MWP

Inis Cealtra Visitor Experience

Construction Environmental Management Plan

Clare County Council

November 2024

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Project No.	Doc. No.	Rev.	Date	Prepared By	Checked By	Approved By	Status
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1. Introduction

This Construction and Environmental Management Plan (CEMP) has been prepared by MWP in conjunction with McCullough Mulvin Architects on behalf of Clare County Council, to accompany the submission of a Part X planning application to An Bord Pleanála for the proposed construction of the Inis Cealtra Visitor Experience development. It incorporates information from the wider design team and Waterways Ireland. It comprises of various elements both on Inis Cealtra Island and within the village of Mountshannon, which sits on the western shore of Lough Derg in County Clare.

This CEMP has been developed specifically for this project and outlines construction practices and environmental management measures that will be implemented during the construction phase to ensure that the project is constructed in accordance with best practices and has the minimum impact on the surrounding environment.

1.1 CEMP Purpose and Objectives

The purpose of a Construction Environmental Management Plan is to outline how the Appointed Contractor(s) will implement a Site Construction Management System to meet the specified requirements which include Contractual, Regulatory and Statutory Requirements, Environmental Mitigation Measures and Planning Conditions.

The principal objective of this CEMP is to avoid, minimise and control adverse environmental impacts associated with all aspects of the construction of the proposed development. In essence, this CEMP is intended to provide the Appointed Contractors with a practicable guide to ensure compliance by all parties with any Planning and Environmental requirements. The CEMP achieves this by providing the environmental management framework to be adhered to during the construction phase of the proposal. It outlines the work practices, construction management procedures, management responsibilities, mitigation measures and monitoring proposals that are required to be adhered to, in order to complete the proposed development in an appropriate environmental manner. All site personnel will be required to be familiar with the plan's requirements as related to their role on site.

There is a requirement on the Appointed Contractor(s), that details of this Project CEMP are updated with progress, including the roles and responsibilities of those appointed on the site for the construction of the project, if their respective roles change during the project.

While this version of the CEMP provides a benchmark for good practice, were avoidance or further minimisation of risks to the environment can be demonstrated using alternative methods or improvements to the current practices, the Contractor will implement these wherever possible.

2. Project Overview-

The Inis Cealtra Visitor Experience is to be developed on Inis Cealtra (Holy Island) and on the mainland, in two principal locations within Mountshannon Village. The project is comprised of different elements as set out below, see Figure 2-1, Figure 2-2 & Figure 2-3 for their indicative location.

2.1 Inis Cealtra Island

- Demolition of an existing concrete shelter adjacent to the existing pier at the north-west of the island.
- Installation of a new L-shaped floating access jetty and walkway at the north-west of the island, consisting of a floating breakwater jetty and a stone and concrete causeway connected by a steel access ramp.
- Provision of new mown grass pedestrian paths on the island coincident with the original pilgrimage route. The paths will allow for enhanced access to the main monuments and natural landscape on the island.
- Provision of three staff and public welfare facility 'pods' including weather shelter, WCs and a rest room for island staff.

2.2 Mainland – Mountshannon

- Construction of a new public car park in Mountshannon Village, on the north side of Main Street, incorporating 169 total car parking spaces, together with coach parking and bicycle parking facilities.
- A Visitor Centre in the southern part of the 'Old Rectory Site'. It is a part-one-storey, part-two-storey semi-circular building incorporating a series of spaces for interpretation, exhibition and education associated with the Inis Cealtra Visitor Experience, together with a café and ancillary supporting spaces. Public realm works in front of the main façade, paved in natural stone, will continue the curved geometry of the building, creating a comfortable space for visitors to meet, relax and take in views of Lough Derg and Inis Cealtra.
- Reconfiguration of the existing Mountshannon Harbour car park, providing for 49 total car parking spaces and public realm enhancements.

For the purposes of this CEMP, the project has been divided into four elements/locations which are outlined as follows:

- Developing of Inis Cealtra with upgraded landing, installation of paths and pods.
- Village Car Park located north of Aistear Park
- Reconfiguration of the Harbour Car Park
- Construction of a Visitor Centre on the grounds of the Rectory

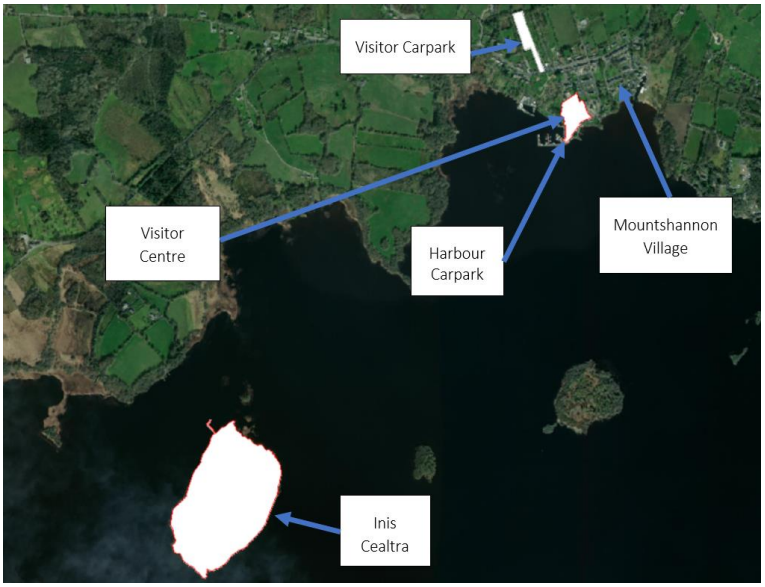


Figure 2-1: Aerial Image of Project Location (Openstreet)

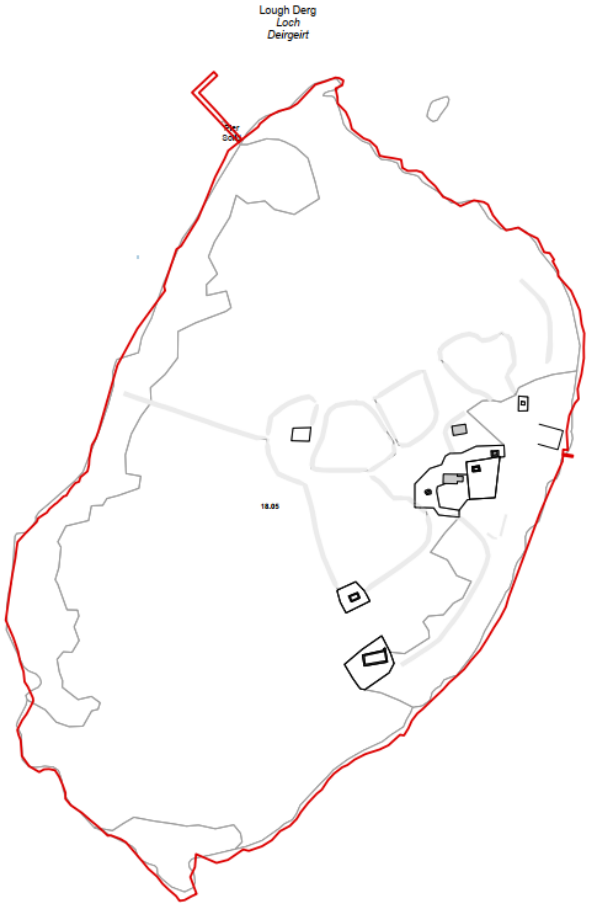


Figure 2-2: Site Boundary for works on Inis Cealtra (MCM)

Figure 2-3: Site Boundary for works in Mountshannon Village (Openstreet)

3. Construction Works

3.1 Overview of works to Inis Cealtra Island and Mainland Mountshannon-

Key elements of the civil works and activities associated with the construction phase of the proposed development are as follows and are discussed in the following subsections:

3.1.1 Inis Cealtra Island

- Pre-commencement activities including site investigation work and pre-construction surveys
- Pre-Construction Activities including
- Site Clearance Works to allow for the new jetty to be constructed
- Construction of temporary site construction compound
- Construction of new floating access jetty and walkway located at Northwest of the island where the existing mooring point is located.
- Site Clearance Works to allow for the remaining works on the Island
- Demolition of a structure on the island
- Construction of 3no. new staff and public welfare facility “pods” on the island
- Construction of new pedestrian paths on the island
- Complete site works, tidy up site, landscaping, restoration
- Demobilise site compound facilities

3.1.2 Village Car Park

- Pre-commencement activities including site investigation work and pre-construction surveys
- Pre-Construction Activities
- Site Clearance Works
- Construction of temporary site construction compound
- Construction of a new public car park on a site to the north of Mountshannon main street with all associated ancillary site works
- Complete site works, tidy up site, landscaping, restoration
- Demobilise site compound facilities

3.1.3 Harbour Car Park Reconfiguration

- Pre-commencement activities including site investigation work and pre-construction surveys
- Pre-Construction Activities
- Site Clearance Works

- Construction of temporary site construction compound
- Reconfiguration of the existing Mountshannon harbour car park, located to the south of the proposed visitor centre with all associated ancillary site works
- Complete site works, tidy up site, landscaping, restoration
- Demobilise site compound facilities

3.1.4 Visitor Centre

- Pre-commencement activities including site investigation work and pre-construction surveys
- Site preparation and pre-construction activities
- Environmental measures
- Construction of temporary site construction compound
- Construction traffic routes
- Site construction drainage system
- Construction of proposed visitor centre to the southern part of the Old Rectory site
- Complete site works, tidy up site, landscaping, restoration
- Demobilise site compound facilities

3.2 Schedule of Construction Works

The typical construction works will be completed in phases as outlined below. This is illustrated in MCM's Phasing Site Plan (INC2-P-003).

- Phase 1 (Inis Cealtra & Village Car park) with completion aimed for Q1 of 2028.
- Phase 2 (Harbour Car Park & Visitor Centre) with a completion date aimed for Q3 2042 with peak construction activity envisaged to occur in 2041 as works would be envisaged to overlap between the Visitor Centre and the Harbour Car Park.

The estimated construction time frame and construction personnel requirements are predicted to be as follows.

- Village Car Park 12 Months with a predicted maximum of 25 personnel on site at any one time. Peak HGV loading would be envisaged to be 25 HGVs per day with typically 5 HGVs per hour.
- Island Works 12 Months with a predicted maximum of 20 personnel on site at any one time. Peak HGV loading would be envisaged to be 10 HGVs per day with typically 3 HGVs per hour.
- Visitor Centre 18 Month with a predicted maximum of 50 personnel on site at any one time. Peak HGV loading would be envisaged to be 20 HGVs per day with typically 4 HGVs per hour.
- Harbour Car Park 6 Months with a predicted maximum of 20 personnel on site at any one time. Peak HGV loading would be envisaged to be 10 HGVs per day with typically 3 HGVs per hour.

3.3 Working Hours and Personnel

Construction is proposed to occur within the following hours subject to planning conditions: -

• 8.00am – 7.00pm (Monday – Friday inclusive)

• 8.00am – 1.00pm (Saturday)

3.3.1 Inis Cealtra Island

It is expected that the construction works on the island elements of the works (construction of jetty/ demolition of existing shelter / construction of pods & paths) will require approximately 25 personnel including during the peak construction phase, to include site contractors, engineers, materials delivery personnel, environmental personnel, health and safety personnel.

3.3.2 Village Car Park

It is expected that the construction works on the Village Car Park will require approximately 20 personnel including during the peak construction phase, to include site contractors, engineers, materials delivery personnel, environmental personnel, health and safety personnel.

3.3.3 Harbour Car Park Reconfiguration & Visitor Centre

It is expected that the construction works on the Harbour Car Park and Visitor Centre elements of the works require approximately 50 personnel including during the peak construction phase, to include site contractors, engineers, materials delivery personnel, environmental personnel, health and safety personnel.

3.4 Construction Methodology – Village Car Park

3.4.1 Site preparation and pre-construction activities

- The following key works will be undertaken as part of the site preparation and pre-construction activities:

3.4.1.1 Pre-Commencement Surveys

Any detailed ground investigations, environmental surveys etc required to support the construction process will be carried out and finalised.

3.4.1.2 Enabling Works

Site enabling works will include but not be limited to the following:

- A traffic management plan will be completed prior to the works commencing and this will be agreed between the Contractor and Clare County Council to ensure that traffic is managed during the works safely and with least impact.
- Secure site and erect fencing, hoarding, and signage as required;
- Locate and terminate existing live services where required;
- Install any bunding and/or run-off controls where required such as installation of suitable protection (e.g., silt curtain) around the site boundaries to control and treat any run-off during the works;

- Identification of temporary stockpiling and storage areas;
- Areas of Japanese knotweed is to be identified and fenced off with a buffer. A treatment programme of spraying is conducted if timelines permit, otherwise, the affected area is excavated, segregated from the other waste generated on the site, and removed to an appropriate waste disposal site.
- Set up contractor welfare facilities and site accommodation including water management measures.
- The erection of signage and information boards for the general public, site employees and trucks transporting materials to/from the site.
- Provision of temporary power, lighting and water services.

3.4.2 General Methodology

The general works methodology on the site would be as follows. Note that these works may happen in a phased manner on the site to cater for the weather, ground conditions and Contractor's sequencing.

- The area will be marked out using ranging rods or wooden posts. The area will be surveyed, and all existing services will be identified. All plant operators and general operatives will be inducted and informed as to the location of any services.
- The site shall be cleared to the extent as shown in the relevant Planning Drawings. Site clearance will include clearing, grubbing and removing any required trees, hedgerows and any surface vegetation (topsoil / sub-soil/ shrubs/ etc) that will be stripped and collected using an excavator and dump truck.
- The mound/wall (245m in approximate length) present within the centre of the site will be removed by construction plant with the waste generated being disposed of at an appropriately licenced facility. The existing masonry wall (approximately 13m) and gate at the southern boundary of the car park will be removed by hand and machinery to allow for the construction of the car park. This material would be reused where reasonably practicable within the site with the remainder being sent to an appropriate waste facility. Refer to Demolition Site Plan – Mountshannon by MCM (INC2-D-003) for further information.
- Topsoil stripping will be excavated to depths agreed upon and in conjunction with the site specifications and design drawings issued. This volume of approximately 3,200m3 of material will be carefully segregated and transported to an agreed temporary deposition point. This material would then be removed from the site with a minor amount may be kept on site in a temporary storage area for later use in landscaping.
- Bulk excavation of a volume of 4200m3 approximately will then occur to the required sub-formation levels using excavators and dumpers. This material may be temporarily stockpiled on the site prior to being removed from the site.
- All excavated material will be brought to a licence waste facility for final disposal. All potential waste shall be appropriately sampled and tested for waste assessment using the HazWaste OnlineTM Tool and Waste Acceptance Criteria (WAC) criteria. The assessment of potential soil waste would occur in-situ, in advance of excavation during the initial site investigation and take account of the waste acceptance criteria for soil recovery facilities and/or waste landfills. All soil sampling, waste classification and reporting will be conducted by a suitably qualified person.
- This waste classification assessment will form part of a Site Specific Soils Management Plan. Soil proposed to be re-used for landscape and fill purposes should be assessed in advance to determine the suitability for re-use with reference to the proposed site end-use.
- The area will be formed on competent subgrade of the underlying subsoil / rock which will comprise of locally obtained stone aggregate laid, where necessary, on a geotextile filter membrane.

- The formation stratum will be examined and signed off by a Chartered Engineer with geotechnical competence.
- Layers of imported stone aggregate material of approximately 3,900m3 will then be provided and compacted in layers as per the Engineering drawings on a geotextile. The depth will be dependent on the area in question. The final formation will be validated with plate bearing tests carried out by a competent testing agency.
- Boundary treatment are erected including retaining walls are constructed.
- The overhead lines on the site will be removed and undergrounded in conjunction with the ESB. The existing poles and wires on the site will be removed to an appropriate waste disposal facility.
- Utilities including drainage for surface water and electrical ducts for ducting and EV charging will be placed on the site as denoted on the Engineers drawings.
- Kerbing will be placed on the site, this may be precast, plastic or in-situ concrete kerbs.
- Layers of imported asphalt material of an approximate volume of 1,000m3 will then be provided and compacted in layers as per the Engineering drawings. Non-destructive testing will be conducted on placed asphalt to verify it meets the design requirements.
- The final surface gravel is placed on the areas of gravel footpaths.
- Approximately 400m3 of Concrete is poured to form a suitable base where the grasscrete is proposed.
- A sand/cement mortar is placed on the concrete slab.
- Approximately 160m3 of grasscrete blocks are placed.
- Levels are checked and sand/compost mix is placed in the blocks and compacted.
- Drainage works including gullies and manholes are installed.
- Green areas have subsoil and topsoil placed. They are then seeded. Areas are landscaped to the Landscape Architect's specification.
- Public lighting installed, EV charging points installed, line marking conducted and finishing works concluded.
- Contractor demobilises from the site

3.4.3 Temporary Construction Compound

3.4.3.1 Visitor Centre, Harbour Car Park & Harbour Upgrade Works

A temporary site construction compound will be used for the construction phase of the proposed visitor centre, harbour car park and harbour upgrade works. This will be located in the central area of the site as shown indicatively in Figure 3-1.The compound will be used as a secure storage area for construction materials, waste materials, and concrete washout area and also contain temporary site accommodation units to provide welfare facilities for site personnel. Facilities will include offices, meeting rooms, a canteen and a drying room.

Figure 3-1: Village Car Park Indicative Contractor's Compound Position

The compound will be constructed early in the project in order to provide site offices and accommodation for staff and for the delivery of materials. Any surface water management, bunding, waste management measures etc will also be put in place at the outset.

A bunded containment area will be provided within the compound for the storage of lubricants, oils and site generators etc. If necessary, the compounds will be fenced and secured with locked gates.

The compound will include an enclosed wastewater management system (holding tank) capable of handling the demand during the construction phase when as many as 25 people dependent on phasing will be working on site. These will be emptied on a regular basis as required by a licensed contractor for treatment and disposal. The compound will be in place for the duration of the construction phase and will be removed once commissioning is complete.

Figure 3-2: Typical Site Compound

3.4.4 Site Access, Construction Traffic and Haul Routes

The Proposed Development is located within the town of Mountshannon. Access to the site is by means of the existing entrance onto the R352.

Construction traffic will include:

- HGVs importing construction materials, including concrete, road build-up materials, building materials, drainage/ducting materials, structural steel, cabling, site boundary fencing, etc.
- HGVs exporting waste/spoil/demolition materials
- HGVs delivering plant/cranes and fuel
- Traffic associated with on-site construction personnel

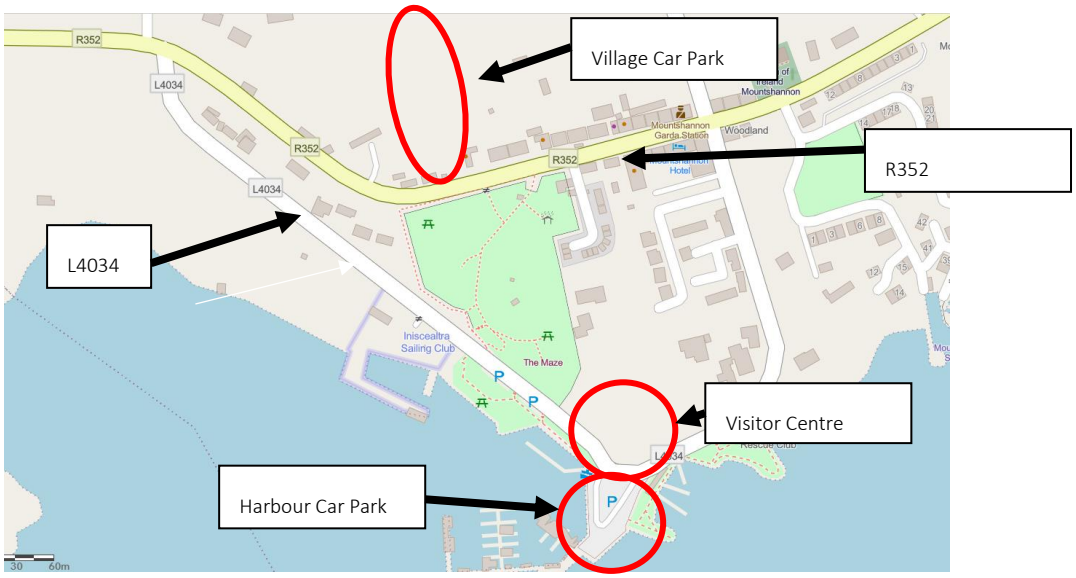


Figure 3-3: Road Network in Mountshannon Village (Local Road Network Open Data)

It is expected that the daily traffic on the network will be minimal and will have negligible impact on the local road network in the site vicinity

The proposed haul routes for the delivery of materials associated with the construction of the scheme will be finalised in the preparation of the Traffic Management Plan Report. The haul route will be along the R352.

The primary haul route will be R352, the construction traffic will be interspersed and minimal when compared with the existing traffic.

Pre- and post-construction surveys have been carried out on approach roads and shared boundary structures. Following completion of the works, the condition of the same will be of at least the same standard as it was prior to the commencement of construction.

The construction phase will require the delivery of concrete, steel, stone aggregate and ancillary materials to the site via the public road network. The key timing periods when the use of the public road network will be at its peak is typically between 8.30am and 10am for Mountshannon National School and commuter related traffic. It is proposed to allow routine deliveries such as aggregate into the site outside of these peak traffic hours as practicable.

The nuisance of dirt on the local road network during wet weather and dust during dry weather will be in the form of a road sweeper, which will operate at regular intervals for the duration of the project. A water bowser will be employed to spray the local road with water during dry periods when there is a risk of dust nuisance.

Appropriate signage will be maintained for the duration of the project with clear warning signage installed along the Local Road on approach to the site entrance.

A road safety and courtesy protocol will be implemented for the duration of the construction works. All companies delivering to the site will have to sign up to this protocol as part of their supply contract. The protocol will consist of restricted delivery hours and speed limits along public roads and within the site. Fundamental to the protocol is courtesy for other road users. In this, construction vehicles will always give way to oncoming public traffic and will always slow down or stop as appropriate for pedestrians and cyclists.

3.4.5 Site Drainage System

The site drainage will consist of the installation of suitable protection (e.g., silt curtain) around the site boundaries to control and treat any run-off during the works.

Best practice and practical experience on other similar projects suggest that in addition to the above outlined drainage plans, there are additional site-based decisions and plans that can only be made in the field through interaction between the Construction Manager, the Design Engineer and the Environmental staff. In relation to decisions that are made on site, it is important to stress that these will be implemented in line with the associated drainage control measures outlined above.

The new foul drainage connection will be made within the public road to the south of the site. Both a Road Closure Licence and Road Opening Licence will be required for this operation.

3.4.6 Building- Other Elements of the Construction Phase

3.4.6.1 Disposal of Spoil

Excavated materials from construction activities will be temporarily stockpiled during construction and subsequently reused on site for backfill/re-grading or re-vegetation. It is envisaged that the made ground, where applicable, will be transported off site in trucks and disposed of at a licensed waste facility. This will prevent any contaminated run-off to public roadside drains during heavy rainfall

3.4.6.2 Concrete Pouring

Due to the concrete pours required to construct the development, the pours will be planned in advance. Special procedures will be adopted in advance of and during all concrete pours to minimise the risk of pollution. These may include:

- Using weather forecasting to assist in planning concrete pours and avoiding large pours where prolonged periods of heavy rain are forecast.
- Ensuring that excavations are sufficiently dewatered before concreting begins.
- Ensuring that covers are available for freshly placed concrete to avoid the surface washing away in heavy rain.

3.4.6.3 Dust Suppression

In periods of extended dry weather, dust suppression may be necessary within the site compound and internal access road to ensure dust does not cause a nuisance. If necessary, water will be taken from the site construction drainage system and will be pumped into a bowser or water spreader to dampen down the internal access road and site compounds to prevent the generation of dust. Water bowser movements will be carefully monitored, as the application of too much water may lead to increased runoff.

3.4.6.4 Water requirement / Water supply

Potable water will be required for the construction employees. Potable water demand will differ greatly between the construction phases and when the project is finished. It is envisaged that the average potable water requirement will rise from an estimated maximum average of 400 litres depending on phasing per day during peak construction. A temporary connection will be sought from Uisce Eireann to supply the construction works demand.

3.4.6.5 Waste-Water Treatment / Effluent disposal

During the construction period, the maximum wastewater production is estimated to be the same as the maximum water consumption of 400 litres per day. The project will utilise portaloos which would be serviced regularly or the use of a temporary wastewater connection to the adjacent foul sewer.

3.4.6.6 Waste Management

From a waste management perspective, the project can be divided into three elements:

- Construction
- Occupation
- Fuel Storage and Management

3.4.6.7 Construction

The main contractor working on site during the works will be responsible for the collection, control and disposal of all waste generated by the works. Construction phase waste may consist of hardcore, stone, concrete, steel reinforcement, ducting, shuttering timber, food waste from the canteen and unused oil, diesel and building materials. This waste will be collected at the end of the construction phase and taken off site to be reused, recycled, and disposed of in accordance with best practice procedures at an approved facility. Municipal waste from the on-site facilities will be collected on a regular basis by approved contractors and disposed of in an authorised facility in accordance with best practices. Plastic waste will be taken for recycling by an approved contractor(s) and disposed of or recycled at an approved facility.

3.4.6.8 Occupation

All wastes arising during the occupation will be of domestic type and will be disposed of by the building and harbour operators with licensed waste operators. Waste storage areas are detailed on the Design Team's drawings.

3.4.6.9 Fuel storage and management

All plant will be refuelled on site e.g. excavators, dumpers etc, while rigid and articulated vehicles will be filled off site as would all site vehicles (jeeps, cars, and vans). A fuel management plan will be developed by the contractors in relevance to the site, and the specific plant and equipment required for construction.

3.5 Construction Methodology – Mainland - Visitor Centre & Harbour Public Realm

3.5.1 Site preparation and pre-construction activities

- The following key works will be undertaken as part of the site preparation and pre-construction activities:

3.5.1.1 Pre-Commencement Surveys

Any detailed ground investigations, environmental surveys etc required to support the construction process will be carried out and finalised.

3.5.1.2 Enabling Works

- Any surface water management, waste management measures etc will be put in place at the outset.
- Part of the pre commencement activities will include:
  - The installation of suitable protection (e.g., silt curtain) around the site boundaries to control and treat any run-off during the works.
  - The erection of signage and information boards for the general public, site employees and trucks transporting materials to/from the site.
- A traffic management plan will be completed prior to the works commencing and this will be agreed between the Contractor and Clare County Council to ensure that traffic is managed during the works safely and with the least impact.

3.5.2 General Methodology

The general works methodology on the site would be as follows. Note that these works may happen in a phased manner on the site to cater for the weather, ground conditions and Contractor's sequencing.

- The area will be marked out using ranging rods or wooden posts. The area will be surveyed, and all existing services will be identified. All plant operators and general operatives will be inducted and informed as to the location of any services.
- The site shall be cleared to the extent shown in the relevant Planning Drawings. Site clearance will include clearing, grubbing and removing any required trees, hedgerows and any surface vegetation (topsoil / sub-soil/ shrubs/ etc) that will be stripped and collected using an excavator and dump truck.
- The mound/wall present within the centre of the site will be removed by construction plant with the waste generated being disposed of at an appropriately licenced facility. Sections of the existing masonry wall will be removed by hand and machinery to allow for the construction of the Visitor Centre. This material would be reused where reasonably practicable within the site with the remainder being sent to an appropriate waste facility. The existing landscape features will be removed from the Harbour Carpark along with the existing surfacing milled down to the depth required for resurfacing works to occur with a road planer. The waste generated will be reused where reasonably practicable within the site with the remainder being sent to an appropriate waste facility. Refer to Demolition Site Plan – Mountshannon by MCM (INC2-D-003) for further information.
- Topsoil stripping of approximately 1600m^3 will be excavated to depths agreed upon and in conjunction with the site specifications and design drawings issued. This material will be carefully segregated and transported to an agreed temporary deposition point. This material would then be removed from the site with a minor amount may be kept on site in a temporary storage area for later use in landscaping.
- Bulk excavation of approximately 6,200m^3 under the proposed building and font courtyard and 1000m^3 for the realigned access track and other external areas will then occur to the required sub formation levels using excavators and dumpers. This material may be temporarily stockpiled on the site prior to being removed from the site.
- All excavated material will be brought to a licence waste facility for final disposal. All potential waste shall be appropriately sampled and tested for waste assessment using the HazWasteOnlineTM Tool and Waste Acceptance Criteria (WAC) criteria. The assessment of potential soil waste would occur in situ, in advance of excavation during the initial site investigation and take account of the waste acceptance criteria for soil recovery facilities and/or waste landfills. All soil sampling, waste classification and reporting will be conducted by a suitably qualified person.

- This waste classification assessment will form part of a Site Specific Soils Management Plan. Soil proposed to be re-used for landscape and fill purposes should be assessed in advance to determine the suitability for re-use with reference to the proposed site end-use.
- The area will be formed on competent subgrade of the underlying subsoil / rock which will comprise of locally obtained stone aggregate laid, where necessary, on a geotextile filter membrane.
- The formation stratum will be examined and signed off by a Chartered Engineer with geotechnical competence.
- Layers of imported stone aggregate material of approximately 600m^3 under the proposed building and 150m^3 in external areas will then be provided and compacted in layers as per the Engineering drawings on a geotextile. The depth will be dependent on the area in question. The final formation will be validated with plate bearing tests carried out by a competent testing agency.
- A 450mm thick in-situ reinforced concrete foundation slab is poured to the required dimensions across the footprint of the building.
- Scaffolding, formwork and falsework are then erected with rebar placed for the in-situ reinforced concrete elements. The various column, walls, beam and slab elements have their concrete poured in a sequential manner with hold periods where required to allow concrete to develop its strength before the element supported by it is cast. The scaffolding, formwork and falsework are adjusted as required during this process. The finishes, insultation, glazing and waterproofing is applied in line with the Architect's specifications.
- Boundary treatment are erected.
- The area to be resurfaced in the Harbour Car Park is milled with a road planer to the required depth. A structural inlay of asphalt is then placed over this milled surface that is prepared and then compacted with rollers. These works would in accordance with TII specification.
- The landscape feature in the centre of the car park is constructed by hand with the use of machinery where reasonably practicable.
- Utilities including drainage for surface water and electrical ducts for ducting and EV charging will be placed on the site as denoted on the Engineers drawings.
- Kerbing will be placed on the site, this may be precast, plastic or in-situ concrete kerbs.
- Layers of imported asphalt material will then be provided and compacted in layers as per the Engineering drawings. Non-destructive testing will be conducted on placed asphalt to verify it meets the design requirements.
- The final surface gravel is placed on the areas of gravel footpaths.
- Concrete is poured where the grasscrete is proposed.
- A sand/cement mortar is placed on the concrete slab.
- The grasscrete blocks are placed.
- Levels are checked and sand/compost mix is placed in the blocks and compacted.
- Drainage works including gullies and manholes are installed.
- Green areas have subsoil and topsoil placed. They are then seeded. Areas are landscaped to the Landscape Architect's specification.
- Lighting installed, CCTV installed, line marking conducted and finishing works concluded.
- Contractor demobilises from the site

3.5.3 Temporary Construction Compound

3.5.3.1 Visitor Centre, Harbour Car Park & Harbour Upgrade Works

A temporary site construction compound will be used for the construction phase of the proposed visitor centre, harbour car park and harbour upgrade works. This will be located as shown indicatively in Figure 3-4. Refer to MCM drawing (INC2-P-VCH-010) for further information.

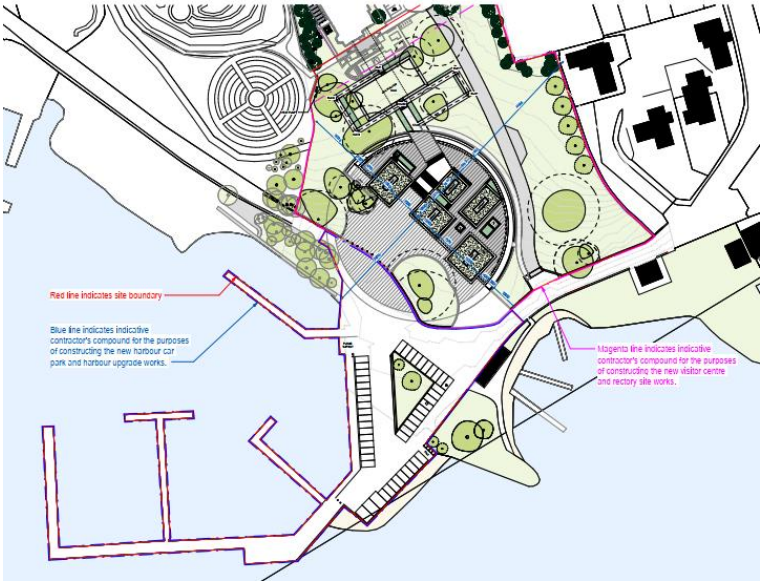


Figure 3-4: Contractor Compounds for Harbour Car Park and Visitor Centre

The compound will be used as a secure storage area for construction materials, waste materials, and concrete washout area and also contain temporary site accommodation units to provide welfare facilities for site personnel. Facilities will include offices, meeting rooms, a canteen and a drying room.

The compound will be constructed early in the project in order to provide site offices and accommodation for staff and for the delivery of materials. Any surface water management, bunding, waste management measures etc will also be put in place at the outset.

A bunded containment area will be provided within the compound for the storage of lubricants, oils and site generators etc. If necessary, the compounds will be fenced and secured with locked gates.

The compound will include an enclosed wastewater management system (holding tank) capable of handling the demand during the construction phase when as many as 50 people. will be working on site. These will be emptied on a regular basis as required by a licensed contractor for treatment and disposal. The compound will be in place for the duration of the construction phase and will be removed once commissioning is complete.

3.5.4 Site Access, Construction Traffic and Haul Routes

The Proposed Development is located within the town of Mountshannon. Access to the site is by means of Harbour Road to the south of the proposed Visitor Centre location. Harbour Road connects onto the R352 which joins the town of Ennis and Portumna.

Construction traffic will include:

- HGVs importing construction materials, including concrete, road build-up materials, building materials, drainage/ducting materials, structural steel, cabling, site boundary fencing, etc.
- HGVs exporting waste/spoil/demolition materials
- HGVs delivering plant/cranes and fuel
- Traffic associated with on-site construction personnel

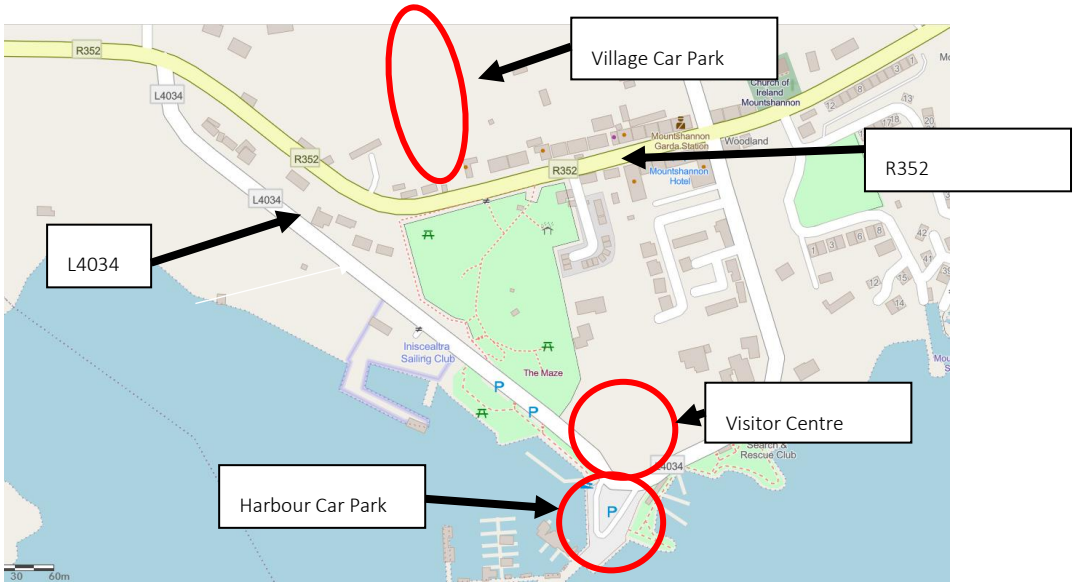


Figure 3-5: Road Network in Mountshannon Village (Local Road Network Open Data)

It is expected that the daily traffic on the network will be minimal and will have a negligible impact on the local road network in the site vicinity. This is subject to phasing of the works and on the assumption that the visitor centre works will not proceed concurrently with the other works.

The proposed haul routes for the delivery of materials associated with the construction of the scheme will be finalised in the preparation of the Traffic Management Plan Report. However, it is envisaged that the haul routes are primarily along the nearby regional road R352 with L4034 utilised for the Harbour Car Park and Visitor Centre.

The primary haul route will be on Harbour Road from the regional road. On the regional road the construction traffic will be interspersed and minimal when compared with the existing traffic.

Pre- and post-construction surveys have been carried out on approach roads and shared boundary structures. Following completion of the works, the condition of the same will be of at least the same standard as it was prior to the commencement of construction.

The construction phase will require the delivery of concrete, steel, stone aggregate and ancillary materials to the site via the public road network. The key timing periods when the use of the public road network will be at its peak is typically between 8.30am and 10am for Mountshannon National School and commuter-related traffic. It is proposed to allow routine deliveries such as aggregate into the site outside of these peak traffic hours as practicable.

The nuisance of dirt on the local road network during wet weather and dust during dry weather will be in the form of a road sweeper, which will operate at regular intervals for the duration of the project. A water bowser will be employed to spray the local road with water during dry periods when there is a risk of dust nuisance.

Appropriate signage will be maintained for the duration of the project with clear warning signage installed along the Local Road on approach to the site entrance.

A road safety and courtesy protocol will be implemented for the duration of the construction works. All companies delivering to the site will have to sign up to this protocol as part of their supply contract. The protocol will consist of restricted delivery hours and speed limits along public roads and within the site. Fundamental to the protocol is courtesy for other road users. In this, construction vehicles will always give way to oncoming public traffic and will always slow down or stop as appropriate for pedestrians and cyclists.

3.4.5 Site Drainage System

The site drainage will consist of the installation of suitable protection (e.g., silt curtain) around the site boundaries to control and treat any run-off during the works.

Best practice and practical experience on other similar projects suggest that in addition to the above outlined drainage plans, there are additional site-based decisions and plans that can only be made in the field through interaction between the Construction Manager, the Design Engineer and the Environmental staff. In relation to decisions that are made on site, it is important to stress that these will be implemented in line with the associated drainage control measures outlined above.

The new foul drainage connection will be made within the public road to the south of the site. Both a Road Closure Licence and a Road Opening Licence will be required for this operation. Regularly serviced portaloos will be used on the site until the foul connection is made. A temporary foul connection with the onsite foul drainage may be utilised also. The contents would be removed and disposed of at a licenced facility.

3.5.5 Building- Other Elements of the Construction Phase

3.5.5.1 Disposal of Spoil

Excavated materials from construction activities will be temporarily stockpiled during construction and subsequently reused on site for backfill/re-grading or re-vegetation. It is envisaged that the made ground, where applicable, will be transported off site in trucks and disposed of at a licensed waste facility. This will prevent any contaminated run-off to public roadside drains during heavy rainfall.

3.5.5.2 Concrete Pouring

Due to the concrete pours required to construct the development, the pours will be planned in advance. Special procedures will be adopted in advance of and during all concrete pours to minimise the risk of pollution. These may include:

- Using weather forecasting to assist in planning concrete pours and avoiding large pours where prolonged periods of heavy rain are forecast.
- Ensuring that excavations are sufficiently dewatered before concreting begins.
- Ensuring that covers are available for freshly placed concrete to avoid the surface washing away in heavy rain.

3.5.5.3 Dust Suppression

In periods of extended dry weather, dust suppression may be necessary within the site compound and internal access road to ensure dust does not cause a nuisance. If necessary, water will be taken from the site

construction drainage system and will be pumped into a bowser or water spreader to dampen down the internal access road and site compounds to prevent the generation of dust. Water bowser movements will be carefully monitored, as the application of too much water may lead to increased runoff.

3.5.5.4 Water requirement / Water Supply

Potable water will be required for the construction employees. Potable water demand will differ greatly between the construction phases and when the project is finished. It is envisaged that the average potable water requirement will rise from an estimated maximum average of 1000 litres depending on phasing per day during peak construction. An existing watermain connection exists on the site, and this will be availed of during the construction phase and/or a temporary connection may be made to Uisce Eireann's water mains if dictated by the Contractor's methodology.

3.5.5.5 Waste-Water Treatment / Effluent Disposal

During the construction time period, the maximum wastewater production is estimated to be the same as the maximum water consumption (1000 litres per day). The project will utilise portaloos which would be serviced regularly or the use of a temporary wastewater connection to the adjacent foul sewer. Waste Management

From a waste management perspective, the project can be divided into three elements:

- Construction
- Occupation
- Fuel Storage and Management

3.5.5.6 Construction

The main contractor working on site during the works will be responsible for the collection, control and disposal of all waste generated by the works. Construction phase waste may consist of hardcore, stone, concrete, steel reinforcement, ducting, shuttering timber, food waste from the canteen and unused oil, diesel and building materials. This waste will be collected at the end of the construction phase and taken off site to be reused, recycled, and disposed of in accordance with best practice procedures at an approved facility. Municipal waste from the on-site facilities will be collected on a regular basis by approved contractors and disposed of in an authorised facility in accordance with best practices. Plastic waste will be taken for recycling by an approved contractor(s) and disposed of or recycled at an approved facility.

3.5.5.7 Occupation

All wastes arising during the occupation will be of domestic type and will be disposed of by the building and harbour operators with licensed waste operators. Waste storage areas are detailed on the Design Team's drawings.

3.5.5.8 Fuel storage and management

All plant will be refuelled on site e.g. excavators, dumpers etc, while rigid and articulated vehicles will be filled off site as would all site vehicles (jeeps, cars, and vans). A fuel management plan will be developed by the contractors in relevance to the site, and the specific plant and equipment required for construction.

3.6 Construction Methodology – Inis Cealtra Island

3.6.1 Site Preparation and Pre-Construction Activities

The following key works will be undertaken as part of the site preparation and pre-construction activities:

3.6.2 Site Investigation Works

Site Investigation works will be conducted at the proposed jetty location in advance of the main works to inform the detailed design for the jetty.

- The drilling rig shown in Figure 3-6 will be transported by the Coill an Eo workboat to the site and placed on the Pontoon raft.
- After securing the rig to the raft the raft will mobilise to the locations shown in Figure 3-7 as GI1, GI2 and GI3.
- Boreholes are drilled at each respective location to verify the geotechnical profile of the site. Samples are recovered and sent to lab for testing.

Figure 3-6: Drill Rig

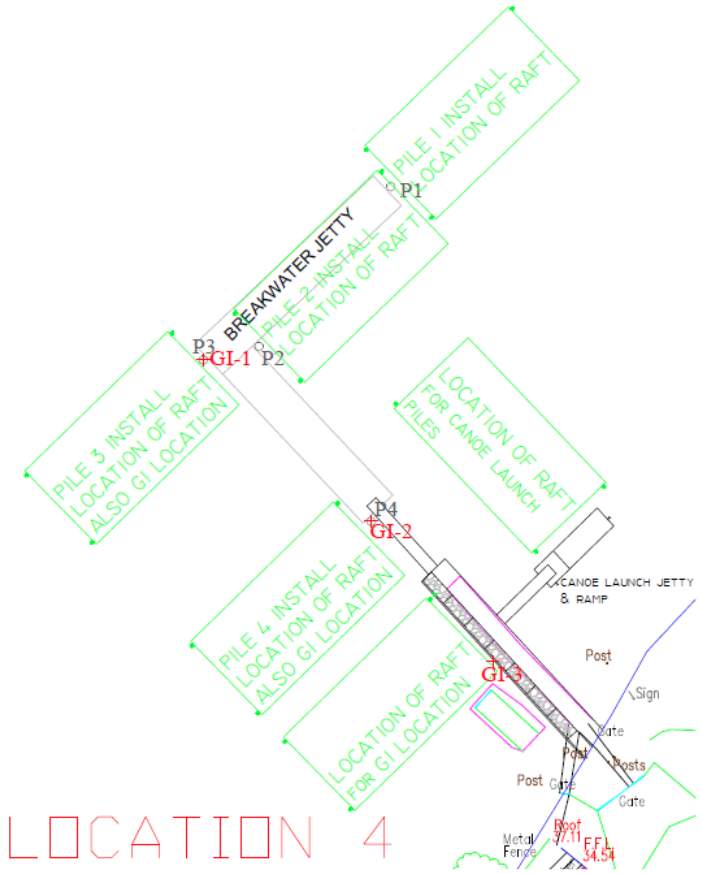


Figure 3-7: Jetty with proposed SI locations denoted as "GI"

3.6.3 Floating Access Jetty, Canoe Launch and access walkway

The new proposed design is a breakwater jetty located at the site of the existing slipway. The existing slipway is shown in Figure 3-8. 4 number 800mm dia (max diameter) steel piles will be required to retain the jetty. It is planned to install a 9m long x 1.5m wide max ramp to allow safe access from the Land (fixed) to the jetty (floating). This will require 4 number 203mm H piles to support the concrete (2m x2m) anchor base that retains the ramp anchor points. These piles will be vibrated into the bed by an excavator on the pontoon raft along the stone causeway on the Southern side and the piles will be hidden inside the stone filled gabions to the Island. Similarly, 2 254mm x 254mm H piles will be required to retain the Canoe Launch section in the sheltered side of the land Structure. They will be vibrated also into place by the excavator on the Pontoon raft. It is envisaged that the programme of works will take approximately 5 to 6 weeks to complete

Figure 3-8: Existing Slipway

Some of the fleet required to complete the installation of the floating jetty are shown in Figure 3-9 of the workboat, 16-unit pontoon raft with an excavator on board. The pontoon raft requires a draft of 0.4 metres and can be up to 0.6 metres when fully laden. It is held in position by spud legs dropped by gravity into the lake bed or pushed into the lake bed by the excavator on board based on the type of working activity.

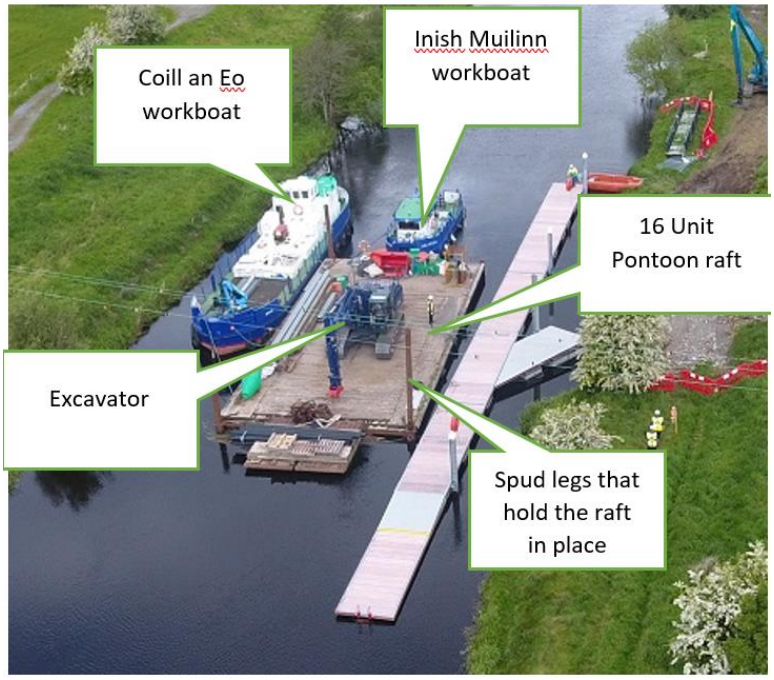


Figure 3-9: Typical equipment to be used for the jetty installation

The proposed layout is shown in Figure 3-10. It is a 4 metre wide breakwater jetty with 4 number 800mm (max) diameter piles core drilled into the lake bed. A 9 metre access ramp will provide access from the Island. This ramp will be secured on the mainland to a concrete base that will sit on stone gabions at the front face of the

access causeway. Also attached to the causeway is a 7 metre ramp to a Canoe launch at right angles to the causeway.

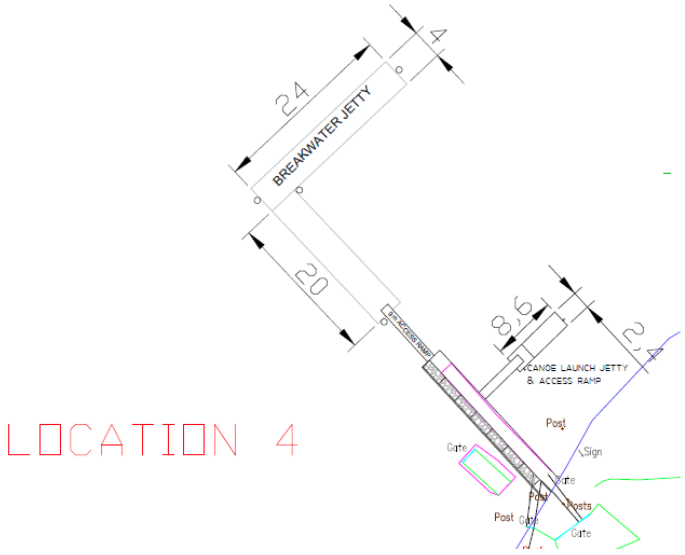


Figure 3-10: Proposed Jetty Layout

3.6.3.1 Causeway works methodology

- The excavator with the piling attachment will drive the outer H piles and outer trench sheet piles from the pontoon raft and will then track off the pontoon raft (held in place by 2 spud legs pushed into the lake bed) on the South West Side of the access causeway onto timber mats (see Figure 3-11) placed in advance from the excavator on the pontoon raft and drive the remaining trench sheet piles. During the construction of the causeway the excavator will travel on the timber mats over the travel area for the excavator to work. The excavator will be working in a depth of water up to 0.6 metres

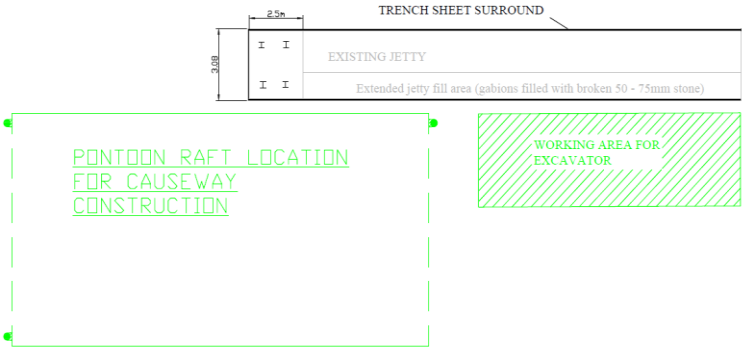


Figure 3-11: Work Areas for Causeway Construction

- The excavator will vibrate the trench sheets with the piling attachment into the bed and to a depth designed based on the Ground Investigation results. The trench sheets will be stored on the Pontoon raft.

- The excavator will place gabion mattresses (1m x 2m x 0.9m) filled with broken washed stone (filled at Mountshannon Harbour) and transported out on the pontoon raft) on the exposed side of the existing causeway structure and inside the trench sheet wall. There will be some loose stone infill required during the construction. 1m³ bags of stone will be transported from Mountshannon Harbour and the excavator will lift the bags from the pontoon raft and spill the stone at the required locations
- The front face of the causeway will have a Trench sheet face finished on top with a concrete anchor block supported by 4 number 254 x 254 H piles driven into the lake bed. These piles will be driven by a piling attachment on the excavator (Similar to Figure 3-12) and vibrated into the lake bed. This concrete platform will be constructed and poured the shuttering of the anchor base area is complete. There will be a timber fender bolted to the top of the Trench Sheet Piles and will act as a screed for the concrete finish. Concrete for the base will be ready mixed locally and delivered to Mountshannon Harbour where it will be poured into small skips and delivered on the pontoon raft to the site where the excavator will pour the skips into the shuttered area. This concrete platform will be the anchor point for the Ramp to the Floating Jetty.

Figure 3-12: Pile Installation

- The finish on the causeway will be a rough Concrete finish.
- The exposed face (SW) of the causeway will be faced with 300 to 600mm large stone to break the wave. The stone will be placed on the pontoon raft at Knockaport and shunted by workboat to the site. The Pontoon layout for the install of the breakwater stones will be as per Figure 3-13.

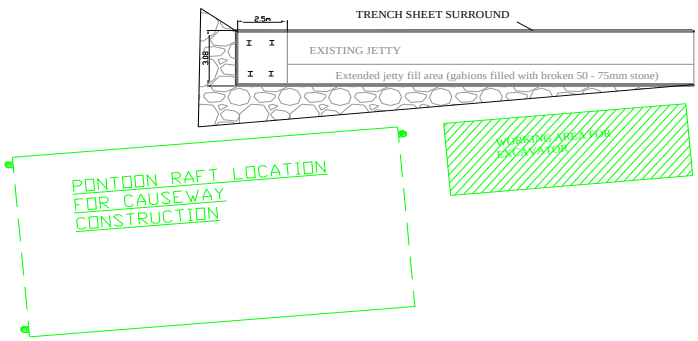


Figure 3-13: Pontoon Raft set up location for Rock Breakwater

3.6.3.2 Jetty / Canoe launch works methodology

- The floating jetty sections will be delivered to Mountshannon Harbour where they will be assembled over water at the Harbour and then towed by the Coill an Eo workboat to the proposed jetty location. A core drilled rig will also be loaded onto the pontoon raft at Mountshannon slipway and travel to the jetty mooring location. See Figure 3-14 for Pontoon locations for the jetty pile install.

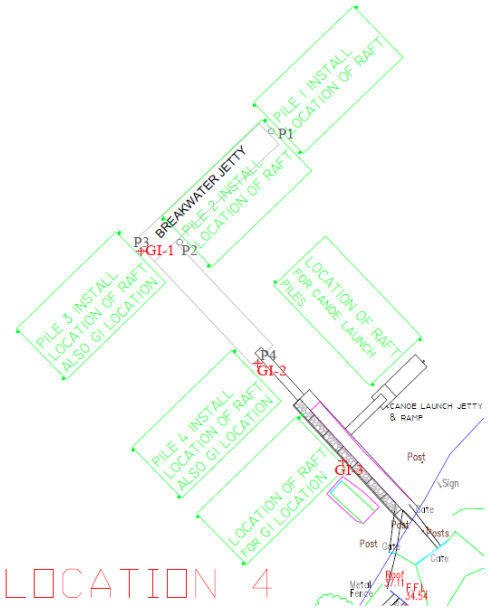


Figure 3-14: Pontoon Works Areas

- 4 piles (P1 -P4) will be core drilled (see Figure 3-15 for drilling rig) into the lakebed size to a depth based on the GI results

Figure 3-15: Core Drilling Attachment for round Jetty Piles

- Excavation of the lake bed will be required on the South end of the main breakwater jetty (see Waterways Ireland's Drawings). The excavator with digging shovel will remove the material (2m³) and place on a skip on the pontoon raft. This material will be removed off site. A silt curtain will be placed around excavation area when removing material.
- The jetty will then be pulled into place with the WI tugboat and anchored with pile guide brackets.
- The 2 H piles for the canoe launch will also be driven by the excavator from the Pontoon raft. The canoe launch will be accessed to the causeway via a 7 metre ramp. The canoe launch will have a freeboard of 300mm to the water line.
- The access ramps will then be placed with the aid of the Excavator on the pontoon raft at the location shown for the Causeway construction to the concrete anchor platform.
- It is envisaged that the programme of works will take approx. 7 to 8 weeks to complete.

3.6.4 Site Clearance Works

Additional topographical surveys, archaeological surveys, ground investigations, environmental surveys, vegetation surveys and wildlife habitat surveys may occur in advance of the site clearance works to complement those that have already been carried out on the island.

Site enabling works will include but not be limited to the following:

- Secure site and erect fencing, hoarding, and signage as required;
- Locate and terminate existing live services where required;
- Install any bunding and/or run-off controls where required;
- Identification of temporary stockpiling and storage areas;
- Set up contractor welfare facilities and site accommodation.
- Provision of temporary power, lighting and water services.
- Dredging works at the proposed jetty at Inis Cealtra is not envisaged.

3.6.5 Enabling Works

Prior to construction commencing, on site, demarcation of the construction site boundary will be undertaken. Hoarding/ Fencing will be erected to secure the site for safety reasons. The island will close to the public during the course of the works, but for access for the farmer/ for a funeral should it be required will be permitted, and this will need to be arranged in advance with the Contractor to allow for safe access.

3.6.5.1 Existing Shelter adjacent to the pier

- There is an existing shelter (16m^2) located adjacent to the pier on the island as shown in Figure 3-16. The structure is simple in its construction being of mass concrete walls and floor with a flat roof and a single window and door. Its previous use is assumed to have been as a shelter for visitors and a livestock farmer who had animals on the island.

- The existing shelter will be carefully dismantled from the roof down using hand tools to break the existing concrete and timber down into sections that can be manually handled. The existing shelter will be carefully taken down from the roof down using hand tools to break the existing concrete and timber down into sections that can be manually handled. This will start from the top down with the removal of the roof followed by the removal of the window and door, taking down of the walls, breaking out of the floor slab and removal of foundations (if any).
- The material will be sorted into waste for disposal/ recycling and then removed off the island by boat where it will be disposed of by a licensed waste contractor.
- A new timber shelter is proposed to be constructed in place of the old shelter. It is proposed that it will be used by visitors. A timber staff pod will also be constructed that is purpose built for the needs of the users.

Figure 3-16: Existing Shelter adjacent to the pier

3.6.6 Temporary Construction Compound

A temporary site construction compound will be set up upon commencement of the construction phase of the works on the island at the location shown indicatively in Figure 3-17 (MCM drawing INC2-P-ISL-010) beside the existing slipway. The compounds will be used as a secure storage area for construction materials and excess spoil, and it will also contain temporary site units to provide welfare facilities for site personnel.

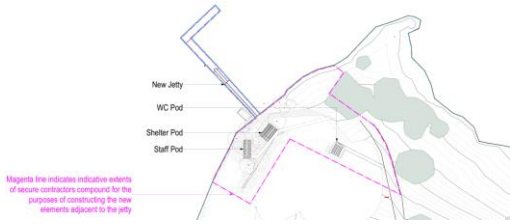


Figure 3-17: Inis Cealtra Main Contractor's Compound

3.6.7 Site Access

Access to the island will be by boat from Mountshannon Harbour to the new jetty being constructed at the existing slipway on the island. The first phase of the works on the island will be to modify the existing concrete slipway to the northwest of the island and to construct the new floating jetty. Upon completion of these works, the new floating jetty will provide access to the island for personnel/ materials via boat/ barge to facilitate works associated with the paths and welfare pods.

3.6.8 Island Pods

The 3no. new facilities pods (staff/ shelter/ WC) are designed as lightweight, timber framed & timber clad structures.

3.6.8.1 Site Preparation – Scrub & Grass Removal

If existing scrub vegetation is present where a pod is proposed to be constructed, clearing will occur using a flair mower. If grass is present where a pod is proposed to be constructed, clearing will occur using a lawnmower. This work will be performed outside of the bird nesting season to ensure no disturbance occurs. The area is then landscaped to the Landscape Architect's specification.

3.6.8.2 Foundations –

The pod foundations will be supported by a series of screw piles installed to a depth sufficient to ensure a stable load-bearing capacity. Installation will be carried out using a tracked mini-digger equipped with a screw pile anchor drive attachment. The exact number of screw piles will be determined based on the pod dimensions, as detailed in the accompanying drawings.

3.6.8.3 Timer Structural Frame –

The pods' structural frames will be built on-site using treated timber. The timber will be brought from the mainland by boat, unloaded at the new jetty, and stored nearby. It will then be taken to the pod locations, where it will be assembled into the structural frames.

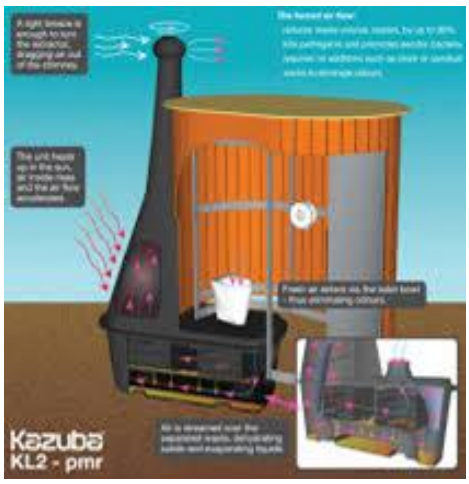
3.6.8.4 Cladding & Finishes

The structural frame of the pods will be clad with timber inside and out, including the walls, floor, and roof. The timber will be transported by boat, stored, and then installed in the pods. The envelope will be insulated and fitted with necessary membranes to ensure it is airtight and weatherproof. Timber windows and doors will also be installed.

3.6.8.5 WC Pod

The WC consists of five separate prefabricated elements: a fully sealed high density polyethylene (HDPE) tank, a ventilation chimney attached to the tank, a WC enclosure with a toilet, a wormery, and an oxygenation box for pre-treatment of waste products. The HDPE tank is typically installed underground, but due to the site's archaeological sensitivity, it will be placed at ground level. See Figure 3-18 for an example arrangement. New ground will be mounded up around this (to approx. +850mm) to conceal the tank. The chimney and WC enclosure will be constructed on top of this while the wormery and oxygenation tanks will be placed on the

ground behind the WCs. A separate timber framed and clad structure, similar to the other three pods will be constructed around this, with their foundations and structure built as described previously.



Dry Toilet Schematic

Typical Dry Toilet Configuration

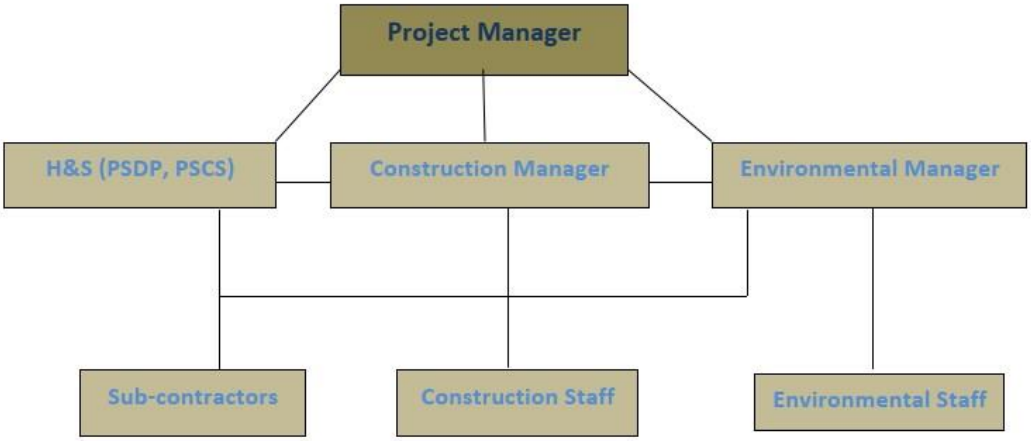
Figure 3-18: Example Dry Toilet Arrangement

3.6.9 Site Drainage System

The works on the island are to be completed at times of dry weather when the ground conditions are appropriate so that the potential for rutting is minimised in so far as is reasonably practicable. Regularly serviced portaloos will be used on the site until the foul connection is made. The contents would be removed and disposed of at a licenced facility.

4. Organisational Structure, Duties and Responsibilities

While the Project Supervisor Construction Stage (PSCS) / Contractor will manage the obligations of the project during construction, Clare County Council (client) and Aegis Safety Management, the Project Supervisor Design Phase (PSDP) will ensure same is undertaken correctly. The Organisational Structure for the Contractor's Project Team is included below.



4.1 Onsite Organisational Structure and Responsibility

The Organisational Structure for the appointed Contractor's Project Team is included below. This structure will be defined by the Contractor and will include the names of the assigned personnel with the appropriate responsibility and reporting structure reflected.

4.2 Duties and Responsibilities

The general role of key people on site implementing the CEMP will be as follows:

- The Project Manager - liaises with the Project Team in assigning duties and responsibilities in relation to the CEMP to individual members of the main contractor's project team.
- The Construction Manager - liaises with the Environmental Manager when preparing site works where there is a risk of environmental damage and manages the construction personnel and general works.
- The Design Engineer - undertakes and certifies the Design and supervises the standard of works, including geotechnical aspects.
- The Environmental Manager - ensures that the CEMP is developed, implemented and maintained. The Environmental Manager's tasks at the construction site are described below at section 4.2.4.

Other roles are outlined as follows:

- Health and Safety (PSDP and PSCS).
- Project Ecologist (as required by the Environmental Manager)
- Project Archaeologist (as required by the Environmental Manager).

The roles and responsibilities outlined are indicative and will be updated on the appointment of the main

contractor (Contractor). Details of the personnel and their responsibilities must be added to the finalised CEMP.

An outline of potential roles is provided below but will require revision.

4.2.1 Project Manager

(To be updated upon appointment of Contractor/finalisation of CEMP)

Name: _____

A Project Manager is to be appointed on behalf of the main Contractor to manage and oversee the entire project.

The Project Manager is responsible for:

- Implementing of the Construction and Environmental Management Plan (CEMP).
- Implementing the Health and Safety Plan.
- Management of the construction project.
- Liaison with the client.
- Liaison with the Project Team.
- Assigning duties and responsibilities in relation to the CEMP.
- Production of construction schedule.
- Materials procurement.
- Maintaining a site project diary

4.2.2 Construction Manager

(To be updated upon appointment of Contractor/finalisation of CEMP)

Name: _____

The Construction Manager manages all the works to construct the facility, on behalf of the main contractor. The Construction Manager reports to the Project Manager. In relation to the CEMP, the Construction Manager is responsible for:

4.2.2.1 Site Specific Method Statements

Liaising with the Environmental Manager in preparing site-specific Method Statements for all Works activities where there is a risk of environmental damage, by incorporating relevant Environmental Control Measures and referring to relevant Environmental Control Measure Sheets.

- Liaising with the Environmental Manager in reviewing and updating site-specific Method Statements for all works activities where Environmental Control Measure and Environmental Control Sheets have been altered

- Liaising with the Environmental Manager where third party agreement is required in relation to site-specific Method Statements, Environmental Control Measures and/or Environmental Control Measure Sheets

4.2.2.2 General

- Being aware of all projects' environmental commitments and requirements
- Ensuring that all relevant information on project programming, timing, construction methodology, etc., is communicated from the Project Manager to the Environmental Manager in a timely and efficient manner in order to allow pre-emptive actions relating to the environment to be taken where required
- Programming and planning of excavation works and communicating this schedule to the Environmental Manager
- Ensuring that adequate resources are provided to design and install any environmental interventions
- Liaising with the Design Engineer and providing information on environmental management to the Design
- Engineer during the construction phase
- Liaising with the Project Team in assigning duties and responsibilities in relation to the CEMP individual members of the main contractor's project staff
- Ensuring that the Environmental Manager performs regular and frequent environmental site inspections

4.2.3 Design Engineer

(To be updated upon appointment of Contractor/finalisation of CEMP)

Name: _____

The Design Engineer is appointed by the Contractor for the works.

The Design Engineer reports to the Project Manager and is responsible for:

- Design of the Works
- Review and approval of relevant elements of the method statements – assist the Construction Manager with the overall review
- Oversee geotechnical aspects of the Works (a geotechnical engineer may be used where required)
- Participating in Third Party Consultations
- Liaising with Third Parties through the Environmental Manager

4.2.4 Environmental Manager

(To be updated upon appointment of Contractor/finalisation of CEMP)

Name: _____

The Environmental Manager is appointed by the Contractor and reports to the Project Manager.

The Environmental Manager is responsible for:

4.2.4.1 General

- Being familiar with the project environmental commitments and requirements
- Being familiar with baseline data gathered for the Environmental Impact Assessment and during pre-construction surveys
- Assisting the Construction Manager in liaising with the Design Engineer and the provision of the information on environmental management to the Design Engineer during the course of the construction phase
- Liaising with the Project Team in assigning duties and responsibilities in relation to the CEMP to individual members of the main contractor's project staff

- Implementing the environmental procedures of the CEMP
- Liaising with the Construction Manager to ensure that the control measures set out in the Schedule of Environmental Mitigation are implemented
- Liaising with the client in relation to environmental issues
- Auditing the construction works from an environmental viewpoint

4.2.4.2 Site Specific Methods

- Liaising with the Construction Manager in preparing site-specific Method Statements for all Works activities where there is a risk of environmental damage. These site-specific Method statements should incorporate relevant Environmental Control Measures and take account of relevant Environmental Control Measure Sheets.
- Liaising with the Construction Manager in reviewing and updating site-specific Method Statements for all Works activities where Environmental Control Measures and Environmental Control Sheets have been altered
- Liaising with the Construction Manager where third party agreement is required in relation to site specific Method Statements, Environmental Control Measures and/or Environmental Control Measure Sheets

4.2.4.3 Third Party Consultations

- Overseeing, ensuring coordination and playing a lead role in third party consultations required statutorily, contractually and in order to fulfil best practice requirements
- Ensuring that the minutes of meetings, action lists, formal communications, etc., are well documented and that the consultation certificates are issued to the Design Engineer as required
- Liaising with all prescribed bodies during site visits, inspections and consultations
- Where new Environmental Control Measures are agreed because of third-party consultation, ensuring that the CEMP is amended accordingly
- Where new Environmental Control Measures are agreed because of third-party consultation, the Environmental Manager should liaise with the Construction Manager in updating relevant site-specific Method Statements
- Where required, liaising with the Construction Manager in agreeing site-specific Method Statements with third parties

4.2.4.4 Licensing

- Ensuring that all relevant works have (and are being carried out in accordance with) the required permits, licences, certificates, planning permissions, etc
- Liaising with the designated licence holders with respect to licences granted pursuant to the Wildlife Act, 1976, as amended
- Bringing to the attention of the Project, Design and Construction Team any timing and legal constraints that may be imposed on the carrying out of certain tasks

4.2.4.5 Waste Management Documentation

- Holding copies of all permits and licences provided by waste contractors
- Ensuring that any operations or activities that require certificates of registration, waste collection permits, waste permits, waste licences, etc., have appropriate authorisation
- Gathering and holding documentation with the respect to waste disposal

4.2.4.6 Legislation

- Keeping up to date with changes in environmental legislation that may affect environmental management during the construction phase
- Advising the Construction Manager of these changes
- Reviewing and amending the CEMP in light of these changes and bringing the changes to the attention of the main contractor's senior management and subcontractors

4.2.4.7 Specialist Environmental Contractors

- Identifying requirements for specialist environmental contractors (including ecologists, waste contractors and spill clean-up specialists) before commencement of the project
- Procuring the services of specialist environmental contractors and liaising with them with respect to site access and report production
- Ensuring that the specialist environmental contractors are competent and have sufficient expertise to co-ordinate and manage environmental issues
- Co-ordinating the activities of all specialists' environmental contractors on environmental matters arising out of the contract
-

4.2.4.8 Environmental Induction Training and Environmental Toolbox Talks

- Ensuring that Environmental Induction Training is carried out for all the main contractor's site personnel. The induction training may be carried out in conjunction with Safety Induction Training
- Providing toolbox talks on Environmental Control Measures associated with Site-specific Method Statements to those who will undertake the work

4.2.4.9 Environmental Incidents/Spillages

- Prepare and be in readiness to always implement an Emergency Response Plan
- Notifying the relevant statutory authority of environmental incidents
- Carrying out an investigation and producing a report regarding environmental incidents. The report of the incident and details of remedial actions taken should be made available to the relevant authority, the Design Engineer, and the Construction Manager.

4.2.4.10 Site Environmental Inspections

- Carrying out regular documented inspections of the site to ensure that work is being carried out in accordance with the Environmental Control Measures and relevant site-specific Method Statements, etc.
- Carrying out a daily inspection of the bunded areas and site drainage system
- Appending copies of the inspection reports to the CEMP
- Liaising with the Construction Manager to organise any repairs or maintenance required following the daily inspection of the site

4.2.5 Other Roles

4.2.5.1 Health and Safety Personnel

(To be updated upon appointment of Contractor/finalisation of CEMP)

The Health and Safety personnel for the construction project are appointed by the Contractor in line with the

Construction Regulations:

- Carrying out duty of Project Supervisor Construction Stage.

- Responsible for safety induction of all staff and personnel on site.
- Implementing the Health and Safety Plan.
- Auditing and updating the Health & Safety Plan.
- All other required legal duties.

4.2.5.2 Project Archaeologist

The Archaeologist will be appointed by the Client or the Contractor and is responsible for:

- Ensuring implementation of archaeological mitigation measures
- Monitoring of groundworks associated with the development
- Liaison with the Environmental Manager/Construction Manager
- Liaison with the Project Manager/client

4.2.5.3 Project Ecologist

(To be updated upon appointment of Contractor/finalisation of CEMP)

The Ecologist, may be appointed by the Contractor and is responsible for:

- Ensuring implementation of ecological mitigation measures.
- Advising on re-vegetation onsite.
- Monitoring of success of on re-vegetation.

4.2.5.2 All Site Personnel

The site personnel appointed by the Contractor are responsible for:

- Adhering to the relevant Environmental Control Measures and relevant site-specific Method Statements
- Adhering to the Health and Safety Plan
- Reporting immediately to the Environmental Manager and Construction Manager any incidents where there has been a breach of agreed procedures including:
  - A spillage of a potentially environmentally harmful substance
  - An unauthorised discharge to ground, water or air, damage to a protected habitat, etc

4.3 Contacts

4.3.1 Main Safety Contacts

Position Title	Name	Phone	Email
The Client (Project Developer will be the client) Details TBC by CCC	Clare County Council	(065) 6821616	customerservices@clarecoco.ie.
Project Supervisor Design Stage (PSDP)	Christine Madden, Aegis Safety Management	087-7455092	Christine.Madden@aegissafety.ie
Project Supervisor Construction Stage (PSCS)	tbc		

4.3.2 Main Contractor Contacts

Position Title	Name	Phone	Email Address
Project Manager	tbc		
Construction Manager* Environmental Manager*	tbc		
Safety (PSCS)	tbc		
Safety Officers	tbc		
Site Emergency Number		999 or 112	
Project Ecologist	tbc		
Project Archaeologist	tbc		
Project Liaison Officer	tbc		

4.3.3 Third Party Contacts

Organisation	Position	Name	Phone	Email Address
Inland Fisheries Ireland	IFI Limerick	Regional Officer	(061) 300 238	limerick@fisheriesireland.ie
National Parks and Wildlife Service	Southwestern Region	District Conservation Officer	(076) 100 2557	nature.conservation@chg.gov.ie
Environmental Protection Agency (EPA)	EPA	EPA Headquarters	(053) 9160600	info@epa.ie
Waterways Ireland	TBC	TBC	TBC	TBC
Office of Public Works (OPW)	TBC	TBC	TBC	TBC
Local Authority	Clare County Council	Clare County Council Headquarters	(065) 6821616	customerservices@clarecoco.ie.
Department of Housing, Local Government and Heritage	National Monument Service	Custom House, Dublin	(01) 8882000	nationalmonuments@chg.gov.ie
Health and Safety Authority	Health and Safety Authority	Head Office, Dublin	(01) 6147000	wcu@hsa.ie
Emergency Services	An Garda Síochána	Scarriff Garda Station	(061) 922790	

Emergency Services	Ambulance and Fire Service	Ambulance and Fire Service	999 or 112

5. Environmental Considerations and Potential Effects

The key potential environmental impacts associated with the proposed development preparation and construction works are set out in the following table. Relevant potential sensitive receptors to the works are identified. These potential sensitive receptors, the environmental considerations and potential impacts are to be considered as the basis for a future detailed CEMP.

Environmental Issue	Potential Receptor	Positive Impacts
Protected Sites	Protected Sites	Protected Sites
Water	Water	Water
Habitats	Habitats	Habitats
Protected Species	Protected Species	Protected Species
Protected Species	Protected Species	Protected Species
Noise	Noise	Noise
Dust	Dust	Dust

6. Environmental Commitments

6.1 Environmental Management Plans (EMP)

A number of environmental management plans (EMP) have been prepared for managing the impacts of Construction Activities associated with the development. See tables below and Appendix 1. These plans are to be implemented by the Project Manager and/or Project Contractor as relevant.

Ref:	Procedure
EMP-1	Surface Water Management and Run-off Control
EMP-2	Fuels and Oils Management
EMP-3	Management of Concrete
EMP-4	Construction Waste Management
EMP-5	Construction Traffic Management Plan
EMP-6	Construction Dust Management
EMP-7	Construction Noise Management
EMP-8	Archaeological & Heritage Protection
EMP-9	Ecological Management Plan Protection of Habitats and Fauna
EMP-10	Invasive Species Management Plan
EMP-11	Emergency Response
EMP-12	Site Environmental Training and Awareness
EMP-13	Monitoring and Auditing
EMP-14	Environmental Accidents, Incidents and Corrective Actions
EMP-15	Environmental Complaints

6.2 Environmental Monitoring Schedule

A Preliminary Monitoring Schedule is provided below and will be finalised pending appointment of the Contractor. The Contractor's developed daily Site Checklists must have the following information included at a minimum:

Aspect	Area of Inspection	Monitoring Required	Note/Checks	Frequency	Responsibility
Surface water Run-off	Weather Forecast	Met Éireann download	• Pre-determined rainfall trigger levels (e.g. 1 in 5-year storm event or heavy rainfall at >25mm/hr)	Every 24 hours minimum	Project Manager
Water quality monitoring	Excavations and Roadside attenuation drain	Visual inspection	•Colour, presents of silts	Daily	Environmental Manager
Roads	Site Entrance	Visual inspection	• Unacceptable level of sediment/silt on the road surface • Presence of waste • Surface condition	Daily	Project Manager
Temporary Site Compound Area	Fuel & Oil Storage areas	Visual inspection	• Damage to containers or ancillary equipment • Leakages • Unlocked storage container	Daily	Environmental Manager
	Construction Materials Storage Areas	Visual inspection	• Damage • Untidiness	Daily	Environmental Manager
	Spoil Storage areas	Visual inspection	• Levels/Slippage • Re-vegetation	Daily early/weekly	Environmental Manager
	Waste Collection Areas	Visual inspection	• Damage • Untidiness • Full skips	Daily	Environmental Manager
	Concrete chute washout area	Visual inspection	• Damages • Leakages • Unacceptable level of	Daily	Environmental Manager

			concrete washings		
Operation Control	Wastewater facilities	Visual inspection	• Portaloos requiring servicing	Weekly	Project Manager
	Hoarding and boundary fences	Visual inspection	• Signs of movement (i.e. not in a straight line) • Damaged or fallen sections of fence	Weekly	Project Manager
	Concrete pours	Visual inspection	• Run-off / spills	To be scheduled with pours	Project Manager
	Dust generation	Visual inspection	• Cleanliness of roads and compound area • Dust at stockpiles • Dust from delivery vehicles	Daily	Project Manager

6.3 Environmental Performance Indicators

The Appointed Project Contractor will outline the key performance indicators for the site in gauging successful site management in the prevention of pollution and the protection of the environment.

Environmental performance indicators will at a minimum include:

- Number of environmental accidents logged
- Number of environmental incidents logged
- Breach of procedure and corrective actions
- Number of environmental complaints received
- Results of monthly water quality monitoring
- Results of noise and vibration monitoring
- Results of site audits
- The performance indicators will be finalised by the Appointed Contractor and communicated to all relevant personnel and sub-contractors. The review periods for analysing site performance indicators must also be specified.

6.4 Response Procedure

In the event of an environmental incident, or breach of procedure, or where a complaint is received, the contributing factors are to be investigated and remedial action taken as necessary. The Contractor will ensure that the following respond actions will take place:

1) The Project Manager, PSDP and Client must be informed of any incident, breach of procedure and/or complaint received, and details must be recorded in the incident/complaint register
2) The Project Manager is to conduct/co-ordinate an investigation to determine the potential influence that could have led to the non-compliance
3) The Project Manager is to notify and liaise with the appropriate site personnel where required, e.g., Site Environmental Manager, Project Ecologist

4) If necessary, the Project Manager will inform the appropriate regulatory authority. The appropriate regulatory authority will depend on the nature of the incident.
5) The details of the incident will be recorded on an Incident / Complaints Form which is to record information such as the cause, extent, actions and remedial measures used to follow the incident/complaint. The form will also include any recommendations made to avoid reoccurrence of the incident.
6) The Project Manager will be responsible for any corrective actions required as a result of the incident e.g., an investigative report, formulation of alternative construction methods or environmental sampling, and will advise the Main Contractor as appropriate
7) The Project Manager is to ensure that the relevant environmental management plans/procedures are revised and updated as necessary.

6.5 Corrective and Preventative Action

Corrective Action Requests will be issued to ensure that prompt action is agreed and committed to, with a view to the effective resolution of any deviations from the CEMP requirements or any environmental issues.

7. Summary

This CEMP provides the information which will be contained in the final Contractor-developed Plan at the construction stage of the project. The requirement on the Contractor to update these details has been explained, and there is a particular requirement for an update to the roles and responsibilities of those appointed on the site for the construction of the project. The CEMP is a live document and will be improved upon as the project progresses, as appropriate.

Appendix 1

Environmental Management Plans

Ref:	Procedure
EMP-1	Surface Water Management and Run-off Control
EMP-2	Fuels and Oils Management
EMP-3	Management of Concrete
EMP-4	Construction Waste Management
EMP-5	Construction Traffic Management Plan
EMP-6	Construction Dust Management
EMP-7	Construction Noise Management
EMP-8	Archaeological & Heritage Protection
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