and will be investigated throughout the design process to ensure that where possible products (including buildings) only contain materials that can be recycled and are designed to be easily disassembled. Material efficiency is being considered for the duration and end of life of a building project to produce; flexible, adaptable spaces that enable a resource-efficient, low-waste future change of use; durability of materials and how they can be recovered effectively when maintenance and refurbishment are undertaken and during disassembly/deconstruction.

4. DESCRIPTION OF THE DEVELOPMENT

4.1 Location, Size and Scale of the Development

The proposed development will include the conservation, conversion and extension of the former Good Shepherd Convent, Home Building, Orphanage Building, Well Site, Gate Lodge, and Bakehouse to provide student accommodation and ancillary services.

A full description is included in Chapter 2 of this EIAR and in the statutory notices.

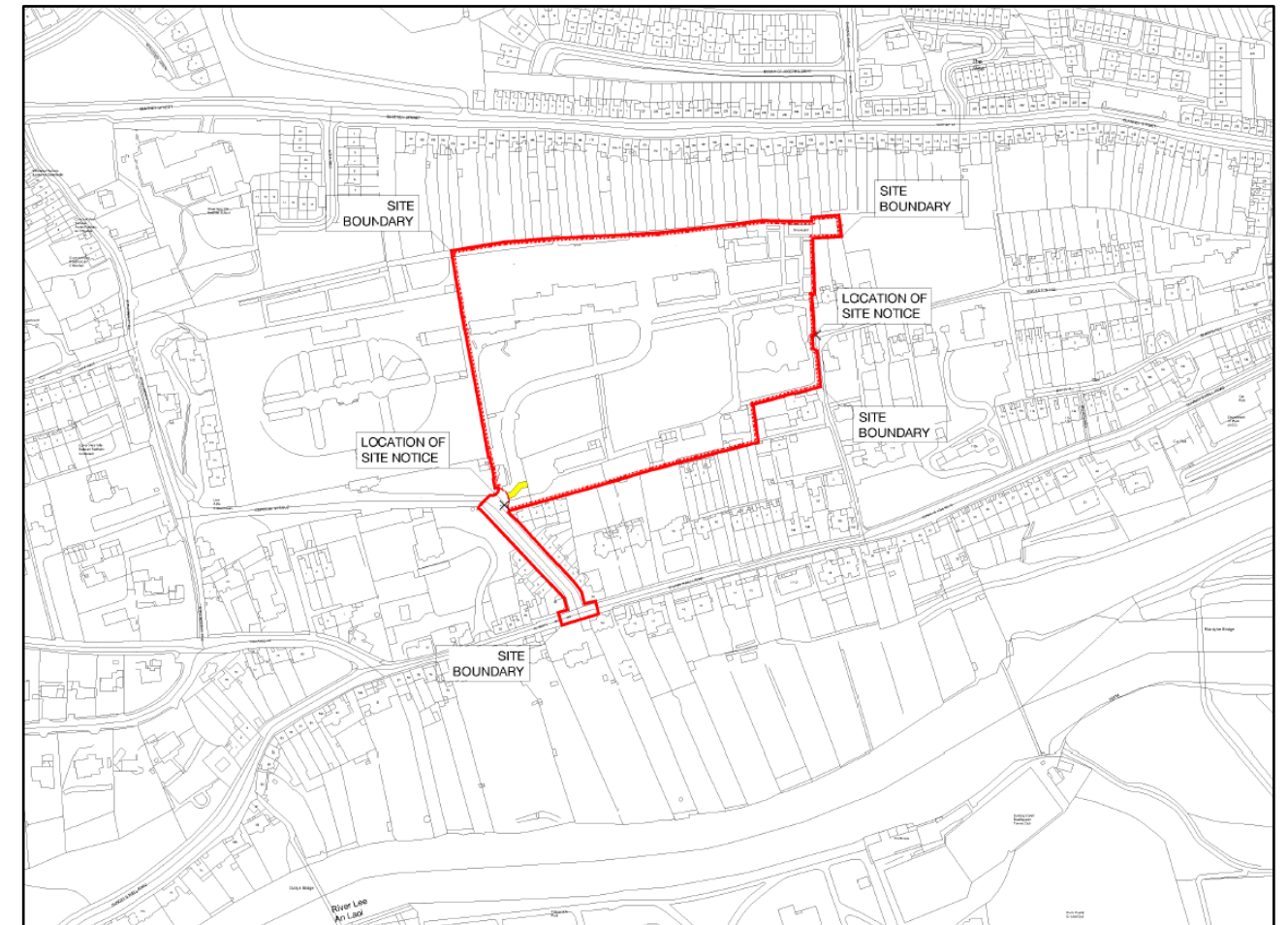


Figure 4.1 Proposed Site Location Red Line Boundary

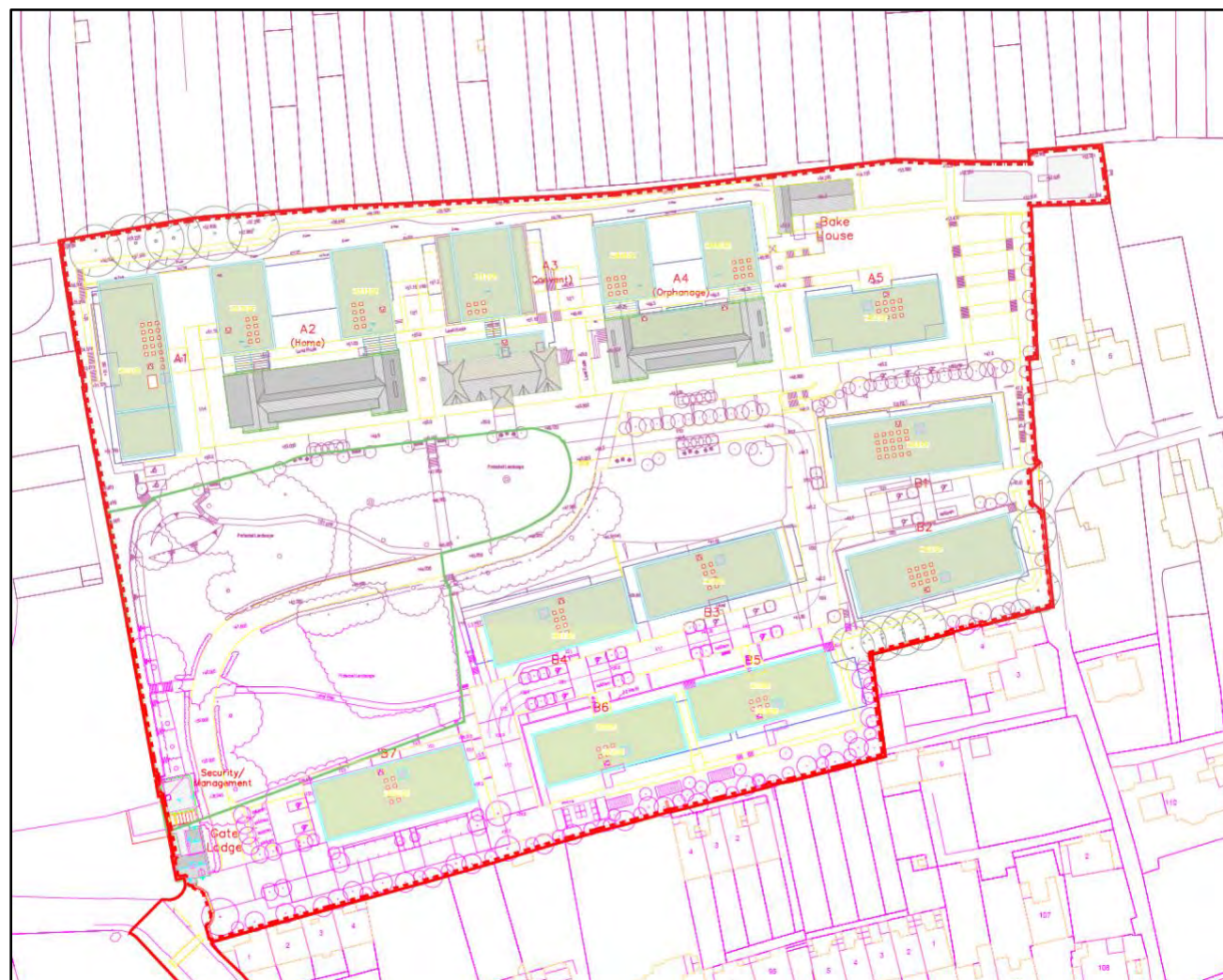


Figure 4.2 Proposed Site Layout & Redline Boundary

4.2 Details of the Non-Hazardous Wastes to be Produced

There will be waste materials generated from the demolition and partial demolition of some of the existing buildings as well as from the further excavation of the building foundations of the units to be demolished in full. The volume of waste generated from demolition will be more difficult to segregate than waste generated from the construction phase, as many of the building materials will be bonded together or integrated i.e. plasterboard on timber ceiling joists, steel embedded in concrete, etc.

There will be soil, stones, clay and made ground excavated to facilitate construction of new foundations and landscaping. The development quantity surveyors – MBPQS, have estimated that 40,329m³ of material will need to be excavated to do so. It is currently envisaged that all clean excavated soil will be reused on-site for landscaping and fill. In the event that any excavated soil is found to be contaminated or not possible for reuse on-site, it will need to be removed off-site. This will be taken for appropriate offsite reuse, recovery, recycling and / or disposal.

During the construction phase there may be a surplus of building materials, such as timber off-cuts, broken concrete blocks, cladding, plastics, metals and tiles generated. There may also be excess concrete during construction which will need to be disposed of. Plastic and cardboard waste from packaging and supply of materials will also be generated. The contractor will be required to ensure that oversupply of materials is kept to a minimum and opportunities for reuse of suitable materials is maximised.

Waste will also be generated from construction workers e.g. organic / food waste, dry mixed recyclables (waste paper, newspaper, plastic bottles, packaging, aluminium cans, tins and Tetra Pak cartons), mixed non-recyclables and potentially sewage sludge from temporary welfare facilities provided on site during the construction phase. Waste printer / toner cartridges, waste electrical and electronic equipment (WEEE) and waste batteries may also be generated infrequently from site offices.

4.3 Potential Hazardous Wastes Arising

4.3.1 Contaminated Soil

While initial site investigations have been undertaken there have not been any samples taken and sent for environmental soil testing as of yet. Prior to any material being removed from site further site investigations, environmental soil testing and waste classification will be undertaken and results will be sent onto CCC upon request.

If any potentially contaminated material is encountered, it will need to be segregated from clean / inert material, tested and classified as either non-hazardous or hazardous in accordance with the EPA publication entitled 'Waste Classification: List of Waste & Determining if Waste is Hazardous or Non-Hazardous'¹⁸ using the *HazWasteOnline* application (or similar approved classification method). The material will then need to be classified as clean, inert, non-hazardous or hazardous in accordance with the *EC Council Decision 2003/33/EC*¹⁹, which establishes the criteria for the acceptance of waste at landfills.

In the event that Asbestos Containing Materials (ACMs) are found within the excavated material, the removal will only be carried out by a suitably permitted waste contractor, in accordance with *the Safety, Health and Welfare at Work (Exposure to Asbestos) Regulations 2006-2010*²⁰ and *the Best Practice Guidance for Handling Asbestos (2023)*²¹. All asbestos will be taken to a suitably licensed or permitted facility.

In the event that hazardous soil, or historically deposited waste is encountered during the construction phase, the contractor will notify CCC and provide a Hazardous / Contaminated Soil Management Plan, to include estimated tonnages, description of location, any relevant mitigation, destination for disposal / treatment, in addition to information on the authorised waste collector(s).

4.3.2 Fuel/Oils

Fuels and oils are classed as hazardous materials; any on-site storage of fuel / oil, and all storage tanks and all draw-off points will be bunded and located in a dedicated, secure area of the site. Provided that these requirements are adhered to and the site crew are trained in the appropriate refueling techniques, it is not expected that there will be any fuel / oil waste generated at the site.

4.3.3 Invasive Plant Species

A site invasive species survey was undertaken by Veon Ltd. in August and September 2024. This included a site walkover survey of the entire site, and around part of the outside perimeter to search for any invasive species listed on the Third Schedule of the European Communities (Birds and Natural Habitats) Regulations 2011 (as amended).

Of the species listed in Part 1 of the Third Schedule, a number of these species are of particular concern due to the location of the survey area and the potential for spread through disturbance. However, only 1 no. instance of a Third Schedule species was recorded within the application site - a single stand of *Gunnera tinctoria*. Additionally, *Rhododendron ponticum* was previously recorded along the edge of the

woodland area. Further detail on the invasive species survey can be found in Chapter 14 (Biodiversity) of the EIAR.

4.3.4 Asbestos

The asbestos report for this development will take place prior to construction commencement. If any asbestos is detected, the removal of asbestos or ACMs will be carried out by a suitably qualified contractor and ACMs will only be removed from site by a suitably permitted / licenced waste contractor, in accordance with the *Safety, Health and Welfare at Work (Exposure to Asbestos) Regulations 2006-2010* and the *Best Practice Guidance for Handling Asbestos (2023)*. All material will be taken to a suitably licensed or permitted facility.

4.3.5 Other Known Hazardous Substances

Paints, glues, adhesives and other known hazardous substances will be stored in designated areas. They will generally be present in small volumes only and associated waste volumes generated will be kept to a minimum. Wastes will be stored in appropriate receptacles pending collection by an authorised waste contractor.

In addition, WEEE (containing hazardous components), printer toner / cartridges, batteries (Lead, Ni-Cd or Mercury) and / or fluorescent tubes and other mercury containing waste may be generated from during C&D activities or temporary site offices. These wastes, if generated, will be stored in appropriate receptacles in designated areas of the site pending collection by an authorised waste contractor.

5. ROLES AND RESPONSIBILITIES

The *Best Practice Guidelines on the Preparation of Resource Waste Management Plans for Construction and Demolition Projects* promotes that a suitably qualified Resource Manager (RM) with expertise in waste and resource management to implement the RWMP should be appointed. The RM may be performed by number of different individuals over the life-cycle of the Project, however it is intended to be a reliable person chosen from within the Planning/Design/Contracting Team, who is technically competent and appropriately trained, who takes the responsibility to ensure that the objectives and measures within the Project RWMP are complied with. The RM is assigned the requisite authority to meet the objective and obligations of the RWMP. The role will include the important activities of conducting waste checks/audits and adopting construction and demolition methodology that is designed to facilitate maximum reuse and/or recycling of waste.

5.1 Role of the Client

The Client is the body establishing the aims and the performance targets for the project.

- ▶ The Client has commissioned the preparation and submission of this RWMP as part of the design and planning submission;
- ▶ The Client is to commission the preparation and submission of an updated RWMP as part of the construction tendering process;
- ▶ The Client will ensure that the RWMP is agreed on and submitted to the local authority and their agreement obtained prior to commencement of works on site;
- ▶ The Client will request the end-of-project RWMP from the Contractor.

5.2 Role of the Client Advisory Team

The Client Advisory Team or Design Team is formed of architects, consultants, quantity surveyors and engineers and is responsible for:

- ▶ Drafting and maintaining the RWMP through the design, planning and procurement phases of the project;
- ▶ Appointing a RM to track and document the design process, inform the Design Team and prepare the RWMP.
- ▶ Including details and estimated quantities of all projected waste streams with the support of environmental consultants/scientists. This will also include data on waste types (e.g. waste characterisation data, contaminated land assessments, site investigation information) and prevention mechanisms (such as by-products) to illustrate the positive circular economy principles applied by the Design Team;
- ▶ Managing and valuing the demolition work with the support of quantity surveyors;
- ▶ Handing over of the RWMP to the selected Contractor upon commencement of construction of the development, in a similar fashion to how the safety file is handed over to the Contractor;
- ▶ Working with the Contractor as required to meet the performance targets for the project.

5.3 Future Role of the Contractor

The future demolition and construction Contractors have not yet been decided upon for this RWMP. However, once selected they will have major roles to fulfil. They will be responsible for:

- ▶ Preparing, implementing and reviewing the (including the Pre-Demolition) RWMP throughout the demolition and construction phases (including the management of all suppliers and sub-contractors) as per the requirements of the EPA guidelines;

- ▶ Identifying a designated and suitably qualified RM who will be responsible for implementing the RWMP;
- ▶ Identifying all hauliers to be engaged to transport each of the resources / wastes off-site;
- ▶ Implementing waste management policies whereby waste materials generated on site are to be segregated as far as practicable;
- ▶ Renting and operating a mobile-crusher to crush concrete for temporary reuse onsite during construction and reduce the amount of HGV loads required to remove material from site;
- ▶ Applying for the appropriate waste permit to crush concrete onsite;
- ▶ Identifying all destinations for resources taken off-site. As above, any resource that is legally classified as a 'waste' must only be transported to an authorised waste facility;
- ▶ End-of-waste and by-product notifications addressed with the EPA where required;
- ▶ Clarification of any other statutory waste management obligations, which could include on-site processing;
- ▶ Full records of all resources (both wastes and other resources) will be maintained for the duration of the project; and
- ▶ Preparing a RWMP Implementation Review Report at project handover.

6. KEY MATERIALS & QUANTITIES

6.1 Project Resource Targets

Project specific resource and waste management targets for the site have not yet been set and this information will be updated for these targets once these targets have been confirmed by the client. However, it is expected for projects of this nature that a minimum of 70% of waste is fully re-used, recycled or recovered. Target setting will inform the setting of project-specific benchmarks to track target progress. Typical Key Performance Indicators (KPIs) that will be used to set targets include (as per guidelines):

- ▶ Weight (tonnes) or Volume (m³) of waste generated per construction value;
- ▶ Weight (tonnes) or Volume (m³) of waste generated per construction floor area (m²);
- ▶ Fraction of resource reused on site;
- ▶ Fraction of resource notified as by-product;
- ▶ Fraction of waste segregated at source before being sent off-site for recycling/recovery; and
- ▶ Fraction of waste recovered, fraction of waste recycled, or fraction of waste disposed.

6.2 Main Construction and Demolition Waste Categories

The main non-hazardous and hazardous waste streams that could be generated by the construction activities at a typical site are shown in **Error! Reference source not found..** The List of Waste (LoW) code (2018) for each waste stream is also shown.

Table 6.1 Typical waste types generated and LoW codes (individual waste types may contain hazardous substances)

Waste Material	LoW Code
Concrete, bricks, tiles, ceramics	17 01 01-03 & 07
Wood, glass and plastic	17 02 01-03
Treated wood, glass, plastic, containing hazardous substances	17-02-04*
Bituminous mixtures, coal tar and tarred products	17 03 01*, 02 & 03*
Metals (including their alloys) and cable	17 04 01-11
Soil and stones	17 05 03* & 04
Gypsum-based construction material	17 08 01* & 02
Paper and cardboard	20 01 01
Mixed C&D waste	17 09 04
Green waste	20 02 01
Electrical and electronic components	20 01 35 & 36
Batteries and accumulators	20 01 33 & 34
Liquid fuels	13 07 01-10
Chemicals (solvents, pesticides, paints, adhesives, detergents etc.)	20 01 13, 19, 27-30
Insulation materials	17 06 04
Organic (food) waste	20 01 08
Mixed Municipal Waste	20 03 01

* Individual waste type may contain hazardous substances

6.3 Demolition Waste Generation

The demolition stage will involve the partial demolition and renovation of multiple brick buildings on-site. The demolition areas are identified in the planning drawings provided with this application. The anticipated demolition waste and rates of reuse, recycling / recovery and disposal are shown in Table 6.2, below.

Table 6.2 Estimated off-site reuse, recycle and disposal rates for demolition waste

Waste Type	Tonnes	Reuse/Recover		Recycle		Disposal	
		%	Tonnes	%	Tonnes	%	Tonnes
Glass	419.5	0	0.0	85	356.6	15	62.9
Concrete, Bricks, Tiles, Ceramics	2377.0	0	2020.5	5	118.9	10	237.7
Plasterboard	186.4	85	55.9	60	111.9	10	18.6
Asphalts	46.6	30	11.7	70	32.6	5	2.3
Metals	699.1	25	35.0	80	559.3	15	104.9
Slate	372.9	5	0.0	85	316.9	15	55.9
Timber	559.3	0	55.9	60	335.6	30	167.8
Total	4660.8		2178.9		1831.7		650.2

6.4 Construction Waste Generation

Table 6.3 shows the breakdown of C&D waste types produced on a typical site based on data from the EPA *National Waste Reports*²² and the joint EPA & GMIT study²³.

Table 6.3 Waste materials generated on a typical Irish construction site

Waste Types	%
Mixed C&D	33
Timber	28
Plasterboard	10
Metals	8
Concrete	6
Other	15
Total	100

Table 6.4, below, shows the estimated construction waste generation for the proposed Project based on the gross floor area of construction and other information available to date, along with indicative targets for management of the waste streams. The estimated amounts for the main waste types (with the exception of soils and stones) are based on an average large-scale development waste generation rate per m², using the waste breakdown rates shown in Table 6.3. These have been calculated from the schedule of development areas provided by the architect.

Table 6.4 Predicted on and off-site reuse, recycle and disposal rates for construction waste

Waste Type	Tonnes	Reuse		Recycle / Recovery		Disposal	
		%	Tonnes	%	Tonnes	%	Tonnes
Mixed C&D	624.9	10	62.5	80	499.9	10	62.5
Timber	530.2	40	212.1	55	291.6	5	26.5
Plasterboard	189.4	30	56.8	60	113.6	10	18.9
Metals	151.5	5	7.6	90	136.3	5	7.6
Concrete	56.8	30	17.0	65	36.9	5	2.8
Other	284.1	20	56.8	60	170.4	20	56.8
Total	1836.9		412.8		1248.9		175.2

In addition to the waste streams in Table 6.4 there will be c. 40,329 m³ of soil, stones, clay and made ground excavated to facilitate construction of new foundations and landscaping. Any suitable excavated material will be temporarily stockpiled for reuse as fill. It is currently envisaged that where soil is not contaminated, the soil excavated will be reused on-site where possible. In the event that soil is contaminated or unable to be reused on-site, it will need to be removed off-site for appropriate reuse, recovery and / or disposal.

It should be noted that until final materials and detailed construction methodologies have been confirmed, it is difficult to predict with a high level of accuracy the construction waste that will be generated from the proposed works as the exact materials and quantities may be subject to some degree of change and variation during the construction process.

6.5 Proposed Resource and Waste Management Options

Waste materials generated will be segregated on-site, where it is practical. Where the on-site segregation of certain wastes types is not practical, off-site segregation will be carried out. There will be skips and receptacles provided to facilitate segregation at source, where feasible. All waste receptacles leaving the site will be covered or enclosed. The appointed waste contractor will collect and transfer the wastes as receptacles are filled. There are numerous waste contractors in the Cork region that provide this service.

All waste arisings will be handled by an approved waste contractor holding a current waste collection permit. All waste arisings requiring disposal off-site will be reused, recycled, recovered or disposed of at a facility holding the appropriate registration, permit or licence, as required.

National End-of-Waste Decision EoW-N001/2023 (Regulation 28) published by the EPA in September 2023, establishes criteria determining when recycled aggregate resulting from a recovery operation ceases to be waste. Material from this proposed development will be investigated to see if it can cease to be a waste under the requirements of the National End of Waste Criteria for Aggregates.

During construction, some of the sub-contractors on site will generate waste in relatively low quantities. The transportation of non-hazardous waste by persons who are not directly involved with the waste business, at weights less than or equal to 2 tonnes, and in vehicles not designed for the carriage of waste, are exempt from the requirement to have a waste collection permit (per Article 30 (1) (b) of the Waste Collection Permit Regulations 2007, as amended). Any sub-contractors engaged that do not generate more than 2 tonnes of waste at any one time can transport this waste off-site in their work vehicles (which are not designed for the carriage of waste). However, they are required to ensure that the receiving facility has the appropriate COR / permit / licence.

Written records will be maintained by the contractor(s), detailing the waste arising throughout the C&D phases, the classification of each waste type, waste collection permits for all waste contactors who collect

waste from the site and COR / permit / licence for the receiving waste facility for all waste removed off-site for appropriate reuse, recycling, recovery and / or disposal. Dedicated bunded storage containers will be provided for hazardous wastes which may arise, such as batteries, paints, oils, chemicals, if required.

The anticipated management of the main waste streams is outlined as follows:

Soil, Stone, Gravel & Clay

The waste hierarchy states that the preferred option for waste management is prevention and minimisation of waste, followed by preparing for reuse and recycling / recovery, energy recovery (i.e. incineration) and, least favoured of all, disposal. The excavations are required to facilitate construction works so the preferred option (prevention and minimisation) cannot be accommodated for the excavation phase.

If material is removed off-site it could be reused as a by-product (and not as a waste). If this is done, it will be done in accordance with Regulation 27 of the European Communities (Waste Directive) Regulations 2011, as amended, which requires that certain conditions are met and that by-product notifications are made to the EPA via their online notification form. Excavated material should not be removed from site until approval from the EPA has been received. The potential to reuse material as a by-product will be confirmed during the course of the excavation works, with the objective of eliminating any unnecessary disposal of material.

The next option (beneficial reuse) may be appropriate for the excavated material, pending environmental testing to classify the material as hazardous or non-hazardous in accordance with the EPA *Waste Classification – List of Waste & Determining if Waste is Hazardous or Non-Hazardous* publication. Clean inert material may be used as fill material in other construction projects or engineering fill for waste licensed sites. Beneficial reuse of surplus excavation material as engineering fill may be subject to further testing to determine if materials meet the specific engineering standards for their proposed end use.

Any nearby sites requiring clean fill/capping material will be contacted to investigate reuse opportunities for clean and inert material. If any of the material is to be reused on another site as a by-product (and not as a waste), this will be done in accordance with Regulation 27. Similarly, if any soils/stones are imported onto the site from another construction site as a by-product, this will also be done in accordance with Regulation 27. Regulation 27 will be investigated to see if the material can be imported onto this site for beneficial reuse instead of using virgin materials.

If the material is deemed to be a waste, then removal and reuse / recovery / disposal of the material will be carried out in accordance with the Waste Framework Directive (Directive 2008/98/EC), the *Waste Management Act 1996* as amended, the *Waste Management (Collection Permit) Regulations 2007* as amended and the *Waste Management (Facility Permit & Registration) Regulations 2007* as amended. Once all available beneficial reuse options have been exhausted, the options of recycling and recovery at waste permitted and licensed sites will be considered.

In the event that contaminated material is encountered and subsequently classified as hazardous, this material will be stored separately to any non-hazardous material. It will require off-site treatment at a suitable facility or disposal abroad via Transfrontier Shipment of Wastes (TFS).

Bedrock

While it is not envisaged that bedrock will be encountered, if bedrock is encountered, it is anticipated that it will not be crushed on site. Any excavated rock is expected to be removed off-site for appropriate reuse, recovery and / or disposal. If bedrock is to be crushed on-site, the appropriate mobile waste facility permit will be obtained from CCC.

Silt & Sludge

During the construction phase, silt and petrochemical interception will be carried out on run-off and pumped water from site works, where required. Sludge and silt will then be collected by a suitably licensed contractor and removed off-site.

Concrete Blocks, Bricks, Tiles & Ceramics

The majority of concrete blocks, bricks, tiles and ceramics generated as part of the construction works are expected to be clean, inert material and will be recycled, where possible. If concrete is to be crushed on-site, the appropriate mobile waste facility permit will be obtained from CCC.

Hard Plastic

As hard plastic is a highly recyclable material, much of the plastic generated will be primarily from material off-cuts. All recyclable plastic will be segregated and recycled, where possible.

Timber

Timber that is uncontaminated, i.e. free from paints, preservatives, glues, etc., will be disposed of in a separate skip and recycled off-site.

Metal

Metals will be segregated, where practical, and stored in skips. Metal is highly recyclable and there are numerous companies that will accept these materials.

Plasterboard

There are currently a number of recycling services for plasterboard in Ireland. Plasterboard from the construction phases will be stored in a separate skip, pending collection for recycling. The site Manager will ensure that oversupply of new plasterboard is carefully monitored to minimise waste.

Glass

Glass materials will be segregated for recycling, where possible.

Waste Electrical & Electronic Equipment (WEEE)

Any WEEE will be stored in dedicated covered cages / receptacles / pallets pending collection for recycling.

Other Recyclables

Where any other recyclable wastes, such as cardboard and soft plastic, are generated, these will be segregated at source into dedicated skips and removed off-site.

Non-Recyclable Waste

C&D waste which is not suitable for reuse or recovery, such as polystyrene, some plastics and some cardboards, will be placed in separate skips or other receptacles. Prior to removal from site, the non-recyclable waste skip / receptacle will be examined by a member of the waste team (see Section 9) to determine if recyclable materials have been placed in there by mistake. If this is the case, efforts will be made to determine the cause of the waste not being segregated correctly and recyclable waste will be removed and placed into the appropriate receptacle.

Asbestos Containing Materials

In the event that any asbestos or ACM is found on-site it will be removed by a suitably competent contractor and disposed of as asbestos waste before the demolition works begin. All asbestos removal work or encapsulation work must be carried out in accordance with the *Safety, Health and Welfare at Work (Exposure to Asbestos) Regulations 2006-2010*.

Other Hazardous Wastes

On-site storage of any hazardous wastes produced (i.e. contaminated soil if encountered and / or waste fuels) will be kept to a minimum, with removal off-site organised on a regular basis. Storage of all hazardous wastes on-site will be undertaken so as to minimise exposure to on-site personnel and the public and to also minimise potential for environmental impacts. Hazardous wastes will be recovered, wherever possible, and failing this, disposed of appropriately.

On-Site Crushing

It is currently not envisaged that the crushing of waste materials will occur on-site. However, if the crushing of material is to be undertaken, a mobile waste facility permit will first be obtained from CCC and the destination of the accepting waste facility or if an application under regulation 28 will be made using National End-of-Waste Decision EoW-N001/2023, will be supplied to the CCC waste unit.

It should be noted that until a construction contractor is appointed it is not possible to provide information on the specific destinations of each construction waste stream. Prior to commencement of construction and removal of any waste offsite, details of the proposed destination of each waste stream will be provided to CCC by the project team.

6.6 Tracking and Documentation Procedures for Off-Site Waste

All waste will be documented prior to leaving the site. Waste will be weighed by the contractor, either by a weighing mechanism on the truck or at the receiving facility. These waste records will be maintained on site by the nominated project RM (see Section 9).

All movement of waste and the use of waste contractors will be undertaken in accordance with the Waste Framework Directive (Directive 2008/98/EC), the *Waste Management Act 1996* as amended, *Waste Management (Collection Permit) Regulations 2007* as amended and *Waste Management (Facility Permit & Registration) Regulations 2007* and amended. This includes the requirement for all waste contractors to have a waste collection permit issued by the NWCPO. The nominated project RM (see Section 9) will maintain a copy of all waste collection permits on-site.

If the waste is being transported to another site, a copy of the Local Authority waste COR / permit or EPA Waste Licence for that site will be provided to the nominated project Waste Manager (see Section 9). If the waste is being shipped abroad, a copy of the Transfrontier Shipping (TFS) notification document will be obtained from DCC (as the relevant authority on behalf of all Local Authorities in Ireland) and kept on-site along with details of the final destination (COR, permits, licences, etc.). A receipt from the final destination of the material will be kept as part of the on-site waste management records.

All information will be entered in a waste management recording system to be maintained on-site.

7. ESTIMATED COST OF WASTE MANAGEMENT

An outline of the costs associated with different aspects of waste management is outlined below. The total cost of C&D waste management will be measured and will take into account handling costs, storage costs, transportation costs, revenue from rebates and disposal costs.

7.1 Reuse

By reusing materials on site, there will be a reduction in the transport and recycle / recovery / disposal costs associated with the requirement for a waste contractor to take the material off-site. Clean and inert soils, gravel, stones, etc., which cannot be reused on-site may be used as access roads or capping material for landfill sites, etc. This material is often taken free of charge or at a reduced fee for such purposes, reducing final waste disposal costs.

7.2 Recycling

Salvageable metals will earn a rebate, which can be offset against the costs of collection and transportation of the skips.

Clean, uncontaminated cardboard and certain hard plastics can also be recycled. Waste contractors will charge considerably less to take segregated wastes, such as recyclable waste, from a site than mixed waste.

Timber can be recycled as chipboard. Again, waste contractors will charge considerably less to take segregated wastes, such as timber, from a site than mixed waste.

7.3 Disposal

Landfill charges are currently at around €140 - €160 per tonne which includes a €85 per tonne landfill levy specified in the *Waste Management (Landfill Levy) Regulations 2015* as amended. The Circular Economy (Waste Recovery Levy) will also incur a levy of €10 per tonne for waste accepted for recovery. This will include backfilling at authorised recovery sites and at municipal waste landfills. In addition to disposal costs, waste contractors will also charge a collection fee for skips.

Collection of segregated C&D waste usually costs less than municipal waste. Specific C&D waste contractors take the waste off-site to a licensed or permitted facility and, where possible, remove salvageable items from the waste stream before disposing of the remainder to landfill. Clean soil, rubble, etc., is also used as fill / capping material, wherever possible.

8. DEMOLITION PROCEDURES

There will be waste materials generated from the demolition and partial demolition of some of the existing buildings as well as from the further excavation of the building foundations of the units to be demolished in full. The demolition areas are identified in the planning drawings submitted as part of this application and in the demolition justification report. A formal demolition plan including safety procedures will be prepared by the demolition contractor. However, in general, the following sequence of works should be followed during the demolition stage:

Waste Reduction Assessment

- ▶ Preparation of a pre-demolition audit detailing resource recovery best practice, i.e. deconstruction and disassembly where feasible and practicable. The demolition audit will be informed by the EU Guidelines for the waste audits before demolition and renovation works of buildings (May 2018) ²⁴.
- ▶ Investigate the reduction and recycling potential of deconstructed components, elements and materials within the new build if it will be compliance with functionality, regulatory and performance requirements. The reuse and recycling of deconstructed components, elements and materials will be carried out in compliance with relevant requirements relating to by-product, end-of-waste and waste data reporting.
- ▶ Reuse and recycle deconstructed components, elements and materials from other projects off-site if in compliance with functionality, regulatory and performance requirements. The reuse and recycling of deconstructed components, elements and materials must be carried out in compliance with relevant requirements relating to by-product, end-of-waste and waste data reporting.
- ▶ A specific audit for potentially hazardous material (asbestos, polychlorinated biphenyls (PCBs), persistent organic pollutants (POPs), etc.) and document procedures for removal of same prior to main demolition works will be undertaken.

Check for Hazards

Prior to commencing works, buildings and structures to be demolished will be checked for any likely hazards including asbestos, ACMs, electrical power lines or cables, gas reticulation systems, telecommunications, unsafe structures and fire / explosion hazards, e.g. combustible dust, chemical hazards, oil, fuels and contamination.

Removal of Components

All hazardous materials will be removed first. All components from within the buildings that can be salvaged will be removed next. This will primarily be comprised of metal; however, may also include timbers, doors, windows, wiring and metal ducting, etc.

Removal of Roofing

Steel roof supports, beams, etc., will be dismantled and taken away for recycling / salvage.

Excavation of Services, Demolition of Walls and Concrete

Services will be removed from the ground and the breakdown of walls will be carried out once all salvageable or reusable materials have been taken from the buildings. Finally, any existing foundations and hard standing areas will be excavated.

9. TRAINING PROVISIONS

A member of the construction team will be appointed as the RM to ensure commitment, operational efficiency and accountability in relation to waste management during the C&D phases of the development.

9.1 Resource Manager Training and Responsibilities

The nominated RM will be given responsibility and authority to select a waste team if required, i.e. members of the site crew that will aid them in the organisation, operation and recording of the waste management system implemented on site.

The RM will have overall responsibility to oversee, record and provide feedback to the client on everyday waste management at the site. Authority will be given to the Waste Manager to delegate responsibility to sub-contractors, where necessary, and to coordinate with suppliers, service providers and sub-contractors to prioritise waste prevention and material salvage.

The RM will be trained in how to set up and maintain a record keeping system, how to perform an audit and how to establish targets for waste management on site. The RM will also be trained in the best methods for segregation and storage of recyclable materials, have information on the materials that can be reused on site and be knowledgeable in how to implement this RWMP.

9.2 Site Crew Training

Training of site crew in relation to waste is the responsibility of the RM and, as such, a waste training program will be organised. A basic awareness course will be held for all site crew to outline the RWMP and to detail the segregation of waste materials at source. This may be incorporated with other site training needs such as general site induction, health and safety awareness and manual handling.

This basic course will describe the materials to be segregated, the storage methods and the location of the Waste Storage Areas (WSAs). A sub-section on hazardous wastes will be incorporated into the training program and the particular dangers of each hazardous waste will be explained.

10. TRACKING AND TRACING / RECORD KEEPING

Records will be kept for all waste material which leaves the site, either for reuse on another site, recycling or disposal. A recording system will be put in place to record the waste arisings on Site.

A waste tracking log will be used to track each waste movement from the site. On exit from the site, the waste collection vehicle driver will stop at the site office and sign out as a visitor and provide the security personnel or RM with a waste docket (or Waste Transfer Form (WTF) for hazardous waste) for the waste load collected. At this time, the security personnel will complete and sign the Waste Tracking Register with the following information:

- ▶ Date
- ▶ Time
- ▶ Waste Contractor
- ▶ Company waste contractor appointed by, e.g. Contractor or subcontractor name
- ▶ Collection Permit No.
- ▶ Vehicle Reg.
- ▶ Driver Name
- ▶ Docket No.
- ▶ Waste Type
- ▶ LoW
- ▶ Weight/Quantity

The waste vehicle will be checked by security personal or the RM to ensure it has the waste collection permit no. displayed and a copy of the waste collection permit in the vehicle before they are allowed to remove the waste from the site.

The waste transfer dockets will be transferred to the RM on a weekly basis and can be placed in the Waste Tracking Log file. This information will be forwarded onto the CCC Waste Regulation Unit when requested.

Each subcontractor that has engaged their own waste contractor will be required to maintain a similar waste tracking log with the waste dockets / WTF maintained on file and available for inspection on site by the main contractor as required. These subcontractor logs will be merged with the main waste log.

Waste receipts from the receiving waste facility will also be obtained by the site contractor(s) and retained. A copy of the Waste Collection Permits, CORs, Waste Facility Permits and Waste Licences will be maintained on site at all times and will be periodically reviewed by the RM. Subcontractors who have engaged their own waste contractors, will provide the main contractor with a copy of the waste collection permits and COR / permit / licence for the receiving waste facilities and maintain a copy on file, available for inspection on site as required.

11. OUTLINE WASTE AUDIT PROCEDURE

11.1 Responsibility for Waste Audit

The appointed RM will be responsible for conducting a waste audit at the site during the C&D phase of the proposed Project. Contact details for the nominated RM will be provided to the CCC Waste Regulation Unit after the main contractor is appointed and prior to any material being removed from site.

11.2 Review of Records and Identification of Corrective Actions

A review of all waste management costs and the records for the waste generated and transported off-site will be undertaken mid-way through the demolition and construction phase of the proposed Project.

If waste movements are not accounted for, the reasons for this will be established in order to see if and why the record keeping system has not been maintained. The waste records will be compared with the established recovery / reuse / recycling targets for the site. Each material type will be examined, in order to see where the largest percentage waste generation is occurring. The waste management methods for each material type will be reviewed in order to highlight how the targets can be achieved.

Upon completion of the C&D phase, a final report will be prepared, summarising the outcomes of waste management processes adopted and the total recycling / reuse / recovery figures for the development.

11.3 Pest Management

A pest control operator will be appointed as required to manage pest onsite during the construction phase of the project. Organic and food wastes generated by staff will not be stored in open skips, but in closed waste receptacles. Any waste receptacles will be carefully managed to prevent leaks, odours and pest problems.

12. CONSULTATION WITH RELEVANT BODIES

12.1 Local Authority

Once construction contractors have been appointed and have appointed waste contractors, and prior to removal of any C&D waste materials off-site, details of the proposed destination of each waste stream will be provided to the CCC Waste Regulation Unit.

CCC will also be consulted, as required, throughout the demolition, excavation and construction phases in order to ensure that all available waste reduction, reuse and recycling opportunities are identified and utilised and that compliant waste management practices are carried out.

12.2 Recycling / Salvage Companies

The appointed waste contractor for the main waste streams managed by the demolition and construction contractors will be audited in order to ensure that relevant and up-to-date waste collection permits and facility registrations / permits / licences are held. In addition, information will be obtained regarding the feasibility of recycling each material, the costs of recycling / reclamation, the means by which the wastes will be collected and transported off-site, and the recycling / reclamation process each material will undergo off-site.

13. SUMMARY AND CONCLUSION

Adherence to this plan will also ensure that waste management during the construction phase at the proposed development is carried out in accordance with the requirements in the EPA's Best Practice Guidelines for the Preparation of Resource & Waste Management Plans for Construction & Demolition Projects and the CCC Waste Bye-Laws and the NWMPCE.

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APPENDIX 11-2 Operational Waste Management Plan



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Date	14/03/2025	14/03/2025

Disclaimer
This report considers the specific instructions and requirements of our client. It is not intended for third-party use or reliance, and no responsibility is accepted for any third party. The provisions in this report apply solely to this project and should not be assumed applicable to other developments without review and modification.



Operational Waste Management Plan

Project Title: Good Shepherd Student Development OWMP Located in Sunday's Well, Cork.

CLIENT	DOCUMENT REFERENCE	DATE
Bellmount Developments Ltd.	247501.1091WMR02	14/03/2025

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1. INTRODUCTION

AWN Consulting, a Trinity Consultants Company, has prepared this Operational Waste Management Plan (OWMP) on behalf of Bellmount Developments Ltd. The proposed development will include the conservation, conversion and extension of the former Good Shepherd Convent, Home Building, Orphanage Building, Well Site, Gate Lodge, and Bakehouse to provide student accommodation and ancillary services.

A full description is included in Chapter 2 of this EIAR and in the statutory notices.

This OWMP has been prepared to ensure that the management of waste during the operational phase of the proposed Development is undertaken in accordance with the current legal and industry standards including, the *Waste Management Act 1996* as amended and associated Regulations ¹, *Environmental Protection Agency Act 1992* as amended ², *Litter Pollution Act 1997* as amended ³, the *National Waste Management Plan for a Circular Economy 2024 - 2030 (NWMPE) (2024)* ⁴ and *Cork City Council (CCC) Bye-Laws for the Segregation, Storage and Presentation of Household and Commercial Waste (2019)* ⁵. In particular, this OWMP aims to provide a robust strategy for the storage, handling, collection and transport of the wastes generated at the Site.

This 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.

At present, there are no specific national guidelines in Ireland for the preparation of OWMPs. Therefore, in preparing this document, consideration has been given to the requirements of national and regional waste policy, legislation and other guidelines.

2. OVERVIEW OF WASTE MANAGEMENT IN IRELAND

2.1 National level

The Irish Government issued a policy statement in September 1998 entitled '*Changing Our Ways*'⁶, which identified objectives for the prevention, minimisation, reuse, recycling, recovery and disposal of waste in Ireland. A heavy emphasis was placed on reducing reliance on landfill and finding alternative methods for managing waste. Amongst other things, *Changing Our Ways* stated a target of at least 35% recycling of municipal (i.e. household, commercial and non-process industrial) waste.

A further policy document, '*Preventing and Recycling Waste – Delivering Change*' was published in 2002⁷. This document proposed a number of programmes to increase recycling of waste and allow diversion from landfill. The need for waste minimisation at source was considered a priority.

This view was also supported by a review of sustainable development policy in Ireland and achievements to date, which was conducted in 2002, entitled '*Making Ireland's Development Sustainable – Review, Assessment and Future Action*'⁸. This document also stressed the need to decouple economic growth and waste generation, again through waste minimisation and reuse of discarded material.

In order to establish the progress of the Government policy document *Changing Our Ways*, a review document was published in April 2004 entitled '*Taking Stock and Moving Forward*'⁹. Covering the period 1998 – 2003, the aim of this document was to assess progress to date with regard to waste management in Ireland, to consider developments since the policy framework and the local authority waste management plans were put in place, and to identify measures that could be undertaken to further support progress towards the objectives outlined in *Changing Our Ways*.

In particular, *Taking Stock and Moving Forward* noted a significant increase in the amount of waste being brought to local authority landfills. The report noted that one of the significant challenges in the coming years was the extension of the dry recyclable collection services.

In September 2020, the Irish Government published a new policy document outlining a new action plan for Ireland to cover the period of 2020-2025. This plan '*A Waste Action Plan for a Circular Economy*'¹⁰ (WAPCE), was prepared in response to the '*European Green Deal*' which sets a roadmap for a transition to a new economy, where climate and environmental challenges are turned into opportunities, replacing the previous national waste management plan '*A Resource Opportunity*' (2012).

The WAPCE sets the direction for waste planning and management in Ireland up to 2025. This reorientates policy from a focus on managing waste to a much greater focus on creating circular patterns of production and consumption. Other policy statements of a number of public bodies already acknowledge the circular economy as a national policy priority.

The policy document contains over 200 measures across various waste areas including circular economy, municipal waste, consumer protection and citizen engagement, plastics and packaging, construction and demolition, textiles, green public procurement and waste enforcement.

One of the first actions to be taken was the development of the Whole of Government Circular Economy Strategy 2022-2023 '*Living More, Using Less*' (2021)¹¹ to set a course for Ireland to transition across all sectors and at all levels of Government toward circularity and was issued in December 2021. It is anticipated that the Strategy will be updated in full every 18 months to 2 years.

The Circular Economy and Miscellaneous Provisions Act 2022¹² was signed into law in July 2022. The Act underpins Ireland's shift from a "take-make-waste" linear model to a more sustainable pattern of production and consumption, that retains the value of resources in our economy for as long as possible and that will to significantly reduce our greenhouse gas emissions. The Act defines Circular Economy for

the first time in Irish law, incentivises the use of recycled and reusable alternatives to wasteful, single-use disposable packaging, introduces a mandatory segregation and incentivised charging regime for commercial waste, streamlines the national processes for End-of-Waste and By-Products decisions, tackling the delays which can be encountered by industry, and supporting the availability of recycled secondary raw materials in the Irish market, and tackles illegal fly-tipping and littering.

The Department of Housing, Local Government and Heritage authored Sustainable Residential Development and Compact Settlements - Guidelines for Planning Authorities (2024)¹³, suggests the below thresholds at which the need for the supplemental information such as the OWMP should be considered.

- ▶ 30 or more residential units,
- ▶ 1,000 sq. metres of mixed-use development

Since 1998, the Environmental Protection Agency (EPA) has produced periodic 'National Waste (Database) Reports' which as of 2023 have been renamed *Circular Economy and Waste Statistics Highlight Reports*¹⁴ detailing, among other things, estimates for household and commercial (municipal) waste generation in Ireland and the level of recycling, recovery and disposal of these materials. The 2024 National Circular Economy and Waste Statistics web resource, which is the most recent study published, along with the national waste statistics web resource (2024) reported the following key statistics for 2022:

- ▶ Generated – Ireland produced 3,190,000 t of municipal waste in 2022. This is a slight increase since 2021. Of this, 55% came from households and 45% came from commercial and public service sources.
- ▶ Managed – In 2022, a total of 1.76 million Household waste collected and treated by the waste industry.
- ▶ Unmanaged – An estimated 36,970 tonnes of household waste was unmanaged waste i.e., not disposed of in the correct manner in 2022.
- ▶ Recovered – A rounded 1.3 million tonnes of Ireland's municipal waste went for incineration with energy recovery in 2022. This tonnage is 43% of municipal waste managed and a marginal increase on the 42% achieved in 2021.
- ▶ Recycled – Some 1.3 million tonnes of municipal waste generated in Ireland was recycled in 2022, resulting in a recycling rate of 41%. This indicates that we face significant challenges to meet the upcoming EU recycling targets for 2025 to 2035
- ▶ Of the municipal waste recycled in 2022, over 825,000 tonnes went for material recycling (approximately the same as 2021) and over 480,000 tonnes were treated by composting/anaerobic digestion (approximately the same as 2021 but up 37% in 2020). The large increase of composted/anaerobically digested biowaste from 2020 is mainly due to a change in our way of estimating home composting.
- ▶ Disposed – Ireland's landfill rate for municipal waste managed was 15% in 2022. This is a 1% decrease from 2021's rate of 16%.
- ▶ Reuse – 54,800 tonnes of second-hand products we estimated by the EPA to have been reused in Ireland in 2021. The average annual Reuse rate per person in Ireland is 10.6 kg per person.

2.2 Regional Level

The proposed student development is located in the Local Authority administrative area of Cork City Council (CCC).

The *Southern Region Waste Management Plan 2015 – 2021* which previously governed waste management policy in the CCC has been superseded as of March 2024 by the NWMPCE 2024 – 2030, the new national waste management plan for Ireland.

The NWMPCE does not dissolve the three regional waste areas. The NWCPCE sets the ambition of the plan to have a 0% total waste growth per person over the life of the Plan with an emphasis on non-household wastes including waste from commercial activities and the construction and demolition sector. This Plan seeks to influence sustainable consumption and prevent the generation of waste, improve the capture of materials to optimise circularity and enable compliance with policy and legislation.

The national plan sets out the following strategic targets for waste management in the country that are relevant to the development:

National Targets

- 1A. (Residual Municipal Waste) 6% Reduction in Residual Municipal Waste per person by 2030.
- 2A. (Contamination of Materials) 90% of Material in Compliance in the Dry Recycling Bin.
- 2B. (Material Compliance Residual) 10% per annum increase in Material Compliance in the residual bin. (90% by the end of 2030).
- 3A. (Reuse of Materials) 20kg Per person / year – Reuse of materials like cloths or furniture to prevent waste.

Municipal landfill charges in Ireland are based on the weight of waste disposed. In the Munster Region, charges are approximately €140-160 per tonne of waste, which includes a €85 per tonne landfill levy introduced under the Waste Management (Landfill Levy) (Amendment) Regulations 2015 (as amended)¹⁵. *The Circular Economy (Waste Recovery Levy) Regulations 2024*¹⁶ will also have a levy of €10 per tonne to waste accepted for recovery.

The *Cork City Development Plan 2022 – 2028*¹⁷ is guided by the National Planning Framework along with several other national and regional plans, including the current regional waste management plan and the Waste Action Plan for a Circular Economy. Waste management has been addressed under *Chapter 9 Environmental Infrastructure* and *Chapter 11 Placemaking and Managing Development*. Waste policies and objectives with a particular relevance to this development are as follows:

Objectives:

- ▶ Objective 9.12 - Waste Management:
 - a) To support the sustainable management of waste in line with the objectives of the Southern Region Waste Management Plan 2015-2021 and the National Waste Management Plan for a Circular Economy (NWMPCE) when published, which will replace the existing Regional Waste Management Plans.
 - b) To facilitate the transition to a circular economy facilitating the value recovery and recirculation of resources in order to generate minimal waste.
- ▶ Objective 11.3 Housing Quality and Standards:
 - a) Waste: Housing should be designed with adequate and easily accessible storage space that supports the separate collection of dry recyclables, food waste and residual waste.

With reference to operational waste strategy, Section 11.270 of Chapter 11 states:

‘Adequate bin storage provision shall be made for the storage, segregation, and recycling of waste in residential developments. In the case of communal refuse storage provision, the collection point for refuse

should be accessible both to the external collector and to the resident and be secured against illegal dumping by non-residents. These shall be well screened from public view and adequately ventilated’.

2.3 Legislative Requirements

The primary legislative instruments that govern waste management in Ireland and applicable to the proposed Development are:

- ▶ *Waste Management Act 1996 as amended;*
- ▶ *Environmental Protection Agency Act 1992 as amended;*
- ▶ *Litter Pollution Act 1997 as amended;*
- ▶ *Planning and Development Act 2000 as amended;*
- ▶ *Circular Economy and Miscellaneous Provisions Act 2022.*

These Acts and subordinate Regulations transpose the relevant European Union Policy and Directives into Irish law.

One of the guiding principles of European waste legislation, which has in turn been incorporated into the Waste Management Act 1996 as amended and subsequent Irish legislation, is the principle of “*Duty of Care*”. This implies that the waste producer is responsible for waste from the time it is generated through until its legal disposal (including its method of disposal). As it is not practical in most cases for the waste producer to physically transfer all waste from where it is produced to the final disposal area, waste contractors will be employed to physically transport waste to the final waste disposal site.

It is, therefore, imperative that the residents, commercial tenants and the proposed facilities management company undertake on-site management of waste in accordance with all legal requirements and that the facilities management company employ suitably permitted / licenced contractors to undertake off-site management of their waste in accordance with all legal requirements. This includes the requirement that a waste contractor handle, transport and reuse / recover / recycle / dispose of waste in a manner that ensures that no adverse environmental impacts occur as a result of any of these activities.

A collection permit to transport waste must be held by each waste contractor which is issued by the National Waste Collection Permit Office (NWCPO). Waste receiving facilities must also be appropriately permitted or licensed. Operators of such facilities cannot receive any waste, unless in possession of a Certificate of Registration (COR) or waste permit granted by the relevant Local Authority under the Waste Management (Facility Permit & Registration) Regulations 2007, as amended, or a Waste Licence granted by the EPA. The COR / permit / licence held will specify the type and quantity of waste able to be received, stored, sorted, recycled, recovered and / or disposed of at the specified site.

2.3.1 Cork City Council Waste Bye-Laws

The CCC "Cork City Council Bye-Laws for the Segregation Storage and Presentation of Household and Commercial Waste" (2019) came into use on the 1st of May 2019. The Bye-Laws set a number of enforceable requirements on waste holders with regard to storage, separation and presentation of waste within the CCC functional area. Key requirements under these Bye-Laws of relevance to the development include the following:

- ▶ Outside of Cork City Centre: Kerbside waste presented for collection shall not be presented for collection earlier than 6.00 pm on the day immediately preceding the designated waste collection day;
- ▶ Outside of Cork City Centre: All containers used for the presentation of kerbside waste and any uncollected waste shall be removed from any roadway, footway, footpath or any other public place no later than 7:00pm on the day following the designated waste collection day;

- Documentation, including receipts, are to be obtained and retained for a period of no less than one year to provide proof that waste has been disposed of in accordance with the bye-laws; and
- Waste containers shall be stored within the curtilage of the premise where the waste is produced and they shall not be stored on a road, footway, footpath or any other public place unless expressly authorised, in writing, by Cork City Council.

The full text of the Waste Bye-Laws is available from the CCC website.

2.4 Regional Waste Management Service Providers and Facilities

Various contractors offer waste collection services for the residential sector in the CCC region. Details of waste collection permits (granted, pending and withdrawn) for the region are available from the NWCPO.

There is only one active landfill in the Southern Region, at Powerstown in Co. Carlow, which is also now a civic amenity centre. There are two other landfills in the region with capacity for landfilling waste but neither are carrying out landfilling activity. Both sites, however, operate as recycling facilities.

There are a number of other licensed and permitted facilities in operation in the region including waste transfer stations, hazardous waste facilities and integrated waste management facilities. There are two existing thermal treatment facilities, one in Duleek, Co. Meath and a second in Poolbeg in Dublin.

The development has a number of bring back centres located in the surrounding area. Distillery Field, North Mall Bring back centre is located 1.5 km east of the proposed student development and can be used by residents of the proposed student development to dispose of household waste streams including clear, green and brown glass.

The CCC Civic Amenity Centre, Kinsale Road, Cork, located 6.7 km southeast of the development site, can be used by residents of the proposed student development for other household waste streams. This centre can accept general waste, plastic, glass, paper, metals, Tetra Pak, batteries, electrical items, light bulbs, paints, varnish and waste mineral oil.

A copy of all CORs and waste permits issued by the Local Authorities are available from the NWCPO website and all Waste Licenses issued are available from the EPA.

3. DESCRIPTION OF THE DEVELOPMENT

3.1 Location, Size and Scale of the Development

The proposed development will include the conservation, conversion and extension of the former Good Shepherd Convent, Home Building, Orphanage Building, Well Site, Gate Lodge, and Bakehouse to provide student accommodation and ancillary services.

A full description is included in Chapter 2 of this EIAR and in the statutory notices.

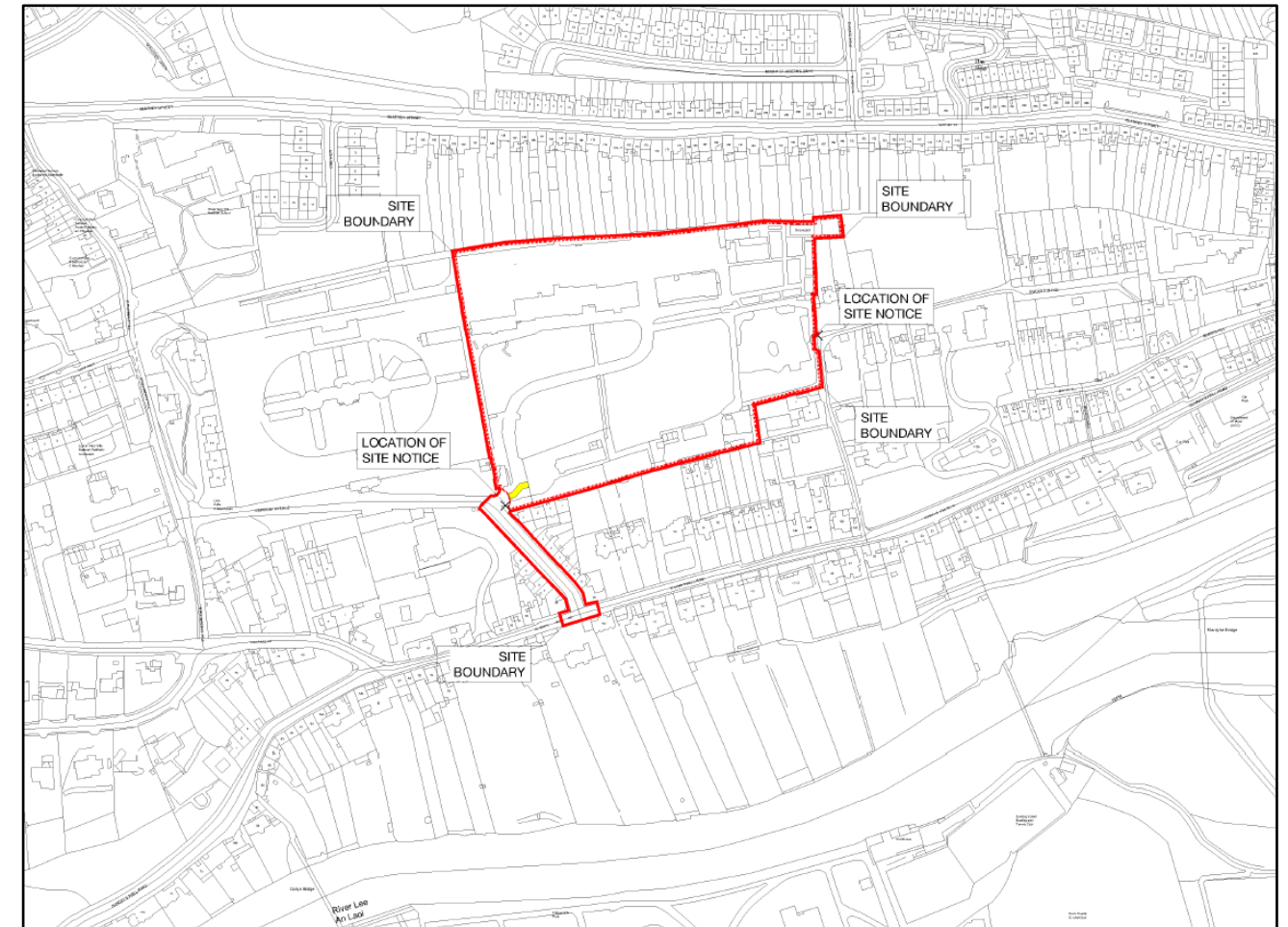


Figure 3.1 Proposed Site Layout Redline Boundary

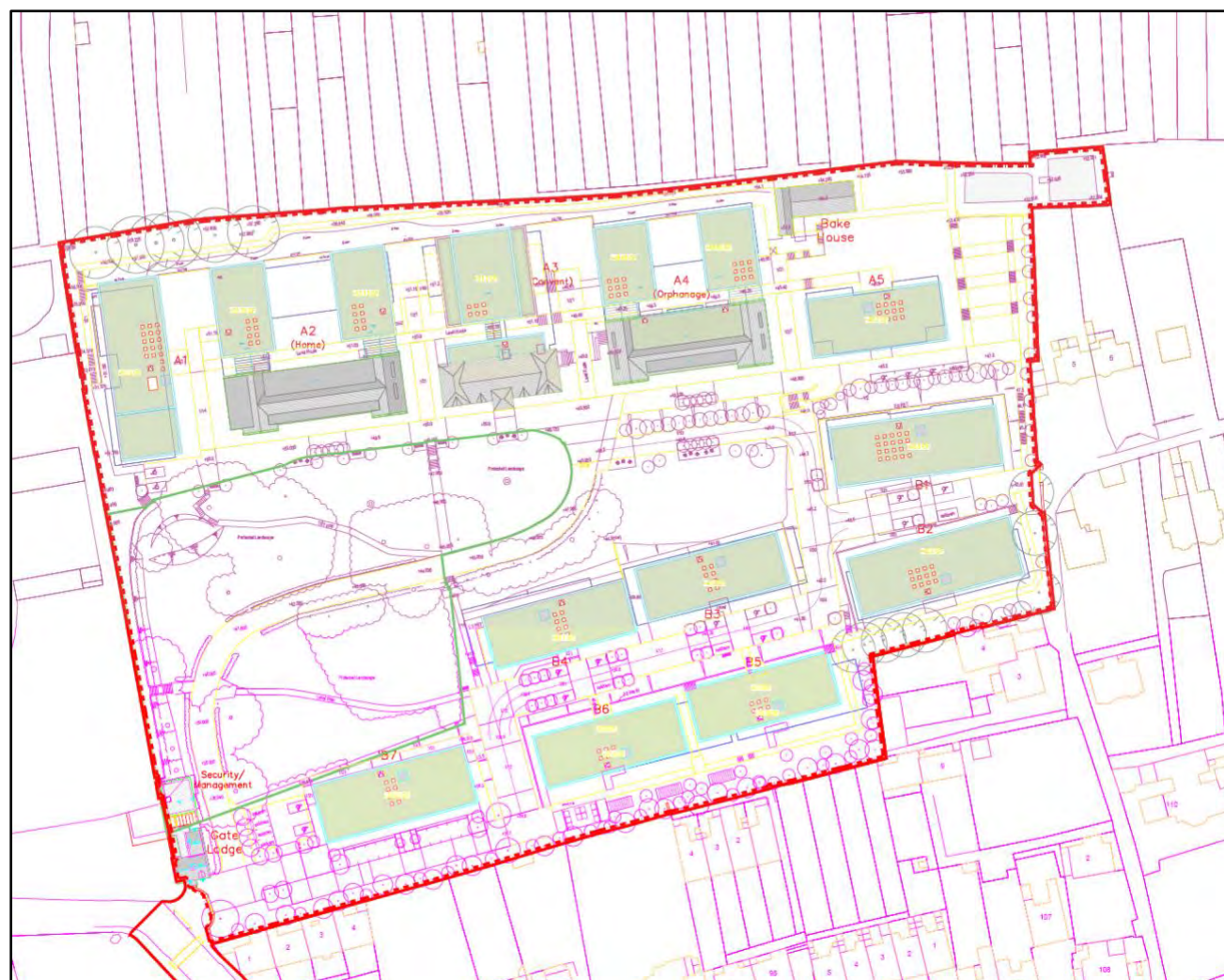


Figure 3.2 Proposed Site Layout & Redline Boundary

3.2 Typical Waste Categories

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

- ▶ 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;
- ▶ Organic waste – food waste and green waste generated from internal plants / flowers;
- ▶ Glass; and
- ▶ Mixed Non-Recyclable (MNR)/General Waste.

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 less frequently / in smaller quantities which will need to be managed separately including:

- ▶ Drink Cans and Bottles (Deposit Return Scheme)
- ▶ Green / garden waste may be generated from external landscaping;
- ▶ Batteries (both hazardous and non-hazardous);
- ▶ Waste electrical and electronic equipment (WEEE) (both hazardous and non-hazardous);
- ▶ Printer cartridges / toners;

- ▶ Chemicals (paints, adhesives, resins, detergents, etc.);
- ▶ Light bulbs;
- ▶ Textiles;
- ▶ Waste cooking oil (if any generated by the student residents or the commercial tenants);
- ▶ Furniture (and, from time to time, other bulky wastes); and
- ▶ Abandoned bicycles.

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 List of Waste Codes

In 1994, the *European Waste Catalogue*¹⁸ and *Hazardous Waste List*¹⁹ were published by the European Commission. In 2002, the EPA published a document titled the *European Waste Catalogue and Hazardous Waste List*²⁰, which was a condensed version of the original two documents and their subsequent amendments. This document has recently been replaced by the EPA 'Waste Classification – List of Waste & Determining if Waste is Hazardous or Non-Hazardous'²¹ 2018. This waste classification system applies across the EU and is the basis for all national and international waste reporting, such as those associated with waste collection permits, COR's, permits and licences and EPA National Waste Database.

Under the classification system, different types of wastes are fully defined by a code. The List of Waste (LoW) code for typical waste materials expected to be generated during the operation of the proposed development are provided in Table 3.1 below.

Table 3.1 Typical Waste Types Generated and LoW Codes

Waste Material	LoW Code
Paper and Cardboard	20 01 01
Plastics	20 01 39
Metals	20 01 40
Mixed Non-Recyclable Waste	20 03 01
Glass	20 01 02
Biodegradable Kitchen Waste	20 01 08
Oils and Fats	20 01 25
Textiles	20 01 11
Batteries and Accumulators*	20 01 33* - 34
Printer Toner/Cartridges*	20 01 27* - 28
Green Waste	20 02 01
WEEE*	20 01 35*-36
Chemicals (solvents, pesticides, paints & adhesives, detergents, etc.) *	20 01 13*/19*/27*/28/29*30
Fluorescent tubes and other mercury containing waste*	20 01 21*
Bulky Wastes	20 03 07

* Individual waste type may contain hazardous materials

4. ESTIMATED WASTE ARISING

A waste generation model (WGM) developed by AWN has been used to predict waste types, weights and volumes expected to arise from operations within the proposed Development. The WGM incorporates building area and use and combines these with other data, including Irish and US EPA waste generation rates.

The estimated quantum / volume of waste that will be generated from the student residential units has been determined based on the predicted occupancy of the units. While the floor area usage (m²) has been used to estimate the waste arising from the commercial units.

Waste generated from the shared student residential amenities has been included in the overall waste figures for the student residential units and will be stored within the student residential waste bins.

The estimated waste generation for the proposed Development for the main waste types is presented in Tables 4.1 – 4.4.

Dry Mixed Recyclables	4.47	3.58	1.42
Glass	0.13	0.10	0.04
Mixed Non-Recyclables	2.60	2.08	0.82
Total	7.85	6.28	2.49

Table 4.4 Estimated Waste Generation for Commercial Units

Waste Type	Waste Volume (m ³ / week)		
	Bakehouse Commercial Unit	Block 7 Commercial/Retail	Gate Lodge Commercial Unit
Organic Waste	0.04	0.15	0.05
Dry Mixed Recyclables	0.87	2.86	1.05
Glass	0.02	0.08	0.03
Mixed Non-Recyclables	0.36	1.19	0.44
Total	1.31	4.28	1.57

BS5906:2005 Waste Management in Buildings – Code of Practice²² has been considered in the calculations of waste estimates. AWN's modelling methodology is based on recently published data and data from numerous other similar developments in Ireland and is based on AWN's experience, it provides a more representative estimate of the likely waste arisings from the proposed Development.

Table 4.1 Estimated Waste Generation for Student Residential Blocks A1 – A3

Waste Type	Waste Volume (m ³ / week)		
	Block A1	Block A2 (Home Building)	Block A3 (Convent)
Organic Waste	0.49	0.87	0.34
Dry Mixed Recyclables	3.32	5.96	2.35
Glass	0.09	0.17	0.07
Mixed Non-Recyclables	1.93	3.47	1.36
Total	5.82	10.47	4.12

Table 4.2 Estimated Waste Generation for Student Residential Blocks A4 – B2

Waste Type	Waste Volume (m ³ / week)		
	Block A4 (Orphanage)	Block A5	Block B1 & B2 (combined)
Organic Waste	0.89	0.34	0.89
Dry Mixed Recyclables	6.11	2.35	6.11
Glass	0.17	0.07	0.17
Mixed Non-Recyclables	3.55	1.36	3.55
Total	10.73	4.12	10.73

Table 4.3 Estimated Waste Generation for Student Residential Blocks B3 – B7

Waste Type	Waste Volume (m ³ / week)		
	Block B3 & B4 (combined)	Block B5 & B6 (combined)	Block B7
Organic Waste	0.65	0.52	0.21

5. WASTE STORAGE AND COLLECTION

This section provides information on how waste generated within the Site will be stored and collected. 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 CCC. In particular, consideration has been given to the following documents:

- ▶ *BS 5906:2005 Waste Management in Buildings – Code of Practice* ²²,
- ▶ *The NWMPCE (2024)*;
- ▶ *Cork City Development Plan 2022 – 2028 (2021)*;
- ▶ *Cork City Council Bye-Laws for the Segregation, Storage and Presentation of Household and Commercial Waste (2019)*; and
- ▶ *DoHLGH, Sustainable Urban Housing: Design Standards for New Apartments, Guidelines for Planning Authorities (2023)* ²³.

Waste Storage Areas

Locations of all Waste Storage Areas (WSAs) can be viewed on the drawings submitted with the planning application under a separate cover.

Student Residential WSAs

9 No. Waste Storage Areas (WSAs) have been allocated in the design of the development for residential use. Blocks A1 will have an internal WSA. Blocks A2– A5 will have external WSAs. Blocks B1 and B2 will share an external WSA located between the two blocks. Blocks B3 and B4 will share an internal WSA located inside the B4 Block. Blocks B5 & B6 will share an external WSA located outside Block B6. Block B7 will have an external WSA. The location of the WSAs can be viewed on the drawings or design statement submitted with the planning application under a separate cover and in appendix B of this report.

Commercial Units WSAs

2 No. WSAs have been allocated in the design of the development for commercial use. The Bake House commercial unit and Block 7 retail unit have a shared WSA is located externally beside Block B7. The Gate Lodge commercial unit WSA is located externally outside of the Gate Lodge commercial unit. The WSAs will be locked and only accessible to the commercial tenants, facilities management and waste contractors.

Facilities management will supply all residents and commercial 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.

Upon collection of the waste, the waste receptacles from the WSAs will be transported directly to the waste collection vehicle. There will be no temporary staging area required for this development.

Using the estimated waste generation volumes in Tables 4.1 – 4.4, above, the waste receptacle requirements for MNR, DMR, organic waste and glass have been established for the WSA. It is envisaged that all waste types will be collected on a weekly basis.

Waste Storage Requirements

Estimated waste storage requirements for the operational phase of the proposed Development are detailed in Table 5.1, below.

Table 5.1 Waste Storage Requirements for the Proposed Student Development

Area/Use	Bins Required			
	MNR ¹	DMR ²	Glass	Organic
Block A1	2 no. 1100 L	3 no. 1100 L	1 no. 120 L	3 no. 240 L
Block A2	3 no. 1100 L & 1 no. 240 L	6 no. 1100 L	1 no. 240 L	4 no. 240 L
Block A3	2 no. 1100 L	2 no. 1100 L & 1 no. 240 L	1 no. 120 L	2 no. 240 L
Block A4	3 no. 1100 L & 1 no. 240 L	6 no. 1100 L	1 no. 240 L	4 no. 240 L
Block A5	2 no. 1100 L	2 no. 1100 L & 1 no. 240 L	1 no. 120 L	2 no. 240 L
Block B1 & B2 (combined)	3 no. 1100 L & 1 no. 240 L	6 no. 1100 L	1 no. 240 L	4 no. 240 L
Block B3 & B4 (combined)	3 no. 1100 L	4 no. 1100 L & 1 no. 240 L	1 no. 120 L	3 no. 240 L
Block B5 & B6 (combined)	2 no. 1100 L	4 no. 1100 L	1 no. 120 L	3 no. 240 L
Block B7	1 no. 1100 L	2 no. 1100 L	1 no. 120 L	1 no. 240 L
Block 7 Commercial	1 no. 1100 L & 1 no. 240 L	3 no. 1100 L	1 no. 120 L	1 no. 240 L
Commercial Bakehouse	2 no. 240 L	1 no. 1100 L	1 no. 120 L	1 no. 120 L
Commercial Gate Lodge	2 no. 240 L	1 no. 1100 L	1 no. 120 L	1 no 120 L

Note: 1 = Mixed Non-Recyclables
2 = Dry Mixed Recyclables

The waste receptacle requirements have been established from distribution of the total weekly waste generation estimate into the holding capacity of each receptacle type.

Waste storage receptacles as per Table 5.1 above (or similar appropriate approved containers) will be provided by the facilities management company in the WSAs.

The types of 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 WSAs are shown in Figure 5.1. All waste receptacles used will comply with the SIST EN 840-1:2020 and SIST EN 840-2:2020 as the standards for performance requirements of mobile waste containers, where appropriate.

Figure 5-1. Typical Waste Receptacles of Varying Size (240L and 1100L)



Receptacles for organic, mixed dry recyclable, glass and mixed non-recyclable waste will be provided in the WSAs prior to first occupation of the development i.e. prior to the first student residential unit or the commercial units being occupied.

This Plan will be provided to each student resident and commercial tenant from first occupation of the development i.e. once the first student residential unit or the commercial unit is occupied. This Plan will be supplemented, as required, by the property management company with any new information on waste segregation, storage, reuse and recycling initiatives that are subsequently introduced.

5.2 Operational Phase Waste Storage – Student Residential Units

Student residents will be required to segregate waste into the following main waste streams:

- ▶ MNR;
- ▶ DMR;
- ▶ Glass; and
- ▶ Organic waste.

Segregated bins for MNR, DMR, glass and organic waste will be provided within the kitchens of the student cluster units by the facilities management company. Additional bins for segregation of MNR and DMR will also be provided in the common areas, where appropriate. Student residents will be required to segregate their waste as above into the provided receptacles in accordance with the terms of the letting agreements of the Operator (The Student Housing Company). An example of a potential 3 bin storage system is provided in Figure 5.2 below.

Figure 5.2 Example Three Bin Storage System to be Provided Within the Student Residential Unit Design



Student residents will be required to take their segregated waste materials to their designated WSAs and deposit their segregated waste into the appropriate bins. The location of the WSAs are illustrated in the drawings submitted with the planning application under separate cover.

Each bin / container in the shared communal WSAs will be clearly labelled and colour coded to avoid cross contamination of the different waste streams. Signage will be posted above or on the bins to show exactly which waste types can be placed in each bin.

Access to the shared communal WSAs will be restricted to authorised residents, facilities management and waste contractors by means of a key or electronic fob access.

Other waste materials such as textiles, batteries, printer toner/cartridges, waste cooking oil and WEEE may be generated infrequently by the residents. Residents will be required to identify suitable temporary storage areas for these waste items within their own units and dispose of them appropriately. Further details on additional waste types can be found in Section 5.4.

5.3 Waste Storage – Commercial Unit

The commercial tenants will be required to segregate waste within their own units into the following main waste types:

- ▶ MNR;
- ▶ DMR;
- ▶ Glass; and
- ▶ Organic waste.

As required, the commercial staff will need to bring segregated DMR, MNR, glass and organic waste to their designated WSAs which will be separate from the student residential WSAs. Commercial waste will not be mixed with student residential waste.

Suppliers for the commercial tenants should be requested by the tenants to make deliveries in reusable containers, minimize packaging or remove any packaging after delivery, where possible, to reduce waste generated by the proposed development.

If any kitchens are allocated in the commercial unit area, this will contribute a significant portion of the volume of waste generated on a daily basis, and as such it is important that adequate provision is made for the storage and transfer of waste from these areas to the WSA.

If kitchens are required it is anticipated that waste will be generated in kitchens throughout the day, primarily at the following locations:

- ▶ Food Storage Areas (i.e. cold stores, dry store, freezer stores and stores for decanting of deliveries);
- ▶ Meat Preparation Area;
- ▶ Vegetable Preparation Area;
- ▶ Cooking Area;
- ▶ Dish-wash and Glass-wash Area; and
- ▶ Bar Area.

Small bins will be placed adjacent to each of these areas for temporary storage of waste generated during the day. Waste will then be transferred from each of these areas to the appropriate waste store within their unit.

All bins / containers in the commercial tenants' areas as well as in the WSA will be clearly labelled and colour coded to avoid cross contamination of the different waste streams. Signage will be posted above or on the bins to show exactly which wastes can be put in each.

Other waste materials such as textiles, batteries, lightbulbs, WEEE, cooking oil and printer toner / cartridges will be generated less frequently. The tenant will be required to store these waste types within their own unit and arrange collection with an appropriately licensed waste contractor. Facilities management may arrange collection, depending on the agreement. Further details on additional waste types can be found in Section 5.4.

5.4 Waste Collection

There are numerous private contractors that provide waste collection services in the Cork City 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.

Apon arrival of the waste vehicle, bins from the proposed development will be brought from the WSAs directly to the waste vehicle. There will be no staging area / temporary collection points in this development. Bins will be returned to the WSAs immediately following collection. A waste vehicle tracking drawing can be seen in appendix A. The collection of bins are such that they will not obstruct traffic or pedestrians (allowing a footway path of at least 1.8m, the space needed for two wheelchairs to pass each other) as is recommended in the *Design Manual for Urban Roads and Streets (2022)* ²⁴.

A trolley / tug or suitable vehicle may be required to convey the bins to and from the waste vehicle. The facilities management or waste contractor will ensure that empty bins are promptly returned to the WSAs after collection / emptying.

Suitable access and egress has been provided to enable the bins to be moved easily from the WSAs to the waste collection vehicles on the appropriate days. Waste will be collected at agreed days and times by the nominated waste contractors.

All waste receptacles should be clearly identified as required by waste legislation and the requirements of the CCC *Waste Bye-Laws*. 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.

It is recommended that bin collection times 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.

5.5 Additional Waste Materials

In addition to the typical waste materials that are generated on a daily basis, there will be some additional waste types generated from time to time that will need to be managed separately. A non-exhaustive list is presented below.

Deposit Return Scheme

Most drinks containers can be recycled via the deposit return scheme, such as bottles, cans and tins made from plastic, aluminum or steel can be returned once they are between 150ml and 3 litres in size and have the Re-turn logo on them.

At the shops you can either return the containers:

- ▶ Using a Reverse Vending Machine (RVM)
- ▶ Manually in the shop

If a shop does not have a RVM but they sell containers with the Re-turn logo, the shop may allow you to manually return containers in store, unless they have a take back exemption.

Locations of RVM machines can be found via the Re-turn website (www.re-turn.ie)

Green Waste

Green waste may be generated from gardens, external landscaping and internal plants / flowers. Green waste generated from landscaping of external areas will be removed by external landscape contractors. Green waste generated from gardens internal plants / flowers can be placed in the organic waste bins.

Batteries

A take-back service for waste batteries and accumulators (e.g. rechargeable batteries) is in place in order to comply with the S.I. No. 283/2014 - European Union (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, 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 purchases any product or products from the retail outlet.

The commercial tenants cannot use the civic amenity centre. They must segregate their waste batteries and either avail of the take-back service provided by retailers or arrange for recycling / recovery of their waste batteries by a suitably permitted / licenced contractor. Facilities management may arrange collection, depending on the agreement.

Waste Electrical and Electronic Equipment (WEEE)

The WEEE Directive (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 electrical and electronic equipment to their local recycling

centre. In addition, consumers can bring back WEEE within 15 days to retailers when they purchase new equipment on a like for like basis. 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.

As noted above, the commercial tenants cannot use the civic amenity centre. They must segregate their WEEE and either avail of the take-back / collection service provided by retailers or arrange for recycling / recovery of their WEEE by a suitably permitted / licenced contractor. Facilities management may arrange collection, depending on the agreement.

Printer Cartridge / Toners

It is recommended that a printer cartridge / toner bin is provided in the commercial unit, where appropriate. The commercial tenant 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.

Chemicals

Chemicals (such as solvents, paints, adhesives, resins, 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 commercial units that is classed as hazardous (if they arise) will be appropriately stored within the tenants' own space. Facilities management may arrange collection, depending on the agreement.

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.

Light Bulbs

Waste light bulbs (fluorescent, incandescent and LED) may be generated by lighting at the commercial units. It is anticipated that commercial tenants will be responsible for the off-site removal and appropriate recovery / disposal of these wastes. Facilities management may arrange collection, depending on the agreement.

Waste light bulbs (fluorescent, incandescent and LED) may be generated by lighting at the residential units. It is anticipated that facilities management will be responsible for the off-site removal and appropriate recovery / disposal of these wastes. Facilities management may arrange collection, depending on the agreement.

Textiles

Where possible, waste textiles should be recycled or donated to a charity organisation for reuse. Commercial and residential tenants will be responsible for disposing of waste textiles appropriately.

Waste Cooking Oil

If the commercial tenants use cooking oil, waste cooking oil will need to be stored within the unit on a bunded area or spill pallet and regular collections by a dedicated waste contractor will need to be organised as required. Under sink grease traps will be installed in any cooking space.

If the residents generate waste cooking oil, this can be brought to a civic amenity centre.

Furniture & Other Bulky Waste Items

Furniture and other bulky waste items (such as carpet, etc.) may occasionally be generated by the commercial tenant. The collection of bulky waste will be arranged, as required by facilities management.

Abandoned Bicycles

Bicycle parking areas are planned for the development. As happens in other developments, residents sometimes abandon faulty or unused bicycles, and it can be difficult to determine their ownership. Abandoned bicycles should be donated to charity if they arise or Facilities management will arrange collection by a licensed waste contractor.

5.6 Waste Storage Area Design

The WSAs will 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 WSAs;
- ▶ Provide suitable lighting – a minimum Lux rating of 400 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 to a central foul drain for bins washing run-off;
- ▶ Have appropriate 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 operator and their selected facilities management company will be required to maintain the waste storage areas in good condition as required by the CCC Waste Bye-Laws.

5.7 Facility Management Responsibilities

It will be the responsibility of the Facilities Management Company to ensure that all domestic waste generated by residents and commercial waste generated from commercial tenants is managed to ensure correct storage prior to collection by an appropriately permitted waste management company.

Facilities Management will provide the following items:

- ▶ Provision of a Waste Management Plan document, prepared by the Facilities Management Company to all residential and commercial units, which shall clearly state the methods of source waste segregation, storage, reuse and recycling initiatives that shall apply to the management of the development;
- ▶ Provision and maintenance of appropriate graphical signage to inform residents of their obligation to reduce waste, segregate waste and in the correct bin;
- ▶ Preparation of an annual waste management report for all residential and commercial units;
- ▶ Designation of access routes to common waste storage areas to ensure safe access from the apartment units by mobility impaired persons;
- ▶ Provision of an appropriately qualified and experienced staff member, who will be responsible for all aspects of waste management at the development;
- ▶ Daily inspection of waste storage areas and signing of a daily check list, which shall be displayed within the area; and

- Maintenance of a weekly register, detailing the quantities and breakdown of wastes collected from the development and provision of supporting documentation by the waste collector to allow tracking of waste recycling rates.

5.8 Pest Management

A pest control operator will be appointed as required to manage pests onsite during the operational phase of this development. All waste generated within the development will be stored in closed waste receptacles both within units and within the WSAs. Any waste receptacles will be carefully managed to prevent leaks, odours and pest problems.

All WSAs will have access for potential control of vermin, if required, be supplied with hot or cold water, drainage point and will be regularly inspected by facilities management to deter pests.

6. SUMMARY AND CONCLUSION

In summary, this OWMP presents a waste strategy that addresses all legal requirements, waste policies and best practice guidelines and demonstrates that the required storage areas have been incorporated into the design of the proposed student development.

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 contributing to the targets set out in *the NWMPCE*.

Adherence to this plan will also ensure that waste management at the development is carried out in accordance with the requirements of the *CCC Waste Bye-Laws*.

The waste strategy presented in this document will provide sufficient storage capacity for the estimated quantity of segregated waste. The designated areas for waste storage will provide sufficient room for the required receptacles in accordance with the details of this strategy.

7. REFERENCES

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3. Litter Pollution Act 1997 as amended.
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APPENDIX A. ROAD SWEEP ANALYSIS FOR REFUSE TRUCK



APPENDIX B. WASTE STORAGE AREA LOCATION





CHAPTER FIFTEEN

BUILT HERITAGE

APPENDIX 15-1 Photographic Record

APPENDIX 15-1 Photographic Record

Extension to West of Original Magdalen Asylum, Exterior:

Elevation		
South Elevation		
	Fig. 15.7	Fig. 15.8
		
	Fig. 15.9	Fig. 15.10
		
	Fig. 15.11	Fig. 15.12
North Elevation		
	Fig. 15.13	Fig. 15.14

Extension to West of Original Magdalen Asylum, Interior:

Floor		
Ground Floor		
	Fig. 15.15	Fig. 15.16
		
	Fig. 15.17	Fig 15.18
		
	Fig. 15.19	Fig. 15.20
		
	Fig. 15.21	Fig. 15.22









Original Magdalen Asylum, Exterior:









Elevation		
South		
	Fig. 15.23	Fig. 15.24
		
	Fig. 15.25	Fig. 15.26
		
	Fig. 15.27	Fig. 15.28

Original Magdalen Asylum, Exterior:

Elevation		
North		
	Fig. 15.29	Fig. 15.30
		
	Fig. 15.31	Fig. 15.32
		
	Fig. 15.33	Fig. 15.34
		
	Fig. 15.35	Fig. 15.36





Original Magdalen Asylum, Interior:

Floor		
Ground Floor – Rear Corridor		
	Fig. 15.37	Fig. 15.38
Ground Floor – Kitchen		
	Fig. 15.39	Fig. 15.40
		
	Fig. 15.41	Fig. 15.42
		
	Fig. 15.43	Fig. 15.44









Floor		
Ground Floor – Refectory		
	Fig. 15.45	Fig. 15.46
		
	Fig. 15.47	Fig. 15.48
		
	Fig. 15.49	Fig. 15.50
Ground Floor –		
	Fig. 15.51	Fig. 15.52

Floor		
Ground Floor – Large Room (chapel, classroom)		
	Fig. 15.53	Fig. 15.54
		
	Fig. 15.55	Fig. 15.56

Infill Building – Between Original Magdalene Home and Convent

Elevation		
South		
	Fig. 15.57	Fig. 15.58
South detail/North		
	Fig. 15.59	Fig. 15.60
Interior		
	Fig. 15.61	

Convent - Exterior

Elevation		
South		
	Fig. 15.62	Fig. 15.63
		
	Fig. 15.64	Fig. 15.65
East		
	Fig. 15.66	Fig. 15.67
North		
	Fig. 15.68	Fig. 15.69

Convent – Interior





Floor		
Ground Floor		
	Fig. 15.70: Remnants of columns to main hall of convent	Fig. 15.71: Cast iron spiral stair to small extension to rear of convent
		
	Fig. 15.72: Location of second stair	Fig. 15.73: View to front elevation

Image taken in 2003 following the fire.



Fig. 15.74:

Infill Building – Between Original Convent and Orphanage

Elevation		
South		
	Fig. 15.75: South elevation	Fig. 15.76: South elevation (internal side)

Orphanage/Industrial School - Exterior

		
	Fig. 15.77	Fig. 15.78
		
	Fig. 15.79	Fig. 15.80
		
	Fig. 15.81	Fig. 15.82
		
	Fig. 15.83	

Orphanage – Interior

		
	Fig. 15.84	Fig. 15.85
		
	Fig. 15.86	Fig. 15.87
		
	Fig. 15.88	Fig. 15.89

		
	Fig. 15.90	Fig. 15.91

Gate Lodge - Exterior







Elevation		
South and West		
	Fig. 15.92	Fig. 15.93
Southwest corner and gateway		
	Fig. 15.94	Fig. 15.95
		
	Fig. 15.96	Fig. 15.97

		
	Fig. 15.98	Fig. 15.99

Gate Lodge - Interior

Floor		
Ground Floor		
	Fig. 15.100	Fig. 15.101
		
	Fig. 15.102	Fig. 15.103
		
	Fig. 15.104	Fig. 15.105

		
	Fig. 15.106	Fig. 15.107

Gate Lodge - Interior

Floor		
First Floor		
	Fig. 15.108	Fig. 15.109
		
	Fig. 15.110	Fig. 15.111
		
	Fig. 15.112	Fig. 15.113

Bake House and Coach House- Exterior

Elevation		
South/West		
	Fig. 15.114	Fig. 15.115
South		
	Fig. 15.116	Fig. 15.117
South/East		
	Fig. 15.118	Fig. 15.119
		
	Fig. 15.120	Fig. 15.121







Bake House and Coach House - Interior

Floor		
Ground Floor		
	Fig. 15.123	Fig. 15.124
		
	Fig. 15.125	Fig. 15.126
		
	Fig. 15.127	Fig. 15.128
		
	Fig. 15.129	Fig. 15.130

Bake House and Coach House - Interior

Floor		
Ground Floor		
	Fig. 15.131	Fig. 15.132
		
	Fig. 15.133	Fig. 15.134
Coach House First Floor		
	Fig. 15.135	Fig. 15.136

Cemeteries and Grounds

Higher walkway, northern boundary		
	Fig. 15.137	
Statue of Christ, northern walkway		
	Fig. 15.138	Fig. 15.139
Grounds south and southeast of the Orphanage		
	Fig. 15.140	
Railings and ramped path to north of gardens		
	Fig. 15.141	Fig. 15.142

Cemeteries and Grounds

Farm buildings, south of Orphanage		
	Fig. 15.143	Fig. 15.144
Farm building		
Steps to walkway on western boundary		
	Fig. 15.145	Fig. 15.146
Nun's Cemetery (northeast corner of site)		
	Fig. 15.147	Fig. 15.148

Hostel



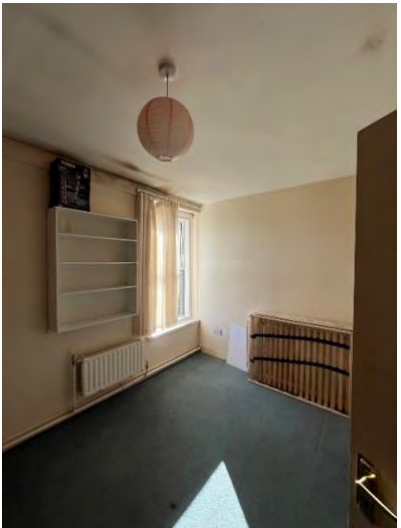
Exterior		
	Fig. 15.149	Fig. 15.150
		
	Fig. 15.151	Fig. 15.152
Interior		
	Fig. 15.153	Fig. 15.154

		
	Fig. 15.155	

