MHL & ASSOCIATES LTD.

For: **Clockstrike Ltd.**

Proposed Residential Development - Phase 2,
Ringwood, Blarney.



Outline Construction Waste and Demolition Management Plan

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MHL & Associates Ltd.
Consulting Engineers

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1 INTRODUCTION

MHL & Associates Consulting Engineers Ltd. (MHL) has prepared this Outline Construction Waste & Demolition Management Plan (CWDP) on behalf of Clockstrike Ltd.

This report is a planning stage report outlining the principle of waste and demolition management from the subject site. The purpose of this CWDMP plan is to provide information to ensure that necessary management of construction and demolition (C&D) waste at the site is undertaken in accordance with current legal and industry standards including the Waste Management Acts 1996 - 2011 and associated Regulations, Litter Pollution Act and Protection of the Environment Act 2003.

1.1 Description of Project Site Location

The applicant's land ownership consists of two individual land holdings on either side of the N20. The applicant is seeking planning for the lands located South of the N20 and east of Station Road. For the purposes of this report, these lands are referred to as the "Ringwood Phase 2" site. The applicant's lands north of the N20 are referred to as the "Stoneview" site and form part of the overall Masterplan Strategy for entire lands under Clockstrike Ltd. ownership.

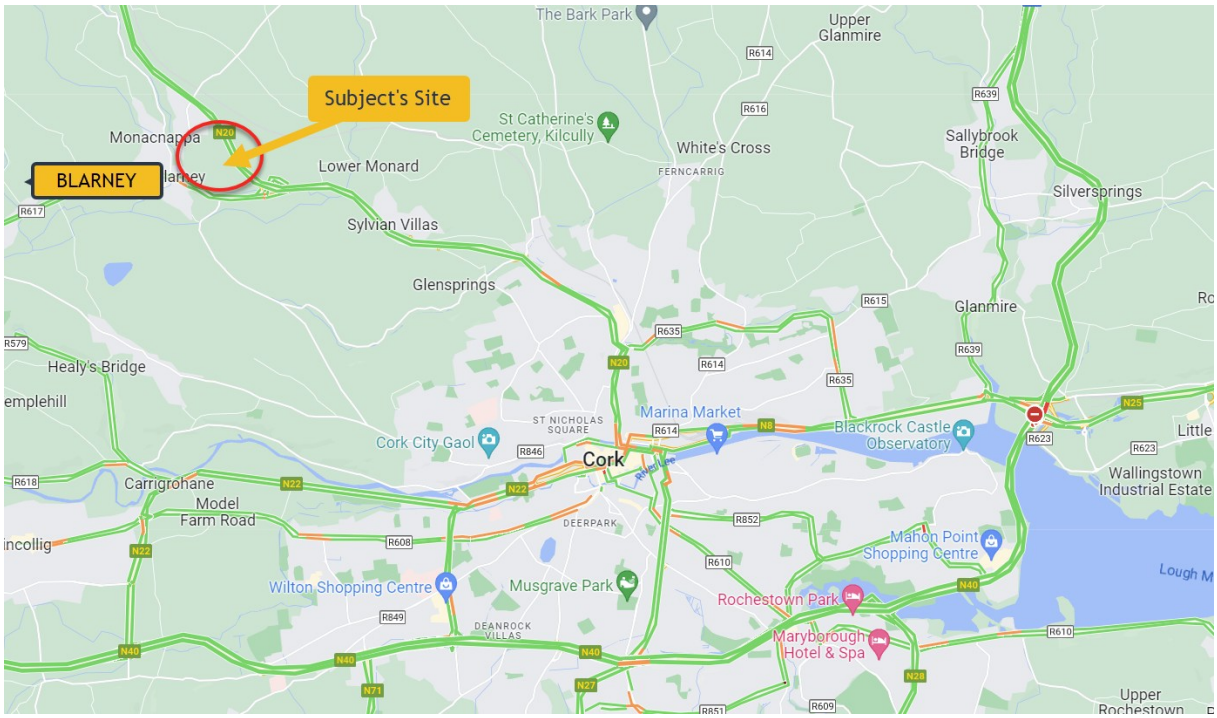


Figure 1.1: Subject's Site Location

The figure above shows the site location in relation to the Blarney Village environs and the wider regional road network. The site is 0.5-1.0 km east of the village centre.

The development of the Ringwood site is in keeping with Cork City Development Plan 2022-2028 which focuses on developing Blarney into an important population centre to the west of the city, fulfilling its role in urban city development.

The proposed site layout has been developed by CCK Architects. Please refer to the design team drawing pack, as submitted, for further details.

The wider Ringwood site is located northwest of Cork City and northeast of Blarney village. The subject's site northern and eastern perimeters are aligned with the National Primary Road (N20), with Station Road bounding its western perimeter. The lands to the south are bounded by the R617 Regional Road.



Figure 1.2: Site Location & Surrounding Area

1.2 Planning Description

The LRD Phase 2 planning description states:

Clockstrike Ltd., intend to apply for permission for a Large-Scale Residential Development (LRD), at this site at Ringwood, Shean Upper and Shean Lower, Blarney, Cork. The proposed development will consist of a large-scale residential development (LRD), representing Phase 2 of development in the Blarney East / Ringwood Expansion Area, and comprising the construction of (i) 323 no. residential dwellings comprising of 157 no. terraced, end-of-terrace, and detached houses (including 129no. 3-bed and 28no. 4-bed units); 52 no. duplexes provided in 5 no. 3-storey buildings (including 26 no. 2-bed and 26 no. 3-bed units) and 114 no. apartments provided in 2 no. 5-storey buildings (including 54 no. 1-bed and 60 no. 2-bed units); (ii) a primary care centre, over 2 stories and 1,724sqm in area, incorporating GP services (iii) the refurbishment and redevelopment of existing farm outbuildings for conversion to a retail/pharmacy use, 80sqm in area, and café/restaurant use, 380sqm in area; (iv) a new access roadway into the site from the R617 with associated pedestrian and cyclist infrastructure, which will form the 1st phase of the proposed Stoneview Access Link Road, (v) a new signalised junction on the R617 road which will provide a single lane approach to the west and a two lane approach to the east, comprising one lane for through traffic on the R617 and a right turn lane for traffic turning into the site, and associated footpath improvements and cycle lane provision (vi) a new signalised junction at the R617 and Killard Road junction which will provide a two lane approach from the west, one lane for through traffic heading eastbound on the R617 and a right turn lane onto the Killard Road, with

associated footpath improvements and pedestrian and cyclist infrastructure; (vii) a new signalised junction on Station Road that reflects the junction permitted under the Phase 1 LRD scheme (Reg. Ref. 2443031) (viii) private, communal, and public open spaces and hard and soft landscaping, boundary treatments and amenity areas, including a new wetland public amenity area, (ix) drainage works and nature-based SuDS measures (x) foul sewer infrastructure, including 1no. pump station, the diversion of existing foul and water sewers and other new network works, (xi) car parking, including EV charging points, bicycle parking, and motorcycle parking bays (xii) 2no. substations, all associated ancillary site, drainage and development works. The planning application is accompanied by an Environmental Impact Assessment Report (EIAR).

The application may be inspected online at the following website: www.ringwoodphase2lrd.ie.



Figure 1.3: Development Site Layout (Phase 2) (c: CCK Architects)

The development proposes to connect to Station Road via the new junction delivered under Phase 1, provide a new access between the proposed Phase 2 spine road and the R617 (signalised junction), and upgrade the existing Killard Road/R617 priority junction to a signalised junction. Extensive traffic analysis for this junction and surrounding road networks has been carried out by Systra Ltd. Please refer to their submitted documentation for further details. This junction arrangement has been arrived at following preliminary discussions with Cork City Council.

2 CWDMP OUTLINE

This CWDMP estimates of the type and quantity of C&D waste to be generated by the proposed development and makes recommendations for management of different waste streams. The plan aims to ensure maximum recycling, reuse and recovery of waste with diversion from landfill, wherever possible. It provides outline guidance on the appropriate 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).

2.1 Key Objectives

Support sustainable development by prioritising waste management.

- Provide a framework in which more responsibility is taken for the waste produced now and into the future.
- Help implement the national waste strategy and support targets.
- Enable waste to be disposed of in the nearest appropriate facility.
- Reflect the concerns and interests of communities, the needs of waste collection. authorities, waste disposal authorities and businesses.
- Ensure the design and layout of new development supports sustainable waste management.
-

2.2 Roles and Responsibilities

Party	***Responsibility***	***Project Stage***
Client	Appointment of competent Principal Contractor and Design Team	Project initiation and subsequent tendering phases
	Responsibility of waste management from 'cradle to grave', including documentation of same.	All project stages
Principal Contractor	Construction & Demolition Waste Management Plan implementation	Project Implementation
	Refinement and implementation of the outline CWDMP	Project Implementation
	Appoint competent and authorised waste management contractor(s)	Project tendering phase
	Appoint trained, competent Waste Manager	Construction phase
Waste Manager	SWMP implementation	Project Implementation
	Ensure that's the objectives of both the CWDMP are put in place	Construction stage
	Waste characterisation. Selection of techniques and design to minimise waste and to maximise recovery and recycling of waste during the project	Construction stage
	Maintenance of Waste Documentation for 3 years	Project Design Phase and during project implementation
	Completion of Final Waste Management Report	Post-construction stage
	Educate colleagues, site staff, external contractors and suppliers about alternatives to conventional construction waste disposal	Construction stage
Design Team	Identification of Key Waste Streams	Project Design Phase
	Design to minimise waste generation in lifecycle of completed construction.	Project Design Phase

Figure 2.1 Key Responsibilities- Construction Stage Waste Management

3 NATIONAL WASTE POLICY- IRELAND

3.1 General

A CWDMP is required for any project that is likely to exceed the thresholds noted in "Best Practice Guidelines on the Preparation of Waste Management Plans for Construction and Demolition Projects". The project meets the DoEHLG thresholds for the inclusion of a CWDMP as listed in the following:

- New residential development of 10 houses or more
- New developments other than (1) above, including institutional, educational, health and other public facilities, with an aggregate floor area in excess of 1,250 m2
- Demolition/renovation/refurbishment projects generating in excess of 100 m3 in volume, of C&D waste
- Civil Engineering projects producing in excess of 500 m3 of waste, excluding waste materials used for development works on the site.

Waste arising from construction, renovation and demolition activities is defined as C&D waste, including surplus/ damaged products and materials arising during the construction work or used during onsite activities.

This CWDMP has been prepared referencing the following:

- The Waste Management Act 1996 – 2008, Amendments & Associated Regulations.
- CIRIA document 133 Waste Minimisation in Construction.
- The Litter Pollution Act 1997.
- The Waste Management Plan for the Southern Region 2015 – 2021; and
- Best Practice Guidelines on the Preparation of Waste Management Plans for
- Construction and Demolition Projects (DoEHLG), June 2006.

3.2 National Level

After the publication of the European Union's 'European Green Deal' which sets a roadmap for a transition to a new economy, where climate and environmental challenges are turned into opportunities, the Irish Government released a new policy document in September 2020 outlining a new action plan for Ireland to cover the period of 2020-2025. This plan, 'A Waste Action Plan for a Circular Economy', aims start implementing a new National Waste Action Plan. This new national waste policy will inform and give direction to waste planning and management in Ireland over the coming years.

It will be followed later this year by an All of Government Circular Economy Strategy. The policy document shifts focus away from waste disposal and moves it back up the production chain. To support the policy, regulation is already being used (Circular Economy Legislative Package) or in the pipeline (Single Use Plastics Directive). The policy document contains over 200 measures across various waste areas including Circular Economy, Municipal Waste, Consumer Protection & Citizen Engagement, Plastics and Packaging, Construction and Demolition, Textiles, Green Public Procurement and Waste Enforcement.

The National Construction and Demolition Waste Council (NCDWC) was launched in June 2002, as one of the recommendations of the Forum for the Construction Industry, in the Task Force B4 final report. The NCDWC subsequently produced 'Best Practice Guidelines for the Preparation of Waste Management Plans for Construction and Demolition Projects'

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8 in July 2006 in conjunction with the then Department of the Environment, Heritage and Local Government (DoEHLG). The guidelines outline the issues that need to be addressed at the pre-planning stage of a development all the way through to its completion. 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.

3.3 Regional Level

The proposed development is located in the Local Authority area of Cork County Council (CCC). The Southern Region Waste Management Plan 2015 – 2021 is the regional waste management plan for the CCC area published in May 2015.

The Regional Plan sets out the strategic targets for waste management in the region and sets a specific target for C&D waste of "70% preparing for reuse, recycling and other recovery of construction and demolition waste" (excluding natural soils and stones and hazardous wastes) to be achieved by 2020.

The "Construction & Demolition Waste-Soil and Stone Recovery/Disposal Capacity" report presents an analysis of the national waste capacity market for the safe treatment of soil wastes, separated to the various regions, including the Southern Region, which encompasses Cork County Council. A schedule of available capacity of soil recovery sites in the regions is shown in the figure below, taken from the aforementioned report:

Local Authority	No. of Facilities	Total Authorised Capacity (tonnes)	Total Intake 2015 (tonnes)	Total Remaining Capacity (tonnes)
Carlow County Council	3	300,000	15,640	90,000
Clare County Council	5	228,500	56,306	23,500
Cork County Council	31	1,636,505	225,038	559,199
Kerry County Council	12	531,275	10,251	173,199
Kilkenny County Council	3	300,000	33,126	74,990
Limerick City & County	2	200,000	37,394	0
Tipperary County Council	5	344,200	16,863	68,150
Waterford City & County	3	65,500	0	0
Wexford County Council	8	455,500	87,025	35,155
Total	72	4,061,480	481643	1,024,193

Figure 3.1 Capacity and Intake Data at Permitted Soil Recovery Sites in the Southern Region *(Taken from the "Construction & Demolition Waste -Soil and Stone Recovery/Disposal Capacity" report)*

The table presents data collected in 2015 and may be out of date. It suggests that whilst no capacity is available for soil recovery sites in Cork, capacity is available in adjoining Counties.

3.4 Legislative Requirements

One of the guiding principles of European waste legislation, which has in turn been incorporated into the Waste Management Act 1996 - 2001 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 client ensures that the waste contractors engaged by 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 and Amendments or a waste or IED 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.

3.5 Details of the Non-Hazardous Wastes to be produced

There will be waste materials generated excavation of the building foundations. There will also be soil, stones and made ground excavated to facilitate site clearance, construction of new building foundations and installation of services.

During the construction phase there may be a surplus of building materials, such as timber off-cuts, broken concrete blocks, 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 oversupply of materials will also be generated.

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 onsite 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.

3.6 Potential Hazardous Wastes to be produced

3.6.1 Contaminated Soil

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' 12 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

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Decision 2003/33/EC 13, which establishes the criteria for the acceptance of waste at landfills.

If Asbestos or Asbestos Containing Material (ACMs) are identified, the removal of asbestos will be carried out by a suitably qualified contractor will only be removed from site by a suitably permitted waste contractor. in accordance with S.I. No. 386 of 2006 Safety, Health and Welfare at Work (Exposure to Asbestos) Regulations 2006-2010.
All asbestos will be taken to a suitably licensed or permitted facility.

3.6.2 Fuel / Oils

As fuels and oils are classed as hazardous materials, any on-site storage of fuel/oil, all storage tanks and all draw-off points will be bunded (or stored in double-skinned tanks) and located in a dedicated, secure area of the site. Provided that these requirements are adhered to and site crew are trained in the appropriate refuelling techniques, it is not expected that there will be any fuel/oil wastage at the site.

3.6.3 Japanese Knot Weed and other Invasive Plant Species

No Japanese Knotweed plant species were recorded within the property boundary.

3.6.4 Other know 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 encountered) will be stored in appropriate receptacles in designated areas of the site pending collection by an authorised waste contractor.

3.7 Main C&D Waste Categories

The main non-hazardous and hazardous waste streams that could be generated by the construction and demolition activities at a typical site are shown in Figure 3.2. The List of Waste (LoW) code (as effected from 1 June 2015) (also referred to as the European Waste Code or EWC) for each waste stream is also shown.

Waste Material	LoW/EWC 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

Figure 3.2 European Waste Codes

4 WASTE MANAGEMENT

4.1 Demolition Waste Generation

The groundworks stage will require the existing ground levels on site to be regraded to enable the construction of the proposed development. No significant demolition is proposed as the site is a greenfield location.

4.2 Construction Waste Generation

If any contaminated material is encountered during the construction works, this will increase the disposal rate. Any potentially contaminated material encountered will have to be classified and disposed of in accordance with Council Decision 2003/33/EC10, which establishes criteria for the acceptance of waste at landfills, and in accordance with Cork County Council directions. Cork County Council and the EPA are to be notified if hazardous waste is uncovered.

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.

4.3 Proposed 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. The appointed waste contractor will collect and transfer the wastes as receptacles are filled. There are numerous waste contractors in the CCC Region that provide this service.

A successful C&DWMP should be integrated into the general site operation, should not be obstructive to site operations and the construction programme. Monitoring of all reuse, recycling, wastage, and disposal can be as close to the source as possible, forming part of the preventative waste strategy. The management plan can delegate monitoring to include Sub-contractors, implementing their own waste control operations.

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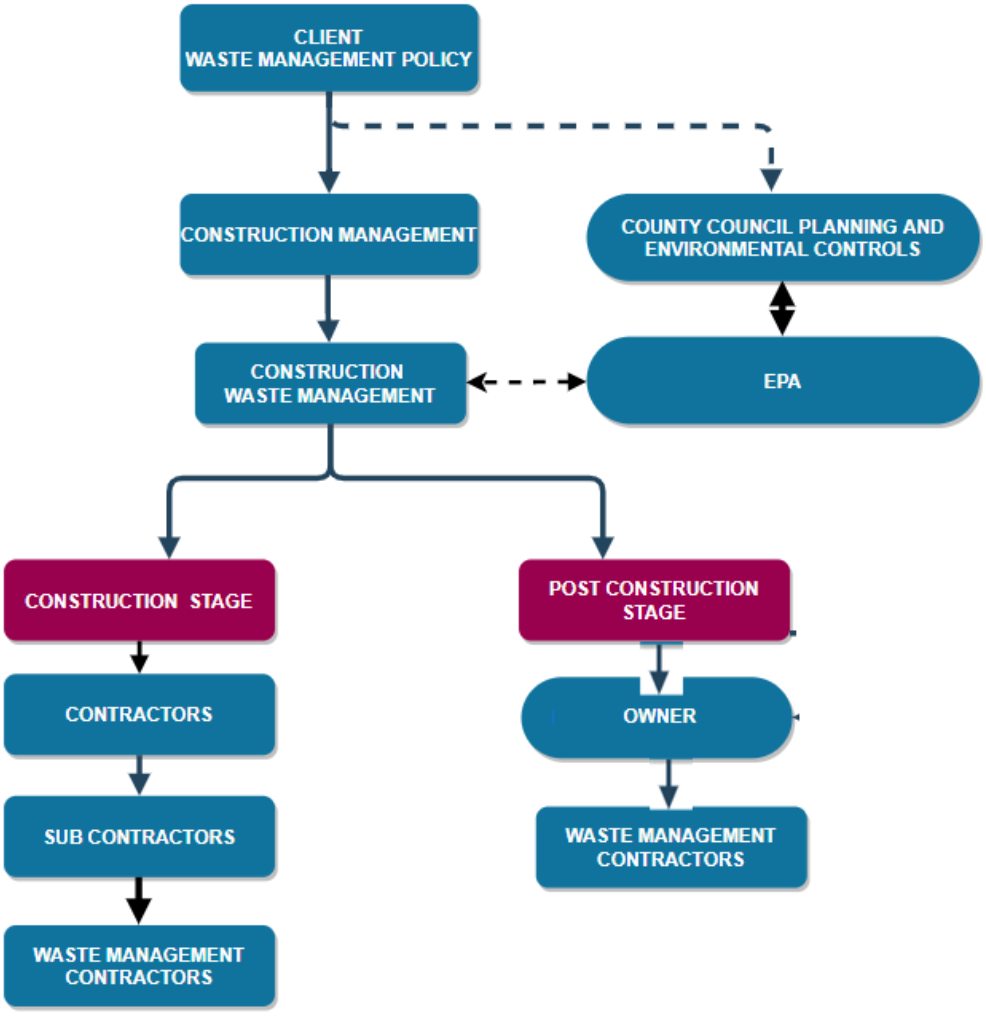


Figure 4.1 Typical Waste Management Structure

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

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 2No. tonnes, and in vehicles not designed for the carriage of waste, are exempt from the requirement to have a waste collection permit (Ref. Article 30 (1) (b) of the Waste Collection Permit Regulations 2007 as amended). Any sub-contractors engaged that do not generate more than 2No. tonnes of waste at any one time can transport this waste offsite in their work vehicles (which are not design 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 or 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 etc, if required.

The EU Waste Directive (2008/98/EC) also mandates that hazardous waste generation should be avoided or at least minimised. To achieve this, a waste management hierarchy should be adhered to. The hierarchy is as follows:

1. **Prevention:** Measures taken before a substance, material or product has become waste.
2. **Re-Use:** Measures taken which products or components that are not waste, are reused again for the same purpose for which they were conceived.
3. **Recycling:** Measures taken in which waste materials are processed into products, materials, or substances whether for the original or other purposes.
4. **Recovery:** Measures taken which waste serving a useful purpose by replacing other materials which would otherwise have been used to fulfil a particular function
5. **Disposal:** Were prevention, re-use, recycling or recovery cannot be utilised, disposal to an appropriate waste site.

The Waste Management 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.

It is anticipated that the majority of excavated material will remain onsite however excavated material is expected to be removed of site. When this 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 Article 27 of the European Communities (Waste Directive) Regulations 2011. Article 27 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. It is not envisaged that article 27 will be used to export excavated material off this site.

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 Article 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 Article 27. It is not envisaged that Article 27 will be used to import material onto this site.

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 Management Acts 1996 – 2011 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 Trans frontier Shipment of Wastes (TFS).

5 ESTIMATED WASTE ARISINGS

5.1 Construction Stage

Soil tests should be carried on excavated soil if deemed appropriate when excavations are undertaken. Fuels stored on site that will be used during the construction phase are classed as hazardous. There will be fuel stored on site for machinery and construction vehicles. All fuel tanks and draw off points will be bunded. If the fuel is correctly contained and bunded, it is note expected that there will be any fuel wastage at the site.

If any contaminated material is encountered during the construction works, this will increase the disposal rate. Any potentially contaminated material encountered will have be classified and disposed of in accordance with the County Council directions, 2003/33/EC10, criteria for the acceptance of waste at landfill. Cork County Council and the EPA are to be notified if hazardous waste is uncovered.

5.1.1 Bedrock

It is not anticipated that bedrock will be encountered during the excavation phase of this development. However, if encountered it is envisaged that all bedrock will be removed offsite and will not be crushed onsite unless the appropriate waste permit, obtained from CCC.

5.1.2 Silt & Sludge

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

5.1.3 Concrete Blocks, Bricks, Tiles & Ceramics

The majority of concrete blocks, bricks, tiles and ceramics generated as part of the construction and demolition works are expected to be clean, inert material and should be recycled, where possible.

5.1.4 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.

5.1.5 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.

5.1.6 Metal

Metals will be segregated into mixed ferrous, aluminium cladding, high grade stainless steel, low grade stainless steel etc., where practical and stored in skips. Metal is highly recyclable and there are numerous companies that will accept these materials.

5.1.7 Plasterboard

There are currently a number of recycling services for plasterboard in Ireland. Plasterboard from the demolition and 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.

5.1.8 Glass

Glass materials will be segregated for recycling, where possible.

5.1.9 Waste Electrical and Electronic Equipment (WEEE)

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

5.1.10 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.

5.1.11 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 7.0) 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.

5.1.12 Canteen Wastes/ W/C utilities Wastes

During Construction Stage, temporary canteen, W/C areas will be maintained and cleaned by an approved / permitted contractor. Removal of domestic waste form the construction compound will be carried out by a permitted waste contractor.

5.1.13 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.

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 construction waste offsite, details of the proposed destination of each waste stream will be provided to CCC by the project team.

5.2 Post Construction /Operation Stage

A high quality, sustainable waste management plan after construction stage will be implemented by the restaurant manager during the operational stage of the development. With a waste/ litter collection employed, segregating waste streams at source.

The waste management procedures outlined above will ensure that all waste at the site is managed accordingly and separated for recycling.

5.2.1 Waste Storage Area

An enclosed Waste Storage Area (WSA) will be located within the curtilage of the development adjacent to the main building for pick-up by authorised waste collection vehicles.

Adequate waste storage located within close proximity to the restaurant with suitable access for staff and waste collectors will be essential for the smooth and efficient storage of daily waste and transfer to refuse trucks. The storage area will be suitably protected so that it does not cause offence to neighbours by being detrimental to their visual amenity, or through emission of offensive odours.

All waste arising from activities on site will be brought from the area of waste generation to the secure enclosed WSA. All waste will be stored in leak-proof containers, e.g. wheeled bins, and these containers will be stored within the curtilage of the premises. Waste cooking oil will be stored within the unit on a bunded area or spill pallet and regular collections by a dedicated waste contractor will be organised as required. Other waste materials such as batteries, printer toner/cartridges and WEEE will be generated occasionally and will be temporarily stored in a suitable container in the WSA pending collection.

All bins / receptacles will be clearly designated/colour coded and clearly and appropriately labelled for operational purposes. On-site treatment, storage and collection arrangements is especially important for this restaurant development, due to the nature of the waste, which includes biodegradable content. All recycling / waste storage areas and bins will be covered at all times when not in use and emptied regularly, to safeguard the amenities of the site and surrounding area.

5.2.2 Operation waste streams

Waste will be segregated as follows:

- Dry Mixed Recyclables (DMR)
- Mixed Non-Recyclables (MNR/General Waste).
- Organic Waste (i.e. food waste / green waste).
- Glass (segregated as brown, green, clear).

5.2.3 Waste Collection/ Litter

As per CCC Bye Laws, The management will be responsible to ensure that the bins in the WSA are presented at the required day and time of collection. Waste will be presented for collection in an orderly manner. All staff will be made aware of the waste collection arrangements, and all waste receptacles will be clearly identified. Management will be responsible for the returning of empty bins to the WSA and for cleaning up any waste that spills out of the bin during collection.

Keeping the environment around the restaurant tidy and free of litter is a key priority for the business. Litter bins located in proximity to 'high-risk' litter spots across the premises / site i.e., areas where there is significant footfall / circulation such as the main entry and exit points. Regular daily little patrols around their restaurants to clear up any rubbish in the vicinity of the restaurant that is associated, with the restaurant will be employed, in order to ensure that their legal obligations are met to ensure that the problem of litter does not have a negative impact on the business brand.

5.3 Off-Site Waste Procedures: Tracking / Documentation

All waste will be documented prior to leaving the site. Waste will be weighed by the contractor, either by weighing mechanism on the truck or at the receiving facility. These waste records will be maintained on site by the nominated project Waste Manager (see Section 7.0).

All movement of waste and the use of waste contractors will be undertaken in accordance with the Waste Management Acts 1996 - 2011, 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 waste manager (see Section 7.0) 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/IE Licence for that site will be provided to the nominated project waste manager (see Section 7.0). If the waste is being shipped abroad, a copy of the Trans frontier 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.

5.4 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 weighing mechanism on the truck or at the receiving facility. These waste records will be maintained on site by the nominated project Waste Manager.

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

6 ESTIMATED COST OF WASTE MANAGEMENT

The cost of waste management is difficult to estimate at this stage of the development for a number of reasons:
Firstly, waste costs have changed significantly over the past few years and are set to keep changing as regional waste management plans are implanted fully and the emphasis of reduce reuse recycle increases.

In addition, the changing economic climate has significantly reduced waste management costs.

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.

6.1 Reuse

By implementation of the CWDMP, there can 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 by reusing materials on site.

Materials which can be reused on site, i.e., clean/ inert soils, gravel/stone, etc. may be used as access road capping material. Clean and inert soils, gravel, stones etc. which cannot be reused on site is often taken free of charge or a reduced fee by waste contractors due to its reuse potential, helping reduce final waste disposal costs.

6.2 Recycling

Waste contractors will charge considerably less to take segregated wastes, such as recyclable waste, from a site than mixed waste. Metal, Timber, uncontaminated cardboard and certain hard plastics can be recycling widely. Salvageable metals can be offset against the costs of collection/ transportation of the skips.

6.3 Disposal

Landfill charges in the Munster region are currently at around €130 - €180 per tonne which includes a €75 /tonne landfill levy specified in the Waste Management (Landfill Levy) Regulations 2015. 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 licenced 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.

7 WASTE MANAGEMENT TRAINING PROVISION

To ensure commitment, operational efficiency and accountability during the C&D phases of the project, a member of the construction team will take the role as the Project Waste Manager

7.1 Training: Waste Manager Responsibilities

The waste manager 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 nominated waste manager will be given 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 waste manager 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. The waste manager will be knowledgeable in how to implement the C&DWMP plan, how to establish / maintain a record keeping system, how to perform an audit and establish targets for waste management on site.

7.2 Training: Site Crew

A waste training program is to be organised by the site's appointed Waste Manager and waste management training can be incorporated with other onsite training, general site induction, manual handling and Health & Safety awareness, etc. All site crew are to be given a course outlining the C&DWMP and practical measures which are to be adhered to, to ensure compliance. Any such training is to detail elements of the CWDMP Plan, highlighting the materials to be segregated, particular dangers of each waste stream explained (hazardous / non hazardous), the storage methods and the location of the Waste Storage Areas (WSAs).

8 RECORD KEEPING

All waste material arising's on site which leaves the site, for reuse, recycling or disposal will be recorded. A recording system will be put in place to record the waste, with a waste tracking log used to track each waste movement from the site.

Waste collection vehicles exiting site are to stop at the site office and the driver sign out as a visitor and provide the security personnel/ waste manager with a waste docket (or WTF for hazardous waste) for the waste load collected.

The waste transfer dockets will be transferred to the site waste manager on a weekly basis, to be placed in the Waste Tracking Log file and forwarded onto the CCC Waste Regulation Unit when requested. The main works contractor can request that each subcontractor engage their own waste contractor, maintain a similar waste tracking log with the waste dockets/WTF maintained on file and available for inspection on site as required.

The security personnel should complete and sign the Waste Tracking Register with the following information prior to leaving the waste vehicle exit the site.:

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

The waste manager will record the following:

- Waste taken off-site for reuse.
- Waste taken off-site for recovery.
- Waste taken off-site for recycling.
- Waste taken off-site for disposal.
- Waste (soil & stone) accepted on-site for recovery.

A copy of the Waste Collection Permits, CORs, Waste Facility Permits and Waste Licences will be maintained on site at all times. Subcontractors who have engaged their own waste contractors, should 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. Prior to any material being removed from site, a duplicate of the Waste Collection Permits, Waste Facility Permits, Waste Licences and CORs will be sent to the CCC Waste Regulation Unit.

9 OUTLINE WASTE AUDIT PROCEDURE

9.1 Responsibility for Waste Audit

During the C&D phase of the development, the appointed waste manager will be responsible for conducting a waste audit at the site. The nominated Waste Manager will provide contact details to the CCC Waste Regulation Unit after the main contractor is appointed and prior to any material being removed from site.

9.2 Review of Records and Identification of Corrective Actions

Mid-way through the project, a review of all the records for the waste generated and transported off-site should be undertaken. If waste movements are not accounted for, the reasons for this should be established 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 to highlight how the targets can be achieved, with waste management costs also reviewed.

10 CONSULTATION WITH RELVANT BODIES

10.1 Recycling/Salvage Companies

Suitability of companies that specialise in C&D waste management will be determined prior to formal engagement of waste contractor. To ensure that relevant and up-to-date waste collection permits and facility COR/permits/licences are held by the waste specialists, each company will be audited with these permit details sent to the CCC Waste Regulation Unit for confirmation. In addition, information regarding individual construction materials will be obtained, including 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.

10.2 Local Authority

Cork County Council will be consulted as required throughout the C&D stage. Details of the proposed destination of each waste stream will be provided to the CCC Waste Regulation Unit once demolition and construction contractors and waste contractor have been appointed. C&D waste materials will be held onsite and once FFC unit has accepted the waste proposal, C&D waste materials will be permitted to be transported offsite.

CCC will also be consulted 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.

Waste Item	Waste Category	On-site Storage/ Treatment Method	Off-site Storage/ Treatment Method	Anticipated Waste Removal Contractors
General (Mixed)	I	Segregated Bin/Skip	Recovery/ Disposal	To be appointed
Surplus Excavated Material	II	Stockpiling Topsoil	Majority to be re-used on-site. Possible beneficial reuse off-site.	To be appointed
Timber	III	Segregated Bin/ Skip. Reuse on site.	Reuse or energy recovery	To be appointed
Plastic	III	Segregated Bin/ Skip	Return to supplier, recycling or disposal	To be appointed
Metal	III	Segregated Bin/ Skip	Deliver to metals merchant	To be appointed

Figure 10.1 Anticipated Waste Streams

11 CONCLUSION

This outline CWDMP provides best guidance on best practice and policies that should be implemented during construction/ operation stages of the development. Adherence to the CWDMP plan will also ensure that waste management at the development is carried out in accordance with the requirements of the CCC. Implementation of this plan will ensure a high level of recycling, reuse and recovery at the site, with all recyclable materials segregated at source to reduce waste contractor costs and ensure maximum diversion of materials from landfill.

The applicant is committed to adhering to best waste management practices within the site in order ensure a successful outcome. Employing Waste Management Hierarchy principles coupled with the use of authorised waste collection contractors, litter management, during construction stage / operational stage will ensure the site in is inline with Southern Region Waste Management Policies and the 1996 Waste Management Act.

Regular checks by designated homeowners on site will ensure sustainability of plan's implementation into the future, ensuring all waste management and collection is coordinated appropriately.

12 REFERENCES

"Best Practice Guidelines on the Preparation of Waste Management Plans for Construction and Demolition Projects" (Department of Environment, Heritage and Local Government, 2006)

Proposed Residential Development - Phase 2

13 APPENDIX

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Proposed Residential Development - Phase 2

14 OUTLINE DEMOLITION PLAN / METHOD STATEMENT

14.1 Introduction

It is not expected that major demolition will form part of the revised scope of works. An outline method statement/ demolition plan is provided below.

This Method Statement is provided for Planning Permission purposes only. The Contractor must develop a Construction and Demolition Waste Management Plan in accordance with the "Best Practice Guidelines on the Preparation of Waste Management Plans for Construction and Demolition Projects" (Department of Environment, Heritage and Local Government, 2006). The Contractor must ensure that all demolition material is managed, stored and disposed of in an appropriate manner in accordance with all relevant waste legislation.

The sequence of demolition/refurbishment will be carried out in a controlled manner with no danger of structural collapse. During these works there will be an exclusion zone set up and no one will be permitted within the vicinity of the demolition works. Dust suppression will be operating during the works to reduce any airborne dust being generated.

14.2 General Procedure

- Establish a site set-up and welfare facilities
- Erect any necessary hoarding around the perimeter of the site
- Carry out an intrusive asbestos survey to identify the presence of any carcinogenic materials
- Use the existing services survey of the site to identify all buried services, determine what services are live, redundant and potentially serve neighbouring properties
- Carry out any necessary services diversions and decommissioning works
- Carry out a soft strip of the building to remove free-standing units, furniture, floor finishes, ceiling tiles, window blinds, partitions, doors and door frames, ceiling bulkheads, M&E services, radiators, light fittings, fixtures and fittings, first fix joinery, kitchens and toilet areas.

All debris will be separated on site and stored in skips for removal to licensed tips or exported where suitable facilities are not available locally. The following are elaborated below.

14.3 Site Hoarding

Solid timber hoarding 2.4m in height will be provided along the perimeter of the site to protect members of the public from machines and materials on site. Hoarding will be erected off a vertical frame which will either consist of uprights encased in concrete 'Kelly' blocks or else using bolted steel shoes which will be placed in the ground. The Kelly blocks will be carefully lifted into place with a teleporter whose movement will be controlled, sequenced and managed by a qualified banksman. Once the vertical frame has been installed the hoarding panels (which will be prefabricated) will be loaded by hand into place.

14.4 Existing Services

Prior to the works, all services will be identified on site with reference to the previously commissioned site investigation, topographical and utility surveys with additional investigation works carried out as required. All services on site will be disconnected, diverted or removed as agreed with service providers.

It will be the responsibility of the Main Contractor to ensure all Mechanical & Electrical services are disconnected from the building prior to commencement. The PSCS should contact the relevant utility suppliers to arrange the correct disconnection for each utility service identified on-site. The disconnections should be carried out by the utility suppliers in accordance with the current legislation "5afety, Health and Welfare at Work (Construction) Regulations 2013". Any demolition works to follow the "Code of Practice /or Avoiding Danger from Underground Services" as issued by the Health & Safety Authority (HSA) in relation to insuring safe service disconnections. Possible utility services on-site include Electricity — ESB Networks Gas Mains - Bord Gais /Telecommunications - UPC/ Virgin Media/Eircom Networks / Mains Water/ Sewers - Local Council. Live services running through the site should be surveyed, identified and clearly marked up by main building contractor.

14.5 Demolition Works

Prior to any demolition works a full structural review of the existing structure will be carried out to review the stability of the existing structure and to assess the temporary measures such as propping that will be required during the demolition stage. These measures will be provided to ensure the structure is demolished in a controlled manner and there is a negligible chance of an unplanned structural collapse. After completion of the site hoarding, a full height scaffolding will be erected which will be tied back to the existing building. This will have access platforms at each 2m level to provide access to the covered safety netting which will be installed along the building elevations. The scaffolding will not be used for demolition but for access to the safety netting to prevent dust and debris from falling onto the footpath and affecting the surrounding area.

All demolition works on site will be carried out in accordance with the relevant code of practice and guidance listed below:

- BS 6187:2011 Code of Practice for Demolition
- The guidelines to the Safety, Health and Welfare at Work (Construction) Regulations

14.6 Noise/ Vibration / Dust / Dirt/

The Contractor will be required to monitor base noise levels at the site location before commencement of the project. Noise monitoring will be required throughout the project, complying with BS 5228 "Noise Control on Construction and Open Sites Part 1: Code of practice.

The Contractor shall monitor vibration for the duration of the works. Condition surveys of adjoining buildings may be required before potential demolition works commence.
Dust prevention measures shall be included for control of any site airborne particulate pollution. The Contractor shall put in place and monitor dust levels in the vicinity. The Contractor shall continuously monitor dust over the variation of weather and material disposal to ensure the limits are not breached throughout the project. Limit for Environmental Protection Agency (EPA) 350mg/m2/day.

14.7 Asbestos

A Pre-demolition & refurbishment asbestos survey should be undertaken to determine if asbestos is present within the extents of the refurbishment building works. If present, a fully licenced competent asbestos removal contractors who specialise in Asbestos removal works should be procured, in accordance with the current asbestos removal legislation - "Safety, Health and Welfare at Work (Exposure to Asbestos) Regulations 2006-2010". All the asbestos cement removals will be carried out in accordance with the "HSA guidance document: Asbestos-containing materials (ACM's) in Workplaces - Practical Guidelines on ACM Management and Abatement" and the current Asbestos legislation. The area around the asbestos removal works will be segregated from other trades on-site. The specialists will erect appropriate warning signage to warn others of the dangers within the exclusion zone. Only trained and competent operatives would be granted access to the area.

14.8 Construction Traffic

As a mitigation measure it shall be a requirement that the Contractor ensure that all vehicles will be required to pass through the wheel wash before exiting the site to the public road network. The wheel wash must be kept in place and used throughout the construction works. Construction Traffic Management Plans to be agreed with Cork County Council prior to construction.

14.9 Neighbouring Care Home Access

Neighbouring access will be maintained throughout the works and communication between the appointed Contractor and Care home staff will be necessary to ensure emergency /service vehicle access is maintained.

14.10 Signage

Appropriate signs will be erected around the site to warn others of the dangers inside the site. The main safety notice sign shown opposite will be erected at the site entrance. The signs below will be erected on the gate and around the site boundary. Task specific signs will be erected inside the site as required.

14.11 Construction Debris/ Waste arisings

All materials removed from the building will be sorted as they are removed and placed into individual piles. Once the works are complete the waste piles will be loaded into relevant waste skips for recycling or disposal.

All materials removed from the building will be segregated and sorted into four different categories:

- Timber
- Clean Rubble
- Plasterboard
- Scrap Metal
- Mixed C&D Waste

14.12 Site Safety

Weekly site meetings will take place on site to discuss safety, progress and any other business. All construction employees will be made aware prior to the commencement of these works of any risks their work can impose on others in the vicinity. Safe System of

Work Plan (SSWP) will be generated for activities on site as required and will be completed by the site safety supervisor. Control measures will only be undertaken so as to minimise the risks identified in the risk assessments attached in Appendix 1 or when the adequate protection is in place. Lone working will not be permitted under any circumstances on the site, and a Buddy system must be operated for any work carried out by authorised operatives entering the work area. First aid equipment will be located in the site office.

15 CONSTRUCTION PHASE ACTIVITIES

It is proposed that there will be several phases of construction.

Activity	Description of Activity
Site Setup	At this stage, the construction site is set-up. The site compound, boundary and other necessary facilities are established. All required enabling works and site investigations (including GI) are carried out.
Enclosures	It will be necessary to separate completed and occupied blocks from areas where construction is ongoing using phased hoarding.
Structures /Demolition	This stage involves the demolition and refurbishment the convent building.
Services	New electricity and telecommunications services infrastructure will be put in place to serve the various units. This will be carried out in accordance with the requirements of the various service providers / authorities.
Surface Water/ UE services	New surface water and UE services infrastructure will be put in place to serve the development. This will be carried out in accordance with the requirements of the UE / authorities.
Landscaping /Internal Road Carriageways	Hard and soft landscaping and reinstatement works will be carried out
Fit out/ Commissioning	Final internal fit out/ commission of services/ facilities/etc.

15.1 Major Plant and Equipment

All plant and equipment will be operated by experienced and qualified personnel.

Plant and equipment used during the works are:

- concrete pumps.
- man, and material hoists.
- scissor, boom and fork lifts.
- articulated and rigid trucks.
- rigs, bulldozers, excavators, backhoes, with ancillary equipment (hammers or saws).
- concrete delivery trucks.

16 SITE

The roles and responsibilities of the personnel involved in the construction works are outlined in Table below. It will be necessary that all personnel involved in the project are responsible for ensuring the requirements of the CEMP are followed. Any noise complaints should be logged and followed up in a prompt fashion by the PSCS. In addition, where a particularly noisy construction activity is planned or other works with the potential to generate high levels of noise, or where noisy works are expected to operate outside of normal working hours etc., the contractor will inform the nearest noise sensitive locations of the time and expected duration of the noisy works.

However, a pre-construction survey should be carried out.

Sensitive Receptor	Location / Potential Impact
Watercourses	Clogheen milcon
Designate Conservation sites with hydrological Pathway.	Silt, petrochemicals, dust could impact on instream biodiversity and hydrological Pathway. Natura 2000 sites. Mitigation measures will be put in place to avoid impacting this watercourse. Nevertheless, mitigation measures will be in place in relation to noise
Population / Human Health & Resident	The proposed Project is proximal to residential areas that would be sensitive to noise, dust and lighting impacts. Mitigation measures will be put in place to avoid impacting the residents proximal to the proposed Project during the demolition and construction phase of the project
Terrestrial Fauna and Flora	The onsite works will involve ground clearance, re-profiling, groundworks and construction with potential for runoff, dust, light and noise impacts.
Birds	Clearance of the site, particularly scrub areas will result in the loss of nesting habitat.
Bats	As per EIAR.
Mammals	As per EIAR.

16.1 Targets

- Zero pollution incidents
- Segregation of site waste to include timber, general waste and other materials
- Completion of environmental checklists as required
- Fuel spill kit to be present on each site at all times
- Maintain all waste licences and waste transfer notes for all waste movements including contractors

16.2 Reporting Specific Objectives

- Environmental incidences to be reported to Site Manager without delay

o Environmental incidents and nonconformities raised, including nature, status, corrective and preventive actions and potential for statutory intervention
o Key environmental issues raised by others
o Significant environmental incidents
o Complaints and the current status of those complaints
o Actions or interventions undertaken by enforcement organisations

16.3 Site Specific Objectives

- Reduce waste, water and energy use on the project including within all of the site offices
- Ensure that everyone comply with the environmental requirements in the contract

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• Seek ways to incorporate environmental opportunities within the design
• Seek ways to reduce the carbon footprint of the contract
• Reduce the amount of construction waste and excavated material generated which goes to land fill
• Zero pollution incidents onsite
• Recycle construction waste where possible
• Maximise beneficial reuse of the materials
• Ensure that all waste documentation (waste transfer dockets, permits etc.) is available for inspection at the site office / in head office.

To ensure the CEMP remains 'fit for purpose' for the duration of the project it will be reviewed prior to commencement of the relevant phase of development and if necessary, updated during the life of the project to ensure that it remains suitable to facilitate efficient and effective delivery of the project environmental commitments. The environmental review would consider past performance from inspections, audit report and monitoring data, plan actions required to mitigate forthcoming risks and disseminate best practice.

16.4 Emergency procedures

The risk of spilling fuel is at its greatest during refuelling of plant. All refuelling of major plant and equipment will take place on an impermeable surface within a designated area of the site compound, greater than 10m away from any drains. The vehicles and equipment will not be left unattended during refuelling. Spill kits and hydrocarbon absorbent packs will be stored in this area and operators will be fully trained in the use of this equipment. Diesel pumps and similar equipment will be placed on drip trays to collect minor spillages or leaks. All equipment must be checked regularly.

Fuel, oil and chemical storage will be sited within a bund of adequate capacity. The bund must be located at least 10 metres away from drains, ditches, excavations and other locations where it may cause pollution. All materials will be stored in accordance with the manufacturer's instructions. Epoxy mortars and chemical-based materials/sealants will be stored in secure containers with relevant warnings shown on the storage unit. Spill kits will be located adjacent to storage areas and used in the event of spillages.

16.4.1 Sediment Control Plan

Consideration of the standard best international practice including but not limited to:
CIRIA (2001). Control of Water Pollution from Construction Sites, Guidance for Consultants and Contractors (C532). Surface water discharge from the site will be managed and controlled for the duration of the construction works until the permanently attenuated surface water drainage system of the proposed site is complete. A temporary positive drainage system shall be installed prior to the commencement of the construction works to collect surface water run-off by the site during construction. A series of geotextile lined cascading, high level outfall, settling basins will be installed upstream of the agreed discharge point. This temporary surface water management facility will throttle run-off and allow suspended solids to be settled out and removed before being discharged in a control manner to the agreed outfall. All inlets to the cascading settling basins will be riprapped to prevent scour and erosion in the vicinity of the inlet.

16.4.2 Air & Dust

Movement of material will be minimised to reduce degradation of soil structure and generation of dust. The pro-active control of fugitive dust will ensure prevention of significant emissions arising, rather than a less effective attempt to control them once they have been released.

- Hard surface roads will be swept to remove mud and aggregate materials from their surface while any un-surfaced roads will be restricted to essential site traffic.

- Any road that has the potential to give rise to fugitive dust must be regularly watered, as appropriate, during dry and / or windy conditions.
- Vehicles exiting the Site shall make use of a wheel wash facility where appropriate, prior to entering onto public roads.
- Vehicles using site roads will have their speed restricted, and this speed restriction must be enforced rigidly. On any un-surfaced site road, this will be 20kph, and on hard surfaced roads
as site management dictates.

- Public roads outside the Site will be regularly inspected for cleanliness and cleaned as necessary.
- Material handling systems and Site stockpiling of materials will be designed and laid out to minimise exposure to wind. Water misting or sprays will be used as required if particularly dusty activities are necessary during dry or windy periods.
- During movement of materials both on and off-site, trucks will be stringently covered with tarpaulin at all times. Before entrance onto public roads, trucks will be adequately inspected to ensure no potential for dust emissions.
- Dust may enter the onsite watercourse via air or surface water with potential downstream impacts. Mitigation measures will be carried out reduce dust emissions to a level that avoids the possibility of adverse effects on the onsite watercourse. The main activities that may give rise to dust emissions during construction include the following:
- Excavation of material.
- Materials handling and storage.
- Movement of vehicles (particularly HGV's) and mobile plant.
- Contaminated surface runoff
- Trucks leaving the site with excavated material will be covered so as to avoid dust emissions along the haulage routes.
- Speed limits on site (15kmh) to reduce dust generation and mobilisation.
- The stream is to be protected from dust on site. This may require additional measures in the vicinity of the bridge (east of the site) if this road is used for machinery e.g. placing of terram/protective material over the stream.
- Regular inspections of the site and boundary should be carried out to monitor dust, records and notes on these inspections should be logged.
- Record all dust and air quality complaints, identify cause(s), take appropriate measures to reduce emissions in a timely manner, and record the measures taken.
- Make the complaints log available to the local authority when asked.
- Record any exceptional incidents that cause dust and/or air emissions, either on- or offsite, and the action taken to resolve the situation in the log book.

16.4.3 Monitoring

- Undertake daily on-site and off-site inspection, where receptors are nearby, to monitor dust, record inspection results, and make the log available to the local authority when asked. This should include regular dust soiling checks of surfaces within 100 m of site boundary, integrity of the silt control measures, with cleaning and / or repair to be provided if necessary.
- Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible.

- Fully enclose specific operations where there is a high potential for dust production and the site is active for an extensive period.
- Remove materials that have a potential to produce dust from site as soon as possible, unless being re- used on site. If they are being re-used on-site cover as described below.
- Cover, seed or fence stockpiles to prevent wind whipping.
- Hard surface roads will be swept to remove mud and aggregate materials from their surface while any un-surfaced roads will be restricted to essential site traffic.

- Any road that has the potential to give rise to fugitive dust will be regularly watered, as appropriate, during dry and/or windy conditions.
- Maintain a vegetated strip and vehicle exclusion zone between the works and the onsite watercourse in consultation with the project ecologist.
- Regular inspection of surface water run-off and any sediment control measures e.g. silt traps will be carried out during the Construction Phase. Regular auditing of construction / mitigation measures will be undertaken e.g. concrete pouring, refuelling in designated areas etc.
- Weather conditions will be considered when planning construction activities to minimise the risk of run-off from the Site and the suitable distance of topsoil piles from surface water drains will be maintained.

16.4.4 Measures Specific to Earthworks

- Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable.
- Use Hessian, mulches or trackifiers where it is not possible to re-vegetate or cover with topsoil, as soon as practicable.
- Only remove the cover in small areas during work and not all at once.
- During dry and windy periods, and when there is a likelihood of dust nuisance, a bowser will operate to ensure moisture content is high enough to increase the stability of the soil and thus suppress dust.
- Due to the proximity of the onsite watercourse an ecologist will oversee works in particular the excavation of material from the perimeter of the site.
- The Contractor will be required to consult with an ecologist prior to the beginning of works to identify any additional measures that may be appropriate and/or required.

16.4.5 Storage/Use of Materials, Plant & Equipment

- Materials, plant and equipment shall be stored in the proposed site compound location.
- Plant and equipment will not be parked within 50m of the onsite watercourse at the end of the working day.
- Hazardous liquid materials or materials with potential to generate run-off shall not be stored within 50m of the onsite watercourse.
- All oils, fuels and other hazardous liquid materials shall be clearly labelled and stored in an upright position in an enclosed bunded area within the proposed Project site compound. The capacity of the bunded area shall conform with EPA Guidelines — hold 110% of the contents or 110% of the largest container whichever is greater.
- Fuel may be stored in the designated bunded area or in fuel bowsers located in the proposed compound location. Fuel bowsers shall be double skinned and equipped with certificates of conformity or integrity tested, in good condition and have no signs of leaks or spillages.
- Waters collected in drip trays must be assessed prior to discharge. If classified as contaminated, they shall be disposed by a permitted waste contractor in accordance with current waste management legal and regulatory requirements.
- All persons working will receive work specific induction in relation to material storage arrangements and actions to be taken in the event of an accidental spillage. Daily environmental toolbox talks / briefing sessions will be conducted for all persons working to outline the relevant environmental control measures and to identify any environment risk areas/works.

16.4.6 Noise

With regard to Construction Phase activities, best practice control measures for noise and vibration from construction sites are found within BS 5228 (2009 +A1 2014) Code of Practice for Noise and Vibration Control on Construction and Open Sites Parts 1 and 2. Whist construction noise and vibration impacts are expected to vary during the Construction Phase depending on the distance between the activities and noise sensitive buildings, the appointed Contractor will ensure that all best practice noise and vibration

control methods will be used, as necessary in order to ensure impacts at off-site NSLs are minimised. The best practice measures set out in BS 5228-1 and BS 5228-2 includes guidance on several aspects of construction site mitigation measures, including, but not limited to:

- selection of quiet plant.
- noise control at source.
- screening; and
- liaison with the public.

Construction Phase noise monitoring will be undertaken at periodic sample periods at the nearest noise sensitive locations to the works to check compliance with the construction noise criterion. Noise monitoring should be conducted in accordance with the International Standard ISO 1996: 2017: Acoustics — Description, measurement and assessment of environmental noise.

17 ADVERSE EFFECTS LIKELY FROM THE PROJECT (POST MITIGATION)

A robust series of mitigation measures has been detailed in the EIAR and the NIS and these will be carried out. These have been developed by a multidisciplinary project team. These will ensure that water entering the nearby watercourses is clean and uncontaminated, that dust and noise levels are controlled on site and measures are in place to prevent pollution. Early implementation of ecological supervision on site at initial mobilisation and enabling works is seen as an important element to the project, particularly in relation to the implementation of surface water runoff mitigation.

Implementation of the outlined mitigation measures will ensure no significant impacts are foreseen from the construction of the proposed project. Residual impacts of the proposed project will be localised to the immediate vicinity of the proposed works. The construction mitigation proposed for the development satisfactorily addresses the potential impacts on designated conservation sites and sensitive receptors, through the application the construction phase measures as outlined above and in the EIAR and NIS. In particular, mitigation measures to ensure compliance with Water Pollution Acts, Air quality legislation will prevent silt, dust and pollution entering the nearby watercourse will satisfactorily address the potential impacts on biodiversity, population & Human Health and Natura 2000 sites.

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