MWP

Construction Environmental Management Plan (CEMP)

An Rínn Rua Hotel and Leisure Park, County Kerry

Rínn Rua Holiday Park LTD

April 2024

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21513	6006		30/04/2024	ZH	MT	MT	DRAFT
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1. Introduction

This Construction and Environmental Management Plan (CEMP) has been prepared by Malachy Walsh and Partners (MWP) on behalf of Rínn Rua Holiday Park Ltd. (The Applicant) to construct a proposed Hotel and Leisure Park, at Reenroe, Ballinskellligs, Co. Kerry.

This CEMP has been developed specifically for this project and outlines construction practices and environmental management measures which will be implemented during the construction phase, in order to ensure that the project is constructed in accordance with best practice, with 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 practical 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.

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

2. Site Context

2.1 Site Location and Description

The subject site is located on the shores of Ballinskelligs Bay on the Iveragh Peninsula, between the coastal town of Waterville and the village of Ballinskelligs, in the Uíbh Ráthaigh Gaeltacht. Reenroe Beach, which is located adjacent to the site, is a popular stop along Wild Atlantic Way and Ring of Skellig tourist routes. The proposed development site location in context of the wider County Kerry area is shown on **Figure 1**.

The site is located to the south of the R567 and to the north and west of Reenroe beach. The Dungeagan to Reenroe Walking Loop and the Emlagh Loop Ballinskelligs pass through the site. Agricultural lands surround the site to the north, east and west.

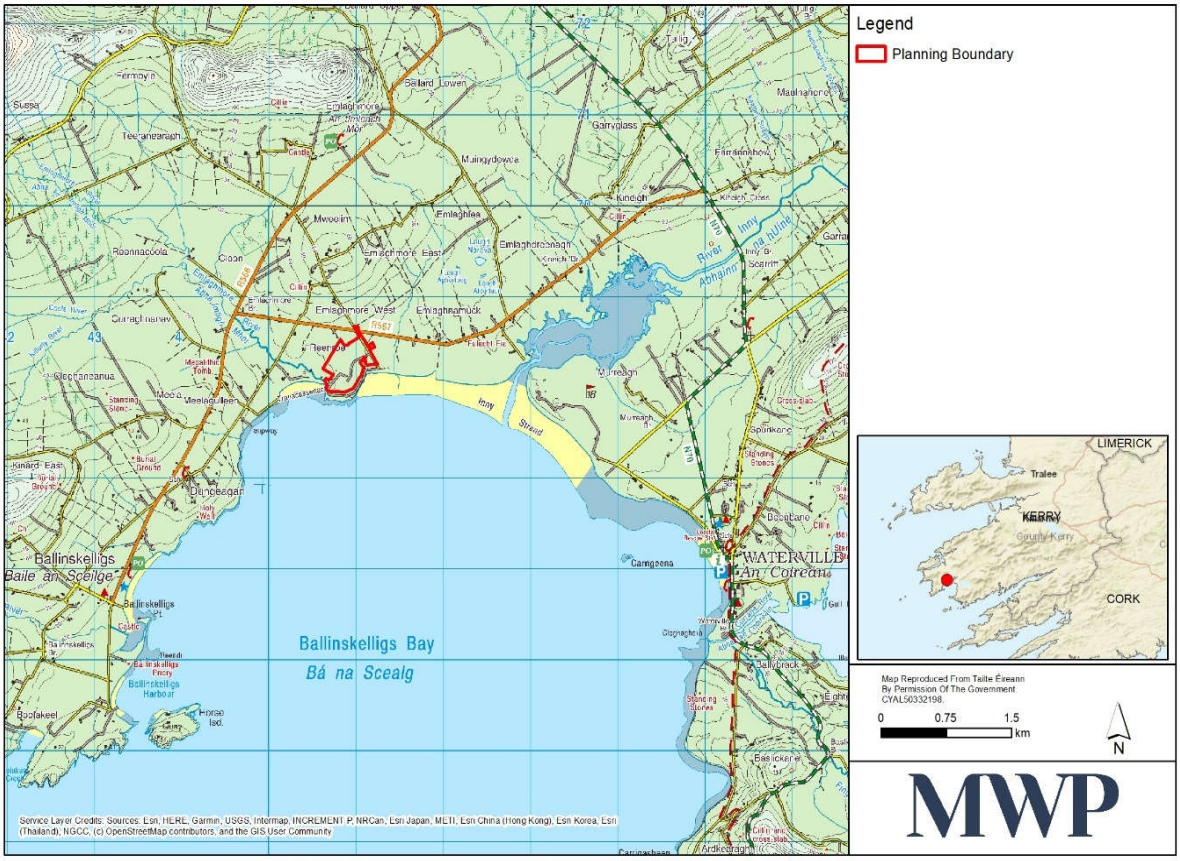


Figure 1 Proposed Site Location

3. Overview of the Project

The proposal will involve restoration of the existing derelict hotel and expansion of the visitor offering to include mobile homes, holiday lodges, touring campervans pitches, tent/caravan pitches, glamping pods and hobbit huts and all associated services, along with sensitive landscaping of the entire development area. The development proposal will also include visitor services including a shop, bar, restaurant, reception area, leisure centre, surf/water sports school and beach café. A separate habitat enhancement area is also proposed on the land to the east of the site boundary which are also in the ownership of the applicant.

The elements of the proposed development are mentioned in detail, below:

- 4 no. self-catering Studio apartments (41.5m^2)
- 3 no. accessible one bedroom self-catering apartments (46.5m^2)
- 15 no. two beds self-catering apartments (ranging from 66.5m^2 and 77.9m^2),
- A bar and café area (181.2m^2)
- An adjacent and inter-connected multi-purpose space (87.6m^2),
- Dining Room (251m^2)
- Outside terrace off dining area (with sea view)
- Kitchen (131.7m^2)
- Kitchen, Bar and Staff storage and facilities area (321m^2)
- Lounge (165m^2)
- Shop -groceries and sundries (74m^2)
- Meeting Room (36.8m^2)
- Toilets (67.9m^2)
- Rooftop restaurant and bar (and associated facilities) (574m^2)
- Elevator and stairwell
- Plant Room (43m^2)
- ESB Substation, switch and standby generator rooms (29.5m^2)
- Delivery yard with goods-in area and bin store (12.4m x 16.7m)

The extensions to the existing hotel will amount to a total of 798,5m^2 on all four floors. This includes the rooftop restaurant, the external fire exit staircase, balconies, entrance foyers, new staff toilet and wash facilities, and the new ESB substation, control/switch room and backup generator room in the hotel delivery yard.

The rest of the proposed Leisure Park will include the construction of:

- 6 no. Hobbit Huts,
- 21 no. Glamping Pods,
- 25 no. Holiday Homes,
- 144 no. Mobile Homes,
- 20 no. Campervan Stands,
- 0.8ha Tent Camping Area,
- Washroom and toilet facilities for campers (58m^2),
- Maintenance Building (618 m^2)
- Leisure Complex (with swimming pool) adjoining the Hotel building (1339.5 m^2)
- Surf School (191.7m^2) and Café (126.5m^2) adjacent to the beach and its access road (with 7 parking spaces and 1 accessible parking space),

- Natural Play Area,
- Central Park (Green) Area with:
    - walkways,
    - 142 no. Car Parking Spaces,
    - 7 access parking spaces,
    - 2 coach parking bays,
    - 40 no. bicycle spaces,
    - 7 no. Electric Vehicle (EV) charging points,
- Retention of an onsite derelict cottage for biodiversity use as bat roost,
- Internal roads (3475m long),
- footpaths,
- waste storage areas,
- widening of the Reenroe beach access road (L-7535) from the R567 to the beach to accommodate two-way traffic, and addition of a separate pedestrian walkway on the east side of the road (Note: existing beach parking spaces will be retained),
- new private access road to two existing neighbouring dwellings to the southwest of the development site,
- new wastewater treatment system with clear water pump station and UV system,
- 2 Standby Generators (at the Hotel and WWTP)
- drainage, water services and percolation area,
- landscaping (as per the proposed Landscape Management Plan),
- all associated ancillary site works, and
- Biodiversity Enhancement Area to the east of the Reenroe beach access road (L-7535).

The proposed Hotel and Leisure Park will occupy approximately 40% (22.6ha) of the 55.85ha of land owned by the developers (see Figure 2). The proposed development will be located on the west side of the Reenroe beach access road (L-7535). The only component of the project which will be located on the east side of the beach road is the Waste Water Treatment Plant (WWTP). It is proposed to engage in habitat management/ enhancement for the purposes of biodiversity gain in the lands owned by the developer on the east side of the Reenroe beach access road (L-7535).

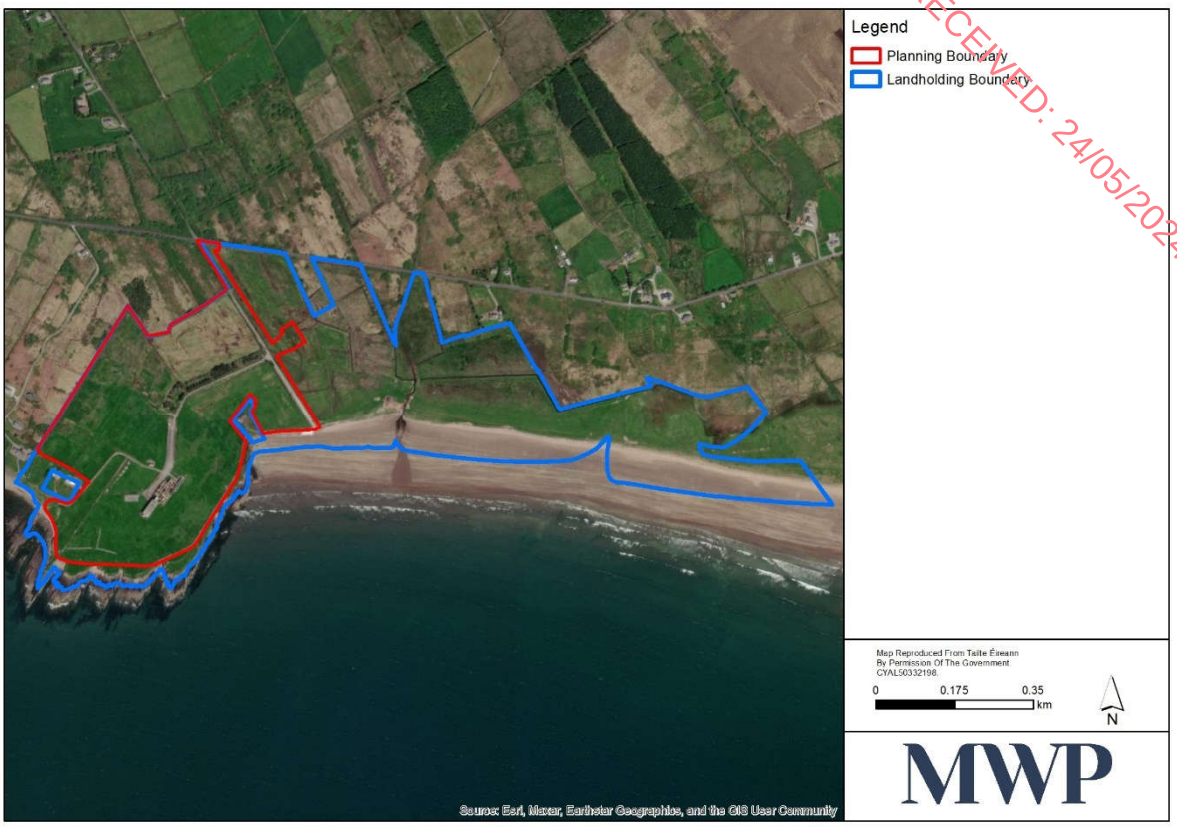


Figure 2: Boundary of the proposed development area

4. Construction Works

4.1 Schedule of Construction Works

Assuming planning permission is granted, it is hoped construction of the proposed development can begin in January 2025. It is proposed to construct the development in a series of Phases over a period of 4.5 to 5 years. An indicative phasing based on the expected construction activities is indicated in **Table 1** below and in **Figure 3**. This phasing is designed to ensure efficiency in the development of the facilities and accommodate the developer's financing plan and constraints.

The first Phase is expected to take 18 months to complete and will comprise: preparatory work and the installation of services including the main access roads, play area, walkways and carpark; water supply and drainage infrastructure; the waste-water treatment plant; as well as the refurbishment of hotel building; construction of the maintenance shed, landscaping and the installation of one third of the proposed (53 No.) mobile homes. During this phase it is expected that two mobile homes will be delivered to site overnight each week over 7 months. At the end of phase 1 the construction compound will be moved to the northern corner of the proposed development site where the maintenance building and camping facilities will be provided. Each phase of construction will be followed by a two month works stoppage in the July/August peak holiday periods.

Phase 2 is expected to be completed in 10 months and will see another third of the mobile homes (47 no.) being developed as well as the construction of half of the holiday lodges, all the glamping pods and the surf shop and café adjacent to the beach access road. Phase 3 will also be completed in 10 months. This phase will involve the installation of the balance of mobile home units (45 No.), the second half of the holiday lodges, the hobbit huts, a central camper washroom and camper-van area. During the final 10 month phase in year 5, the construction of the Leisure Centre and the camping area is planned to be undertaken.

Table 1 Indictive Duration and Activities for each Construction Phase.

Phase #	Construction Activities	Duration
Phase 1	Initial site mobilisation and establishment of construction compound and access road. Access road for neighbours along northern boundary. Hoarding Underground services (water supply and discharge & electricity) WWTP and associated facilities. Landscaping and planting Internal roads and car park Walkways, fencing and gates Play area Hotel Refurbishment (including restaurant, pub, offices and shop) 53 mobile homes - first three rows closest to main entrance road 11 Holiday Lodges/Cabins (half) Maintenance Building. Relocation of Construction compound for Phase 2.	18 months beginning Jan 2025
July and August Stoppage		
Phase 2	47 Mobile Homes 14 Holiday Lodges/Cabins (half) 20 Glamping pods Beach Surf Shop & Cafe	10 months
July and August Stoppage		
Phase 3	45 Mobile Homes 6 Hobbit Huts Washroom Camper Parking	10 months
July and August Stoppage		
Phase 4	Camping sites Leisure Centre	10 months

4.2 Working Hours

Working hours will be 8am to 6pm Monday to Friday and 8am to 2pm on Saturday.

No work will be undertaken on Sundays and Bank Holidays.

4.3 Construction Personnel

The number of construction staff working on site will vary over the construction period from 20 to 80 persons, with the maximum number of people expected to be employed being around 80 persons second and third quarters of the first phase of construction. This maximum employment period will be the phase when all the services will be under construction along with the hotel refurbishment and the delivery of mobile homes and lodges.

Personnel involved will include:

- Site contractors;
- On-site vehicle and plant operators;
- Engineers;
- Materials delivery personnel;
- Environmental personnel; and
- Health and safety personnel.

All those employed on the project will be inducted in line with relevant health and safety standards and protocols [Health and Welfare at Work (Construction) Regulations, (SI 291 of 2013)]. in the relevant health and safety standards and protocols before starting work on this construction project. Compliance with the health and safety standards must be monitored and enforced.

4.4 Construction Methodology

4.4.1 Site Preparation

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

- Any detailed ground investigations, environmental surveys etc required to support the construction process.
- The site boundary will be clearly marked with high visibility tape and the appointed contractor will not be permitted to use any areas outside the identified site boundary for any activity relating to construction. Hoarding/ Fencing will be erected to secure the site for safety reasons.
- Topsoil will be removed and stored forreuse on site for use in landscaping.
- A temporary site construction compound will be set up upon commencement of the construction phase within the site boundary.

4.4.2 Temporary Construction Compound

Initially in the first phase of construction, the area where the proposed leisure centre and car park will be cleared and used as the construction compound. The compound will include staff toilet and changing/wash facilities, drying rooms, offices, staff car parking areas and plant, materials and waste storage areas, including bunded

containment area for the storage of fuels, lubricants, oils, etc. On completion of the phase 1 construction works, the temporary compound area will be reinstated for the proposed leisure centre and car park.

In Phase 2 - 4, the construction compound will be moved to the proposed site for the camping, camper vans, wash facilities and the last phase of mobile homes. Once the work is completed, the temporary construction compound will be reinstated, and the area will be utilised for camping and camper vans. Any excavated material will be carefully managed, stored, and reused for the complete reinstatement and restoration of the compound.

The construction compounds will be in place for the duration of the construction works and will be removed once commissioning is complete.

4.4.3 Site Access

During the first phase of construction, entrance to the site will be via the main existing property entrance. During phases 2- 4 the construction entrance will be via the two site entrances along the proposed new private access road along the northern and western boundary of the site (see Figures 2 and 3).

Figure 3 Excerpt showing gated site entrance for private access road along the northern boundary of the property and the entrance for the Maintenance building which will be used as a temporary construction compound access during Phases 2-4.

Figure 4: Excerpt showing additional gated service entrance along the private access road along northern boundary of the property that will be used as a temporary construction entrance during phases 2-4.

4.4.4 Construction Works

The work will be conducted in consultation with the landowner and in accordance with any relevant measures outlined in the CEMP.

The hotel will be refurbished on site, while the lodges and hobbit huts/glamping pods will be delivered, assembled and constructed on site. The mobile park homes will be constructed by the suppliers and delivered by vehicle to site. Cement foundations and floors will be constructed for the mobile homes, lodges, and hobbit huts/glamping pods.

The main stages of construction will be progressed in summary as follows:

Enabling Works

- Ensure that all pre-construction environmental measures and surveys are implemented/conducted; Set up the temporary construction compound to include site offices, welfare facilities, water connection, waste compound, parking area and refuelling area;
- Set up the construction site enclosures. Protective hoarding will be erected around the perimeter;
- Removal of vegetation including identified trees for removal, if required;
- Commence site clearance and topsoil stripping;
- Regrade to formation level where required;
- Installation of utilities and services;
- The proposed surface water drainage network will be installed. Further information can be found in the Infrastructure Report and Chapter 7 Water of this EIAR;
- The construction foul water collection system will be installed; and

Construction Works

- Hotel demolition works and removal of building rubble,
- Lay foundations and hardstands where needed;
- Construct roads, parking areas, and footpaths;

- Renovation of Hotel;
- Installation/assembly of Mobile homes and Lodges
- Construction of Waste Water Treatment plant and associated distribution system and percolation facilities.
- Connection to public services – public water supply, electricity and communications networks;
- Landscaping (as per the proposed Landscape Management Plan);
- Complete all site finishes; and
- Completion of any testing and commission services within the development.

4.4.5 Construction Materials and Plant

Table 2 below provides details of the volumes of excavated and fill materials to be used during the construction of this development. Most of this work will take place during the 18-month Phase 1 of the construction process. All excavated soils and rock will be reused in landscaping on site. No excavated material will be removed from the site.

Table 2: Cut and Fill Volumes for various project components.

Project Components	Excavation	Surfacing repair	Build up Blinding/804	Pipe fill	Fill	Tarmac	Concrete
	typically 0.5m	typically 250mm	250mm	75% excavation	250/500mm	50mm	200mm
Cut or Fill	Cut	Fill					
Main external road		1433.7					
Main Internal Roads		282.1					
Mobile Homes	2939.4				1469.7		1175.8
Mobile Home road	3319.2		1327.7		1659.6	331.9	
Camper Vans	253				253.0		
Camper Van Roads	952.8		476.4		381.1	95.3	
Holiday Cabin Road	668		334.0		267.2	66.8	
Holiday Cabins	1035				621.0		414.0
Hobbit homes roads	859.1				859.1		343.6
WWTP	900				450.0		60.0
Glamping	189		113.4				18.9
Surf Shop/Café	152.6				91.5		61.0
Private Access Road	1520.4		912.2		760.2	152.0	
Leisure Centre + parking Lot	4104.4		2462.6		2462.6	410.4	
Proposed Watermain	6499.8			4874.8			

Project Components	Excavation	Surfacing repair	Build up Blinding/804	Pipe fill	Fill	Tarmac	Concrete
	typically 0.5m	typically 250mm	250mm	75% excavation	250/500mm	50mm	200mm
Proposed Storm Water	1668.1			1251.1			
Proposed WWTP and Pipelines	5004.3			2502.2			
Total (m3)		1715.8	5626.3	8628.1	9275.1	1056.5	2073.3
	30065	28375.1					
Balance	1689.9						

Concrete and additional aggregate materials will be sourced from appropriately authorised facilities. The following quarries in County Kerry are in proximity to the site:

- Skellig Quarries
- Breedon Caheresiveen Quarry
- The Grotto – Slate Quarry (Valentia)
- Michael F Quirke & Sons (Kilorgin)

For a project of this nature and scale a range of machinery and equipment will be required during the construction phase of the works. The following is a list of the equipment that will be required during the works.

- 20t 360 Excavators
- 20t Dumper Truck
- 3t Mini Digger
- 5t Dumper truck
- 3t roller
- Road Sweeper
- Block Grab
- Teleporter
- 20m³ Skips
- Articulated Booms
- Scissor Lifts
- 30 kva Generator
- 12T Silo (for trowel ready mortar)
- Kerbing Machine
- Asphalt paver finisher
- MEWPs, platform lifts, hoists
- Mobile cranes
- Temporary sump pumps

4.4.6 Construction Traffic

The detailed Traffic Management Plan (TMP) included in Section 12.5.2 of the Chapter 12 (Traffic) of the EIAR will be further updated and adopted by the appointed contractor prior to construction commencing. Given that Phase 1 of the proposed project may not become operational until the summer of 2026 it will be necessary to engage with the Roads and Transportation section of Kerry County Council, and with An Garda Siochana and to reflect traffic volumes and local road use at the time.

Table 3 below outlines the types of construction activities in each phase of construction and the associated traffic implications that will need to be managed.

Table 3: Construction Traffic Assumptions for the Four Phases

Phase	Construction Activity	Traffic Implications
1	1. Construction compound and site access 2. Excavations and ground clearance 3. Roads and Services Infrastructure & groundworks 4. Waste-Water Treatment Plant and percolation areas 5. Hotel 6. 50 Park Homes 7. Relocation of Construction compound. 8. Car parking areas	1. Heavy earth moving equipment and stone, gravel and sand and container offices deliveries 2. As above 3. As above + delivery of piping and wiring and associated materials 4. WWTP - as above + delivery of tanks, building materials and piping 5. Construction workers and delivery of renovation and building materials, 6. 2 mobile homes delivered per week at night over 7 months. 7. Heavy vehicles and mobile crane (No.1) 8. Parking for max. of 80 construction staff adjacent to the construction compound.
2	1. 45 Mobile Homes (next three rows) 2. 13 Holiday Lodges/Cabins (half) 3. 20 Glamping pods 4. Beach Surf Shop & Cafe	1. 2 mobile homes delivered per week at night over 7 months. Cement floors for 45 homes constructed. 2. Materials for 13 holiday lodges delivered and constructed on site. Cement floors for each also constructed. 3. Materials for 6 hobbit huts and 20 glamping pods delivered and constructed on site. Cement floors for each also constructed. 4. Parking for 30 construction staff adjacent to new construction compound around maintenance building.
3	1. 47 Mobile Homes and the east end of the service roads for mobile homes 2. 11 Holiday Lodges/Cabins (half) 3. Washroom 4. Camper Parking 5. 6 Hobit Huts	1. 2 mobile homes delivered per week at night over 7 months. Cement floors for 47 homes constructed. 2. Materials for 11 holiday lodges delivered and constructed on site. Cement floors for each also constructed. 3. Construction materials for washroom, and camping facilities delivered. 4. Parking for max. of 30 construction staff.
4	1. Leisure Centre 2. Camping sites	1. Construction materials for Leisure Centre delivered. Construction vehicles for Leisure Centre. 2. Parking for max. of 30 construction staff.

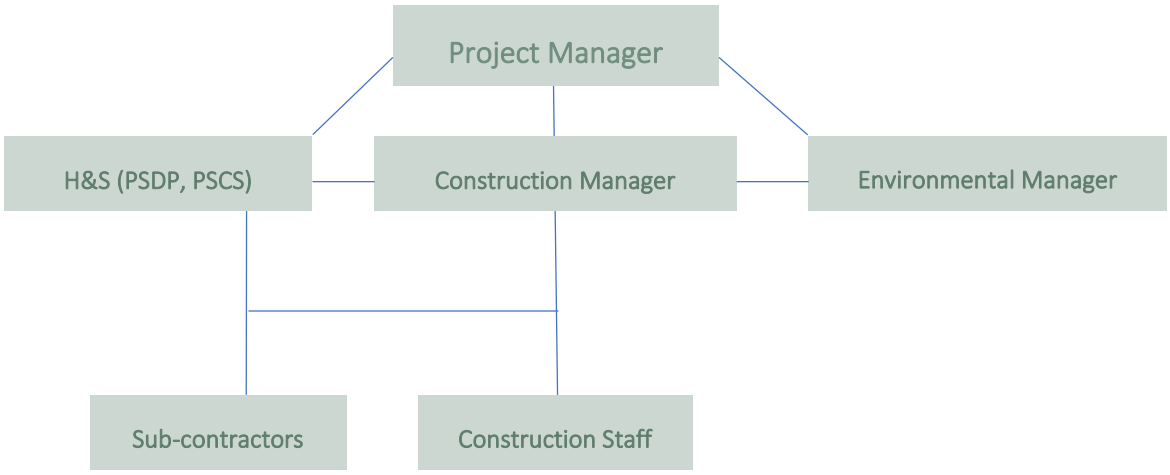
All excavated materials will be reused on site in landscaping.

5. Organisational Structure, Duties, and Responsibilities

While the Project Supervisor Construction Stage (PSCS) / Contractor will manage the obligations of the project during construction, Rínn Rua Holiday Park Limited (client) and the Project Supervisor Design Phase (PSDP) will ensure same is undertaken correctly.

5.1 On-site Organisational Structure and Responsibility

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



The Contractor will select the Project Team for the construction of the Project. The Contractor's Project Team will include an overall Project Manager, whose duties will stretch beyond the day-to-day works to budgetary, procurement and scheduling matters. The selected Construction Manager will have overall responsibility for the construction site personnel carrying out the works and the Construction Manager will report to the Project Manager.

A competent Environmental Manager will be appointed for the duration of the works and will report to the Project Manager. The Construction Manager will communicate regularly with the Environmental Manager to ensure mitigation measures are applied to specific works. The Environmental Manager will carry out tasks as required, including installation and maintenance of sediment control measures and implementing and maintaining approved waste management control measures. The use of dedicated staff, under the direction of the Environmental Manager, will ensure the environmental controls are in situ ahead of the works on site.

5.2 Duties and Responsibilities

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

- 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)'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 (Geotechnical engineer may need to be consulted).
- 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 5.2.4. To ensure adequate cover of environmental tasks, waste management tasks and responsibilities, dedicated construction staff will be assigned to the Environmental Manager to implement and maintain the Sediment and Erosion Plan and any other measures required.

Other roles include:

- Health and Safety (PSDP and PSCS)
- Waste Management Coordinator (report to the Environmental Manager)
- Geotechnical Engineer (as required by Design Engineer)
- Project Ecologist (as required by the Environmental Manager)
- Project Archaeologist (as required by the Environmental Manager)

5.2.1 Project Manager

Name: TBC

A Project Manager is to be appointed on behalf of the main Contractor(s) 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/developer
- 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

5.2.2 Construction Manager

Name: TBC

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

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 and Waste Management Control Measures and Environmental Control Sheets have been altered, and

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

General

- Being aware of all project 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 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 Contractor's project staff; and
- Ensuring that the Environmental Manager performs regular and frequent environmental site inspections; and
- Reviewing and approving all waste management control measures ensuring compliance with National and International waste legislation and best practice.

5.2.3 Design Engineer

Name: TBC

The Design Engineer 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;
- Participating in Third Party Consultations; and
- Liaising with Third Parties through the Environmental Manager.

5.2.4 Environmental Manager

Name: TBC

The Environmental Manager is responsible for:

General

- Being familiar with the project environmental commitments and requirements;
- Being familiar with baseline data gathered for the various environmental assessments 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, and
- Liaising with the Project Team in assigning duties and responsibilities in relation to the CEMP to individual members of the 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/developer in relation to environmental issues.
- Auditing the construction works from an environmental viewpoint.

Site-Specific Method Statements

- 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 Measure and Environmental Control Sheets have been altered, and
- 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.

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 as a result of third party consultation, ensuring that the CEMP is amended accordingly;
- Where new Environmental Control Measures are agreed as a result of third party consultation, the Environmental Manager should liaise with the Construction Manager in updating relevant site-specific Method Statements, and
- Where required, liaising with the Construction Manager in agreeing site-specific Method Statements with third parties.

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 (if required);
- 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.

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, and
- Gathering and holding documentation with the respect to waste disposal.

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, and
- Reviewing and amending the CEMP in light of these changes and bringing the changes to the attention of the Contractor's senior management and subcontractors.

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, and
- Co-ordinating the activities of all specialist environmental contractors on environmental matters arising out of the contract.

Environmental Induction Training and Environmental Toolbox Talks

- Ensuring that Environmental Induction Training is carried out for all the 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.

Environmental Incidents/Spillages

- Prepare and be in readiness to implement at all times an Emergency Response Plan.
- Notifying the relevant statutory authority of environmental incidents, and
- 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.
- The Site Environmental Manager shall notify the Client of any complaints or environmental incidents within 24 hours of occurrence. Where significant incidents occur requiring the involvement of statutory authorities or emergency services or where any pollution events occur, the Client shall be notified within 1 hour.

Site Environmental Inspections and Auditing

- 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 inspections of the 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.
- Accommodate audits by the Employer and/or independent auditing consultants during the project.
- Accommodate third party environmental auditing when required.

- During audits, the Environmental Site Manager shall make the necessary staff available during each audit and provide access to all documentation and site areas (and provide necessary induction and training to allow access where required).
- If there are any adverse findings arising from the environmental audits, the Environmental Site Manager shall be required to take prompt mitigation actions and provide written reports to the Employer detailing such mitigation.
- The Environmental Site Manager shall notify the Employer of any complaints or environmental incidents within 24 hours of occurrence. Where significant incidents occur requiring the involvement of statutory authorities or emergency services or where any pollution events occur, the Employer shall be notified within 1 hour.
  Note: Communication in respect of the project to regulatory or statutory bodies shall be undertaken by the Employer, unless otherwise agreed, except in the case of incident notification.

Environmental Records

- The Construction Environmental Manager shall provide all CEMP documentation to the Client on completion of the site works. Reports arising during the site works, such as verification reports or waste disposal records shall be provided to the Client within one month of completion of the activity and may be subject to review.

5.2.5 Other Roles

5.2.5.1 Health and Safety Personnel

The Health and Safety personnel for the construction project is appointed by the Contractor in line with the Construction Regulations:

- Carrying out duty of Project Supervisor Construction Stage (PSCS)
- 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

5.2.5.2 Geotechnical Engineer

The Geotechnical Engineer is responsible for:

- Assisting the Design Engineer as required
- Providing advice on geotechnical aspects of the works

5.2.5.3 Waste Management Coordinator

Name: TBC

The Waste Management Coordinator has been appointed by the Contractor and is responsible for:

- The management of waste that may be generated at the site.
- Educating site personnel, sub-contractors, and suppliers, about the best alternatives to conventional waste disposal/Waste Management Regime at the site.
- Keep records of all waste being removed from site, the effectiveness and accuracy of the documentation is to be monitored on a regular basis.

- Update the Waste Management Plan on a regular basis where required and make available as required (i.e. sub-contractors).
- Continually identifying waste minimisation actions on site and update the WMP plan accordingly.
- Distinguish reusable materials from materials suitable for recycling.
- Ensure maximum segregation at source.
- Cooperate with Site Management, on locations for stockpiling reusable materials.
- Separate materials for recovery.
- Identify and liaise with operators for recovery outlets.
- The Environmental Site Manager & Waste Management Coordinator will observe and advise upon all work carried out by sub-contractors where there are direct waste management issues of concern e.g. the excavation of non-hazardous and hazardous subsoils for off-site disposal. The sub-contractors will be instructed to comply with the CEMP.

5.2.5.4 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.

5.3 Contacts

5.3.1 Main Contractor Contacts

Position Title	Name	Phone	Email
Main Contractor	TBC		
Project Manager	TBC		
Construction Manager	TBC		
Design Engineer	TBC		
Environmental Manager*	TBC		
Safety (PSCS)*	TBC		
Safety Officer*	TBC		
Site Emergency Number*	TBC		
Waste Management Coordinator	TBC		
Envir./Ecological Clerk of Works	TBC		
Overall Project PSDP	TBC		

**24 hour contact details required*

5.3.2 Employer Contacts

Position Title	Organisation	Name	Phone	Email
Employer				
Employer's Representative				

5.3.3 Third Party Contacts

Organisation:	Position:	Name/Address:	Phone:	Email Address:
Inland Fisheries Ireland				
National Parks and Wildlife Service				
Environmental Protection Agency (EPA)	EPA	EPA Headquarters		info@epa.ie
Local Authority	Kerry County Council	Kerry County Council		
Health and Safety Authority	Health and Safety Authority			
Emergency Services	An Garda Síochána			
Emergency Services	Ambulance and Fire Service	Ambulance and Fire Service		

6. Environmental Commitments

6.1 Auditing, and Monitoring

A Preliminary Monitoring Schedule is provided below and will be finalised pending appointment of the Contractor.

The Contractor will assign a full-time Environmental Manager who will visit the site regularly to monitor the construction activities on a day-to-day basis. The duties will include completing the required checklists (sample checklist included below) and coordinating with the relevant personnel (e.g. Design Engineer as required) ensuring all environmental monitoring is carried out.

6.2 Environmental Performance Indicators

The 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 include:

- Number of environmental accidents/incidents logged;
- Breach of procedure and corrective actions;
- Number of environmental complaints received;
- Results of monthly water quality monitoring;
- Results of monthly dust monitoring
- Results of noise and vibration monitoring, and
- Results of site audits.

The performance indicators will be communicated to all relevant personnel and sub-contractors. The review periods for analysing site performance indicators must also be specified.

Aspect	Area of Inspection	Monitoring Required	Note/Checks	Frequency	Responsibility
Surface Water Run-off Controls	Site compound Wastewater facilities Site entrance	Visual inspection	• Leaks • Cracks/broken plastic piling • Build up of sediment	Regular/daily/weekly during the construction phase as well as during and after significant rainfall events	Environmental Manager
	Weather Forecast	Met Éireann download	• Pre-determined rainfall trigger levels (e.g. 1 in 5 year storm event or heavy rainfall at >25mm/hr)		Environmental Manager
Water quality monitoring	Drainage ditches	Visual inspection of drainage system	• Presence of waste	Weekly	Environmental Manager
		Visual inspection of drainage system	• Presence of waste • Surface Condition	Daily	Project Manager
Roads	Fuel & Oil Storage areas	Visual inspection	• Damage to containers or ancillary equipment • Leakages • Unlocked storage container • Fuels stored within bunded area	Daily	Project Manager
	Construction Materials Storage Areas	Visual inspection	• Damage • Untidiness	Daily	Environmental Manager
Operation Control	Concrete pours	Visual inspection	• Run-off / spills	Weekly	Project Manager
	Dust generation	Visual Inspection	• Cleanliness of roads and compound area • Dust from delivery vehicles	To be scheduled with pours	Project Manager

7. Environmental Management Plans (EMP)

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

The Contractor will ensure that plans/procedures are communicated to all site staff, including sub-contractors, through induction, training and at relevant meetings.

EMP-1 Excavation Works Management Plan

EMP-2 Surface water Management Plan

EMP-3 SUD'S Management and Maintenance Plan

EMP-4 Fuels and Oils Management

EMP-5 Concrete Management Plan

EMP-6 Ecological Management Plan

EMP-7 Construction Waste Management Plan

EMP-8 Construction Traffic Management

EMP-9 Management of Archaeology

EMP-10 Construction Noise Management

EMP-11 Construction Dust Management

EMP-12 Emergency Response Plan

EMP-13 Site Environmental Training Awareness

EMP-14 Monitoring and Auditing

EMP-15 Environmental Accidents, Incidents and Corrective Actions

EMP-16 Environmental Complaints

EMP 1: Excavation Works Management Plan

Purpose

To describe measures for the management of all excavations on the site.

Procedure

General

Excavations will be done during dry weather periods so as to avoid run-off from exposed excavation areas. Weather will be monitored during the project and no excavation works will be allowed during severe or heavy rainfall.

All temporary cuts/excavations will be carried out such that they are stable or adequately supported. Where appropriate and necessary, cuts and excavations will be protected against ingress of water or erosion by the use of cut off drains around the excavation works. Temporary works will be such that they do not adversely interfere with existing drainage channels/regimes.

Vehicular movements will be restricted to the footprint of the proposed development. This implies that machinery must be kept on existing roads/hardstands/yard areas and aside from advancing excavations do not move onto areas that are not permitted for the development.

Management and Storage of Excavated Materials and Soil Management

- Storage of excessive material will be avoided. Site management should include the checking of equipment, materials storage and transfer areas, drainage structures and their attenuation ability on a regular basis during the construction phase of the project. The purpose of this management control is to ensure that the measures in place are operating effectively, prevent accidental leakages, and identify potential breaches in the protective retention and attenuation network during earthworks operations.
- Materials required for construction should be handled and stored in a manner which reduces unnecessary wasting. Stone and any other quarry materials should be imported from local quarries where possible and stored neatly in segregated areas.

No permanent waste or stockpiles will be left on site, other those materials required for designed landscaping and construction generally. The topsoil removal and excavations for the proposed development and all excavated materials will be re-used on site as fill or for landscaping.

Responsibility

- The Environmental Manager will monitor the excavation areas and associated drainage.
- The Construction Manager will monitor vehicle movements throughout the construction phase
- The Project Manager will oversee the phasing of the excavation and machinery movement across the site.
- Construction personnel will be informed of the measures to prevent pollution of water courses.
- The Design Engineer, Geotechnical Engineer and Sub-contractors will have responsibilities as appropriate.
- All responsibilities will be finalised by the Appointed Contractor.

Details of Excavating Soil and Rock be finalised by Appointed Contractor

EMP 2: Surface Water Management Plan

Purpose

The purpose of this plan is to describe measures for the management of all surface water and run-off on site, and in particular, sediment and erosion control during the construction works.

Procedure

The following water management will be implemented on site during the construction phase:

Drainage and Sediment Control

Best practice mitigation measures will be implemented with regard to runoff and sediment control as follows:

- Erosion control, where runoff is prevented from flowing across exposed ground and becoming polluted, and sediment control, where runoff is slowed to allow suspended sediment to settle, are important elements in runoff and sediment control. Erosion and sediment controls are to be implemented prior to any site clearance works commencing.
- Clean water runoff will be intercepted and diverted away from construction site runoff to avoid cross-contamination of clean water with soiled water.
- All topsoil stripping close to sensitive areas will be carried out during periods of dry weather and all stockpiling will be kept as far as possible from surface water features.
- The area of exposed ground will be minimised. The amount of material excavated is to be kept to a minimum. Excavations will only be carried out following installation of appropriate sediment controls measures which will slow run-off and trap suspended sediment, particularly if working during prolonged wet weather or if working during an intense rainfall event.
- The drainage system will be inspected regularly during construction, in particular after heavy rainfall/storm events, to check for blockages/drainage issues. Where any drainage issues are identified, these will be addressed on the same day to ensure water quality protection.
- To help prevent the contamination of the ground and groundwater, contaminated materials such as fuels, oils, greases, hydraulic fluids and chemicals will be stored in bunded compounds. Refuelling of machinery, etc. must be carried out in bunded areas as outlined in the relevant guidance, i.e. CIRIA (2001) and DMRB Volume 11 (1994).
- Fuels will be stored during the construction phase in bunded fuel storage tanks with a 110% holding capacity. Where it is necessary to dispense fuels on site, this will be undertaken in areas covered with an impermeable surface to protect ground water;
- A temporary site drainage system consisting of filter drains will be set up for the duration of the first phase of construction. All construction phase water will be directed to the temporary drainage system during this phase. Where possible, drainage from construction works during the subsequent phases will make use of the operational drainage system installed during phase 1;
- Construction works, especially ones involving the pouring of concrete, will be conducted in the dry where possible; and

- **Temporary Construction Compound**Parking will only take place within designated parking areas.
- The site compound including designated parking areas will be located at least 50 m from any watercourse/waterbody.
- A designated wash down area within the site compound will be used for cleaning of any equipment or plant, with the safe disposal of any contaminated water. Wheel wash facilities are to be provided at all entrances/exits for the site. All construction vehicles leaving or entering the site will be required to drive through these wheel wash areas. Runoff generated at the vehicle washdown area will discharge to the drainage system for treatment and attenuation.
- Temporary toilet facilities will be managed by the appointed Contractor during the construction phase;
- A bunded containment area will be provided within the compound for the storage of fuels, lubricants, oils etc; and
- The compounds will be in place for the duration of each construction phase and will be removed once commissioning is complete.

Storage and Stockpiles

- Temporary stockpiles of excavated earth will be constructed within the lands during construction;
- All excavated materials from the site or introduced materials for construction will be re-used the site in the landscaping berms and other works;
- No permanent spoil or stockpiles will be left on site, other than those materials required for landscaping, berm construction and construction generally;
- Temporary storage areas for fuels and other hazardous materials required by the contractor during construction will be stored in appropriately bunded facilities to prevent the accidental spillage of hazardous liquids that could cause soil and groundwater contamination;
- Long term storage of waste oils will not be allowed on site. These waste oils will be collected in leak-proof containers and removed from the site for disposal or re-cycling by an approved service provider, as required.
- Collision with oil stores will be prevented by locating oils within a steel container in a designated area of the site compound away from vehicle movements;
- On-site washing of concrete truck barrels should not be allowed. The washing of the chutes at the rear of the trucks may be permitted. A designated wash area will be required.

Construction Runoff and Sediment Control

Best practice mitigation measures will be implemented with regard to runoff and sediment control as follows:

- Erosion control, where runoff is prevented from flowing across exposed ground and becoming polluted, and sediment control, where runoff is slowed to allow suspended sediment to settle, are important elements in runoff and sediment control. Erosion and sediment controls are to be implemented prior to any site clearance works commencing.
- Clean water runoff will be intercepted and diverted away from construction site runoff to avoid cross-contamination of clean water with soiled water.

- All topsoil stripping close to sensitive areas will be scheduled to be carried out during dry weather and all stockpiling will be kept as far away as possible from open water courses.
- The area of exposed ground will be minimised. Early covering/seeding/planting of exposed surfaces will be undertaken once opened areas have been reinstated.
- Every effort will be made to ensure that the amount of material excavated is kept to a minimum in order to limit the impact on the geological and hydrological aspects of the site.
- Excavations will only be carried out following installation of appropriate sediment controls measures which will slow run-off and trap suspended sediment, particularly if working during prolonged wet weather or if working during an intense rainfall event.
- The scheme drainage system will be inspected daily during construction, or after storm events, to check for blockages/drainage issues. Where any drainage issues are identified, these will be addressed on the same day to ensure water quality protection.

Monitoring

- Water management infrastructure will be regularly inspected and maintained;
- The Environmental Manager will regularly inspect the Site;
- Weather forecasts will be regularly monitored during the construction phase. The 24 hour advance meteorological forecasting service from Met Éireann will be used.

Responsibility

The Environmental Manager is responsible for ensuring that appropriate water pollution prevention measures are put in place.

References

- CIRIA C692: Environmental Good Practice on Site, (Audus et al., 2010)
- CIRIA C532: Control of Water Pollution from Construction Sites, Guidance for Consultants and Contractors (Masters-Williams et al., 2001)
- CIRIA C753 – The SUDS Manual; CIRIA C698 – Site handbook for the construction of SUDS, and

EMP 3: Fuel and Oils Management Plan

Purpose

Construction machinery and associated equipment will be the principal sources of pollutants such as oil, lubricants, fuel and hydrocarbons. The purpose of this plan is to describe measures for the management of all fuel and oils on-site for the protection of natural resources (soils and groundwater) from any spills.

Procedure

Construction Machinery and Vehicle

- All plant will be refuelled on site e.g. excavators, tractors & quads, while rigid and articulated vehicles will be fuelled off site as would all site vehicles (jeeps, cars and vans).
- The potential for hydrocarbons getting into the existing drains and local watercourses will be mitigated by only refuelling construction machinery and vehicles in designated refuelling areas using a prescribed re-fuelling procedure.
- Refuelling will be carried out using 110% capacity double bunded mobile bowsers. The refuelling bowser will be operated by trained personnel. The bowser will have spill containment equipment which the operators will be fully trained in using.
- No servicing or repair of plant, machinery or vehicles should be undertaken on-site and the mechanical soundness of construction machinery will be checked prior to the commencement of construction works.
- To reduce the potential for oil leaks, only vehicles and machinery will be allowed onto the site that are mechanically sound. An up-to-date service record will be required from the main contractor.
- Contractors supplying concrete and crushed stone to the site will be contractually required to supply their products using roadworthy vehicles.
- Should there be an oil leak or spill, the leak or spill will be contained immediately using oil spill kits; the nearby dirty water drain outlet will be blocked with an oil absorbent boom until the fuel/oil spill has been cleaned up and all oil and any contaminated material removed from the area. This contaminated material will be properly disposed of in a licensed facility.
- The Environmental Manager will be immediately informed of the oil leak/spill and will assess the cause and the management of the clean-up of the leak or spill. They will inspect nearby drains for the presence of oil and initiate the clean-up if necessary.
- Immediate action will be facilitated by easy access to oil spill kits. An oil spill kit that includes absorbing pads and socks will be kept at the site compound and also in site vehicles and machinery.
- Correct action in the event of a leak or spill will be facilitated by training all vehicle/machinery operators in the use of the spill kits and the correct containment and cleaning up of oil spills or leaks. This training will be provided by the Environmental Manager at site induction.
- In the event of a major oil spill, a company who provide a rapid response emergency service for major fuel spills will be immediately called for assistance, their contact details will be kept in the site office and in the spill, kits kept in site vehicles and machinery.

Accidental spills / contaminated runoff:

- Good site practice [CIRIA 32 (2001)] is applied to ensure no fuels, oils, other substances or contaminated runoff are stored in a manner on site in which they may spill and enter the ground, particularly when the

initial top layer is excavated. Dedicated, bunded storage areas will be used for all fuels or hazardous substances. Spill kits will be maintained on site.

Drainage and Sediment Control:

- Construction pollutants such as oil or fuel will be stored in secure bunded impermeable construction compounds away from drains and open water and inspected regularly for leaks or signs of damage.
- To help prevent the contamination of the ground and groundwater, contaminated materials (oils, fuels, chemicals etc.) will be used and stored in an appropriate manner as outlined in the relevant guidance, i.e. CIRIA (2001) and DMRB Volume 11 (1994).

Temporary Construction Compound:

- Temporary toilet facilities will be managed by the appointed Contractor during the construction phase;
- The compound will shift in each phase and will be present for the duration of the construction phase.

Responsibilities

- The Construction Manager and Environmental Manager are responsible for ensuring Fuel and Oils are managed in line with this procedure. The Environmental Manager is responsible for ensuring spill kits are readily available in vulnerable locations.
- The Construction Manager is responsible for ensuring the spill kits are adequately stocked and should inform the Environmental Manager when items have been used. The Appointed Contractor, in updating the CEMP, must designate personnel to the tasks relating to Fuels and Oil, as outlined.

References

- Best Practice Guidelines BPGCS005 – Oil Storage Guidelines (Enterprise Ireland).

EMP 4: Concrete Management Plan

Purpose

The purpose of this plan is to describe measures for the management of concrete on-site for the protection of natural resources from any spillages.

Procedure

Supervision of Concrete Pours

- To reduce the potential for cementitious material entering watercourses, concrete pours will be supervised by the Construction Manager, a suitably qualified Engineer and/or the Environmental Manager.
- The construction manager will ensure that the area of the pour is completely drained of water before a pour commences.
- Pours will not take place during forecasted heavy rainfall.
- Incidental rainfall from light showers during the period of a pour is typically absorbed into the concrete matrix but heavier showers can result in some run off from the top surface of the concrete pour. If run-off is encountered the supervisor in charge will block the outflow from the drains to retain or treat the run-off until the pH is neutral before discharge to the drainage network.
- In the event of a spillage on site, the Environmental Manager will temporarily block the dirty water drains in the immediate area and monitor the pH levels of the water and if necessary, will adjust the pH levels using CO_2 entrainment. Any spillage will be cleared immediately.
- Temporary storage of cement bound granular mixtures will be on hardcore areas. Cement products are hazardous and should always be stored in a COSHH store or similar (shipping container), and only be in the open when in use. If cement products are temporarily located in the open, then they will be located within an impermeable bunded area and covered to prevent contact with rainwater. This will prevent direct drainage of cement storage areas to surface waters.

Responsibilities

- The Construction Manager and EHS Manager will supervise all concrete pours.
- The Environmental Manager is responsible for ensuring that appropriate water pollution prevention measures are put in place and that water sampling is carried out. Where standards are breached, he/she should carry out an investigation and in conjunction with the Construction Manager, he/she should ensure remedial action is taken and further samples taken to verify that the situation has returned to normal.

EMP 5: Ecological Management Plan (Protection of Habitats and Fauna)

Purpose

The proposed development is located within 15km of the following designated sites:

- Ballinskelligs Bay and Inny Estuary SAC
- Killarney National Park, Macgillycuddy's Reeks and Caragh River Catchment SAC
- Valencia Harbour/Portmagee Channel SAC
- Kenmare River SAC
- Iveragh Peninsula SPA
- Puffin island SPA
- Deenish Island and Scariff Island SPA

These sites are designated for the protection of Qualifying Interest (QI) aquatic habitats/species and Special Conservation Interest (SCI) bird species which are sensitive to water pollution and disturbance.

The purpose of this plan is to describe measures for the management and protection of habitats and fauna on the Site.

Procedure

Ensuring implementation of ecological protection measures outlined below:

Pre-Construction Derogation Licence

For the protection of Bats, a Derogation Licence, issued under Regulation 54 of the European Communities (Birds and Natural Habitats) Regulations 2011, is required to be granted prior to any works to the hotel or derelict cottage. This licence must be obtained from the DHLGH through NPWS in advance of any works taking place which would or potentially could disturb bats or their roosts. This licence is required irrespective of any requirement for planning consent, or otherwise.

Pre-Construction Surveys

Physical inspections of potential roost features (PRFs) in trees to be felled, using endoscope and high-powered torch, and/or dusk/dawn surveys, will be undertaken by a bat specialist/suitably qualified ecologist to determine if roosts are present. If any period of time elapses, further surveys are to be undertaken by the ecologist immediately in advance of tree-felling to ensure that roosting bats are not present. Prior to any structures being demolished, physical inspections and emergence/re-entry surveys, as required, will be undertaken.

The purpose of these surveys is to:

- Determine the current locations and characteristics of roosts in the period prior to commencement on-site to establish if the baseline conditions reported herein remain valid, given the length of time which may potentially elapse between completion of baseline surveys and reporting and commencement of construction activity and the degree to which bat species can typically vary in their usage of roost habitat features, and
- Ensure that the mitigation measures remain adequate to avoid or reduce predicted impacts on bats.

This will ensure that any changes in Site context in relation to suitability for bats will be highlighted and that any additional mitigation measures which are then required are applied. In the event that previously unknown bat roosts are identified within the Site, best-practice mitigation will be recommended by the appointed ecologist in

consultation with KCC and NPWSA pre-construction survey for otter should be undertaken prior to the commencement of any works as per best-practice guidance set out in NRA (2008) in relation to construction works and otter. The purpose of the pre-construction survey is to identify any changes within the Site. The survey should be undertaken no more than 10-12 months in advance of construction. The survey should be supplemented by an additional survey immediately prior to site works commencing if more than four weeks have elapsed since the initial pre-construction survey.

A pre-construction survey for badger should be undertaken prior to the commencement of any works as per best-practice guidance set out in NRA (2006b) in relation to construction works and badger. The purpose of the pre-construction survey is to identify any changes within the Site. The survey should be undertaken no more than 10-12 months in advance of construction. The survey should be supplemented by an additional survey immediately prior to site works commencing if more than four weeks have elapsed since the initial pre-construction survey.

In the event of a badger breeding/resting place being discovered within or in proximity of the Site, all construction activity and site works will be undertaken in accordance with NRA (2006b). Implementation of best-practice guidelines for badger will be overseen by the appointed ECoW.

Amphibian surveys will be carried out by a suitably qualified ecologist in advance of construction works. These surveys will focus on breeding areas confirmed to be used or with the potential to be used by breeding amphibians. Methodology for frog surveys will follow Reid et al. (2013). In the event that there is a requirement to disturb breeding frogs, frog spawn and/or spawning habitat, then the relevant licence will be required from NPWS, prior to removal of frogs and/or spawn by the appointed ecologist to an alternative suitable location nearby.

Monitoring

- A suitably qualified and experienced Project Ecologist/ECoW will be employed during the construction phase of the project. Duties will include the review of all method statements, delivery of toolbox talks, undertaking of all required pre-construction surveys for protected species and monitoring of works throughout the construction phase to ensure that works are taking place in compliance with the CEMP and that the requirements of the Conditions of Planning and all environmental controls and EIAR mitigation is implemented in full. As part of toolbox talks, contractor staff and other site personnel, as relevant, will be made aware of the procedure to follow if a protected species or their resting or breeding site is encountered.
- The appointed ECoW will be awarded a level of authority and will be allowed to stop construction activity if there is potential for adverse environmental effects other than those predicted and mitigated for in the EIAR. The appointed ECoW will have demonstrated professional experience in managing large-scale construction works affecting ecological receptors identified within the EIAR.

General Protection of Habitats

- The area of proposed works will be kept to the minimum necessary to minimise disturbance to habitats and flora. Vegetation removal within the Site is to be minimised and be restricted to those areas of vegetation which have been identified for removal (to be clearly marked by contractor staff prior to removal). Removal of vegetation from anywhere outside of marked areas will not be permitted.
- The footprint of the construction area, site compound and materials storage areas will be clearly marked out prior to commencement of works with reference to design drawings, under the supervision of the

project engineer and appointed ecologist, so that it is visible to all contractor staff and machine operators.

- The extent of access for all construction plant and machinery is to be clearly marked out, in particular along the southern boundary of the Site to avoid impacts on more sensitive habitat, namely areas of 'Dry calcareous and neutral grassland habitat (GS1)', which have been identified along the cliff-top immediately adjacent to the Site boundary. A heavy machinery exclusion zone will be established using temporary stakes and signage, as required, to prevent encroachment by heavy machinery onto this habitat. This will be undertaken in consultation with the appointed ECoW. There shall be no side casting of material or any other construction-related activity within this area. All operatives will be made aware of this works exclusion zone.
- All operatives will be made aware of the immediate proximity of the Ballinskelligs Bay and Inny Estuary SAC to the Site as part of toolbox talks. Movement of construction plant/vehicles is to be minimised within the SAC boundary. Movement of plant and machinery is to be avoided on the 'shingle gravel and banks' habitat in the south of the proposed BEA. There shall be no side casting of material or any other construction-related activity within this area.
- Immediately prior to construction, the site should be inspected for the presence of breeding/resting sites of protected fauna species to confirm the findings of the baseline surveys and confirm that site circumstances have not changed in relation to breeding/resting sites of protected species.
- Construction materials and wastes are to be kept in designated areas to reduce risk of accidental injury/entrapment of any wildlife on-site and construction vehicles and personnel will not encroach onto habitats beyond the proposed development footprint.
- The area of exposed ground will be minimised. Early covering/seeding/planting of exposed surfaces will be undertaken once opened areas have been reinstated.
- The site compound including designated parking areas will be located at least 50 m from any watercourse/waterbody.
- Clean water runoff will be intercepted and diverted away from construction site runoff to avoid cross-contamination of clean water with soiled water.
- The area of exposed ground will be minimised. The amount of material excavated is to be kept to a minimum. Excavations will only be carried out following installation of appropriate sediment controls measures which will slow run-off and trap suspended sediment, particularly if working during prolonged wet weather or if working during an intense rainfall event.
- Wheel wash facilities are to be provided at all entrances/exits for the site. All construction vehicles leaving or entering the site will be required to drive through these wheel wash areas.
- Runoff generated at the vehicle washdown area will discharge to the drainage system for treatment and attenuation.
- Washout of concrete trucks will not occur at the site. Washout of plant is to be carried out in designated, contained, impermeable areas.
- To reduce the level of disturbance to nocturnal fauna, construction activities will be restricted to between 08.00 and 18.00, Monday to Friday, and between 08.00 and 14.00 on Saturdays. Construction work will not take place outside of these hours unless in exceptional circumstances.

General Protection of Fauna

- Disturbance of fauna generally will be reduced by controlling the movement of construction vehicles and personnel.
- Construction materials and wastes are to be kept in designated areas to reduce risk of accidental injury/entrapment of any wildlife on-site.
- In accordance with Section 40 of the Wildlife Acts, vegetation removal, including tree removal, will be conducted outside of the restricted bird nesting period (March 1st to 31st August, inclusive). This will not only protect nesting birds, but a range of biodiversity.
- Where areas of dense vegetation are to be removed, such as within the conifer treeline, the ECoW will be present to oversee removal of vegetation and ensure any necessary mitigation measures are in place in the event that a previously unknown breeding or resting site of any protected mammal species is encountered during the works.
- Mammals and birds are mobile and so are expected to disperse from the area; however, young or hibernating animals are vulnerable to impacts during vegetation clearance. Prior to any vegetation clearance, the area will be checked by the ECoW to check for the presence of young or hibernating animals.
- Should any resting or breeding place of any protected species be discovered within the Site during the pre-construction or construction phases, the ECoW is to be informed immediately and the advice of NPWS sought. Any works in the area are to cease immediately and the area is to be cordoned off until the ECoW has authorised recommencement of works.
- All temporary construction lighting is to be switched off outside daylight hours. Construction lighting is to be directed inwards into the Site to reduce indirect alteration of adjacent habitats outside the Site and minimise nocturnal impacts on faunal species.
- To reduce the level of night-time disturbance to nocturnal fauna, construction activities should be restricted to standard construction hours. Construction work will not take place outside of these hours unless in exceptional circumstances.

Protection of Chough

<u>Provision of Alternative Nesting Habitat</u>

- Chough nest shelters, containing a nesting platform, are designed to provide a nest site, close to an area of suitable habitat.
- To mitigate for loss of the existing chough nest-site within the hotel, it is proposed to install alternative, suitable nesting habitat for this pair within their territory. To maximise the chance of successful uptake of the proposed alternative nesting-habitat by chough, it is proposed to install two different types of artificial nest, to be installed at separate locations within the Applicant's lands.
- Within the Proposed Development site, it is proposed to install a chough nesting box on the hotel. This will be installed at a suitable location somewhere on top or towards the top of the building. For example, on the hotel bedroom block roof, the roof of the hotel tower or at the top of the hotel tower beneath the overhanging eaves of the tower roof. The proposed nest-box at the hotel is to be installed in the location selected as soon as is practicably possible once relevant works in that section of the hotel are complete.
- There are several important factors which should be considered with regard to design and siting of chough nest-boxes generally. These include installation of the nest-box at a sufficient height above

ground, avoidance of direct sunlight and ensuring sufficient shade to prevent overheating. Installation of the nest-box beneath the eaves of the roof tower would provide shade and shelter. Alternatively, installation of the nest-box on either the hotel bedroom block roof or tower roof could be facilitated by providing some form of roofing/shelter over the nest-box to ensure sufficient shade. A gap should be left between the top of the nest-box and the shelter roof to allow sufficient airflow and prevent overheating. Adults may also roost in shelters at other times of year , therefore, it is considered that the nest-box may also provide an alternative winter roosting site for chough on-site. Installation of a chough nest-box at the hotel would provide an alternative nest-site within close proximity of both the current nest-site and winter roost-site, which would likely increase chance of uptake by the resident pair on-site.

- Boxes can be made of 12millimetre exterior plywood – marine plywood is preferable, or Ecosheet©, a recycled plastic boarding . One or two large rocks approximately 10 centimetres tall should be placed in the front of the box. This provides a good perching point for the adults, and juveniles almost ready to fledge, and also forms a barrier for the nest to be built against and prevent chicks from falling out when young. Suitable nesting materials, including a variety of size twigs, heather, fern fronds, moss, lichens, teased sheep wool and horsehair for the nest lining can be provided somewhere close by for choughs to use for nest-building. The boxes need to be checked each year as they do suffer from being exposed to the sea air.
- It is proposed that a second alternative chough nest/roost-site is provided at a suitable location elsewhere within the Applicant's lands which encompass a large area of coastal grassland extending eastwards from the Proposed Development site. Here, due to a lack of either manmade or suitable natural structures to which a nest-box could be attached, it is proposed that a chough nesting platform be constructed. Again, adequate height and shade, and deterrence of interference, will be important considerations in the design of the nesting platform. Although this example shown below depicts a nest-platform being used in an aviary situation, this could easily be adapted as required to be used in a natural setting. Advantages of locating a chough nesting-platform within the general area outlined above include proximity to the current nest and winter roost-site at the hotel without being too close, availability of foraging habitat in the surrounding and wider area, and a location within lands under the ownership and control of the Applicant.
- The alternative chough nesting-sites proposed (nest-box and nest-platform, both discussed above) would be available to either the resident pair occurring on-site or potentially another breeding pair. Availability of both artificial nest design options and locations will increase the chance of successful uptake by chough. Final design and siting of both options will be undertaken by the appointed ecologist in consultation with NPWS. Measures are also proposed in relation to monitoring for chough.

Protection of Other Breeding Birds

- A bird box scheme comprising artificial nest boxes will be installed to provide alternative nesting habitat for species currently nesting in the hotel (starlings, swallows, and jackdaw). For example, the maintenance building in the north-east corner of the Site has been identified as a suitable location to accommodate nest-boxes for swallow. Nest-boxes are also to be installed in other suitable locations, such as on walls and trees within the Site, either retained or newly planted. A minimum of 20 No. bird boxes are to be installed within the Site. Installation of the nest box scheme, including the final number and location of boxes to be installed, is to be undertaken under the direction of the appointed ECoW and following guidance by BirdWatch Ireland.

Protection of Otter

- In the event of an otter breeding/resting place being discovered within or in proximity of the Site, all construction activity and site works will be undertaken in accordance with NRA (2008). Implementation of best-practice guidelines for otter will be overseen by the appointed ECoW.

Protection of Badger

- In the event of a badger breeding/resting place being discovered within or in proximity of the Site, all construction activity and site works will be undertaken in accordance with NRA (2006b). Implementation of best-practice guidelines for badger will be overseen by the appointed ECoW.

Protection of Amphibians

- In the event that there is a requirement to disturb breeding frogs, frog spawn and/or spawning habitat, then the relevant licence will be required from NPWS, prior to removal of frogs and/or spawn by the appointed ecologist to an alternative suitable location nearby.Bats Protection

Protection of Bats

- A Derogation Licence, issued under Regulation 54 of the European Communities (Birds and Natural Habitats) Regulations 2011, is required to be granted prior to any works to the hotel or derelict cottage. This licence must be obtained from the DHLGH through NPWS in advance of any works taking place which would or potentially could disturb bats or their roosts. This licence is required irrespective of any requirement for planning consent, or otherwise.

<u>Provision of Alternative Roost-sites (Derelict Cottage)</u>

- It is proposed to utilise the derelict cottage located within the Site to provide alternative roosting sites for bats. The principal function of this structure as a proposed alternative roost site will be to mitigate for loss of common pipistrelle and lesser horseshoe bat 'moderate significance' bat roosts associated with the Proposed Development. While providing principally for these species, it will also aim to accommodate/provide roosting habitat for other bat species recorded on-site, such as soprano pipistrelle, to reduce impacts on local bat populations.
- The baseline data across the three proposed sampling locations will be used to inform the approach to works to the derelict cottage. The aim of this process will be to ensure that the ambient conditions within the derelict cottage (alternative roost) replicate the baseline ambient conditions within the hotel structure as much as possible, taking into account any seasonal fluctuations, to improve roosting suitability for bats within the cottage. Where discrepancies are noted, modifications will be made to the cottage to try and adjust ambient conditions accordingly, to be undertaken under the direction and guidance of the appointed ecologist in consultation with the appointed contractor. The temperature datalogger will remain in-situ within the derelict cottage until the end of the monitoring period

The following general mitigation measures are proposed in relation to works to the derelict cottage to make it suitable as an alternative roosting site for bats and minimise impacts on any bats occurring.

- Prior to any works commencing, toolbox talks, as required, will be given by the appointed ecologist to contractor staff to explain the general approach to works and what to do in the event that bats are encountered. The appointed ecologist will remain on-site during works.
- Externally, part of the original stonework of the east gable wall is visible where render has fallen away. It is proposed to remove all external render from the building to restore the original natural stone finish which will provide additional crevices and increase the availability of potential roosting habitat to bats.
- Where re-pointing of stonework is required for structural stability, this will be undertaken by hand only once all crevices have been thoroughly inspected by the appointed ecologist with the use of an endoscope and have been confirmed free of bats. In this case, crevices can be temporarily packed with bubble-wrap to keep them free of bats until pointing work is undertaken. In the event that bats are encountered, crevices will be marked for retention with wildlife-friendly paint. Where re-pointing is not required to stabilise stonework, it will be left as. This will maximise potential roosting crevices available to bats.
- Where required, roof slates will be removed carefully by hand. Any vegetation growth will be removed. Roof repairs will comprise natural slate. If roofing felt is required, then traditional hessian reinforced bitumen felt membrane is to be used, rather than more modern breathable roof membrane.
- Any rotten timberwork at risk of disintegrating will be removed. In the event that any roof timbers require to be replaced, or any other new timber is required, then pre-treated timber will be used (timber treatment products used to be non-toxic to bats). There are multiple timber-treatment products which are considered suitable for use in or near bat roosts[1]. Any necessary timber treatment operations e.g. within roof spaces, should be carried out during the winter months - November to March in accordance with Aughney *et al*., (2008).
- Both the rear and front doors of the building are completely missing. Both doors will be replaced with secure, wooden doors. It is proposed that only one of these doors be used for access going forward (for roost monitoring purposes, to be kept locked otherwise), and the other is left permanently closed.
- There are several windows in the building, all of which are of timber window frame construction (poor condition) and with glazing missing. To the front, there are two ground-floor and three first-floor windows, and to the rear one first-floor window. There is also a small window at first-floor level on the eastern gable wall. To minimise light penetration and draughts within the building interior, and help retain heat, reduce noise and visual disturbance, and deter unwanted human activity, all windows on the ground-floor will be closed up permanently.
- It is proposed that the first-floor window openings to the rear and on the gable wall, and possibly one of the windows to the front, will be retained as roost access points. These window surrounds are to be replaced with wooden frames (appropriately treated) and left unglazed. Internally, partition boxes, open at one side, will be constructed around these roost access points using plywood sheeting painted black (using non-toxic paint). These partitions will limit light spill from the window openings into the interior of the building while allowing bats to freely enter the building. The remaining two windows to the front of the building will be permanently sealed, again to limit the level of light and wind within the building's interior and reduce noise disturbance.

[1] https://www.gov.uk/government/publications/bat-roosts-insecticides-and-timber-treatments/timber-treatment-products-suitable-for-use-in-or-near-bat-roosts; https://data.jncc.gov.uk/data/e5888ae1-3306-4f17-9441-51a5f4dc416a/Batwork-manual-3rd-edn.pdf

- Where predators could potentially access window openings by climbing stonework etc, access points will be made predator-proof using either sheets of smooth steel attached securely to the external walls around window openings or purpose-built 'tilt-trays' which prevent access by predators.
- Prior to all works, including to windows and doors, stonework, roofing etc., any gaps and crevices, such as around door and window surrounds, stonework, timber framework etc., are to be thoroughly checked by the ecologist using an endoscope and torch to ensure that crevices are free of bats.
- In the event that any bats are discovered during any aspect of the works, they will be carefully caught using gloves, cloth or a box, kept safely and released outside, preferably at dusk, on the same day.
- Internally, all debris, rubbish etc. on the floor at ground-level will be removed. The existing damaged guttering and drainage pipes on the building's exterior will be removed and replaced.
- To increase the availability of suitable bat-roosting habitat at the derelict cottage, bat-boxes are to be installed on both the interior and exterior faces of the building (minimum total 10 no.). These should be positioned between 3-5 m (minimum 3 m) off the ground, preferably close to the eaves and in sunny but sheltered locations. Installation of bat-boxes at the structure should follow BCIreland guidance[2]. For example, timber boxes can be used internally; however, Woodcrete boxes are recommended for external positions. Boxes of Woodcrete construction are more durable and long-lasting, while also having better thermal properties for bats, over timber.
- Externally, boxes facing in different directions (roughly south) to provide a range of temperature conditions are recommended to be installed. For example, boxes facing from south-east to south-west to allow the sun to fall on each box for part of the day. Boxes are to be securely attached to the structure and are not to be positioned directly over any doors or windows. In-line with BCIreland recommendations, self-cleaning boxes should be used (designed so that any bat droppings fall out the bottom removing the need for yearly cleaning out)[3]. All boxes, in particular Woodcrete boxes due to their weight, are to be checked periodically to ensure that attachments to walls remain secure.
- The large pile of boulders which is located to the rear of the building will be removed to facilitate planting in the vicinity of the structure and increase vegetation cover to support foraging and commuting bats.

Proposed Timeline

- Due to the presence of nesting jackdaw and starling within the derelict cottage, it is recommended that any works to the cottage are undertaken in autumn (September, October and November) and/or early spring (March) (outside the bat and main bird breeding season, and the bat hibernation period).
- It is recommended that works to provide suitable alternative roosting habitat within the cottage take place at least several months in advance of an anticipated project start date on-site (once the required Derogation Licence has been granted to allow works). This will maximise the length of time available to bats to find the alternative roost and allow sufficient time to make any changes required with regard to achieving the necessary suitable, as discussed above.

[2] https://www.batconservationireland.org/wp-content/uploads/2015/05/BCIrelandGuidelines_BatBoxes.pdf

[3] https://www.batconservationireland.org/wp-content/uploads/2022/07/The-Beginners-Guide-to-Bat-Boxes.pdf

Approach to Hotel Renovation Works

- It is recommended that construction works to the hotel do not commence until after the main hibernation period to minimise impacts on bats. Hotel renovation works should therefore commence in spring (March/April), prior to the breeding season, when bat numbers are likely to be lower. In the event that the project starts later in the year than anticipated, e.g., summer, it is recommended that the breeding season for bats (May to August) is avoided to reduce impacts, with works instead commencing in the autumn (September/October), prior to the start of the hibernation period.
- Due to the large scale of the hotel building, the presence of confirmed roosts, the abundance of potential roost sites, and the degree to which bats can move through the various components of the building as a result of unsealed windows, areas of structural damage etc, the general approach will be to systematically preclude bats from each room/area prior to works starting. This will entail the appointed ecologist undertaking visual inspections of each room for bats, including all cracks, crevices etc., after which these and all room entry points (open doorways/windows) can be 'closed' with temporary bubble-wrap and/or coverings, such as hessian, heavy-duty plastic sheeting or similar, securely fastened to prevent bats from entering. Similarly, exposed walls should be checked for presence of bats, after which any crevices can be temporarily packed with bubble-wrap and/or the area of wall covered with hessian or other temporary covering, to prevent bats from entering before and during works. It is important that bat presence throughout the building is regularly monitored during works to ensure that bats have not re-gained access to any part of the building's interior. Regular inspections of all areas should be undertaken and any signs of bat activity searched for.
- Specific measures in relation to demolition, including removal of blockwork, suspended ceilings or sub-floor materials, roof works etc. will need to be drawn up by the appointed contractor in consultation with the appointed ecologist. Specific measures in relation to exclusion procedures for either confirmed or suspected roost locations within the building will need to be drawn up. Works at these locations will need to be carefully planned to minimise potential impacts on any roosting bats which may be present. Where roosting bats are expected to be present, relevant rooms/areas can be closed off, using temporary means, as outlined above, following dusk, to minimise the chances of bats being present. The appointed ecologist should supervise such works, in particular at confirmed or suspected roost locations, and be on hand in the event that bats are discovered.
- Any accumulations of ivy growing on structures are to be carefully removed in the autumn months under the supervision of the appointed ecologist and left on the ground for 24 hours to allow any residing bats to exit safely.
- Using the above approaches, the likelihood of bats being present within the hotel throughout the works will be reduced. If bats, or signs of bats are found, during works, works are to cease in the area until the appointed ecologist has advised how to proceed and/or undertaken removal of bats, in which case they will be carefully relocated to the alternative roost-site (cottage).
- Prior to any works commencing, a detailed work plan involving both the appointed contractor and the appointed ecologist will be required to be drawn up. This will be done in consultation with NPWS and in-line with any Derogation Licence conditions. The work plan will set out the approach to be taken and specific measures with regard to site preparation works, clearance and demolition works, and construction and renovation works which may affect bat roosts within the existing hotel structure, and will be tailored, as required, with regard to specific construction works/activities required. The work plan will also be informed by the results of the pre-construction surveys to ensure that the approach to works will be undertaken in such a way as to minimise impacts on bats.
- Prior to any works commencing, toolbox talks will be given by the appointed ecologist to contractor staff to explain the general approach to works and outline any specific areas of sensitivity/measures required. Toolbox talks should be given to new contractor staff arriving to site, as required (on an 'as needed'

basis). As part of toolbox talks, staff will be informed by the ecologist of the procedure to follow in the event that a bat is discovered, and the ecologist is not present.

Felling of Trees

During felling of trees, the following points will be followed:

- On a precautionary basis, all tree-felling is to be conducted in a manner sensitive to bats, and in accordance with NRA (2005). Trees are to be felled between September and early November to reduce the potential for disturbance of roosting bats. Tree felling will be completed by Mid-November at the latest because bats roosting in trees are highly vulnerable to disturbance during their hibernation period (November – April).
- Where trees are considered to have any potential for roosting bats, the appointed ecologist is to oversee felling in the event that bats are discovered. In this case, the procedure for dealing with any bats found will be as for general construction works, as discussed above. As a precaution, once felled, trees will be left intact on-site for a minimum 24 hours prior to disposal to allow any bats which may be present to leave. Any accumulations of ivy growing on trees are to be carefully removed in the autumn months under the supervision of the bat specialist/suitably qualified ecologist and left on the ground for 24 hours to allow any residing bats to exit safely.

Site Lighting

The following measures will be applied in relation to site lighting:

- Appropriate lighting will be employed during the construction phase to minimise impacts on local bat populations. Construction lighting will be targeted to minimise/avoid light spill to enable the retention of dark-corridor connectivity within the landscape for commuting bats.
- Any external lighting for the proposed development should conform to the following guidelines and be strictly implemented during the construction phase of the proposed development:
  - Bat Conservation Trust (2018). Guidance Note 08/18. Bats and Artificial Lighting in the UK - Bats and the Built Environment Series.
  - Bats & Lighting. Guidance Notes for: Planners, engineers, architects and developers (BCI, 2010).

Luminaire design is extremely important to achieve an appropriate lighting regime. Luminaires come in a myriad of different styles, applications and specifications which a lighting professional can help to select. The BCT Lighting Guidelines (BCT, 2023) are to be followed with regard to the selection and use of luminaires. All temporary lighting used throughout the Site, other than any lighting required for Health and Safety (H&S), will be switched off after construction hours as a means of reducing light pollution/ensuring that there is no unnecessary residual lighting during hours of darkness. Any external security lighting will be set on motion-sensors and short (1 min) timers. The H&S lighting will be cowled towards the centre of compound areas. Light spillage onto retained perimeter hedgerows/treelines is to be avoided. Lighting will be reviewed and audited for implementation throughout the construction period by the appointed Ecologist.

Landscaping for Bats

- The Landscaping proposal for the Proposed Development includes targeted planting for bats within the Site. This comprises planting in the immediate vicinity of the cottage (native trees and shrubs) which will extend north-eastwards along the main internal access road to connect with the existing treeline.

- This planting will replace improved and semi-improved grassland, providing enhanced foraging habitat within the vicinity of the alternative roost-site (cottage), will provide enhanced shelter to the structure from coastal winds, and will help to attenuate artificial light and visual/noise disturbance. This proposed planting will form a strong, continuous, vegetated corridor between the cottage and the existing treeline, along which bats can commute and forage and improve connectivity between the roost and higher-value foraging/commuting habitats both on and off-site.
- Furthermore, the Landscaping proposal for the Site has incorporated 'bat-friendly' and 'pollinator-friendly' planting schemes throughout, with a strong focus on native species, where considered suitable for exposed, coastal locations, as native species support higher insect life for bats and other fauna. For example, the proposed planting schedule includes native and/or pollinator-friendly species such as holly (Ilex aquifolium), hawthorn (Crataegus monogyna), rowan (Sorbus aucuparia), Scots pine (Pinus sylvestris), willow (Salix cinerea), broom (Cytisus scoparius), blackthorn (Prunus spinosa), sea holly (Eryngium spp.), hemp agrimony (Eupatorium cannabinum), heather (Calluna vulgaris), hebe (Hebe spp.), lavender (Lavendula angustifolia) and purple top (Verbena bonariensis), all of which are listed by Bat Conservation Ireland or the Bat Conservation Trust as being flora species of value to bats .

Responsibility

Periodic routine inspections of construction activity will be carried out by an Environmental Manager to be employed by the main contractor to ensure all controls to prevent environmental impact are in place. Only suitably trained staff will undertake environmental inspection at the site.

A suitably qualified and experienced Project Ecologist/Ecological Clerk of Works (ECoW) will be employed during the construction phase of the project. Duties will include the review of all method statements, delivery of toolbox talks, undertaking of all required pre-construction surveys for protected species and monitoring of works throughout the construction phase to ensure that works are taking place in compliance with the CEMP and that the requirements of the Conditions of Planning and all environmental controls and EIAR mitigation is implemented in full. As part of toolbox talks, contractor staff and other site personnel, as relevant, will be made aware of the procedure to follow if a protected species or their resting or breeding site is encountered.

The appointed ECoW will be awarded a level of authority and will be allowed to stop construction activity if there is potential for adverse environmental effects other than those predicted and mitigated for in the EIAR. The appointed ECoW will have demonstrated professional experience in managing large-scale construction works affecting ecological receptors identified within the EIAR.

Details of Ecological Management to be finalised by Appointed Contractors.

References

- CIRIA C692: Environmental Good Practice on Site, (Audus et al., 2010)
- CIRIA C532: Control of Water Pollution from Construction Sites, Guidance for Consultants and Contractors (Masters-Williams et al., 2001
- CIRIA C753 – The SUDS Manual; CIRIA C698 – Site handbook for the construction of SUDS, and
- Bat Conservation Trust (2023). Guidance Note 08/23. Bats and Artificial Lighting at Night.

EMP 6: Invasive Species Management Plan

During MWP multidisciplinary ecological field surveys of the study area, three high-impact invasive plant species listed under the Third Schedule of the European Communities Regulations 2011 (S.I. 477 of 2015) were recorded on-site; Japanese knotweed, giant rhubarb and rhododendron (*Rhododendron ponticum*) and one low impact invasive species, Montbretia (Crocosmia x crocosmiiflora) was recorded.

Monitoring

Invasive species will be monitored, and where required, managed throughout the project span, in accordance with the construction-stage IAPS management plan.

- The extents of IAPS infestations on-site are extremely limited and localised. A pre-construction survey for IAPS is to take place in advance of the commencement of site works to inspect existing stands of IAPS for new growth and identify any new stands which may have emerged in the intervening period.
- A construction-stage IAPS management plan will be prepared and will incorporate the following management measures. The construction stage management plan should set out clear processes for the eradication, control and containment of each IAPS on-site and is to include a detailed implementation and treatment schedule (including initial and follow-up treatments) in light of the construction schedule and the prevailing IAPS conditions on-site at the time.
- Where any IAPS is identified within/adjacent to the works footprint, fencing and/or advisory signage is to be erected around stands (minimum 7 m buffer in the case of Japanese knotweed).
- No non-essential ground maintenance or any other ground disturbance should take place within IAPS fenced areas. Where works are required within/adjacent to infested areas, the appointed contractor is to develop and implement an appropriate method statement with regard to managing IAPS on-site and ensuring bio-security compliance. This should be done in consultation with a suitably qualified specialist. Under no circumstances is any IAPS plant or rhizome material to be cut, dug out or in any other way disturbed without the advice of a suitably qualified specialist.
- Where application of herbicides is required to treat IAPS on-site, the proximity of ecological receptors is to be taken into account. Herbicide use is to be minimised as much as possible and targeted to the specific IAPS. Where use of herbicides is required, non-residual, aquatic approved herbicides are to be used. Herbicides are not to be used in windy or foggy weather, during or preceding rainfall or where rainfall is forecast within 12 hours or during particularly cold weather to reduce risk of spray drift, run-off or poor plant uptake. Herbicides are to be applied strictly in accordance with the manufacturer's recommendations and by competent, experienced and licenced personnel registered as a Professional Pesticides User.
- Monitoring of control measures should be undertaken approximately six to eight weeks after treatment to determine success of measures used.
- Large areas of disturbed/bare soil should be mulched, where appropriate, and seeded/planted at the earliest opportunity with native species to stabilise the soil and deter any subsequent reinvasion. Planting should be carried out with regard to '*Horticulture Code of Good Practice: To prevent the introduction and spread of invasive non-native species* (Kelly, 2012).

- Where off-site removal of IAPS material or infested soil is required, then the relevant NPWS licence will be required to be procured in advance of removal of IAPS material off-site and in accordance with the European Communities (Birds and Natural Habitats) Regulations 2011 (SI 477). Off-site removal of such material will be undertaken in accordance with licence conditions.
- All management and control measures implemented on-site during the construction phase are to be carried out in accordance with best practice guidance as set out in '*The Management of Invasive Alien Plant Species on National Roads (GE-ENV-01104)*' TII (2020), '*The Management of Noxious Weeds and Non-native Invasive Species on National Roads*' NRA (2010), '*Best Practice Management Guidelines Rhododendron Rhododendron ponticum and Cherry Laurel Prunus laurocerasus'* Maguire, *et al*., (2008), '*Best Practice Management Guidelines Japanese Knotweed Fallopia japonica*' Kelly, *et al*., (2015) and '*Managing Japanese Knotweed on Development Sites: the Knotweed Code of Practice*' UK Environment Agency (2006).

Biosecurity

The following measures are recommended in relation to Site bio-security and reducing the risk of introduction or spread of invasive species within the area.

- Prior to being brought to Site, validation should be provided by all suppliers that construction plant, machinery and vehicles are free from invasive species. Similarly, certification is to be obtained from suppliers that all raw materials to be imported to Site including soil, fill, sand, gravel and landscaping materials are free from invasive species.
- All vehicles, machinery and equipment/tools are to arrive to site clean and steam washed. Visual inspections are to take place. All Personal Protective Equipment (PPE) brought to site is to be clean and dry with any attached vegetation or debris removed.
- A schedule of regular site inspections for invasive species is to be prepared and undertaken for the duration of the construction works. These inspections are to encompass the IAPS growing season for the duration of the construction works programme to monitor existing IAPS growth, identify any new IAPS stands, inspect materials storage areas and monitor implementation of IAPS management measures on-site, where required e.g., fencing, signage etc.
- Where there is a requirement for IAPS control areas, all vehicles, equipment/tools, footwear etc used in these areas will be thoroughly cleaned in a designated area once works in that area are complete to prevent spread of IAPS. The use of tracked machinery within IAPS infested areas is to be prohibited. The use of tracked machinery within close proximity of IAPS infested areas is to be strictly controlled. This should be undertaken with direction from the ECoW.

EMP 7: Construction And Demolition Waste Management Plan

Purpose

The purpose of the plan is to describe measures for the management of all wastes associated with the construction works.

Procedure

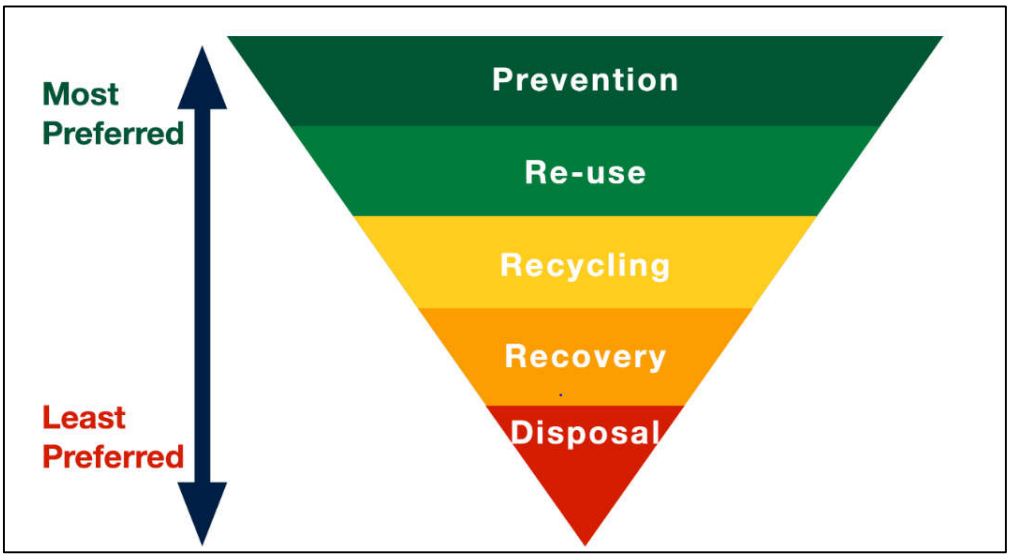
The appointed contractor(s) will be required to develop a Construction Waste Management Plan (CWMP) which will form part of the overall live Construction Environmental Management Plan. The waste management goal for the construction phase of the project is to manage all waste in accordance with the relevant statutory provisions and the waste hierarchy.

The CWMP will form part of the CEMP:

- Regard should be had to the Best Practice Guidelines on the Preparation of Waste Management Plans for Construction and Demolition Projects (DoEHLG, July 2006) in preparing and maintaining this plan.
- National waste management policy is governed primarily by the requirements of European law, particularly the Directive 2008/98 on Waste, also known as the Waste Framework Directive. The Directive was responsible for implementing the Waste Hierarchy as show in Figure below.
- The adoption of the CWMP (appointed contractor(s)) and OWMP (facility management team) will abide by the waste hierarchy and will be developed in accordance with Kerry County Development Plan as well as the local and national waste management policies.

The Construction Phase Waste Management Plan should address the following aspects of the Project:

- Analysis of the waste arising/material surpluses.
  - Specific waste management objectives for the project.
  - Methods proposed for prevention, reuse and recycling of wastes.
  - Material handling procedures.



Any material deemed unsuitable for re-use in the works will be transported off site in trucks and disposed of under license from Kerry County Council. This will prevent any contaminated run-off to drains adjacent to access road during heavy rainfall.

As part of the record keeping procedures, the Environmental Manager will keep records provided by waste contractors of all waste being removed from site. The Environmental Manager will record waste removed from site on a quarterly basis. This information will be recorded in a standard format.

Waste to be generated during construction:

During the construction phase, the following waste will be generated:

Excavated Soils, Subsoil:

Material arising from site clearance and excavation works will be stored separately according to material identification:

Stockpile 1 – Excavated top-soils.
Stockpile 2 – Excavated sub-soils suitable for reuse on-site.
Stockpile 3 – Excavated materials to be removed off-site.

A dedicated trained banksman will supervise the operation paying particular attention to the condition of materials and making sure that different materials are separated accordingly to their deposition points.

Temporary stockpiles of sub-soils will be located in an area away from drainage ditches and will be bunded on the downgradient edges with a silt curtain or other suitable materials to reduce risk of silt run-off. Surplus topsoil or excavated material unsuitable for reuse in the reinstatement of the temporary construction features and landscaping will to be transported to an approved licences waste facility capable of accepting the material

Domestic Waste-Water Effluent:

Wastewater from construction welfare facilities on site will drain to integrated wastewater holding tanks associated with the toilet units. The stored effluent will then be collected when required from site by a permitted waste contractor and removed to an appropriately authorised waste facility for treatment and disposal.

General Waste

- Access to materials will be controlled. A dedicated storage area will be provided in the site compound for building materials such as cables, geotextile matting, blocks, tools and equipment, fence posts and wire, booms, pipes etc.
- This waste will be stored in the temporary construction compound and collected throughout the construction phase and taken off site to be reused, recycled and disposed of in accordance with best practice procedures at an approved facility.
- Access to stored materials will be restricted; the site compound will be securely fenced from the outset and will be locked when there are no site personnel present.
- Plastic waste will be taken for recycling by an approved contractor and disposed or recycled at an approved facility; and
- Waste oil and waste oil drums will be collected and stored in containers and on a bunded tray within the storage container.

- Domestic type waste generated by contractors will be collected on site, stored in an enclosed skip at the temporary construction compounds and taken off site to be reused, recycled and disposed of in accordance with best practice procedures at an approved facility.

Construction Compound

Construction compound(s)/waste storage area(s) will be created for storage of waste materials, plant, and equipment and for site offices, and welfare facilities. Wastes Generation Best practice procedures in general will minimise waste generated on-site. Measures including good site management will be taken to limit the quantity of waste generated during construction phase. Waste such as excavated material on-site will be recycled where possible. Waste streams will include wastes generated by plant, machinery and construction workers over the period of the works, for example waste oils, sewage, refuse (paper, carton, plastic etc), wooden pallets, waste batteries, fluorescent tubes etc.

Soils and Spoil

Any materials excavated on site in the course of the construction works (i.e. soil/peat stripping for track construction, foundations/hardstanding areas) will be stored on site and re-used on site. As such, off-site disposal of this material is not expected. Excavated materials from all construction activities will be temporarily stockpiled at hardstand locations during construction and subsequently reused on site for backfill/re-grading or re-vegetation.

Hazardous and Other Waste

The following Table lists some of the waste types that may be generated during the construction works. Although some waste types may be generated in locations other than the construction compound (for example if absorbent filters are required at foundation/track locations etc., such waste materials will be stored within the construction compound only). Waste materials generated outside the construction compound will be taken to the compound on a daily basis.

Common Construction Wastes					
Concrete	Wood	Cables	Metallic packaging/tins	Cardboard Packaging	Food Waste
Paper packaging	Plastic packaging	Wooden packaging	Office paper	Non-hazardous detergent	Plastic containers
Plastic bottles	Mixed waste	Septic tank sludge	Non-hazardous waste electrical(s)		

EWC Code and Waste Type/Stream	
13 02 08*: Waste oils	17 04 11: Cables
17 04 07: Mixed Metal	17 05 03*: Soil and stones containing hazardous substances
17 01 01: Concrete	17 05 04: Soil and stones
17 02 01: Wood	17 09 04: Mixed construction and demolition wastes other than those mentioned in 17 09 01, 17 09 02 and 17 09 03

EWC Code and Waste Type/Stream	
17 02 03: Plastic	20 01 01: Paper and cardboard
17 03 02: Bituminous mixtures other than those mentioned in 17 03 01	20 03 01: Domestic waste
20 03 04: Domestic Wastewater	

If hazardous waste is encountered (ie. asbestos), then appropriate handling, storage, transportation, and disposal will be carried out. Prior to being removed from the site, the waste will undergo a comprehensive waste assessment and classification by suitably trained/qualified person(s), in accordance with the European Waste Catalogue hazardous waste list. At the site, every effort will be made to segregate waste, and properly segregate hazardous waste from non-hazardous and inert waste arising. Hazard wastes will be identified, removed and kept separate from other wastes in order to avoid cross contamination. Specific method statement detailing the necessary mitigation measures during the excavation/handling, transportation, and disposal of hazardous materials encountered at the site will be prepared as required.

During the construction phase, if asbestos is found in the demolition waste, an asbestos survey will be needed before construction works begin and if found, a suitably qualified specialist will be contracted to remove it safely.

Oils, paints, adhesives and chemicals will be kept in a separate contained secured storage area. Lids will be kept on containers to avoid spillage/evaporation. Waste oils, adhesives etc will handle, and disposed of appropriately. Every effort will be made at the site for no long-term storage of hazardous materials/fuels/oils/chemicals, etc. There shall be no long-term storage of waste oils etc. at the site.

Concrete

Concrete waste may potentially occur. There shall be no washout of trucks at site. Excess concrete will be returned to the supplier for reuse. To reduce the volume of cementitious water.

Metals

It is now common practice to segregate metals for reuse and recycling, however there are still sites where waste metal is thrown away in the general rubbish.

Timber

Timber waste will be stored separately. Any pallets will be returned to the supplier for reuse. Offcuts/trimmings will be used in formwork where at all possible. A container for waste wood, covered where possible will be located at compound/other storage areas. This waste will be collected by the waste contractor and will forward it for wood recycling.

Blocks, Bricks, and Tiles

The careful storage of these materials will significantly reduce the volumes of wastes occurring at the site. Every effort will be made to use broken blocks/off-cuts. Final quantities of these wastes generated will be stockpiled (possibly crushed/screened) and reused at the site as subbase materials for road/other suitable hardstanding locations.

Packaging/Plastic

Double handling will be avoided by segregating packaging wastes immediately after un-wrapping. Waste packaging will be segregated and in separate containers, at storage area for collection by the waste contractor for disposal to a licensed facility.

Other waste

Other wastes which may be generated may include residual non-recyclable waste such as paper, cloth, some cardboards, or plastics. These types of materials will be stored in a dedicated container at the site compound. All residual wastes will be dispatched to suitably licensed facility for disposal. Other construction and demolition waste will be collected and disposed of appropriately.

Responsibility

The Environmental Manager will be responsible for adherence to correct waste management procedures. They will also identify a waste contractor to remove waste that can be recycled or re-used.

The Environmental Manager will keep records provided by waste contractors of all waste being removed from site. The Environmental Manager will record waste removed from site regularly. This information will be recorded in a standard format. It will be the construction manager's responsibility to organise the removal of skips from their area when they are full.

The Environmental Engineer will inspect waste segregation and temporary soil/rock storage stockpiles during his regular site visits.

References

Best Practice Guidelines on the Preparation of Waste Management Plans for Construction and Demolition Projects (DoEHLG, July 2006).

Details of Site Waste Management to be finalised by Appointed Contractors.

EMP 8: Construction Traffic Management Plan

Purpose

To describe measures for the management of construction traffic, including construction personnel traffic and oversized loads, for the minimisation of disturbance and nuisance to the local community.

Procedure

Traffic Management Plan

- A detailed Traffic Management Plan (TMP) will be prepared and submitted to the Kerry County Council for approval prior to the commencement of construction by the appointed contractor.
- The plan will include the proposed haul routes, vehicle types, anticipated traffic numbers etc, for the construction stage of the development.
- The plan will include provision for:
  - Communicating with the community, the Gardaí, and the Local Authority.
  - Details of site access and any site traffic rules, including security, parking, loading, and unloading, required speed or other relevant details.
  - Programme of maintenance and upkeep of public roads.
  - Site operating hours (including delivery) to be outlined.
- The contractor will adopt the following principles in planning, developing, and implementing traffic management proposals:
  - Maximize the safety of the workforce and the travelling public.
  - Keep traffic flowing as freely as possible and reduce the impact of the road works to a minimum.
- The contractor will plan and manage the construction works to ensure as far as is reasonably practicable that:
  - Works within the site and road network do not result in a safety hazard to road users or the workforce involved in the contract.
  - Any resulting increase in traffic delays and congestion is minimized.

The proposed construction phases are designed to ensure that after phase 1, no construction works will coincide with the July and August summer tourist season, which is the peak traffic season locally, when the proposed development is operational.

Traffic Management Measures

At a minimum the following measures outlined below will be implemented to minimise the impacts of construction phase traffic associated with the project.

- The appointed contractor will survey the area for any unforeseen hazards prior to the commencement of works and set up warning signage as appropriate.
- Ensure a strict protocol for Heavy Good Vehicle (HGV) drivers to follow the designated haulage route, and timing restrictions as detailed.

- Advanced warning should be given to the residents and road users for specific times when large volumes of HGV traffic and vehicles delivering mobile homes may occur and when the proposed road works to the Reenroe beach access road are to be undertaken.
- Signage relating to the proposed construction traffic will be installed at the entrance to the development site.
- A maximum speed limit would be imposed for HGVs on the local road network during the construction phase.
- A well planned and executed delivery programme avoiding peak traffic on typical days would be ensured.
- In order to minimise traffic congestion during peak traffic hours, the majority of staff will either arrive on-site before or after the peak morning traffic and finish work before or after the evening peak traffic hours.
- The condition of the public road will be monitored on an on-going basis and a road sweeping vehicle would be provided as required to remove any mud that is deposited on the road network on the approach to the site.
- Enforcement of existing regulatory markings and signage would be ensured.
- All construction parking and compounds will be provided within the site confines. Construction wheel wash facilities will be provided on-site. A specialist road washing and cleaning vehicle will be used regularly each day to maintain public roads, as appropriate. All necessary construction signage and other measures required by Kerry County Council will be provided, including construction traffic warning signage along the R567.
- When the construction contractor is appointed, an updated Construction Traffic Management Plan will be submitted to Kerry County Council, for approval, prior to the commencement of construction.

Road Safety Protocol

A road safety and courtesy protocol will be in place for all road users for the duration of construction. All companies delivering to site would have to sign up to this protocol as part of their supply contract. Courtesy for other road users is fundamental to the protocol. HGV traffic would give way to oncoming traffic where possible. Vehicles would always slow down or stop, as appropriate, for pedestrians and cyclists along the proposed haulage routes. Passing bays will be provided to ensure intervisibility between traffic coming from opposing directions.

Road Network Maintenance

The road condition will be inspected daily by site management to ensure that the access route road is maintained in a safe and passable condition. When necessary, potholes and ruts will be filled in and the road cleaned of any mud and rubble. Following completion of construction, the condition of the public access route road will be of at least the same standard as it was prior to commencement of construction.

Signage

Signage will be manufactured using retro-reflective material to Class Ref 2 of EN 12899. The colours, chromaticity and luminance factors will be as specified in Specification TS4 published by the Department of the Environment, Heritage, and Local Government. Specification TS4 consists of guidelines produced by the DoEHLG, Dublin.

Signage will be inspected at regular intervals by the contractor to check that it is in place, secure, unobstructed (by vegetation etc.) and cleaned when required. Warning lights will be appropriately fitted as required. Where signs could be obscured by bends, hills, or dips in the road, additional warning signs will be put in place. If traffic

management controls involving traffic lights are being implemented, a contact person will be available in the event of traffic light failure outside of normal working hours.

Staff Training

The contractor will provide training to operatives in the traffic control systems being used on site. The works will be designed and maintained by a trained operative holding a current Signing Lighting and Guarding CSCS card.

The importance of traffic management, the safety of motorists, pedestrians and site staff will be emphasised to all construction staff. All personnel will be informed of the Traffic Management Plan during their induction when they first arrive on site. Toolbox talks will also be given so that all personnel are aware of traffic management controls being implemented as the work progresses. On-site turning bays, speed limit signage, directional signage to the sub-station, site compound, delivery routes, exit routes, stores, offices, canteen, and the requirement for reverse parking, will be erected as required.

The appointed contractor will also ensure that on site personnel will be aware of environmental constraints / sensitive areas in which works are to be avoided.

Responsibility

Management of traffic on site during construction will be done by:

- Project Manager;
- Construction Manager;
- Construction personnel;
- Sub-contractors as appropriate; and
- Delivery personnel

Details of Traffic Management Plan to be finalised by Appointed Contractor

EMP 9: Archaeology Management Plan

Purpose

The purpose of this plan is it to describe measures for the management and protection of any archaeological features.

Procedure

The following mitigation measures will be undertaken in advance of and during the construction phase subject to the grant of planning permission:

Pre-construction archaeological testing under licence from the NMS should be undertaken on the footprint of the Proposed Development site within the greenfield limits of the proposed development.

If features / artefacts of archaeological significance are identified, further mitigation will be required following consultation with the Kerry County County Archaeologist and the NMS.

A report on the results of the licensed testing will be required to be submitted to NMS and the relevant authorities on completion of the project.

Construction Area

- It is recommended that a programme of archaeological testing is implemented for groundworks associated with the development.
- Archaeological monitoring of all groundworks associated with topsoil / peat stripping should be undertaken to recover any potential artefacts.
- If any features of archaeological potential are discovered during the course of the works the Department of Culture, Heritage and the Gaeltacht will be informed immediately.
- All works associated with the removal of the two internal sections of the Reenroe – Emlaghmore West townland boundary should be archaeologically monitored. The two impacted sections of the townland boundary shall be archaeologically recorded. All recommendations are subject to approval by the National Monument Service of the Department of Housing Local Government and Heritage and Kerry County Council.

Responsibility

Environmental Manager
Construction Manager
Project Archaeologist

Details of any management and protection of archaeological and cultural heritage on the site to be finalised by Appointed Contractor

EMP 10: Construction Noise Management Plan

Purpose

The construction phase of the Project has the potential to increase noise levels surrounding the proposed site. Potential noise impacts from the construction phase will depend on the number and type of equipment employed during the works. The purpose of this plan is to describe measures for the management of impacts from construction noise.

Procedure

Control of Noise at Source

- Plant will be properly and regularly maintained.
- Compressors, if needed, will be 'sound related' models fitted with properly lined and sealed acoustic covers which will be kept closed whenever machines are in use.
- All vehicles and mechanical plant will be fitted with effective exhaust silencers.

Construction Phase

- Best practice in the form of BS5228 –1&2:2009 + A1 2014, Code of Practice for the Control of Noise and Vibration on Construction and Open Sites will be adopted during the construction phase in order to minimise the noise generated by construction activities and nuisance to neighbours.
- All plant and equipment for use will comply with the Construction Plant and Equipment Permissible Noise Levels Regulations 1996 (SI 359/1996) and other relevant legislation.
- If construction limits are found to be exceeded, noise screens will be utilised around proposed site and machinery such as generators etc.
- All compressors and generators will be "sound reduced" or "super silent" models fitted with properly lined and sealed acoustic covers, which will be kept closed whenever the machines are in use, and all ancillary pneumatic percussive tools will be fitted with mufflers or silencers of the type recommended by the manufacturers.
- Site activities shall be staggered when working in proximity to any receptor. This proposed method of working will provide effective noise management of site activities to ensure that any receptor is not exposed to unacceptably high levels of noise over extended periods.
- A nominated person from the appointed contractor will be appointed to liaise with local residents and businesses regarding noise nuisance events.

Responsibility

- The Construction Manager will be familiar with the neighbouring noise sensitive receptors and alert the Environmental Manager in good time prior to work commencing in the areas closest to any noise sensitive receptors.
- The Environmental Manager will review any relevant planning conditions in updating this plan.

References

- BS5228 –1&2:2009, Code of Practice for the Control of Noise and Vibration on Construction and Open Sites
- IOA GPG Supplementary Guidance Note 5: Post Completion Measurements (July 2014).

Details of management of noise on the site to be finalised by Appointed Contractor

EMP 11: Construction Dust Management Plan

Purpose

The purpose of this plan is to describe the measures for the management of nuisance impacts on air quality from construction generated dust.

Procedure

A dust minimisation plan will be formulated for the construction phase of the project as construction activities are likely to generate some dust emissions. The potential for dust to be emitted depends on the type of construction 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.

Construction phase generated dust can be minimised by the following measures:

- The use of water as a dust suppressant, e.g. a water bowser to spray access road and compound hardcore areas during any extended dry periods when fugitive dust emissions could potentially arise;
- Public roads will be inspected regularly for cleanliness and cleaned as necessary;
- All loads entering and leaving the site will be covered during dry periods if dust becomes a nuisance on site;
- Control of vehicle speeds passing over access road within the site;
- Where necessary, site stockpiling of materials will be designed and laid out to minimise exposure to wind;
- Regular site inspections should take place to examine dust measures and their effectiveness.

Construction Traffic Emissions

Construction traffic emissions can be reduced using the following measures:

- Ensure regular maintenance of plant and equipment. Carry out periodic technical inspection of vehicles to ensure they perform most efficiently;
- Implementation of the Traffic Management Plan to minimise congestion; and
- All site vehicles and machinery to be switched off when not in use - no idling.

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

- Site road will be regularly cleaned and maintained as appropriate.
- Furthermore, any road that has the potential to give rise to fugitive dust will be regularly watered, as appropriate, during dry and/or windy conditions.
- Speeds will be restricted on roads as site management dictates.
- Public roads in the vicinity of the site will be regularly inspected for cleanliness and cleaned, as necessary.
- A temporary vehicle wheel wash facility will be installed in proximity to the site entrance.

Site roads and routes

Movement of transportation trucks and plant trucks along haul roads (in particular unpaved roads) can be a significant source of fugitive dust if control measures are not in place. The most effective means of supressing

dust emissions from unpaved roads to apply speed restrictions. Studies show that these measures can have a control efficiency ranging from 25 to 80% (UK Office of Deputy Prime Minister, 2002).

- Bowsers or suitable watering equipment will be available during periods of dry weather through the construction period. Research has found that watering can reduce dust emissions by 50% (USEPA, 1997). Watering shall be conducted during sustained periods to ensure that unpaved areas are kept moist. The required application rate frequency will vary according to soil type, weather conditions and vehicular use; and
- Any hard surface roads will be swept to remove mud and aggregate materials from their surface.

The dust minimisation plan will 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 practice and procedures.

Monitoring

With respect to monitoring measures temporary dust deposition monitoring will be carried out at the facility during construction phase of the project in order to ensure the boundary levels of deposition and nuisance dust are within recommended limit which are typically less than 350mg/m2/day.

Responsibility

The Environmental Manager is responsible for developing and reviewing the site Dust Minimisation Plan.

The Construction Manager is responsible for organising dust suppression through use of bowsers and cleaners.

References

- 'Control of Dust from Construction and Demolition Activities', UK British Research Establishment (BRE).
- 'Environmental Good Practice on Site', Construction Industry Research and Information Association (CIRA).
- 'Environmental Management Plans', Institute of Environmental Management and Assessment (IEMA).
- 'Guidelines for the Creation, Implementation and Maintenance of an Environmental Operating Plan' National Roads Authority of Ireland (NRA).

Details of Dust Management Plan to be finalised by Appointed Contractor

EMP 12: Emergency Response Plan

Purpose

To describe measures for the prevention of an environmental accident or incident and the response required to minimise the impact of such an event during the construction works.

Procedure

In the event of an environmental emergency, all personnel will react quickly and adhere to this procedure.

All site personnel will be inducted in the provisions of the Emergency Response Plan.

The following outlines some of the information, on the types of emergency, which must be communicated to site staff;

- Release of hazardous substance - Fuel or oil spill
- Concrete spill or release of concrete
- Flood event – extreme rainfall and high tide/wave events
- Strong wind/storm events
- Environmental buffers and exclusion zones breach
- Housekeeping of materials and waste storage areas breach
- Stop works order due to environmental issue or concern (threat to archaeological or ecological feature)
- Fire on site (cross-reference site Safety Emergency Plan as appropriate)

If any of the above situations occur; the Emergency Response Plan is activated. The Environmental Manager will most likely be responsible for overseeing the Emergency Response Plan (to be confirmed upon appointment of Contractor) and will be prepared and ready to implement the plan at all times. The Environmental Manager will be immediately informed and report to the scene. He/she must be aware of the;

- Nature of the situation – brief description of what has happened.
- Location of the incident.
- Whether any spill has been released.
- Whether the situation is under control.

The Emergency Response Plan must be completed by the appointed Contractor.

Oil Spillages

The following list outlines issues likely to be appropriate for inclusion in such a plan:

- Site staff will report the spillage immediately to the Environmental Manager or Construction Manager.
- Where relevant, the Environmental Manager will report the spillage to Inland Fisheries Ireland and Kerry County Council.

- Where possible, the source of pollution will be identified.
- Switch off all sources of ignition.
- Stop the spillage spreading.
- Use absorbent materials from the spill kit to mop up the spill (sand or absorbent materials should be used rather than detergents).
- Place boom across watercourse or in nearby downstream existing drains as a precaution.
- Do not wash spillage into drainage system. Washing will only make the situation worse and extend the pollution to other water bodies/drainage systems.
- If the spill has already reached drains, block the inlet of the dirty water cross pipes in the nearby drainage outflow points on the roadside drains with oil absorbent booms, which will prevent oils flowing into the existing drains.
- Shovel contaminated sand/earth/absorbent granules into sacks or skips.
- A specialist oil removal company should remove pooled oil.

Concrete Spillages

The following list outlines issues likely to be appropriate for inclusion in such a plan:

- Site staff will report the concrete spillage immediately to the Environmental Manager or Construction Manager.
- Where relevant, the Environmental Manager will report the spillage to Inland Fisheries Ireland and Kerry County Council.
- If there is a risk of concrete spreading into the drainage system, the inlet of the dirty water cross pipes in the nearby drainage outflow points on the roadside drains will be blocked using the absorbent booms, which will prevent concrete flowing into the existing drains.
- Do not wash spillage into drainage system. Washing will only make the situation worse and extend the pollution to other water bodies/drainage systems.
- If the spill has already reached drains, acid may be added to the drains by the Environmental Manager to neutralise the alkalinity of the concrete.
- Shovel contaminated concrete granules into sacks or skips for treatment in the Roadside Concrete Wash unit.

Contacts

As an Environmental Control Measure, the Environmental Manager will append the relevant contact details to the Emergency Response Plan document. Examples of such contact details include:

- Environmental Manager.
- Specialist oil removal Company.
- Kerry County Council.
- Inland Fisheries Ireland.
- National Parks and Wildlife Service.

Location of Emergency Spill Kits

- A map indicating the location of all emergency spill kits will be attached to the Emergency Response Plan document.
- Emergency oil spill kits will also be carried in all site vehicles and machinery and in the site office.

Responsibility

- The appointed Contractor/Environmental Manager will prepare and finalise an Emergency Response Plan to be ready to respond to any incident.
- All site personnel will report any spillages of oil or chemicals to the Environmental Manager and Construction Manager immediately.
- As appropriate, the Environmental Manager will report the spillage to the Regional Fisheries Board, local authority and any other relevant authority.

Details of Emergency Response Plans to be finalised by Appointed Contractor

EMP 13: Site Environmental Training and Awareness

Purpose

To describe measures for the training of all site personnel in the protection of the environment and the relevant controls.

Procedure

Site signage will be provided at the entrance to the site to inform the public that access to the site is restricted to those directly involved in the construction works.

An initial site environmental induction and ongoing training will be provided to communicate the main provisions of the CEMP to all site personnel. Two-way communication will be encouraged to promote a culture of environmental protection.

The following outlines some of the information which will be communicated to site staff;

- Environmental procedures of the CEMP.
- Environmental buffers and exclusion zones.
- Housekeeping of materials and waste storage areas.
- Environmental Emergency Response Plan.

Housekeeping and Storage of hazardous materials

- Hazardous materials marked with the following symbols will only be stored in the secure storage container in the site compound.

- Subcontractors will provide a copy of the Material Safety Data Sheets for all hazardous substances brought on site.

All finalised CEMP policies will be adhered to, in the management of fuels and oils, concrete, and installation of sediment and erosion controls and drainage features. All finalised details will be communicated with site personnel. Environmental Training including spill kit training, installation of silt fence training is to be provided by the Appointed Contractor. Environmental training records will be retained in the site office.

Responsibility

- Environmental manager
- Construction manager
- All site personnel

Details of Induction and Training to be finalised by Appointed Contractor.

EMP 14: Monitoring and Auditing Procedure

Purpose

To describe measures for environmental monitoring during the construction works and audit of control measures to ensure environmental protection.

Procedure

All mitigation measures, any planning conditions and relevant construction methods will be monitored on site. The Appointed Contractor will nominate an Environmental Manager for the works. The Environmental Manager will provide Audit Checklists to ensure regular checks of the site's control measures for the ongoing protection of the environment.

At a minimum monitoring will be carried out to ensure adherence with the following.

EMP-1	Management of Excavations
EMP-2	Surface Water Run-off Control
EMP -3	SuDS Management and Maintenance Plan
EMP-4	Fuels and Oils Management
EMP-5	Concrete Management Plan
EMP-6	Protection of Habitats and Fauna (Ecological Management)
EMP-7	Construction Waste Management
EMP-8	Construction Traffic Management
EMP-9	Management of Archaeology
EMP-10	Construction Noise Management
EMP-11	Dust Management

Checklists for daily, weekly or monthly site audits will be finalised by the Environmental Manager and the relevant personnel informed of their duties. Checklists will include (but are not limited to) confirmation that fuel is stored appropriately, waste management rules are adhered to, all environmental buffers are maintained, sediment and erosion control measures of the Surface Water Management Plan are in place and functioning. Checklists will be finalised with the Final Contractor's CEMP.

All environmental records, including completed checklists, will be retained at the site office.

Responsibility

- Project Manager
- Environmental Manager
- Construction Manager
- Project Ecologist
- Project Archaeologist

Details of Monitoring Procedure and Checklists to be finalised by Appointed Contractor's Environmental Manager

EMP 15: Environmental Accidents, Incidents, and Corrective Actions

Purpose

To describe measures for the recording, investigating and close-out of any environmental accidents or incidents on the site

Procedure

- The Environmental Manager or Construction Manager will be contacted as soon as possible where there is any incident that carries the possibility of negative environmental consequences (e.g. minor oil leakage or blockage of drainage pipe).
- The Emergency Response Plan and standard emergency procedures will be applied to get the incident under control and prevent injury or loss of life in the first instance.
- Work in the area will be halted and the Environmental Manager will be called to the scene to assess the situation and to decide on initial responses and remedial measures.
- Once the situation is under control, the environmental accident or incident will be recorded, and the cause investigated.
- Any remedial action required will be taken to mitigate any damage and prevent a reoccurrence.
- Corrective actions will be communicated to personnel and sub-contractors where relevant – particularly where it results to a change in procedure.

Example list of environmental accidents & incidents

- Accidents involving large spill of fuel or concrete from delivery truck (emergency response required).
- Spills of fuel and oil (minor).
- Waste or rubbish left around the site (not in dedicated waste areas).
- Breach of any buffers (ecological, archaeological, watercourse).
- Failure of any control measures (silt fences collapsed in a storm).
- Concrete chute wash out in a non-dedicated area.
- Unplanned vehicle movement off the access road.
- Unplanned vehicle movement within a buffer zone.

Responsibility

- Site staff will contact the Environmental Manager or Construction Manager as soon as possible where there is any incident that carries the possibility of negative environmental consequences.
- The Environmental Manager is responsible for alerting the relevant authorities.

Details of Environmental Accidents, Incidents and Corrective Actions Procedure, including a chain of responsibility, to be finalised by Appointed Contractor and communicated to all personnel and sub-contractors.

EMP 16: Environmental Complaints

Purpose

To describe measures for the recording and resolving complaints by third parties, including local residents or members of the public

Procedure

A complaints procedure will be established for the duration of the construction phase. Any complaints received regarding alleged noise or any other complaint will be investigated immediately. Details of the complainant, the complaint (time of occurrence and nature of noise/vibration/other) and follow up action will be logged in the complaints record. The project manager will develop and implement an appropriate queries/complaints procedure. Records will include full details of the concerns expressed and ensure that a formal assessment is commenced of the reported concern.

The project manager will also discuss complaints with and oversee an initial response to the person who has submitted the complaint/concern confirming its receipt. The project manager will liaise with the environmental manager and an investigation to assess the issue of concern will be carried out and decisions made to see what corrective and/or preventive action, or further investigation is necessary. With overall responsibility for complaints, the project manager will respond within a reasonable timescale and maintain records of all correspondence. If significant corrective action and external stakeholder involvement is required the site manager/project manager will oversee all elements of the process.

Complaints that may be received will be logged, assessed and appropriate action taken as soon as practical. It will be critical to the success of the project that key issues are properly addressed from the outset to create a good working relationship and an integrated team approach to resolving potential issues before they arise.

Responsibility

- Project Manager
- Environmental Manager
- Construction Manager

Details of Environmental Complaints Procedure to be finalised by Appointed Contractor.