

**Popes Hill LRD, Popes Road
Blackpool, Cork**

**Outline Construction & Demolition
Resource Waste Management Plan**

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1 Introduction

This report was prepared to accompany a planning application for the proposed Large-scale Residential Development (LRD) on the site located at Popes Hill, Blackpool, Cork.

This report will largely form the basis of an Outline Construction Resource Waste Management Plan only. It will be finalised prior to commencement of construction on site with input from the Contractor appointed to undertake the works. This plan should be read in conjunction with the Outline Construction Environmental Management Plan (OCEMP).

The site area currently comprises 4 number dwellings with one of the dwelling houses occupied and with the other 3 dwelling houses derelict for some time. There are some derelict outbuildings also on the site.

The Outline Construction and Demolition Resource Waste Management Plan (O-CRDWMP) will be a live document that will be updated throughout the project lifecycle by the Main Contractor as required.

1.1 Site Location

The site of the proposed development is a part brownfield, part greenfield site and is approximately 2.581 hectares in area. The site consists of 4no. two-storey dwelling, 3no. of which are derelict, ancillary sheds and 4no. fields of heavy grasses with thick boundary vegetation. The site is connected to Blackpool village via Popes Road and Assumption Road and a pedestrian crossing over North City Link Road (N20).

The site is bounded by the Glentrasna residential area and Military Cemetery to the north, Christian Brothers College (CBC) sportsgrounds and Collins Barracks carpark to the south, Popes Hill residential area to the west and Collins Barracks Military Museum to the east and southeast. The N20 North City Link Road is located to the west of the site.

The site's topography includes significant elevation changes, with an approximate 25-meter fall from east to west and a 8-meter level difference from north to south. The site then falls diagonally from the southeast corner to the northwest corner towards the Military Cemetery. The site location is shown in figure 1-1 below.

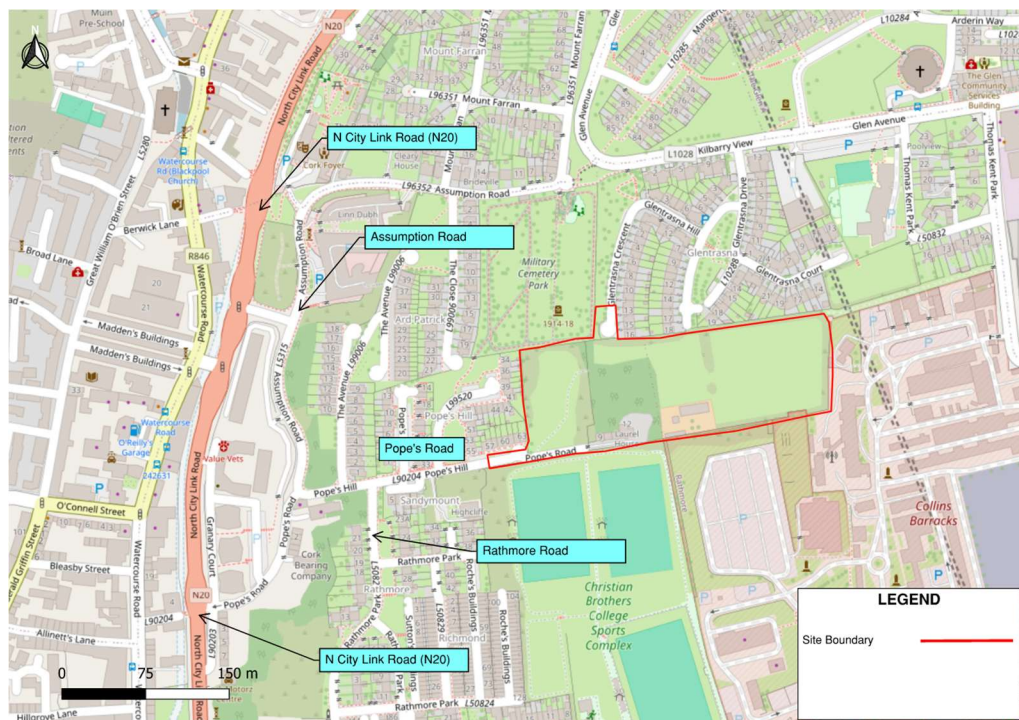


Figure 1-1: Site Location of the Proposed Development

1.2 Development Description

The proposed development will consist of a Large-Scale Residential Development (LRD) comprising of the following: (1) the demolition of a terrace of 4no. existing dwellings, 3no. of which are derelict, and ancillary sheds and their replacement with 1no. single-storey 3-bed detached bungalow (116sqm.) accessed via a modified private driveway; (2) the construction of 103no. dwellings (10980.6sqm.) (19no. 1-beds, 26no. 2-beds, 52no. 3-beds, and 7no. 4-beds) of between 2-4 storeys in height, to include 50no. townhouses (3no. 2-bed units; 40no. 3-bed units and 7no. 4-bed units); and 53no. duplex apartments (19no. 1-bed apartments, 23no. 2-bed apartments, and 11no. 3-bed apartments); (3) The proposed development will also include a ground floor crèche (217.4sqm.) with rear garden and front set down area. (4) The proposed development will also include 104no. car parking spaces, 128no. cycle spaces, internal roads and pathways, including internal traffic calming measures and pedestrian crossings; the provision of private, communal and public open space, including all balconies and terraces; hard and soft landscaping and boundary treatments; retaining walls; bin stores; revisions to the existing access; a pedestrian connection with Glentrasna Park to the north; and all associated site development, landscaping and boundary treatment, and drainage works, including SuDS.

The proposed works are outlined in a series of architectural drawings prepared by REDDY Architects, and engineering drawings prepared by PUNCH Consulting Engineers and supplied as part of the planning documentation.

2 Construction Resource Waste Management

2.1 Background

The purpose of this Outline Construction and Demolition Resource Waste Management Plan is to provide the information necessary to ensure that the management of waste at the site is undertaken in accordance with current legal and industry standards including the Waste Management Act 1996 and associated Regulations, Litter Act 1997 and the Southern Region Waste Management Plan 2015-2021, and CCC policy and guidance including Objectives 5.13 and 9.12 of the Cork City Development Plan 2022-2028.

This section was prepared in accordance with the EPA published *'Best Practice Guidelines on the Preparation of Resource and Waste Management Plans for Construction & Demolition Projects'* (2021) for the planning application of the proposed development and outlines a Preliminary Resource Waste Management Plan for the proposed construction works at the site.

2.2 Best Practice

The management of resource waste should reflect the waste management hierarchy, with waste prevention and minimisation being the first priority succeeded by reuse and recycling.

During construction works, the use of recycled materials reduces the quantities of waste which ultimately needs to be consigned to landfill sites.

Throughout the works, the following should be considered:

1. Establishing the potential for any reusable site assets (equipment, materials, soils, etc.)
2. Enabling the optimum recovery of assets on site.

Any decisions made on the above measures are to be recorded within the O-CRDWMP by the appointed Resource Waste Manager. It should be noted, the existing buildings on this site have been demolished and all materials removed from site.

2.3 Prevention of Waste

The primary effort therefore should be to engage in waste prevention and reduce the amount of waste generated in the first place i.e. minimise the resources needed to do the job. Options to prevent waste are typically greater during the early stages of the project through forward planning of construction works and procurement of materials.

Prevention is financially advantageous as it reduces the purchase of construction materials and obviates the need to remove wastes from site. It is important to emphasise the potential for certain purchasing procedures to contribute to a reduction in excessive material wastage on site.

Examples include:

- a) ensuring materials are ordered on an "as needed" basis to prevent over supply to site;
- b) purchasing construction materials in shape, dimensions and form that minimises the creation of excessive scrap waste on site;
- c) ensuring correct storage and handling of construction materials to minimise generation of damaged materials/waste, e.g., keeping deliveries packaged until they are ready to be used;
- d) ensuring correct sequencing of operations; and

- e) assigning individual responsibility (through appropriate contractual arrangements) to sub-contractors for the purchase of raw materials and for the management of wastes arising from their activities, thereby ensuring that available resources are not expended in an extravagant manner at the expense of the main contractor.

2.4 Reuse of Waste

Material that is generated should be reused on site or salvaged for subsequent reuse to the greatest extent possible and disposal should only be considered as a last resort. Initiatives should be put in place to maximise the efficient use/reuse of materials. As per good practice, the contractor will carry out an assessment of the inventory of existing assets to assess their potential for reuse on site.

2.5 Recycling of Waste

Similar to reuse, the recycling of resources on site offers a reduction in off-site management and associated cost reductions from transporting and processing these resources. There should also be consideration of the import and use of recycled materials or materials which contain a recycled content from other sites.

There are a number of established markets available for the beneficial use of construction waste:

- Waste timber can be recycled as shuttering or hoarding, or sent for reprocessing as medium density fibreboard;
- Waste concrete can be utilised as fill material for roads or in the manufacture of new concrete when arising at source; and
- The technology for the segregation and recovery of stone, for example, is well established, readily accessible and there is a large reuse market for aggregates as fill for roads and other construction projects.

2.6 Overall Management of Construction Waste

Waste minimisation, reuse and recycling can best be managed operationally by nominating a “Resource Waste Manager” to take responsibility for all aspects of waste management at the different stages of the Project.

This Resource Waste Manager may well be a number of different individuals over the life-cycle of the Project, but in general is intended to be a reliable person chosen from within the Contracting Team, who is technically competent and appropriately trained, who takes the responsibility to ensure that the objectives and measures within the Waste Management Plan are delivered and who is assigned the requisite authority to secure achievement of this purpose.

Specifically, the function of the Resource Waste Manager will be to communicate effectively with colleagues in relation to the aims and objectives for waste management on the Project. The primary responsibility for delivery of the objectives of the Waste Management Plan will fall upon the Resource Waste Manager designated at the construction stage. A key objective for the Resource Waste Manager should be to maintain accurate records on the quantities of waste/surpluses arising and the real cost (including purchase) associated with waste generation and management. The Resource Waste Manager will ensure that these waste/surpluses are exported off site by suitable authorised operators to suitably authorised sites.

The Resource Waste Manager will also be responsible for updating the plan as required to reflect new resource streams, work practices, suppliers or resource management options as required. In order to ensure supply chain initiatives have been adopted, the Resource Waste Manager will be engaged with relative individuals who have access to ordering and stock control records.

The preparation, application and documentation of a Project Waste Management Plan should enable all parties - including contractors, designers and competent authorities - to learn from the systematic implementation and assessment of best practice, particularly through the recording of summary information on performance outcomes.

2.7 Monitoring and Compliance

To ensure the effective implementation of the Resource and Waste Management Plan (RWMP), a system of ongoing monitoring and compliance will need to be established by the Contractor, specifically the Resource Waste Manager, and maintained throughout the duration of the project. Key performance indicators such as the waste recycling/reuse percentages outlined in Appendix 3 of Best Practice Guidelines of Waste Management Plans for C&D Projects for materials such as metal, concrete, paper & cardboard, plastic, wood, mixed waste and residues will be defined to assess the effectiveness of waste minimisation, segregation, reuse, and recycling measures.

Regular site audits will be conducted by the Resource Waste Manager and other members of the senior management team to track compliance with the RWMP objectives and to identify opportunities for improvement. All data and records relating to waste generation, handling, segregation, disposal, and resource use will be compiled in a centralised logbook and retained on file at the site office. These records will be kept up to date and will be made available for inspection by the planning authority or other relevant bodies upon request. The RWMP, including all monitoring and compliance procedures, will be submitted to Cork City Council for written agreement prior to the commencement of the development. Once approved, it will be maintained on file as part of the public record for the project.

2.8 Construction Management Plan

2.8.1 Disposal of Water, Wastewater and Sewage

All site facilities during construction will be located entirely within the site. The facilities will include canteen, toilet block and drying room for all staff/workers. These facilities will be connected to the Local Authority sewage system with local authority approval.

2.8.2 Water Disposal

Throughout the works, all surface water (water from excavations etc.) will be pumped to a holding tank on site. From here the water will be pumped to a series of settlement tanks. These tanks will act as primary and secondary settlement. The settlement tanks will be of sufficient number and size to allow the necessary retention time for solids to settle. The discharge water from the final tank will be routed to the existing surface water system with approval from the local authority. Visual checks of the pumping and settlement system will be carried out on a routine basis.

2.8.3 Working Hours

Working hours during site clearance and construction shall be restricted to 08:00-18:00 hours on Monday to Fridays and to 08:00-16:00 hours on Saturdays. Activities outside these hours shall require the prior approval of the Planning Authority.

2.8.4 Waste Management Control Policy

In general:

Regular shaped skips will be used for the duration of the construction works. All skips will be situated in the waste segregation area on site.

Labelled skips will be available for each of the following waste types: wood, metal, brick/ rubble, canteen waste, plasterboard, paper and cardboard, other general waste and special bins for any hazardous wastes as required.

Throughout the construction zone, covered labelled wheelie bins will be placed at designated waste depots. These bins will be taken and used by the operatives/ sub-contractors and returned to the depots after use.

The waste segregation area banksman will co-ordinate the movement of skips to and from the construction zone. The banksman will also co-ordinate the scheduling of the approved waste collector to transport waste to the relevant permitted/ licensed waste facility.

2.8.5 Control of Fuels and Lubricants

In order to provide fuel to the relevant items of plant on site, a certified double skinned metal fuel tank with integrated pump, delivery hose, meter, filter and locking mechanism will be situated in a secure area on the construction site. It will be situated within a bund. This tank will be certified for lifting when full.

Sand piles and emergency clean up spill kits will be readily available in the event of a fuel spill. A hazardous bin will also be available to contain any spent sand or soak pads.

New metal jerry cans with proper pouring nozzles will be used to move fuel around the site for the purposes of refuelling items of small plant on site.

Drip trays will be used under items of small plant at all times. Any waste oils etc. contained in the drip trays or the bunded area will be emptied into a waste oil drum, which will be stored within the bund.

Metal jerry cans and any other items of fuel containers will be stored in certified metal bunded cabinets. Any gas bottles will be stored in a caged area at a secure location on the site. All will be properly secured at point of work.

2.8.6 Site Compound Layout

The site will be enclosed by hoarding or the existing boundary walls in areas. A waterproof membrane will be fixed to the base of the hoarding and the ground. The compound area will be of hardstanding material.

2.8.7 Car Parking Arrangements

Parking of construction workers vehicles and machinery is feasible within the site extents. To minimise congestion, a parking and traffic management plan will need to be developed by the Contractor for submission to Cork City Council to ensure that construction workers access the site using alternative means of transport (i.e. public transport) to negate/ minimise any impacts on the local network.

2.8.8 Traffic Management Procedures/ Generation

All deliveries will be booked into site at least one day before delivery. All drivers will contact the site gate man 15 minutes before arrival on site.

Construction traffic will typically arrive along Popes Road, prior to entering the proposed development site. All deliveries will be off-loaded without delay by the most appropriate method and escorted off site.

The site gate man will be responsible for ensuring that there is no conflict between pedestrians and vehicles entering/ exiting the site. In addition, temporary markings will be painted on the footpath either side of the site entrance to alert pedestrians.

It is envisaged that working hours on site will be 08:00 hrs to 18:00 hrs Monday to Friday and 08:00 hrs to 16:00 hrs Saturday, therefore the peak movements in and out of the site should occur outside of the AM/PM rush hour traffic.

The volume of HGV movements per day will vary according to the different stages of bulk excavation. Peak HGV movements are expected to be associated with removal off-site of materials during excavation works.

Excavation/Regrading Works:

For a rigid HGV hauling material to the site, it will typically take 15 mins from when the rigid arrives at the site entrance, travels to the unloading area, empties its load and leaves the site.

2.8.9 Air Quality

There is the potential for a number of emissions to the atmosphere during the construction stage of the project. In particular, activities may generate quantities of dust. Construction vehicles, generators etc., will also give rise to some exhaust emissions.

Vehicular movements to and from the site will make use of existing roads. Considering the existing traffic levels in the area, the likely air quality impact associated with construction traffic is not significant.

A dust minimisation plan will be formulated for the bulk excavation and construction phase of the project, as construction activities are likely to generate dust emissions. The potential for dust to be emitted depends on the type of activity being carried out in conjunction with environmental factors including levels of rainfall, wind speeds and wind direction. The potential for impact from dust depends on the distance to potentially sensitive locations and whether the wind can carry the dust to these locations. The majority of any dust produced will be deposited close to the potential source and any impacts from dust deposition will typically be within several hundred metres of the construction area.

In order to ensure that no dust nuisance occurs, a series of measures will be implemented.

Roads shall be regularly cleaned and maintained as appropriate. Hard surface roads shall be swept to remove mud and aggregate materials from their surface. Furthermore, 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 delivering material with dust potential both on and off the site shall be enclosed or covered with tarpaulin at all times to ensure no potential for dust emissions.

All vehicles exiting the site shall make use of a wheel wash facility, if required, prior to entering onto public roads, to ensure mud and other wastes are not tracked onto public roads. Public roads outside the site shall be regularly inspected for cleanliness and cleaned as necessary.

Material handling systems and site stockpiling of materials shall be designed and laid out to minimise exposure to wind. Water misting or sprays shall be used as required if particularly dusty activities are necessary during dry or windy periods.

At all times, the procedures put in place will be strictly monitored and assessed. In the event of dust nuisance occurring outside the site boundary, satisfactory procedures will be implemented to rectify the problem.

The dust minimisation plan shall be reviewed at regular intervals during the construction phase to ensure the effectiveness of the procedures in place and to maintain the goal of minimisation of dust through the use of best practise and procedures.

2.8.10 Asbestos

Asbestos present on the site will be removed in accordance with, Health and Welfare at Work (Exposure to Asbestos) Regulations 2006 (S.I. No. 386) and its amendment 2010 (S.I. No. 589). “Where any demolition or other work involves removing, repairing or maintenance of asbestos and/or asbestos-containing products from or at any building, other structure, plant, installation or ship, whether or not such removal involves total demolition of the structure, such work shall not commence until a suitable plan of work is drawn up in writing outlining how that work is to be carried out.”

A plan of work will be implemented following the premisses below:

- that asbestos or asbestos-containing products, or both, are to be removed so far as is reasonably practicable before demolition techniques are applied or major refurbishment of a premises commences, except where this would cause a greater risk to employees than if the asbestos or asbestos-containing products, or both, had been left in place.
- that personal protective equipment PPE, shall be provided to the employees concerned.
- information to include; the nature and probable duration of the work, the location of the place where the work is carried out, the methods applied where the work involves the handling of asbestos or of materials containing asbestos, and the characteristics of the equipment used for protection and decontamination of the employees carrying out the work, and protection of other persons present on or near the worksite.

2.9 Noise and Vibration

2.9.1 Noise

There is no published Irish guidance relating to the maximum permissible noise level that may be generated during the construction phase of a project. Local authorities normally control construction activities by imposing limits on the hours of operation and consider at their discretion noise limits.

In the absence of specific noise limits, appropriate criteria relating to permissible construction noise levels for a development of this scale will be agreed with Cork City Council as part of the planning conditions and will indicate the maximum permissible noise levels at adjacent properties during construction and any related time constraints with regard hours of operation. The majority of the construction activity is expected to occur during normal working hours.

2.9.2 Vibration

There are two varieties of criteria for vibration: those dealing with human comfort and those dealing with cosmetic or structural damage to buildings. In both instances, it is appropriate to consider the magnitude of vibration in terms of Peak Particle Velocity (PPV).

It is acknowledged that humans are particularly sensitive to vibration stimuli and that any perception of vibration may lead to concern. In the case of road traffic, vibration is perceptible at around 0.5 mm/s and may become disturbing or annoying at higher magnitudes. However, higher levels of vibration are typically tolerated for single events or events of short duration. For example, piling is typically tolerated at vibration levels up to 5mm/s. This guidance is applicable to the daytime only; it is unreasonable to expect people to be tolerant of such activities during the night.

Guidance relevant to acceptable vibration within buildings is contained in the following documents:

- British Standard BS 7385 -2:1993: Evaluation and measurement for vibration in buildings. Guide to damage levels from ground borne vibration, and;
- British Standard BS 5228-2:2009: Code of practice for noise and vibration control on construction and open sites

2.9.3 Noise and Vibration Mitigating Measures

Due to the nature of the activities undertaken on a construction site, there is naturally potential for generation of significant levels of noise. A variety of items of plant may be in use, such as pneumatic breakers, excavators, lifting equipment, dumper trucks, compressors and generators. The flow of vehicular traffic to and from a construction site is also a potential source of relatively high noise levels.

The potential for vibration at neighbouring sensitive locations during construction is typically limited to excavation works and lorry movements on uneven road surfaces.

With regard to construction activities, reference will be made to BS 5228-1:2009: Noise control on construction and open sites, which offers detailed guidance on the control of noise and vibration from construction activities. In particular, it is proposed that various practices be adopted during construction, including:

- Limiting the hours during which site activities likely to create high levels of noise or vibration are permitted;
- Establishing channels of communication between the contractor/developer, Local Authority and residents;
- Appointing a site representative responsible for matters relating to noise and vibration;
- Monitoring typical levels of noise and vibration during critical periods and at sensitive locations;
- All site access roads will be kept even, to mitigate the potential for vibration from lorries;
- Construction of 2.4m high hoarding.

Furthermore, it is envisaged that a variety of practicable noise control measures will be employed. These may include:

- Selection of plant with low inherent potential for generation of noise and/ or vibration;
- Erection of barriers as necessary around noisy processes and items such as generators heavy mechanical plant or high duty compressors;
- Placing of noisy/vibratory plant as far away from sensitive properties as permitted by site constraints and the use of vibration isolated support structures where necessary.

We would recommend that vibration from construction activities be limited to the values set out in Section 2.9.2. It should be noted that these limits are not absolute but provide guidance as to magnitudes

of vibration that are very unlikely to cause cosmetic damage. Magnitudes of vibration slightly greater than those are normally unlikely to cause cosmetic damage, but construction work creating such magnitudes should proceed with caution. Where there is existing damage, these limits may need to be reduced by up to 50%.

During the construction phase of the project there will be some small impact on nearby properties due to noise emissions from site traffic and other activities. However, given that the construction phase of the project is temporary in nature, it is expected that the various noise sources will not be excessively intrusive. Furthermore, the application of binding noise limits and hours of operation, along with implementation of appropriate noise and vibration control measures, will ensure that noise and vibration impact is kept to a minimum.

A Noise and Vibration Impact Assessment report will be prepared prior to construction stage for further details on the construction and operational phase impact as well as mitigating measures.

It is highly recommended that appropriate dilapidation records for the site and surrounding area are documented prior to the commencement of construction activities.

2.10 Indicative On-Site Waste Construction Waste Management Plan

In the course of the Project, it is estimated that the following construction wastes/material surpluses will arise:

Waste Type (LoW Code)	Construction Waste Material	Actions
17 04 07	Mixed Metal	20% to be reused on site and 80% to be recycled
17 01 01	Concrete	50% of any waste concrete to be recycled and 50% to be properly disposed of
15 01 01	Paper & Cardboard	100% of any waste packaging to be recycled
17 02 03	Plastic	100% of any waste packaging to be recycled
17 02 01	Wood	100% of any waste timber to be recycled
17 09 04	Mixed Waste	Waste materials will be recycled where possible or disposed of appropriately
17 09 04	Residues	Any other waste materials will be recycled where possible or disposed of appropriately

Table SF1 Estimated C&D Waste Arisings on Site from Appendix 3 of Best Practice Guidelines of Waste Management Plans for C&D Projects (figures to be confirmed as design progresses).

These quantities are provisional only and subject to further determination during construction works, where specific quantities will be determined and managed by the contractor.

2.10.1 Proposals for Minimisation, Reuse and Recycling of Construction Waste

Construction waste will arise on the Project mainly from service trenches and foundation preparation.

The following are proposals for minimisation, reuse and recycling of construction waste:

- The Purchasing Manager shall ensure that materials are ordered so that the quantity delivered, the timing of the delivery and the storage is not conducive to the creation of unnecessary waste.
- Concrete waste will be source segregated.
- Masonry and wood will be source segregated.
- Packaging will be source segregated for recycling or return to suppliers.
- Hazardous wastes will be identified, removed and kept separate from other construction waste materials in order to avoid further contamination.
- Other construction waste materials will be collected in receptacles with mixed construction waste materials, for subsequent separation and disposal at a remote facility.

It is anticipated that waste materials will have to be moved off site. It is the intention to engage specialist waste service Contractors, who will possess the requisite authorisations, for the collection and movement of waste off-site, and to bring the material to a facility which currently holds a Waste Licence/ Waste Permit/ Certificate of Registration. Accordingly, it will be necessary to arrange the following waste authorisations specifically for the Project:

Authorisation Type	Specific Need for Project (Yes/No?)	
Waste Licence	Yes ☒	No ☐
Waste Permit	Yes ☒	No ☐
Waste Collection Permit	Yes ☒	No ☐
Trans frontier Shipment Notification	Yes ☐	No ☒
Movement of Hazardous Waste Form	Yes ☐	No ☒

Table SF2 Waste Authorisations Necessary for the Scheme from Appendix 3 of Best Practice Guidelines of Waste Management Plans for C&D Projects

A list of waste collection permit holders to be employed on this project will be submitted to the local authority by the contractor in their Formal Construction Resource Waste Management Plan for the Construction Stage.

A list of waste collection permit sites that the waste may be recovered or disposed to on this project will be submitted to the local authority by the contractor in their Formal Construction Resource Waste Management Plan for the Construction Stage.

2.10.2 Assignment of Responsibilities

A foreman shall be designated as the Responsible Person and have overall responsibility for the implementation of the on-site Waste Management Plan.

The Responsible Person will be assigned the authority to instruct all site personnel to comply with the specific provisions of the Plan.

At the operational level, a Ganger from the main contractor and appropriate personnel from each sub-contractor on the site shall be assigned the direct responsibility to ensure that the discrete operations stated in the Waste Management Plan are performed on an on-going basis.

2.10.3 Training

Copies of the Waste Management Plan will be made available to all personnel on site. All site personnel and sub-contractors will be instructed about the objectives of the Waste Management Plan and informed of the responsibilities which fall upon them as a consequence of its provisions.

Where source segregation and material reuse techniques apply, each member of staff will be given instructions on how to comply with the Waste Management Plan.

Posters will be designed to reinforce the key messages within the Waste Management Plan and will be displayed prominently for the benefit of site staff.

2.10.4 Waste Auditing

The Resource Waste Manager shall arrange for full details of all arisings, movements and treatment of construction waste discards to be recorded during the construction stage of the Project.

Each consignment of construction waste taken from the site will be subject to documentation, which will conform to Table SF3 and ensure full traceability of the material to its final destination.

Detail	Particulars
Name of Project of Origin	Residential Development, Blackpool, Cork
Material being Transported	e.g. Soil, Crushed Asphalt etc.
Quantity of Material	e.g. 20.50 tonnes
Date of Material Movement	e.g. 01/07/2021
Name of Carrier	e.g. Authorised Carriers Ltd.
Destination of Material	e.g. Aggregates & Recycling Ltd
Proposed Use	e.g. Use as Hardcore in Dwelling Floors

Table SF3 Details to be Included within Transportation Dockets from Appendix 3 of Best Practice Guidelines of Waste Management Plans for C&D Projects

Details of the inputs of materials to the Construction site and the outputs of wastage arising from the Project will be investigated and recorded in a Waste Audit, which will identify the amount, nature and composition of the waste generated on the site. The Waste Audit will examine the manner in which the waste is produced and will provide a commentary highlighting how management policies and practices may inherently contribute to the production of construction waste. The measured waste quantities will be used to quantify the costs of management and disposal in a Waste Audit Report, which will also record lessons learned from these experiences which can be applied to future projects.

The total cost of construction waste management will be measured and will take account of the purchase cost of materials (including imported soil), handling costs, storage costs, transportation costs, revenue from sales, disposal costs etc. Costs will be calculated for the management of a range of construction waste materials, using the format shown in Table SF4.

The Table SF4 below will be completed and submitted to the Council in full following the appointment of a contractor for the works.

Material	Estimated Quantities & Costs (tonnes & Euro)
<u>SOIL</u>	XXX tonnes for €_____
Quantity of Waste Soil(tonnes)	
Purchase Cost i.e. Import Costs (€)	
Materials Handling Costs (€)	
Material Storage Costs (€)	
Material Transportation Costs (€)	
Revenue from Material Sales (€)	
Material Disposal Costs (€)	
Material Treatment Costs (€)	
Total Waste Soil Management Costs (€)	
Unit Waste Soil Management Costs (€)	

Table SF4 Standard Record Form for Costs of Construction Waste Management from Appendix 3 of Best Practice Guidelines of Waste Management Plans for C&D Projects

Details of the quantities and types of construction waste arising from the Project will be forwarded to the Environmental Protection Agency, CCC, NCDWC etc.

3 Waste Management Legislation and Obligations

3.1 Relevant Waste Management Legislation

This section provides details of waste related legislation relevant to the project. In accordance with cradle to grave responsibilities, the Contractor will be responsible for all waste arisings from the time the waste is generated until it reaches its final destination point. This includes its method of treatment/disposal. The Waste Management Acts 1996-201, give effect to the polluter pays principle effectively stating that the waste producer may be liable for any pollution incidents arising from the management of their waste. There is therefore an onus on the Contractor to ensure that all contractors managing waste on their behalf are legally compliant and technically competent and the waste itself is contained, handled, treated and disposed of in accordance with all relevant regulatory requirements.

A brief description of the main waste related regulatory controls relevant to the project is provided hereunder; however, the list is not exhaustive and should be reviewed and amended at regular intervals in accordance with changing legislation:

3.1.1 Waste Management (Landfill Levy) (Amendment) Regulations 2015, S.I. No. 182/2019

The amendment regulation increased the landfill levy to €85 per tonne of waste disposed of with an exemption for Construction & Demolition (C&D) Waste. This exemption for C&D waste was subsequently removed in 2024.

3.1.2 Waste Management (Landfill Levy) Regulations 2015, S.I. No. 189/2015

The levy of €75 per tonne of waste disposed is increased under the amendment Regulations S.I. No. 182/2019 referenced above.

3.1.3 Waste Management (Facility Permit and Registration) (Amendment) Regulations 2015, S.I. No. 198/2015

These regulations describe the process for obtaining a Waster Permit or Certificate of Registration, by a private operator from a local authority, or a Certificate of Registration from the Environmental Protection Agency (EPA) in respect of a local authority run waste activity which requires registration.

3.1.4 Waste Management (Licensing) (Amendment) Regulations 2010, S.I. No. 350/2010

These regulations relate to the process for obtaining a waste licence from the EPA for the operation of certain waste recovery or disposal facilities under Part V of the Waste Management Act.

3.1.5 Waste Management (Collection Permit) (Amendment) Regulations 2016, S.I. No. 24/2016

These regulations relate to the requirement to obtain a waste collection permit from the relevant local authority for the collection of waste on a commercial basis.

3.1.6 Waste Management (Movement of Hazardous Waste) Regulations 1998, S.I. No. 14/1998

These regulations control the movement of hazardous waste within Ireland requiring authorisation in the form of C1 consignment forms. The C1 form is completed by the Consignor, the Carrier and the Consignee. A three part document provides a tracking mechanism for the hazardous waste from its point of origin to its final destination.

3.1.7 Waste Management (Shipments of Waste) Regulations 2007, S.I. No. 419/2007

These regulations control the movement of waste across member states. Shipments are controlled under a TFS (Transfrontier Shipment) form, which designates the waste under the categories of Green, Amber and Red List.

3.1.8 Waste Classification, List of Waste and Determining if Waste is Hazardous or Non-Hazardous, 2015

This document allows the generators of waste to classify the waste as hazardous or non-hazardous and in the process assigning the correct List of Waste entry. The waste classification system applies across the EU and is the basis for all national and international waste reporting obligations. Correct classification is the foundation for ensuring that collection, transportation, storage, treatment of waste is carried out in a manner that provides protection for the environment and human health and in compliance with legal requirements.

3.1.9 Carriage of Dangerous Goods by Road Regulations 2015, S.I. No. 288/2015

These regulations require drivers transporting dangerous goods to be ADR trained. In addition, a Dangerous Goods Safety Advisor (DGSA) must be appointed where activities include the carriage, or related packing, loading, filling or unloading of dangerous goods by road.

4 Waste Management Types

4.1.1 Demolition Waste Identification & Classification

The Contractor shall establish a procedure to identify and classify all waste arising at the site in relation to the demolition of the existing buildings in accordance with the European Waste Catalogue (EWC) Code. The Contractor shall ensure that the waste materials generated during the works are clearly identified as either hazardous or non-hazardous wastes, with reference to the guidance from the Environmental Protection Agency (Paper Tool of the Procedure for the Identification of the Hazardous Components of Waste) where required and shall establish waste storage areas for the different types of waste that may arise.

For each waste stream identified by the Contractor, and for each additional waste stream that may arise during the works, the Contractor shall identify the following:

- The appropriate EWC Code
- A suitable Waste Collection Contractor in possession of a valid Waste Collection Permit for the collection of the waste.
- The waste recovery or disposal site, including the transfer station where the waste may be transferred to upon leaving the site in possession of a valid Waste Facility Permit or Waste License, as appropriate.
- The recovery or disposal method for the waste.

Only Contractors in possession of a valid Waste Collection Permit shall collect wastes from the site. The Contractor responsible for the waste shall ensure that the Waste Collection Contractor:

- Is permitted to collect the particular waste.
- Is permitted to collect waste.
- Uses a waste collection vehicle identified on the Waste Collection Permit.
- Transfers the waste to a waste facility identified on the Waste Collection Permit.

The Waste Management Plan is to be updated by the appointed Contractor to include for the names of waste collectors to be engaged in waste movement from the site along with the destination waste facilities where waste will be taken off-site for recovery/disposal.

4.1.2 Quantities of Demolition Waste

Waste which will be generated by the demolition of existing buildings, excavation works of the existing substructure and underground civil infrastructure. The type, quantity and waste codes and included in Table SF5.

Waste Type (LoW Code)	Waste Type (Description)	Volume of Waste Generated Predicted Estimate (tonnes)	Waste Exported off-site Predicted Estimate (tonnes)
17 01 01	Concrete	100	100
17 01 02	Bricks and Blocks	250	250
17 01 03	Tiles & Ceramics	1	1
17 02 01	Wood	5	5
17 02 02	Glass	1	1
17 02 03	Plastic	1	1
17 04 01	Copper, Bronze, Brass	1	1
17 05 04	Soil and Stone	50	50
17 06 04	Insulation Material	5	5
17 08 02	Gypsum	5	5
17 09 04	Mixed C&D Waste	25	25
17 06 05	Construction Materials Containing Asbestos	5	5

Table SF5 Summary of Demolition Waste Quantities

4.1.3 Quantities of Site Development Waste

One of the main types of C&D wastes generated from construction sites is soil and stone removed from excavation works on site to new foundations, road, drainage and utility works. As part of development of the site levels a cut/fill exercise was undertaken and it is envisaged that all excavated or cut material will be re-used on site including topsoil and subsoil. Any rock encountered with nominal quantities anticipated will be broken out, crushed on-site and re-used as fill material.

As part of the design of the layout and in order to balance cut and fill, split level units were designed on the sloping sections of the site.

A detailed estimate of waste to be generated in the overall construction works can only be completed when detailed construction methodologies are confirmed for the site.

A Resource and Waste Inventory in line with the template provided in the EPA document 'Best Practice Guidelines for the preparation of resource & waste management plans for construction & demolition projects' will be provided prior to the construction phase, as shown in Appendix A.

The inventory will reflect the nature of the construction works and will also contain non-construction relation waste streams such as flood, litter and packaging waste etc.

Appendix A Resource and Waste Inventory

Waste Type (LoW Code)	Waste Type (Description)	Volume Generated (tonnes)	Prevention (tonnes - non-waste)	Reused (tonnes - waste)	Recycled (tonnes - waste)	Recovered (tonnes - waste)	Disposed (tonnes - waste)	Unit Cost Rate (€/tonne)	Total Cost (€)
17 01 01	Concrete								
17 01 02	Bricks and Blocks								
17 01 03	Tiles & Ceramics								
17 02 01	Wood								
17 02 02	Glass								
17 02 03	Plastic								
17 03 02	Bituminous Mixtures								
17 04 01	Copper, Bronze, Brass								
17 04 02	Aluminium								
17 04 03	Lead								
17 04 04	Zinc								
17 04 05	Iron and Steel								
17 04 06	Tin								
17 04 07	Mixed Metals								
17 04 11	Cables								
17 05 04	Soil and Stone								
17 06 04	Insulation Material								
17 08 02	Gypsum								
17 09 04	Mixed C&D Waste								

Waste Type (LoW Code)	Waste Type (Description)	Volume Generated (tonnes)	Prevention (tonnes - non-waste)	Reused (tonnes - waste)	Recycled (tonnes - waste)	Recovered (tonnes - waste)	Disposed (tonnes - waste)	Unit Cost Rate (€/tonne)	Total Cost (€)
17 01 06	Mixtures of, or separate fractions of concrete, bricks, tiles and ceramics containing hazardous substances								
17 02 04	Glass, plastic and wood containing or contaminated with hazardous substances								
17 03 01	Bituminous mixtures containing coal tar								
17 04 09	Metal waste contaminated with hazardous substances								
17 05 03	Soil and stones containing hazardous substances								
17 06 05	Construction Materials Containing Asbestos								
	Other resources (non- waste materials) (specify as needed)								
	Other wastes (specify as needed)								