



Construction Environmental Management Plan (CEMP)

**Proposed Large Residential Development (LRD) at
Killowen, Kenmare, Co. Kerry**

KPH Construction

September 2026

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Appendix 1: Environmental Management Plans

Project No.	Doc. No.	Rev.	Date	Prepared By	Checked By	Approved By	Acceptance Code / Status
25631	25631-ZZ-ZZZ-RP-MWP-EN-6003	0	04/09/2026	AW	AOC	OH	P3

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1. Introduction

This Construction and Environmental Management Plan (CEMP) has been prepared by Malachy Walsh and Partners (MWP) to support the planning application for the proposed Large Residential Development (LRD) at Killowen, Kenmare, Co. Kerry.

This CEMP outlines construction practices and environmental management measures which shall 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 CEMP is to outline how the Contractor shall implement a Site Construction Management System to meet the specified requirements which include Contractual, Regulatory and Statutory Requirements, Environmental Mitigation Measures and Planning Conditions.

In essence, the CEMP provides the Project Contractor with a practical guide to ensure compliance by all parties with Planning and Environmental requirements.

The CEMP achieves this by providing the environmental management framework to be adhered to during the pre-commencement and construction phases of proposed residential development. 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 construction the works in an appropriate manner.

All site personnel shall be required to be familiar with the plan's requirement as related to their role on site. There shall be a requirement on the Contractor that details are updated with progress, including the roles and responsibilities of those appointed on the site for the construction of the project.

This CEMP is intended to be a live document whereby different stages will be completed and submitted as the development progresses.

2. Development Overview

The Proposed Development will be on an area of approximately 2.63ha. The Proposed Development includes the demolition of existing shed structures on-site, removal of existing concrete slab and the provision of a residential development of 100 no. residential units, landscaping and associated site development works.

The proposed development includes the following:

- Clearing of the site, including demolition of existing 2 No. small derelict metal-clad/wooden sheds and removal of the underlying concrete slab to allow for the construction of the proposed LRD.
- The construction of 100 No. residential houses comprising of:
 - 40 No. 3-Bed two storey house
 - 30 No. 1-Bed apartments
 - 30 No. 2-Bed apartments
- The construction of approximately 112 No. car parking spaces proposed throughout the site
- Ancillary infrastructure development works will include wastewater infrastructure, surface water attenuation, water utility services, public lighting, bin stores, bicycle stores, ESB substations, and all associated site development works.
- Vehicular access to the development will be via an upgraded and relocated entrance off the Pat Scarteen Road, with proposed upgrades including amendments to the existing shared pedestrian/cycle path and modifications to the signing and lining on the public road. The proposed development also provides for separate pedestrian/cycle entrances off Pat Scarteen Road and includes dedicated pedestrian and cycling paths traversing the site.

3. Site Location and Context

The proposed LRD site is located within the townland of Killowen, Kenmare, Co. Kerry, approximately 500m northeast of the Kenmare town centre. The site is within the Kenmare development boundary in the Kenmare Municipal District Local Area Plan 2024-2030 and is zoned R1 (new/proposed residential). Woodland is present along the southwest boundary. The eastern boundary of the site is defined by the local road, known as 'Pat Scarteen Road', which connects to the main Kenmare to Kilgarvan regional road (R569) to the southeast. To the north, the site adjoins the Aldi commercial premises, while Scarteen Park residential development lies to the northwest.

See **Figure 3-1** for site location and **Figure 3-2** for the proposed development layout.



Figure 3-1: Site Location



4. Construction Overview

4.1 Site Preparation

The pre-construction phase of development includes preparatory works such as:

- Prior to the commencement of construction activities, the area for development will be fenced off.
- Pre-construction environmental and ecological surveys will be undertaken.
- Clearing of the site, including demolition of existing 2 No. small derelict metal-clad/wooden sheds and removal of the underlying concrete slab to allow for the construction of the proposed LRD.

The key construction elements of the project include:

- A temporary construction compound will be established within the site boundary. This will be situated a minimum of 25m from the 'Lissaniska 21' river or surface drain.
- Implementation of temporary site construction surface water drainage system.
- Roads, car parking area, public open spaces and footpaths will be constructed.
- 100 No. residential units will be constructed.
- New planting to comprise native trees; shrubs. Refer to the Landscape Plan and Drawings accompanying the planning application for details and locations.

4.2 Temporary Construction Compound

A temporary construction compound shall be set up within the site boundary upon commencement of the construction phase. The compound shall be used as a secure storage area for construction materials and excess spoil and shall also contain temporary site units to provide welfare facilities for site personnel. The construction compound shall be located at least 25m from any watercourse and/or surface drain.

The compound shall be constructed at an early stage of the project to provide site offices, staff welfare facilities, and a designated area for the delivery and storage of materials. Any surface water management, waste management measures etc. shall also be put in place at the outset. Where required, site security measures will be installed adjacent to the site entrance at an early stage of the works and maintained for the duration of the construction period. The compound shall be in place for the duration of the construction phase and shall be removed once construction is complete.

The compound will be typically comprised of compacted layers of crushed imported stone aggregate which shall be spread and lightly compacted to provide a hard area for site offices and storage containers. Areas within the compound shall be constructed as access roads and used as vehicle hardstanding during deliveries and for parking. Parking and traffic management shall be done in a manner to minimise the traffic disturbance on the local road network insofar as practicable. The compound and site facilities shall be removed at the end of construction with surfaces finished to the permitted planning specification or to greenfield condition.

4.3 Site Access & Construction Traffic

Access for the construction phase will be via a single site entrance proposed along Pat Scarteen Road, this access point will also serve the operational phase of the development. Fundamental to the protocol is courtesy for other road users. In this, construction vehicles will always give way to oncoming residential traffic and will always slow down or stop as appropriate for pedestrians and cyclists.

Repairs will be carried out on the public road, as necessary, to ensure that the condition does not deteriorate below a standard that could affect the use of the site, as required.

Construction traffic will include:

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

A road safety and courtesy protocol will be implemented for the duration of the construction works. All companies delivering to site will have to sign up to this protocol as part of their supply contract. The protocol will consist of restricted delivery hours and enforced speed limits on public roads and within the site to minimise traffic impacts on other road users, with particular consideration given to peak school and commuter periods. Where continuous concrete pours are required, delivery hours may need to extend outside standard working times.

4.4 Construction Schedule/Project Phasing

A 5-year planning permission is being sought, and it is proposed to build the development in two phases.

It is expected that the development will commence upon receipt of development consent. It is estimated that the duration of the construction phase will be a total of approximately 24 months.

4.5 Working Hours

Working hours will be limited to 7am to 7pm Monday to Friday and 8am to 1pm on Saturdays. No work will be permitted on Sundays and Bank Holidays without prior permission from Kerry County Council (KCC). Due to the requirement for the concrete pours to be continuous, the working day may extend outside normal working hours in order to limit the traffic impact on other road users, particularly peak period school and work commuter traffic.

4.6 Construction Personnel

During the construction phase, the number of on-site construction personnel will vary over the course of the works, as specialist subcontractors and trades will be required at different stages. Peak numbers of construction staff on-site are expected to be between 30-50 employees.

4.7 Water Requirements

A water tanker shall be used to provide water to the site during construction if a temporary watermain cannot be facilitated to the site.

4.8 Wastewater

Portable toilet facilities shall be used on site during construction if a temporary wastewater connection to the adjacent foul sewer cannot be facilitated. The tanks shall be sized to suit the expected use and shall be installed in a location remote from water courses. Contents and residues shall be regularly emptied by a competent operator for safe disposal to an approved treatment works.

4.9 Method Statements

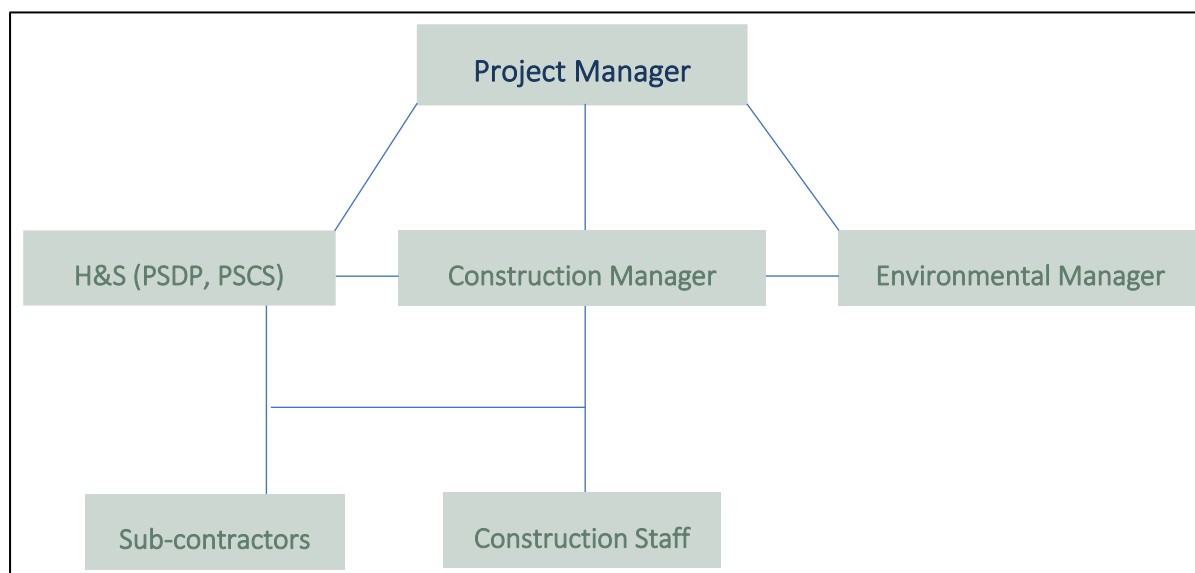
The appointed contractor will provide method statements to carry out the works which will as a minimum consider the following:

- Good practice guidelines on the control of water pollution from construction sites developed by the Construction Industry Research and Information Association (CIRIA);
- Method statement for management of surface water to prevent run-off of silt or any other pollutant from the site to watercourses;
- C532 Control of water pollution from construction sites: guidance for consultants and contractors (Masters-Williams et al, 2012);
- SP156 Control of water pollution from construction sites – guide to good practice (Murnane et al, 2002);
- Requirements for the protection of fisheries habitat during construction and development works at river sites developed by the Eastern Regional Fisheries Board (ERFB);
- Proper storage and bunding of any oils/hydrocarbons; and,
- Noise management measures.

5. Organisational Structure, Duties and Responsibilities

5.1 On-Site Organisational Structure and Responsibility

A typical organisational structure for the Contractor's Project Team is illustrated in **Figure 5-1**. This structure is defined by the contractor and includes the names of the assigned personnel with the appropriate responsibility and reporting structure reflected.



*H&S – Health and Safety

*PSDP – Project Supervisor Design Process

*PSCS – Project Supervisor Construction Stage

Figure 5-1: Typical Contractors Organisational Structure

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 – Liaising 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 work, including geotechnical aspects (Geotechnical engineer may need to be consulted); and,
- The Environmental Manager – Ensures that the CEMP is developed, implemented and maintained.

Other roles include:

- Health and Safety (PSDP and PSCS);
- Waste Management Coordinator (report to the Environmental Manager); and,
- Ecological Clerk of Works (ECOW).

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 the 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; and,
- 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:

5.2.2.1 Site-Specific Method Statements

- Liaising with the environmental manager in preparing site-specific method statements for all works activities where there is a risk of environmental damage, by incorporating relevant environmental control measures and referring to relevant environmental control measures 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.

5.2.2.2 General

- Being aware of all project's 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
- 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:

5.2.4.1 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;
- 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 the environmental issues; and,
- Auditing the construction works from an environmental viewpoint.

5.2.4.2 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 measures 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.

5.2.4.3 Third Party Consultations

- Overseeing, ensuring coordination and playing a lead role in third party consultations required statutorily, contractually and in order to fulfil best practice requirements;
- Ensuring that the minutes of meetings, action lists, formal communications, etc., are well documented and that the consultation certificates are issued to the design engineer as required;
- Liaising with all prescribed bodies during site visits, inspections and consultations;
- Where new environmental control measures are agreed 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.

5.2.4.4 Licensing

- Ensuring that all relevant works have (and are being carried out in accordance with) the required permits, licences, certificates, planning permissions, etc.;
- Liaising with the designated licence holders with respect to licences granted pursuant to the Wildlife Act, 1976, as amended (if required); and,
- 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.

5.2.4.5 Waste Management Documentation

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

5.2.4.6 Legislation

- Keeping up to date with changes in environmental legislation that may affect environmental management during the construction phase;
- Advising the construction manager of these changes; 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.

5.2.4.7 Specialist Environmental Contractors

- Identifying requirements for specialist environmental contractors (including ecologist, 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.

5.2.4.8 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; and,
- Providing toolbox talks on environmental control measures associated with site specific method statements to those who will undertake the work.

5.2.4.9 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;
- 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; and,
- 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.

5.2.4.10 Site Environmental Inspection and Auditing

- Carrying out regular documented inspections of the site to ensure that works is being carried out in accordance with the environmental control measures and relevant site specific method statements, etc.;
- Carrying out inspection of the site drainage system;
- Appending copies of the inspection report 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; and,

- The environmental site manager shall notify the employer of any complaints or environmental incidents with 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.

5.2.4.11 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 the project supervisor construction stage (PSCS);
- Responsible for safety induction of all staff and personnel on site;
- Implementing the Health and Safety Plan;
- Auditing an updating the Health and Safety Plan; and,
- All other required legal duties.

5.2.5.2 ECoW/Ecologist

The main responsibilities of the appointed ecologist include:

- Undertaking/overseeing pre-construction checks for protected species;
- Review of method statements of contractors to ensure that all relevant aspects of the CEMP have been incorporated;
- Providing toolbox talks and other training necessary to ensure that mitigation measures are fully understood by site personnel;
- Evaluating the effectiveness of mitigation measures implemented and engaging with contractor staff where additional measures/environmental controls are deemed necessary; and,
- Keeping records of works undertaken, effectiveness of measures implemented, and additional controls implemented, where required.

5.2.5.3 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; and,
- 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; and,
- An unauthorised discharge to ground, water or air, damage to a protected habitat etc.

5.3 Contacts

5.3.1 Main Contractor Contacts

Refer to **Table 5-1** for the main contractor contact details to be provided once they have been confirmed.

Table 5-1: 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		
Overall Project PSDP	TBC		
ECoW	TBC		

**24 hour contact details required*

5.3.2 Employer Contacts

Refer to **Table 5-2** for the employer contact details to be provided once they have been confirmed.

Table 5-2: Employer Contacts

Position Title	Organisation	Name	Phone	Email
Employer	TBC			
Employer's Representative	TBC			

5.3.3 Third Party Contacts

Refer to **Table 5-3** for the third party contact details to be provided once they have been confirmed.

Table 5-3: Third Party Contacts

Organisation:	Position:	Name/Address:	Phone:	Email Address:
National Parks and Wildlife Service	South West Division	District Conservation Officer	(064) 6670 166	nature.conservation@chg.gov.ie
Environmental Protection Agency (EPA)	EPA	EPA Headquarters	(053) 9160600	info@epa.ie
Local Authority	Kerry County Council	Kerry County Council County Buildings, Rathass, Tralee, Co. Kerry	(066) 7183500	info@kerrycoco.ie
Health and Safety Authority	Health and Safety Authority		(01) 6147000	contactus@hsa.ie
Emergency Services	An Garda Síochána	Kenmare Garda Station, Shelbourne St, Kenmare, Co. Kerry, V93 WY91	(064) 664 1177	
Emergency Services	Ambulance and Fire Service	Ambulance and Fire Service	999 or 112	
Emergency Department	A&E	University Hospital Kerry	(066) 7184100	

6. Environmental Commitments

6.1 Environmental Management Plans

A number of environmental management plans (EMPs) have been prepared for managing the impacts of construction activities associated with this project. Refer to **Table 6-1** and **Appendix 1**. These plans are to be implemented by the appointed project manager and/or project contractor(s) as relevant.

Once appointed, it is the contractor's responsibility to update and add (where required) project specific control measures relevant to the environmental management plans and procedures. The contractor shall ensure that plans/procedures are communicated to all site staff, including sub-contractors, through induction, training and at relevant meetings.

Table 6-1: Plans for Managing Impacts of Construction Activities

Ref:	Procedure:
EMP-1	Management of Excavations and Materials
EMP-2	Management of Surface Water Runoff
EMP-3	Management of Fuels and Oils
EMP-4	Management of Concrete
EMP-5	Construction Resource & Waste Management Plan
EMP-6	Management of Traffic
EMP-7	Management of Dust
EMP-8	Management of Noise
EMP-9	Archaeological and Heritage Protection
EMP-10	Management of Landscape
EMP-11	Ecology/Biodiversity Management

6.2 Auditing, Monitoring and Response

The example environmental monitoring schedule (**Table 6-2**) presents generic monitoring measures applicable to housing developments. The monitoring schedule for construction shall also provide for the checking of equipment, materials storage and transfer areas and specific environmental controls.

The appointed contractor shall assign a full-time environmental manager who shall visit the site regularly to monitor the construction activities on a day to day basis. The duties shall 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.

Table 6-2: Example of Environmental Monitoring Schedule

Aspect	Area of Inspection	Monitoring Required	Note/Checks	Frequency	Responsibility
Surface Water Run-off Controls	Weather Forecast	Met Éireann download	Pre-determined rainfall trigger levels (e.g., 1 in 5 year storm event or heavy rainfall at >25mm/hr)	Regular/daily/weekly during the construction phase as well as during and after significant rainfall events	Environmental Manager
	Discharges from on-site sediment and erosion controls	Visual inspection	Colour, presence of silts	Weekly	Environmental Manager
Water quality monitoring	Discharges from on-site sediment and erosion controls	Visual inspection	Unacceptable level of sediment/silt on the road surface • Presence of waste	Weekly	Environmental Manager
	Internal site road Site Entrance	Visual inspection	Unacceptable level of sediment/silt on the road surface 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
Temporary Site Compound Area	Waste Collection Areas	Visual inspection	Damage Untidiness Full skips	Daily early/weekly	Environmental Manager
	Dry wheel wash	Visual inspection	Build-up of sediment	Daily	Environmental Manager
	Wastewater facilities	Visual inspection	Holding tank requiring emptying	Weekly	Project Manager
Operation Control	Concrete pours	Visual inspection	Run-off / spills	Weekly	Project Manager
	Dust generation	Visual Inspection	Cleanliness of roads and compound area Dust at stockpiles Dust from delivery vehicles	To be scheduled with pours	Project Manager

6.3 Environmental Performance Indicators

The appointed contractor shall 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 shall include:

- Number of environmental accidents/incidents logged;
- Breach of procedure and corrective actions;
- Number of environmental complaints received;
- Result of dust monitoring; and,
- Result of site audits.

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

The contractor holds Certificate of Registrations for Quality Management System to ISO 9001:2015 and Occupational Health and Safety Management System to ISO 45001:2018/Amd 1:2024.

6.4 Response Procedure/Corrective Action

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

- The project manager must be informed of any incident, breach of procedure and/or complaint received, and details must be recorded in the incident/complaint register;
- The project manager is to conduct/co-ordinate an investigation to determine the potential influence that could have led to the non-compliance;
- The project manager is to notify and liaise with the appropriate site personnel where required, e.g. site environmental manager, project ecologist;
- The project 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;
- If necessary, the project manager shall inform the appropriate regulatory authority. The appropriate regulatory authority will depend on the nature of the incident;
- The details of the incident shall be recorded on incident/complaints form which is to record information such as the cause, extent, actions and remedial measures used following the incident/complaint. The form shall also include any recommendations made to avoid reoccurrence on the incident.

6.5 Emergency Response Plan

Best construction practice, including that for Health and Safety, shall be employed to minimise the risk of any accidents occurring. All work on site shall be carried out in compliance with the Health and Safety Act 2005, the Health and Safety (Construction) Regulations 2013, as amended, and all relevant Legislation and Work Practice to ensure that the construction areas, site environs and public roads remain safe for all users. The contingency plan will stay in place during construction and will be displayed at appropriate locations.

An emergency response plan shall be prepared and overseen as part of the project's environmental control measures. The plan will include relevant emergency contact details and a map identifying the locations of all emergency spill kits. The plan shall be implemented in the event that any of the situations outlined below occur.

The Environmental Manager shall be immediately informed and report to the scene. The Environmental Manager shall assess the cause and the management of the clean-up of the leak or spill. They shall inspect nearby drains for the presence of oil, and initiate the clean-up if necessary. 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; and,
- Whether the situation is under control.

All site personnel shall be inducted in the provision of the Emergency Response Plan / Contingency Plan. This training shall be provided by the Environmental Manager at site induction. The following outlines some of the information on the types of emergencies, which must be communicated to the site staff:

- Release of hazardous substance – Fuel and oil spill;
- Concrete spill or release of concrete or silt;
- Flood event – extreme rainfall event;
- Strong wind gales;
- Drought weather conditions;
- 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 features); and,
- Fire on-site.

Oil Spillages:

- Report any spillages of oil or chemical to the Environmental Manager and Construction Manager immediately.
- The site manager shall contact the:
 - The Client
 - Environmental Protection Agency ("EPA") 24-hour emergency incident line 1890 33 55 99; and,
 - Inland Fisheries 24-hours pollution line 1890 34 74 64. The pollution hotline number shall be reference in the construction site rules and displayed in the Site office and in the 'Emergency Preparedness and Response Plan'
- If spillage is flammable, switch off all sources of ignition;
- Stop the spillage spreading
 - Immediately deploy the spill kit in accordance with the manufacturer's instructions;
 - Use absorbent materials from the spill kit to mop up the spill (sand or absorbent materials is to be used rather than detergents);
 - 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;

- In the event of a major spill, a company who provide a rapid response emergency service for major fuel spills shall be immediately called for assistance, their contact details shall be kept in the site office and in the spill kits kept in site vehicles and machinery; and
- Pooled oil must be removed.

Concrete Spillages Plan:

- Report the concrete spillage immediately to the Environmental Manager or Construction Manager;
- 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 shall be blocked using the absorbent booms, which shall prevent concrete flowing into the existing drains;
- Do no 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; and,
- Shovel contaminated concrete granules into sacks or skips for treatment in the Roadside Concrete Wash unit.

As appropriate, report the spillage to the Client, EPA 24-hour emergency incident line, Inland Fisheries Ireland, KCC and any other relevant authority.

Spill kits shall be readily available to all personnel. The spill kits shall be of an appropriate size and type for the materials held on site.

Emergency oil spill kits shall be carried in all site vehicles and machinery and in the site office, for ease of access. A spill kit shall also be stored (and clearly marked) near refuelling areas.

All used spill kit materials are to be disposed of in the proper manner as outlined in spill summary procedures.

6.6 Site Environmental Training and Awareness

Site signage shall 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 shall be communicated to site staff:

- Environmental procedures of the CEMP;
- Housekeeping of materials and waste storage areas; and,
- Environmental Emergency Response Plan.

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

6.7 Monitoring and Auditing

All mitigation measures, any planning conditions and relevant construction methods shall be monitored on-site. The Contractor shall nominate an Environmental Manager for the works. The Environmental Manager shall

provide Audit Checklists to ensure regular checks of the Site's control measures for the ongoing protection of the environment.

Checklists for daily, weekly or monthly site audits shall 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, resource & waste management rules are adhered to, all environmental buffers are maintained, Surface water and run-off control measures of the are in place and functioning, and concrete chute wash-out procedure is being followed. Checklist shall be finalised with the contractor's Environmental Operating Plan (EOP).

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

Table 6-3: Environmental Monitoring

Environmental Aspect	Monitoring Location	Monitoring Frequency	Monitoring Arrangements
Site Housekeeping	Entire Site	Daily	Visual Inspection
Surface Watercourse	All Watercourse	After Periods of Rain, Weekly if No Rain	Visual Inspection
Fuels and Chemical – Appropriate Storage	Entire Site	Daily	Visual Inspection

6.8 Environmental Complaints

Any environmental complaints received, whether internal or external, shall be recorded and investigated. It is recommended that immediate action is taken as relevant to resolve environmental complaints to avoid any nuisance to the local community or any environmental damage.

This procedure includes:

- Recording of any complaints to a Site Log;
- Follow up by the relevant site representative – Environmental Manager;
- Remedial measures where required;
- Ongoing communication with complainant to confirm resolution; and,
- Any required training or communication with site personnel and sub-contractors as a result.

The out of hours contact number for the Site is: TBC.

Appendix 1

Environmental Management Plans (EMPs)

- EMP 1: Management of Excavations and Materials
- EMP 2: Management of Surface Water Runoff
- EMP 3: Management of Fuel and Oils
- EMP 4: Management of Concrete
- EMP 5: Construction Resource & Waste Management Plan
- EMP 6: Management of Traffic
- EMP 7: Management of Dust
- EMP 8: Management of Noise
- EMP 9: Archaeological and Heritage Protection
- EMP 10: Management of Landscape
- EMP 11: Ecology/Biodiversity Management

EMP 1 Management of Excavations and Materials.

Purpose: The purpose of this plan is to describe the measures for the management of all excavations and materials on the site.

Implementation Stage	Mitigation / Management Measures	Responsibility
<i>During Construction</i>	All excavations and earthworks to be carried out in accordance with BS6031:2009 Code of Practice for Earthworks. Soil handling, extraction and management shall be undertaken with regard to best practice guidelines such as Guidance on the Waste Management (Management of Waste from the Extractive Industries) Regulations 2012.	Environmental Manager;
	All site excavations and construction to be supervised by a suitably qualified and experienced engineer. Contractor method statements will be reviewed and approved prior to commencement of works	Construction Manager
	It is anticipated that soils generated during excavation will be reused within the site for bunding, landscaping and restoration purposes. Off-site removal of soils is not expected under the current design assumptions. However, should off-site removal of any surplus or unsuitable soils be required, these materials will be transported to an appropriately licensed facility for management or disposal.	
	If any contaminated earth is uncovered, this is to be stored separately and disposed of accordingly once the contaminant has been identified.	
	Efforts shall be made to ensure that water does not accumulate in excavated areas.	
	All topsoil and subsoil to be stored separately, and care shall be given to ensure the structure and quality of the soil is not damaged.	
	The amount of exposed ground and soil stockpiles to be kept to a minimum and any stockpiles in place for an extended period of time shall be allowed to re-vegetate naturally.	

EMP 1 Management of Excavations and Materials.

Purpose: The purpose of this plan is to describe the measures for the management of all excavations and materials on the site.

Implementation Stage	Mitigation / Management Measures	Responsibility
	Bulk excavations will be undertaken during dry weather conditions to minimise runoff from exposed ground. Weather conditions will be monitored, and excavation works will not proceed during periods of heavy or prolonged rainfall.	
	Temporary stockpiles of soil shall be located on level ground at designated material storage areas at least 50m from watercourses and drains and shall be bunded on the downgradient edges with a silt curtain or other suitable materials to reduce the risk of silt run-off into watercourses and drains.	
	All plant and equipment shall utilise biodegradable hydraulic oil.	
	Stockpiling of soils will be minimised, and no permanent stockpiles will remain following completion of construction works.	

EMP 2 Management of Surface Water Runoff

Purpose: The purpose of this plan is to describe the measures for the management of all surface water and run-off on the site.

Implementation Stage	Mitigation / Management Measures	Responsibility
<i>During Pre-Construction</i>	Temporary site drainage systems shall be put in place prior to the construction of the development, to prevent contaminants entering the aquatic environment.	Environmental Manager;
	Hydrocarbon interceptors shall be provided on the surface water attenuation system.	Construction Manager
	To avoid cross-contamination to clean water and soiled water, interception of up-gradient cut-off ditches and diversion of clean water runoff away from construction site is to be ensured. This shall reduce or prevent the amount of potential silt-laden or polluted water that may require treatment.	Environmental Manager
<i>During Construction</i>	SuDS shall be installed and associated pollution control measures shall be implemented on site. Proposed SuDS measures include swales; filter drains and sediment ponds.	
	Discharge from silt control measures shall be discharged into an area of vegetation for dispersion or infiltration, in accordance with SuDS techniques.	
	Surface water management controls shall be in place to prevent entry of silted run-off into the site stormwater network. The site currently drains directly to ground (i.e. stormwater is not collected).	
	Operations and activities that have the potential to impact on the water environment shall be regularly monitored throughout the construction of the development. This is to ensure compliance with planning conditions and environmental regulations.	
	Settlement ponds built into the construction drainage system.	

EMP 2 Management of Surface Water Runoff

Purpose: The purpose of this plan is to describe the measures for the management of all surface water and run-off on the site.

Implementation Stage	Mitigation / Management Measures	Responsibility
	Overland discharge of stormwater from the settlement ponds onto agricultural land before it reaches the existing land drain network. Water supply and drainage arrangements, including the disposal of surface water, shall comply with the requirements of the planning authority for such works in respect of both the construction and operation phases of the Proposed Development.	
Post Construction	Any introduced or artificial materials required (e.g. silt fencing, straw bales, sandbags etc.) that might need to be deployed onsite, shall be removed on completion of the works. To ensure that there is no unacceptable flood risk, the following mitigation measures are to be implemented: - The finished floor level (FFL) of all buildings should be set above the 1% AEP flood level for the MRFS plus 500mm freeboard. This recommendation is in line with the requirements of Criterion 3 of the Greater Dublin Strategic Drainage Study (GDSDS), 2005. On this basis, the design flood level ranges from 6.75 mOD to 8.25mOD. The proposed minimum F.F.L of the residential units ranges from 7.60mOD to 10.20mOD and any proposed F.F.L is a minimum of 500mm above the adjacent design flood level. - The land within the site will be raised above the design flood level. - Surface water drainage from the proposed development site will manage the associated pluvial flood risk using a suitably design surface water management strategy that incorporates Sustainable Urban Drainage System (SUDs).	

EMP 3 Management of Fuels and Oils

Purpose: The purpose of this plan is to describe the measures for the management of all fuels and oils on site for the protection of natural resources (soils and groundwater) from any spills

Implementation Stage	Mitigation / Management Measures	Responsibility
<i>During Construction</i>	All refuelling shall take place on flat ground in a designated refuelling area at least 30m from watercourses.	Environmental Manager;
	All plant will be refuelled at designated refuelling locations within the site compound. Rigid and articulated vehicles will be fuelled off site as will all site vehicles (jeeps, cars and vans).	Construction Manager
	Only designated trained and competent operatives will be authorised to refuel plant on site.	
	All hydrocarbons, chemicals & oil storage tanks requirement for the construction and decommissioning stages shall be bunded to a volume not less than the greater of the following: • 110% of the capacity of the largest tank within the bunded area; or, • 25% of the total volume of substance which could be stored within the bunded area.	
	Spill kit containment equipment will be stored at all work areas for use in the event of an emergency. The contents of the spill kit will be replenished if used and they will be checked on a scheduled basis during environmental inspections and audits. All crews will be trained in the use of spill kit equipment.	
	Designated fuel filling points will have appropriate oil and petrol interceptors to provide protection from accidental spills.	

EMP 3 Management of Fuels and Oils

Purpose: The purpose of this plan is to describe the measures for the management of all fuels and oils on site for the protection of natural resources (soils and groundwater) from any spills

Implementation Stage	Mitigation / Management Measures	Responsibility
	A bunded diesel bowser shall be located inside a fenced area within the temporary construction compound. Any other chemicals shall be stored within a storage container with an accompanying Control of Substances Hazardous to Health ('COSHH') Datasheet in accordance with health and safety regulations. If generators are used on site, these shall be bunded (the bund shall be capable of containing 110% of the fuel tank's capacity). The bund shall be kept empty of water. Where chemicals are required on site, they must be placed in an appropriate bund to prevent ground contamination. All chemicals must be stored in a correctly marked container clearly identifying the contents. Where labels are worn off, they must have a new label placed on them or the contents transferred to the correctly marked container. All safety data sheets for all chemicals shall be filed on site as part of the CEMP. During construction, fuel and oil deliveries shall take place within the designated refuelling area within the temporary construction compound. The Contractor shall supervise site deliveries to ensure that the correct amount of material is delivered to the correct tank, and the level is checked prior to refilling to avoid spillage. The refuelling bowser shall be operated by trained personnel. The bowser shall have spill containment equipment which the operators shall be fully trained in using. Plant nappies or absorbent mats to be placed under refuelling point during all refuelling to absorb drops. Plant nappies to be provided beneath small mobile plant (e.g. small generators, pumps, etc.). Hoses and valves shall be checked regularly for signs of wear. Hoses shall be turned off and securely locked when not in use.	

EMP 3 Management of Fuels and Oils

Purpose: The purpose of this plan is to describe the measures for the management of all fuels and oils on site for the protection of natural resources (soils and groundwater) from any spills

Implementation Stage	Mitigation / Management Measures	Responsibility
	Diesel pumps and similar equipment shall be checked regularly and any accumulated oil removed from appropriate disposal. The volume of leakage shall be prevented through monitoring oil storage tanks/drums for leaks and signs of damage. This will be carried out daily by the Environmental Manager. Only mechanically sound plant will be permitted access to the site. All plant used is to be regularly inspected for leaks and fitness for purpose. An up-to-date service record will be required from the main contractor. Plant, equipment and materials will be stored within the designated temporary site compound only and will not be positioned in a manner that could surcharge existing or newly formed slopes. Vehicles will not be left running unnecessarily and low emission fuels will be used where possible. Drainage within the temporary site compound will be directed to an oil interceptor to prevent pollution should any spillage occur. Storage areas will be covered and secure, where possible, to prevent rainwater filling the bunded areas and to prevent acts of vandalism that could result in leaks or spills. Fuel fill pipes will not extend beyond the bund wall and will have a lockable cap secured with a chain.	

EMP 3 Management of Fuels and Oils

Purpose: The purpose of this plan is to describe the measures for the management of all fuels and oils on site for the protection of natural resources (soils and groundwater) from any spills

Implementation Stage	Mitigation / Management Measures	Responsibility
	Suitable precautions will be taken to prevent spillages from equipment containing small quantities of hazardous substance (i.e. chainsaws and jerry cans) including: • Each container or piece of equipment will be stored on its own drop tray made of a material suitable for the substance being handled; and, • Containers and equipment will be stored in a firm level surface No tanks or pipework containing liquids such as fuel, oils or chemicals will be stored below ground. Vehicles and plant will not park near or over drains and will be washed in accordance with the commitments set out above. Spill kits will be on site and for ease of access, located in the site office and site vehicles and machinery. Contingency plans will be in place for dealing with a spillage should a spillage occur. Should there be an oil leak or spill, the leak or spill shall 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 for the area. This contaminated material will be properly disposed of in a licensed facility. See Section 6.5 Emergency response plan for more details on the correct management of spills. Only the required volume of oil will be stored for the works taking place at the time.	

EMP 3 Management of Fuels and Oils

Purpose: The purpose of this plan is to describe the measures for the management of all fuels and oils on site for the protection of natural resources (soils and groundwater) from any spills

Implementation Stage	Mitigation / Management Measures	Responsibility
	Collision with oil stores will be prevented by locating oils within a stell container in a designated area of the site compound away from vehicle movements.	
	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.	
	The local authority will be informed immediately of any spillage or pollution incident that may occur on-site during the construction phase.	
	Vehicles shall never be left unattended during refuelling and drip trays are to be located under all static plant vehicles.	

EMP 4 Management of Concrete

Purpose: The purpose of this plan is to describe the measures for the management of concrete on site for the protection of watercourses from any spillages

Implementation Stage	Mitigation / Management Measures	Responsibility
<i>During Construction</i>	There shall be no pouring of concrete during extreme/prolonged rainfall or forecasted heavy rainfall. Incidental rainfall from light showers during pour period is typically absorbed into the concrete matrix but heavier showers can result in some runoff from the top surface of the concrete pour. If runoff is encountered, the Environmental Manager will block outflow to retain or treat the runoff until the pH is neutral before discharge to the drainage network. The area of the pour should be completely drained of water before a pour commences. Raw or uncured waste concrete/cementitious material will be disposed of by removal from the development area. A designated trained operator, experienced in working with concrete, will be employed during the concrete-pouring phase, and pouring will be supervised by the Construction Manager, a suitably qualified Engineer, and the Environmental Manager/ECOW. The use of concrete close to drainage features will be carefully controlled to avoid spillage. To reduce the volume of cementitious water, washout of concrete trucks will not take place on site. Concrete trucks will be washed out off site at the source of the quarry. The concrete trucks shall wash down their chutes at a designated chute wash down area (away from the works area). The wash down area shall consist of the polythene lined bunded area of about 10m³ capacity. The collected washdown water will be disposed of using a registered collector.	Environmental Manager; Construction Manager

EMP 4 Management of Concrete

Purpose: The purpose of this plan is to describe the measures for the management of concrete on site for the protection of watercourses from any spillages

Implementation Stage	Mitigation / Management Measures	Responsibility
	Temporary storage of cement bound granular mixtures shall be on hardcore areas. Cement products are hazardous and are to always be stored in a COSHH store or similar (shipping container), and only be in the open when in use. Any small volumes of incidental wash generated from cleaning hand tools, cement mixers or other plant, as required, will be trapped on-site to allow sediment to sediment to settle out and reach neutral pH before clarified water is released to the surface water drains or allowed to percolate to ground. Settled solids will need to be appropriately disposed of off-site. No disposal of concrete remnants will be permitted on site. Breaking of concrete (structure demolition) has the potential to emit alkaline dust into the receiving environment. Where necessary a barrier between the dust source and the sensitive receptor (the water body in this case) will be erected to limit the possibility of dust contacting the receptor. The use of wet concrete and cement in or close to any water body will be carefully controlled so as to minimise the risk of any material entering the water. Where possible, a specific fast-setting mix (by having either a higher than normal fines content, a higher cement content or the use of ecologically – appropriate chemical admixtures, will be used to minimise the risk of ecological impact.	

EMP 5 Construction Resource & Waste Management Plan		
Purpose: The purpose of this plan is to describe the measures for the management of all waste associated with the construction works		
Implementation Stage	Mitigation / Management Measures	Responsibility
Construction	Refer to Document 25631-ZZ-ZZZ-RP-MWP-EN-6004 'Resource & Waste Management Plan'	Environmental Manager; Construction Manager

EMP 6 Management of Traffic

Purpose: The purpose of this plan is to describe the measures for the management of all traffic, including construction traffic, for the minimisation of disturbance and nuisance to the local community

Implementation Stage	Mitigation / Management Measures	Responsibility
<i>During Construction</i>	A dedicated person will be appointed for the management of the delivery booking system during the construction stage. It will also be this person's duty to make sure haulage companies use the chosen haul route.	Project Manager;
	HGV movements will be limited to 7am to 7pm Monday to Friday and 8am to 1pm on Saturdays, unless otherwise agreed in writing with KCC. Deliveries will be scheduled to avoid morning and evening peak hours, creating conflict with the local residents' commute or school run.	Construction Manager;
	During the construction phase, clear construction warning signs will be placed on the approach to the access point. The site entrance point will also be appropriately signed. Access to the construction site will be controlled by onsite personnel and all visitors will be asked to sign in and out of the site by security/site personnel.	Construction Personnel;
	In order to mitigate a significant impact 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.	Sub-contractors, as appropriate;
	Adequate parking facilities will be made available within the Construction Compound for all site workers during the course of construction	Delivery Personnel
	The condition of the public road and site entrance will be monitored on an on-going basis and a road sweeper provided to clean the public roads if required.	

EMP 7 Management of Dust

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

Implementation Stage	Mitigation / Management Measures	Responsibility
<i>During Construction</i>	A wheel wash will prevent the transfer of dirt and stones onto the public roads. All drivers will be required to check that their vehicle is free of dirt, stones and dust prior to departing from the site. The wheel wash will require the truck to drive through it. It will not have any cleaning additives and will drain into its own settlement pond.	Construction Manager;
	The wheel wash area will be cleaned regularly so as to avoid build-up of residue. Vehicle washdown water will discharge to the drainage system for treatment and attenuation.	Project Manager;
	During windy conditions, any dust generating activities will be avoided or minimised, where practical.	Environmental Manager
	Any soil stockpiles will be covered when left for extended periods of time.	
	It is desirable to re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable.	
	Driving practices which minimise dust generation will be adopted such as a 15km speed limit.	
	Loads into and out of site will be evaluated and covered where required.	
	Any road that has potential to give rise to fugitive dust will be regularly watered, as appropriate, during dry and/or windy conditions. This will include the prompt removal of any spillage so as to prevent the dispersion of dust along the road, which is likely to be resuspended by passing vehicles. A mechanical vacuum road sweeper shall be used if necessary.	

EMP 7 Management of Dust

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

Implementation Stage	Mitigation / Management Measures	Responsibility
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Organising dust suppression through use of bowsers and cleaners

- Plan site layout so that machinery and dust causing activities are located away from receptors as far as possible;
- Keep site fencing, barriers and scaffolding clean using wet methods;
- Remove materials that have the potential to produce dust from site as soon as possible;
- Erect solid screens or barriers around dusty activities or the site boundary that are at least as high as any stockpiles on site; and,
- Cover stockpiles to prevent wind whipping.

Record all dust and air quality complaints, identify causes and take the appropriate measures to reduce emissions in a timely manner. Make the complaints log available to the local authority when asked. Record any exceptional incidents that cause dust and/or air emissions, either on or off site, and the actions taken to resolve the situation in the log book.

During the construction phase, dust emissions at the site boundary shall not exceed 350mg/m²/day. Should there be any complaints relating to dust, monitoring measures will be implemented in line with the Bergerhoff method.

Increase the frequency of site inspections by the person accountable for air quality and dust issues on site when activities with a high potential to produce dusts are being carried out and during prolonged dry or windy conditions.

EMP 8 Management of Noise

Purpose: The purpose of this plan is to describe the measures for the management of nuisance impacts from construction noise

Implementation Stage	Mitigation / Management Measures	Responsibility
<i>During Pre-Construction</i>	A pre-construction commitment to managing nuisance noise will be agreed through notification and consultation with affected parties, if deemed necessary.	Construction Manager;
	Training of site staff in the proper use and maintenance of tools and equipment.	Project Manager;
<i>During Construction</i>	Construction contractors will be required to comply with the requirements of the European Communities (Construction Plant and Equipment) (Permissible Noise Levels) Regulations, 1988 as amended in 1990 and 1996 (S.I. No. 320 of 1988, S.I. No. 297 of 1990 and S.I. No. 359 of 1996), and the Safety, Health and Welfare at Work (Control of Noise at Work) Regulations, 2006 (S.I. No. 371 of 2006). Standards of good practice for noise and vibration will be followed to minimise noise and vibration impacts from activities and vehicles.	Site Agent
	During the construction phase noise levels at noise sensitive locations shall not exceed 65dB(A) between 7am and 7pm Monday to Friday, and 8am to 1pm on Saturdays and 45dB(A) at any other time. Noise exceedance activities must be agreed in writing with KCC prior to activity taking place. A proposal for a noise monitoring programme during the construction phase shall be submitted for written agreement of the Planning Authority.	
	The main control measures will be control of noise at source using the following methods in line with Clause 8 'Control of noise' of BS 5228-1:2009+A1:2014.	
	Solid 2.4m high perimeter timber hoarding will be erected on the boundary of the proposed development at locations where building will occur within 40m of a residential house and there is no existing block work wall between the residence and the proposed development	
	Operators of all mobile equipment will be instructed to avoid unnecessary revving or idling of machinery.	

EMP 8 Management of Noise

Purpose: The purpose of this plan is to describe the measures for the management of nuisance impacts from construction noise

Implementation Stage	Mitigation / Management Measures	Responsibility
	Use of appropriate plant and equipment where possible with low noise level generation where possible.	
	All construction plant to be used on site is to have effective well-maintained silencers.	
	Noise generating equipment will be located as far as possible away from local noise sensitive areas identified.	
	Noise screens shall be utilised around noisy plant and machinery such as generators and cutting stations.	
	Regular and effective maintenance of site machinery including a full maintenance schedule to ensure that all pieces of equipment are in good working order. With efficient use of well-maintained mobile equipment, considerably lower noise levels than those predicted can be attained.	
	Machines that could be in intermittent use will be shut down between work periods or will be throttled down to a minimum.	
	Plant start-up will be sequential rather than all together.	
	Plant known to emit noise strongly in one direction will, when possible, be orientated so that the noise is directed away from noise-sensitive locations.	
	Drop heights for materials such as gravels will be minimised whenever practicable. When loading and unloading material, attempts shall be made not to drop the material from a height.	

EMP 8 Management of Noise

Purpose: The purpose of this plan is to describe the measures for the management of nuisance impacts from construction noise

Implementation Stage	Mitigation / Management Measures	Responsibility
	Any noise complaints shall immediately be directed to the site agent. Depending on the nature of the complaint, the initial response could be to immediately case the activity until mitigation measures have been put in place and agreed with affected individuals. Monitoring can then be undertaken to validate any complaint.	
	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.	
	In the event that activities outside of normal working times are needed, the Contractor shall prepare a suitable Method Statement, and the Contractor will seek the approval of the Local Authority and if required, the directly affected residents/others.	

EMP 9 Archaeological and Heritage Protection

Purpose: The purpose of this plan is to describe the measures for the protection of archaeological and cultural heritage features on the site

Implementation Stage	Mitigation / Management Measures	Responsibility
<i>During Pre-Construction</i>	The proposed development has no RMP sites or associated ZoN areas within the application site. It is recommended that an archaeological programme of works be implemented prior to the construction stage, in order to investigate the specific below-ground potential for such prehistoric remains. An AIA (Archaeological Impact Assessment) was submitted as part of this application and concluded that there is no archaeological constraints pertaining to this proposed development site. It is recommended that any groundworks required be monitored by a qualified archaeologist during the construction stage, at the discretion of the archaeologist and the National Monuments Service. The results of such works will also inform the need for any further archaeological work as required. Any unknown sub-surface remains present within the application site to be identified and preserved by record or in-situ, as appropriate.	Construction Manager; Project Manager

EMP 10 Management of Landscape

Purpose: The purpose of this plan is to describe the measures for the management of landscape on the site

Implementation Stage	Mitigation / Management Measures	Responsibility
<i>During Construction</i>	Construction vehicles shall not track across undisturbed areas outside their defined working areas and access corridor	Construction Manager;
	The landscape strategy has been developed in accordance with the principles of regenerative landscape design, seeking to enhance biodiversity, improve ecological connectivity, support soil health, strengthen water resilience and contribute positively to the long-term ecological value of the site.	Project Manager
	Materials and machinery shall be stored tidily during the works. Machinery shall not be left in place for longer than required for construction purposes to minimise effects on view and visual amenity	
	Any disturbance to or temporary removal of existing field boundaries to facilitate construction shall be undertaken sensitively to ensure successful reinstatement of these features following completion of construction activities.	
	Lighting of compounds and works shall be restricted to agreed working hours and that which is necessary for security.	
	Existing trees, woodland edge habitats, treelines and boundary vegetation will be retained wherever practicable and integrated into the site's green infrastructure network. New planting will reinforce these features and strengthen ecological connectivity within the site and the wider landscape.	

EMP 10 Management of Landscape

Purpose: The purpose of this plan is to describe the measures for the management of landscape on the site

Implementation Stage

Mitigation / Management Measures

Responsibility

The landscape proposals incorporate a network of public open spaces, communal open spaces, native hedgerows, tree planting, meadow planting and pollinator-friendly landscaping designed to provide habitat diversity and ecological stepping stones throughout the development.

Existing hedgerows will be retained, protected and enhanced through supplementary planting and gapping-up using native species including hawthorn (*Crataegus monogyna*), blackthorn (*Prunus spinosa*), hazel (*Corylus avellana*) and alder (*Alnus glutinosa*), thereby strengthening wildlife corridors and habitat connectivity.

The planting strategy has been informed by the All-Ireland Pollinator Plan 2021–2025, with priority given to native trees, shrubs and wildflower species that provide nectar, pollen, fruit and seed resources throughout the year.

Pollinator-friendly meadow habitats and native wildflower planting will be established within public open spaces, landscape margins and green corridors to provide foraging and nesting resources for bees, butterflies and other pollinating insects.

Flowering hedgerows and native shrub planting will provide important seasonal food resources for pollinators, birds and other wildlife, while contributing to habitat diversity and ecological resilience.

EMP 10 Management of Landscape

Purpose: The purpose of this plan is to describe the measures for the management of landscape on the site

Implementation Stage	Mitigation / Management Measures	Responsibility
	The proposed planting palette includes a wide range of native and pollinator-supporting species such as oak (<i>Quercus robur</i> and <i>Q. petraea</i>), birch (<i>Betula pendula</i> and <i>B. pubescens</i>), alder (<i>Alnus glutinosa</i>), holly (<i>Ilex aquifolium</i>), rowan (<i>Sorbus aucuparia</i>), bird cherry (<i>Prunus padus</i>), hawthorn (<i>Crataegus monogyna</i>), guelder rose (<i>Viburnum opulus</i>), dogwood (<i>Cornus sanguinea</i>), meadowsweet (<i>Filipendula ulmaria</i>), bird's-foot trefoil (<i>Lotus corniculatus</i>), ox-eye daisy (<i>Leucanthemum vulgare</i>) and devil's-bit scabious (<i>Succisa pratensis</i>). Fruit- and nut-bearing tree species will be incorporated where appropriate within public open space, communal green areas and green infrastructure corridors to provide additional food resources for wildlife and further enhance biodiversity value. Landscaping proposals prioritise locally provenanced and Irish-grown planting stock where available and maximise the reuse of on-site soils and existing seed resources where practicable. Landscape management practices minimise pesticide use wherever possible, retain areas of flowering vegetation, support pollinator habitat and promote long-term ecological resilience in accordance with Pollinator Plan guidance.	

EMP 10 Management of Landscape		
Purpose: The purpose of this plan is to describe the measures for the management of landscape on the site		
Implementation Stage	Mitigation / Management Measures	Responsibility
	The landscape strategy seeks to achieve a net gain in biodiversity through the retention and enhancement of existing ecological features, the establishment of native and pollinator-friendly planting, strengthening of habitat connectivity, and the creation of a multifunctional green infrastructure network throughout the site.	
	The site shall be maintained in a clean and uncluttered state, and this shall be monitored	
	On completion of construction, all remaining construction materials and equipment shall be removed from site, and any disturbed areas, including temporary areas of hard standing, broken up and restored	
	The palette of colours and materials used to create the new infrastructure shall be selected to be unobtrusive and reflect the existing environment	
Post Construction		

EMP 11 Ecology/Biodiversity Management

Purpose: To describe measures for the management and protection of habitats and fauna on the site

Implementation Stage	Mitigation / Management Measures	Responsibility
During Pre-Construction	If vegetation clearance or ground disturbance is proposed between March and August (inclusive), pre-clearance checks for nesting birds or protected mammals will be undertaken by the ECoW. Should any active nests, resting sites or other evidence of protected species be identified, an appropriate buffer zone will be established and maintained until the feature is no longer in use and works can proceed in accordance with ecological value.	Construction Manager;
	Prior to any vegetation clearance, the area will be checked by the ECoW for the presence of young or hibernating animals.	Project Manager;
	A pre-construction otter survey should be undertaken along the Keelnagower Stream corridor to confirm the absence of otter resting or breeding sites immediately prior to works commencing, and to inform any additional mitigation measures required.	Environmental Manager;
		ECoW.
During Construction	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 the 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.	
	Butterfly bush and old men's beard were the only species observed at the proposed development site. Rhododendron was also found in Scarteen Park estate, just outside the red boundary. Management of this species should be carried out in accordance with the following document: <i>The Management of Invasive Alien Plant Species on National Roads – Technical Guidance. GE-ENV-01105 (2020).</i>	

EMP 11 Ecology/Biodiversity Management

Purpose: To describe measures for the management and protection of habitats and fauna on the site

Implementation Stage	Mitigation / Management Measures	Responsibility
	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 form 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 an 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.	
	Only native tree, shrub and plant species shall be utilised during landscaping.	

Lighting associated with the site works could cause disturbance/displacement of bats. During the site works, lighting shall follow mitigation measures outlined by Bat Conservation Ireland in Bats & Lighting Guidance Notes for: Planners, engineers, architects and developers (2010), BCT lighting Guidelines (BCT, 2018) Bats and lighting: Overview of current evidence and mitigation guidance (Stone, 2013) and Bat Mitigation guidelines for Ireland. Irish Wildfire Manuals, No. 25 (Kelleher & Marnell, 2006).

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

- To minimise disturbance to bats and other nocturnal fauna, construction activities during the hours of darkness shall be kept to a minimum, particularly during the bat active season (April to September).
- Construction lighting shall be temporary, task-specific and used only where required for health and safety purposes. Lighting shall be switched off when not in use.
- Where practicable, night-time working shall be avoided, thereby reducing the requirement for artificial lighting during the construction phase.
- If construction lighting is required during the bat activity period (April to September), lighting shall be directed away from retained woodland, treelines, potential bat roost features and other habitats used by commuting and foraging bats, particularly the woodland and treeline habitats along the western site boundary.
- Directional lighting shall be used to ensure illumination is restricted to the immediate work area and to prevent light spill into adjacent habitats.
- The design and positioning of luminaires shall minimise overspill through the use of hoods, cowls, louvres, shields or similar measures where necessary.
- Lighting levels shall be maintained at the minimum required to meet health and safety requirements and shall avoid unnecessary illumination of retained boundary vegetation and ecological corridors.
- Any security lighting required outside normal working hours shall be fitted with motion sensors and short-duration timers to minimise unnecessary illumination.

EMP 11 Ecology/Biodiversity Management

Purpose: To describe measures for the management and protection of habitats and fauna on the site

Implementation Stage	Mitigation / Management Measures	Responsibility
	All site personnel shall receive toolbox talks outlining ecological sensitivities associated with the site, including the importance of avoiding light spill onto woodland, treeline and other habitats used by bats The extent of construction works area within the development site boundary shall be clearly marked out using temporary stakes and high-visibility tape/bunting such that the construction zone, including extent of access for all construction plant and machinery, site compound and materials storage areas, is defined and is clearly visible to all contractor staff and machine operators. Disturbance of fauna shall be limited by controlling the movement of construction vehicles and personnel. Construction vehicles and personnel shall not encroach onto habitats beyond the proposed development footprint. Where areas of dense vegetation are to be removed, 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. Vegetation removal shall be minimised within the proposed development site. Removal of vegetation with potential to support nesting birds will be undertaken outside the main bird breeding season (March to August inclusive), where possible. Where this is not feasible, pre-clearance nesting bird checks will be completed by a suitably qualified ecologist not more than 48 hours prior to works.	

EMP 11 Ecology/Biodiversity Management

Purpose: To describe measures for the management and protection of habitats and fauna on the site

Implementation Stage	Mitigation / Management Measures	Responsibility
	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.	
	To enhance biodiversity value within the Proposed Development, a range of bird nesting features should be incorporated throughout the site. Nest boxes for common passerine species should be installed on retained mature trees, treelines and suitable boundary features, particularly along retained green infrastructure corridors. In addition, integrated bird nesting features should be incorporated into suitable buildings throughout the development.	
	To support hedgehog movement through the proposed development, boundary treatments should be designed to retain connectivity between gardens and adjacent green areas. This can be achieved through the provision of small “hedgehog gaps” (approximately 13 × 13 cm) at the base of fences or walls to allow hedgehogs to travel freely between plots and avoid habitat fragmentation. The use of solid, impermeable fencing should be minimised where possible, and landscaping should incorporate native shrub planting and log or leaf piles to provide additional shelter and foraging opportunities within communal green spaces.	

It is recommended that a bat box enhancement scheme is implemented to enhance the ecological value of the site for bats through the provision of additional artificial roosting opportunities. In accordance with good practice, the scheme should be implemented prior to commencement of development works, and in advance of any tree removal, to ensure the continuity of roosting and shelter opportunities for bats (NRA, 2006a).

Bat boxes should be installed within suitable foraging habitat, including retained trees along woodland edges and other appropriate features within or adjacent to the site. The design, siting, orientation, and installation of all bat boxes shall be determined and supervised by a suitably qualified bat specialist or the appointed project ecologist and shall be carried out in accordance with NRA (2006a) guidance and Bat Conservation Ireland (BCIreland) guidance.

To maximise uptake by a range of bat species, the scheme should incorporate a variety of bat box types, reflecting the ecological requirements of species recorded during baseline surveys. This may include:

- Woodland associated designs (e.g. Miramare boxes) attracting a wide variety of crevice-dwelling species as it mimics a hollow tree.
- Generalist woodcrete box designs (e.g. Schwegler-type boxes) suitable for common pipistrelle, soprano pipistrelle, brown long-eared bat and Daubenton's bat.

The final number, type, and precise locations of bat boxes will be confirmed by the appointed ecologist, having regard to:

- The species recorded on site,
- The level of bat activity observed, and

In accordance with best practice, the bat box scheme should be registered with Bat Conservation Ireland to contribute to national bat conservation monitoring and data collection (BCIreland guidance).

Excavations will be covered overnight or fitted with escape ramps to prevent accidental entrapment of mammals and other fauna.

