November 2023

Construction Environmental Management Plan

Large Scale Residential Development at Broomfield West, Midleton, Co. Cork

On behalf of

Castle Rock Homes Midleton Ltd.

MALONE O'REGAN ENVIRONMENTAL

QUALITY
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Construction Environmental Management Plan

Large Scale Residential Development at Broomfield West, Midleton, Co. Cork

Castle Rock Homes Midleton Ltd.

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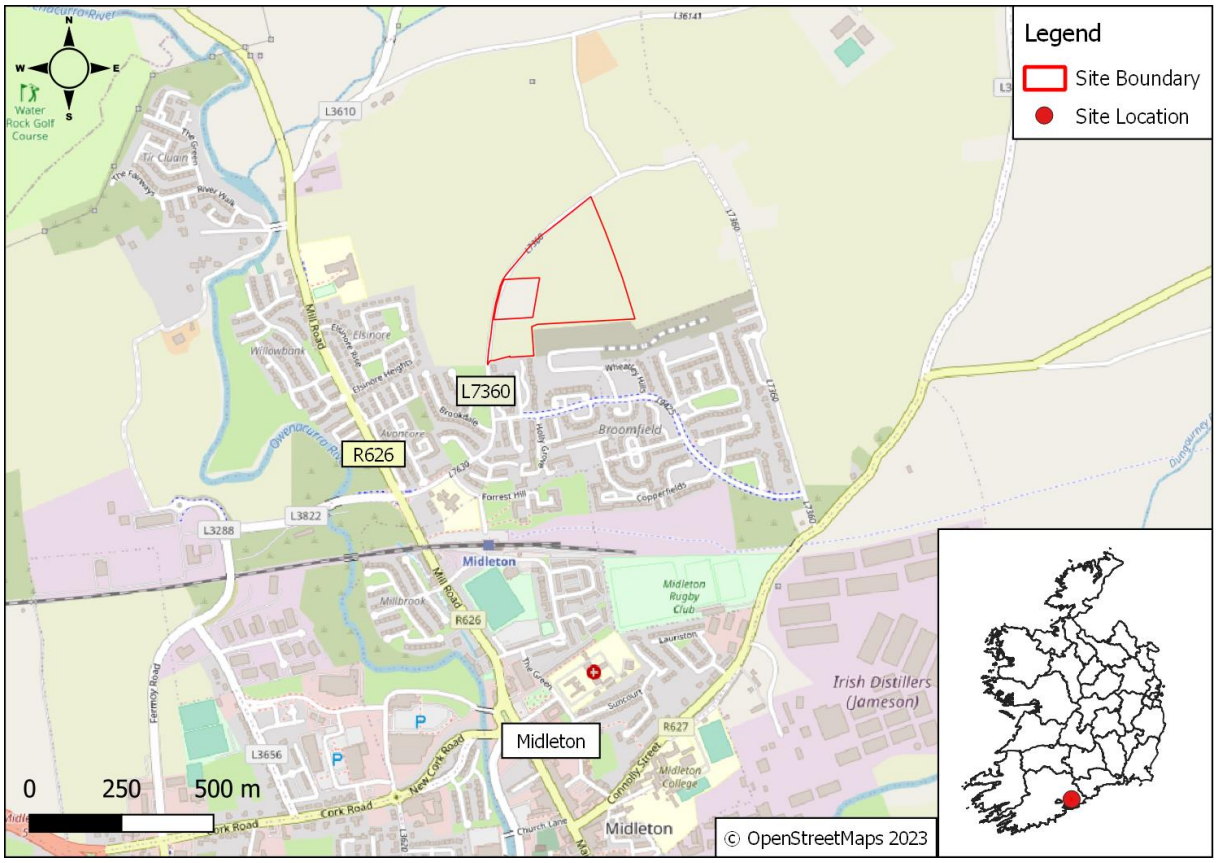
1 INTRODUCTION

Malone O' Regan Environmental Services (MOR) was commissioned by Castle Rock Homes Midleton Ltd. ('the Applicant') to prepare a Construction Environmental Management Plan (CEMP) to accompany a planning application for the proposed Large Scale Residential Development ('the Proposed Development').

The Proposed Development is located on an area of land that is ca.8.273 hectares (ha) in size and is located within the townland of Broomfield West, Co. Cork, ca. 1km north of Midleton town centre and is shown in Figure 1-1 ('the Site') (OS ITM Reference 588097 575082).

Figure 1-1: Site Location



1.1 Scope and Objective

The key objective of this CEMP is to ensure that all potential construction phase environmental impacts will be addressed in accordance with current legislative requirements and best practice guidelines. It will assist in the control of environmental risks that may arise during construction to ensure that these works do not result in an environmental incident, environmental damage or undue nuisance to the local environment.

This document contains an assessment of the likely risks onsite, it outlines procedures for monitoring the effectiveness of the environmental protection measures and for the dissemination of information to all relevant personnel during the construction programme. In assessing the risks to the environment on and adjacent to the Site, full cognisance has been taken of:

- C532 – Control of Water Pollution from Construction, Guidance for Consultants and Contractors [1];
- C741 - Environmental Good Practice on Site (4th edition) [2];

- All works will be undertaken in accordance with the Inland Fisheries Ireland (IFI) 'Requirements for the Protection of Fisheries Habitat during Construction and Development' [3]
- Guidance for the Treatment of Badger Prior to the Construction of National Road Schemes [4];
- Guidance for the Treatment of Otters Prior to the Construction of National Road Schemes [5];
- Guidance on the Management of Noxious Weeds and Non-Native Invasive Plant Species on National Roads [6]; and,
- IFI Biosecurity Protocol for Field Survey Work [7].

To achieve this objective the CEMP will:

- Provide a method of documenting compliance with the Environmental Commitments / Environmental Management Requirements / Best Practice Guidelines;
- Ensure compliance with current legislation;
- Effectively minimise any potential adverse environmental effects during construction including how site-specific method statements will be developed to avoid, minimise and mitigate construction effects on the environment; and,
- Communicate key environmental obligations that apply to all contractor organisations, their sub-contractors and employees while carrying out any form of construction activity.

This CEMP will be used by the appointed contractor to prepare an updated and comprehensive CEMP prior to the commencement of any onsite works. If required by the conditions of the grant of planning permission, the updated plan will be approved by Cork County Council in advance of any works commencing onsite. The approved plan will be implemented for the duration of the construction works to protect the receiving environment from potential impacts arising during the construction works.

1.2 Report Structure

The CEMP should be considered by the appointed contractor as a 'living' document with reviews being undertaken at predetermined intervals and data added as appropriate. The measures identified in the CEMP should be:

- Viewed as mandatory and common practice onsite; and,
- Embedded within the construction company's policies and site procedures, e.g., within an existing environmental management system framework.

2 DESCRIPTION OF THE PROPOSED DEVELOPMENT

The Applicant intends to apply for permission for development at Broomfield West, Midleton, Co. Cork. The development will consist of 272 no. units comprising of:

- 34No. 1-bedroom units;
- 122No 2-bedroom units;
- 94No. 3-bedroom units; and
- 22No. 4-bedroom units.

A mix of house types will be provided consisting of duplex style apartments, terraced and semi-detached units.

The Proposed Development also consists of a child creche and community use facility, and all associated site development works at Broomfield West, Midleton, Co. Cork.

Figure 2-1: Proposed Development Site Layout

The Proposed Development also provides for good pedestrian connection to the town centre, existing estates (Blossom Hill and Avoncore Place) to the south and future development on adjacent lands with the provision in pathways and cycle lanes throughout the site. The connection ensures good permeability for pedestrians and cyclists.

2.1.1 Site Access and Egress

Existing access to the subject site can currently only be achieved via L-7630 Broomfield Road which runs along the north-western boundary of the site and connects to the R626 via Avoncore Place. As can be seen in figure 2-1, there will be several entry points to the LRD along the L-7630.

2.1.2 Infrastructure Details

An Engineering Infrastructure Report was prepared by Brian O Kennedy & Associates Ltd. and submitted as part of the overall planning application. The report outlines the proposed means of servicing the development with roads, surface water sewers, foul water sewers, mains water supply, and storm water attenuation.

2.1.3 Drainage

Surface Water System

The surface water sewer system serving the development will consist of a network of surface water drains operated by gravity flow. The sewers will discharge westward towards the existing L-7360 public roadway. This roadway is currently being upgraded as part of the Park Hill View Estate Ltd development to the west of this roadway (PP Ref:18/7236). The public road upgrade includes installing a new surface water sewer to serve the Park Hill View Estate Ltd housing development site. The surface water sewers serving the subject proposed development will connect into this newly-laid storm sewer. These sewers have been increased in size to accommodate the proposed extra discharge from the subject development.

SuDS measures have been incorporated on the surface water system to intercept water at source and reduce the run-off from the site. A series of attenuation tanks will be installed to limit the runoff from the site to the original greenfield run off level. See Drawings 22/6372-P-1321 + 1322 for layout of SuDS measures incorporated into the development as submitted as part of the Proposed Development.

A network of gravity sewers will be installed to service the Proposed Development. Surface water will be collected from all hardstanding and impermeable surfaces. The piping network will be appropriately designed using SuDS drainage software design to accommodate the discharge volumes.

Please refer to the Engineering Report for full details on the surface water system prepared by Brian O Kennedy & Associates Ltd. which has been submitted as part of this application.

Receiving Network

The surface water outfall pipe from the development will connect to an existing manhole at the junction of the L-7360 and the Broomfield Court spine road. This manhole is part of an existing surface water network which runs from this connection point through the existing Brookdale and Avoncore estates, crossing the R626 public roadway and discharging into the Owenacurra River.

An assessment of the capacity of the receiving network has been made. Catchment areas for the network have been calculated and sizes and invert levels of the pipes have been assessed. Contributing volumes from existing properties, public roads, the under-construction Park Hill View Estate Ltd Development and the Midleton Water Treatment Plant discharge volumes have been taken into account in these calculations. The receiving network has appropriate capacity to accept the additional surface water discharge from the proposed development. These capacity calculations are attached in Appendix 'C' of the Engineering Report prepared by BOK.

Attenuation details

Underground Storage Tanks are favoured over proprietary cellular structures on account of the high soil infiltration levels and down-slope existing housing development and infrastructure. On account of the topography and the location of the Midleton Water Treatment Plant, the surface water network serving the Site is divided up into separate segments with three separate attenuation tanks provided for adequate protection against downstream river flooding. The tanks will be constructed of reinforced concrete cast in situ and fully sealed.

The surface water drainage network is shown on Drawings 22/6372-P-1303 +,1321 + 1322 and details of the attenuation tank design is shown on Drawings 22/6372-P-1323 as submitted as part of the overall planning application.

Foul Sewer System

The foul sewer system serving the Proposed Development will operate by gravity flow. The sewers will discharge westward towards the existing: -73160 public roadway. At the time of writing this report, this roadway is currently being upgraded as part of the Park Hill View Estate Ltd development (Planning Ref: 18/7236) to the west of this road. This road upgrade includes installing new surface and foul water sewers to serve the Park Hill View Estate Ltd development site. It is proposed to connect into these newly-laid sewers. These sewers have been upgraded to accommodate the proposed extra discharge from the Proposed Development. Please see Drawings 22/6372-P-1301 + 1302 submitted as part of the overall planning application.

Please note all sewers will be designed and installed in accordance with Irish Water Code of Practice infrastructure Rev July 2020.

Please refer to the Engineering Infrastructure Report for full details on the foul water sewer design and details prepared by Brian O Kennedy & Associates Ltd. which has been submitted as part of this application.

2.1.4 Water Supply

Pre-Connection query

A pre-connection query was lodged with Irish Water. The Irish Water response confirms that a water connection is feasible without infrastructure upgrade by them. The requirement to potentially divert the 12” Ductile Iron watermain is noted on the Irish Watermain is noted on the Irish Water Response. A copy of this response has been included in the Engineering Report prepared by BOK.

Proposed Network

Irish water have an existing 12” Ductile Iron watermain running through the south-west corner of the Site. It will be necessary to relocate this main to suit the proposed arrangement of roads and houses on the Site, subject to an agreement with Irish Water.

The proposed water supply network will be an internal watermain network of 150mm diameter spine with 100mm diameter branch mains. All watermain installations details will be in accordance with Irish Water – Water Infrastructure Standard Details – July 2020.

Fire hydrants will be installed such that all dwellings are within 45m of a hydrant.

A bulk water meter will also be installed at the principal watermain connection location. All dwellings will also have individual meters. Details of the water supply network are shown on Drawings 22/6372-P-1331 +1332 submitted as part of the overall planning application.

Please refer to the Engineering Infrastructure Report for full details on the water supply design and details prepared by Brian O Kennedy & Associates Ltd. which has been submitted as part of this application.

2.1.5 Earthworks

Earthworks will include the excavation of level platforms and foundations for each residential building and the importation of stone material for access roads etc. The design of road levels and finished floor levels has been carried out in such a way as to minimize cut/fill type earthworks operations.

2.2 Sensitive Design

Specialist input was a key element of the proposed design, in order to maximise the potential within the design of the Proposed Development to avoid impacts. The key measures relevant for this project have been detailed below:

- A comprehensive Landscape Plan has been developed for the Proposed Development which includes ecological enhancement measures. For full details please refer to the Landscape Plan submitted as part of the overall planning application;
- All vegetation removal required onsite will be undertaken in accordance with relevant legislation to avoid potential disturbance to nesting birds. These works will be undertaken outside the period of 1st of March to 31st of August; and,
- All boundary trees and hedgerow / treelines that are to be retained will be protected from unnecessary damage, appropriate mitigation measures are outlined in Arboricultural Report submitted as part of the overall planning application.

2.3 Monitoring Works

An Ecological Clerk of Works (ECoW) will inspect the Site in advance of works commencing and will undertake monthly inspections to ensure that the construction phase is completed in line with the mitigation measures detailed within the EcIA submitted with this report and the plans submitted in support of this planning application. The ECoW will undertake additional inspections as required during the works.

In addition, the ECoW will either deliver or provide the resident engineer with sufficient environmental information to deliver a Site induction to all personnel working onsite.

3 CONSTRUCTION WORKS

3.1 Construction Programme

Once planning is granted construction works are expected to commence immediately and take 18 months per phase, this will be confirmed upon the appointment of the main contractor and will be completed in three (3No.) phases. The proposed phases will be as follows:

- Phase 1 – 52 Units;
- Phase 2 – 74 Units; and,
- Phase 3 – 146 Units.

3.2 Construction Management Plan

During the construction phase, the methods of working will comply with all relevant legislation and best practice in reducing the environmental impacts of the works. Although construction phase impacts are generally of a short-term duration and are localised in nature, the impacts will be reduced as far as practicable through compliance with current construction industry guidelines.

Construction phase times will be as follows:

- 7:00am to 6:00pm Monday to Friday;
- 8:00am to 2:00pm on Saturdays; and,
- No work on Sundays or public holidays.

Construction works outside these hours will be limited to works necessary for health and safety reasons, to protect the environment or with prior agreement with the Planning Authority.

3.3 Construction Compound

To ensure the efficient management of the construction works, a temporary construction compound will be set up for the duration of the construction works. During the construction of the Proposed Development, it is expected that the site compound will be located in and around the proposed parts storage shed to the south-west of the Proposed Development. The location of the compound will be confirmed before the commencement of works.

3.4 Construction Traffic and Site Access

A Mobility Management Plan (MMP) and Design Manual for Urban Road and Streets (DMURS) was completed by Hegsons Design Consultancy Limited and submitted as part of the Planning Application.

Existing access to the subject site can currently only be achieved via L-7630 Broomfield Road which runs along the north-western boundary of the site and connects to the R626 via Avoncore Place. The site is currently used as agricultural land and generates limited if any vehicle trips on a daily basis.

The DMURS focuses on key aspects of the Proposed Development which include:

- Connected Networks
- Multi-Functional Streets
- Pedestrian Focus

While the MMP outlines the characteristics of Proposed Development including:

- The existing pedestrian and Cycle Infrastructure;
- The existing public transport network;

- The existing local road network;
- The proposed pedestrian and cycle improvements;
- The proposed car parking;
- The proposed electric vehicle charging spaces; and,
- The Mobility Management Plan.

As part of the Proposed Development, the applicant is committed to development and implementing the Mobility Management Plan to reduce the dependency on travel by car for visitors and residents.

A Traffic and Transportation Assessment (TTA) has also been prepared by Hegson Design Consultancy Ltd. which provides in-depth information about the projected mode split and transport assuming current conditions. The TTA underpins the MMP, which seeks to outperform the worst-case 'business as usual' predictions set out in the TTA.

3.4.1 Resource and Waste Management Plan

A Resource and Waste Management Plan (RWMP) has been prepared by Brian O'Kennedy & Associates Ltd and submitted as part of the Proposed Development for controlling, managing, and monitoring the resources and waste generated from a proposed residential development at Broomfield, Midleton, County Cork.

The RWMP describes how the construction phase will adhere to applicable legislation, Best Practice Guidelines, and Local Authority Waste Management Policies.

4 ENVIRONMENTAL MANAGEMENT FRAMEWORK

4.1 Environmental Policy

The project will be carried out in accordance with the policies / objectives of the appointed Contractor's environmental policy and procedures.

4.2 Objectives and Targets

Environmental objectives for the construction phase will be developed and should refer to legal compliance and environmental good practice, these may include:

- Zero pollution incidents;
- Minimise disruption to residents (and their complaints);
- Reduce / avoid impacts on biodiversity; and,
- Minimise waste sent to offsite licensed facilities.

4.3 Structure and Responsibilities

A management structure that includes an organisational chart encompassing all staff responsible for environmental work will be included within the CEMP. This will set out the respective roles and responsibilities with regard to the environment and identify the nominated Construction Environmental Manager. Illustrative key roles and responsibilities are set out in Table 4-1 below.

Table 4-1: Roles and Responsibilities

Role	Responsibility
Project Manager / Construction Environmental Manager (Appointed Contractor)	Responsible for management of the construction phase of the project. Has overall responsibility for the environmental performance of the project. Responsible for implementing the CE&WMP during the construction phase to ensure that waste is disposed of legally, economically and safely. Ensure compliance with environmental legislation, consents, objectives, targets and other environmental commitments. Responsible for reporting incidents and where required, communicating the incident details to the Client and relevant regulatory authorities. Monitoring of the construction processes against the project objectives. Liaison with all staff and local stakeholders dealing with any complaints or queries from the public.
Site Staff (Assigned by Appointed Contractor)	To receive general environmental awareness training and undertake work in accordance with method statement briefings and toolbox talks. Trained personnel to manage particular tasks such as, refuelling plant and equipment, managing the stores and water quality monitoring.
Environmental Clerk of Works / Consultant (Assigned by Appointed Contractor)	To provide information relevant to construction that may assist the Contractor to manage environmental aspects of the scheme and to ensure that the Contractor complies with all the relevant legal requirements, commitments and targets agreed for the scheme.

4.4 Communication

The CEMP will be distributed to the project team, including sub-contractors, to ensure that the environmental requirements are communicated effectively. Relevant staff and contractors will also be briefed on key activities and environmentally sensitive operations. Project, client and company environmental policies, where available, should be displayed onsite.

The Contractor will define procedures for internal and external communication. The Client may require that any communication with external parties such as environmental regulators or the public will be undertaken through a nominated Client Representative.

During the construction phase, internal communication will include regular progress meetings, which should cover:

- Training undertaken;
- Progress reports;
- Inspections, audits and non-conformance;
- Complaints received;
- Visits by external bodies and the outcome or feedback from such visits;
- Objective / target achievement, including reporting on environmental performance; and,
- External communication, including letter drops or meetings, and liaison with statutory authorities will be overseen by the Site Manager.

5 ENVIRONMENTAL RISK ASSESSMENT

5.1 Risk Classification

The classification of the environmental risks, arising from the construction phase will follow the definitions of significance as outlined by the Environmental Protection Agency (EPA) for Environmental Impact Statements [8] as shown below in Table 5-1.

Table 5-1: Rating Magnitude of Impact

Magnitude of Impact	Importance / Sensitivity of Resource			
	High	**Moderate**	**Low**	**Negligible**
Large	Very Substantial	Substantial	Moderate	Slight
Medium	Substantial	Substantial	Moderate	Slight
Small	Moderate	Moderate	Slight	Slight
Negligible	Slight	Slight	Slight	Negligible

In addition to the assessment of risks arising from known sources, an assessment of risk for unplanned events / incidents onsite were also assessed. These were rated as per the EPA 'Guidance on Assessing and Costing Environmental Liabilities,' [9]. The methodology for the rating of likelihood and consequence are shown in Tables 5-2 and 5-3.

Table 5-2: Rating of Likelihood of Risk Occurring

Rating	Likelihood	
	Category	**Description**
1	Trivial	Very low chance of hazard occurring
2	Low	Low chance of hazard occurring.
3	Medium	Medium chance of hazard occurring.
4	High	High chance of hazard occurring
5	Very High	Very high chance of hazard occurring.

Table 5-3: Rating of Consequence of Risk Occurring

Rating	Consequence	
	Category	**Description**
1	Trivial	No impact or negligible change to the environment.
2	Minor	Minor impact / localised or nuisance.
3	Moderate	Moderate impact to environment.
4	Major	Severe impact to the environment
5	Massive	Massive impact to a large area, irreversible in medium term.

5.2 Risk Identification

In developing this CEMP, the following site-specific aspects are considered relevant to the construction phase:

- The location of the Site in context of the surrounding area;
- The local road network;
- Local residences and businesses;

- The location of the Site in context of the onsite surface water and closest water bodies;
- An increase in air and noise emissions during the construction stage; and,
- The biodiversity value of the Site and its surrounding habitats.

The specific risks to the environment and methodologies to control these risks and pertinent site relevant factors to the construction area limiting these risks are outlined in Table 5-4. The likelihood of each of the risks occurring is related to the scope of the risk and the site-specific conditions.

Additionally, the following detailed site-specific plans will be completed by the appointed Principal Contractor, adhered to and incorporated into site works:

- Construction Stage Method Statement; and,
- Final Construction Environmental Management Plan (CEMP).

Table 5-4: Site Specific Environmental Risk Assessment and Management

Aspect of Construction	Potential Hazard	Magnitude	Likelihood	Risk Management Procedures – Mitigation Measures
Water Quality – Suspension solids	Suspended sediment due to run-off from construction areas causing potential detriment to water quality.	Moderate	Low	• The working area will be clearly defined, and construction activities will be carefully planned to minimise ground disturbance; • Prior to the commencement of earthworks, silt fencing will be installed along the boundary of the development works. The silt fences will remain in place throughout the entire construction phase; • Weather conditions will be considered when planning construction activities. Works will be planned to minimise the risk of runoff from the Site; • Existing vegetation will be retained where possible; and, • Daily monitoring of the excavations / earthworks will be completed by a suitably qualified person during the construction phase.
Water Quality – Oil & other construction related chemicals	Oil spills resulting in water pollution and contamination to the environment	Moderate	Low	• Prior to any works commencing, all construction equipment will be checked to ensure that they are mechanically sound to avoid leaks of oil, fuel, hydraulic fluids and grease; • Preventative maintenance and relevant maintenance logs will be kept for all onsite plant and equipment; • The Appointed Contactor will put in place a specific, step-by-step refuelling procedure which will be communicated to all relevant employees onsite; • Only designated trained operators will be authorised to refuel plant onsite; • Refuelling of plant and machinery will be completed in a controlled manner using drip trays (bunded container trays) in a dedicated refuelling area; • All oil stored onsite for construction vehicles will be kept in a lock and bund protected area; • Bunds for the storage of hydrocarbons and chemicals during construction will have a holding capacity of 110% of the volume to be stored and will be regularly inspected for leaks and signs of damage; and,

Aspect of Construction	Potential Hazard	Magnitude	Likelihood	Risk Management Procedures – Mitigation Measures
				• Procedures and contingency plans will be set up to deal with emergency accidents or spills. Only emergency breakdown maintenance will be carried out onsite.
Water Quality - Cement	Cement and Concrete resulting in water pollution and contamination to the environment	Moderate	Low	• The production, transport and placement of all cementitious materials will be strictly planned and supervised; • All concrete pours will be carried out in dry weather; • Shutters will be designed to prevent failure; • Chemicals used will be biodegradable where possible; • Any spillages will be cleaned up immediately and disposed of correctly; • Where possible, concrete skips, pumps and machine buckets will be prevented from slewing over water when placing concrete; • Where concrete is to be placed by means of a skip, the opening gate of the delivery chute will be securely fastened to prevent accidental opening; • No washing of plant or equipment will be permitted onsite; • Concrete washout of trucks and larger plant will not occur onsite; • Concrete washing from smaller equipment will be collected and disposed of offsite; and, • Surplus concrete will be returned to batch plant after completion of a pour.
Earthworks	Encountering contaminated materials during excavation works	Moderate	Medium	• All excavated contaminated soils will be removed offsite in a timely manner, in accordance with the relevant waste legislation.
Waste Management	Incorrect management of general waste resulting in litter onsite and / or attraction of rodents	Minor	Low	• Should hazardous waste be encountered during construction (such as contaminated soils), it will be segregated, contained, classified, transported and disposed of by appropriately permitted Waste Contractors in accordance with all relevant national and international waste legislation;

Aspect of Construction	Potential Hazard	Magnitude	Likelihood	Risk Management Procedures – Mitigation Measures
				• Measures will be implemented to minimise waste and ensure correct handling storage and disposal of waste; and, • No burning of waste material shall take place onsite.
Nuisance - Noise	Generation of noise resulting in disturbance to local fauna and / or loss of amenity value within the local area	Minor	Medium	• Works will be limited to 8:00 to 18:00 Monday to Friday and 8:00 to 14:00 on Saturdays, thereby, limiting noise effects on sensitive species. • All plant and equipment onsite will be in a fit condition for use, to prevent the addition of noise from maintenance issues; • All plant (fixed and mobile) will be maintained to a high standard to reduce any tonal or impulsive sounds; • All plant will be throttled down or switched off when not in use; and • Handling of all materials will take place in a manner which minimises noise emissions. In particular, drop heights of material will be reduced; and, • Positioning of hoarding and enclosures around noisy works or plant as required.
Nuisance – Dust / Dirt	Generation of dust / dirt causing loss of amenity at residential area or community areas.	Low	Low	• In the unlikely event of dust problems arising, the contractor will use hoses to saturate all bulk materials with water, both during the process and whilst loading / unloading. • Burning of materials onsite will not be permitted, in order to prevent smoke emissions. • The contractor will ensure that the area around the Site, including the public roadway, is regularly and adequately swept to prevent any accumulation of dust and dirt.
Biodiversity Protection	General Measures	N/A	N/A	• An ECoW will inspect the Sites in advance of works commencing and will undertake Site inspections as required during the works to ensure that they will be completed in line with the mitigation measures detailed within the EcIA; • If protected or notable species are encountered during operations at the Site, the ECoW or NPWS will be contacted for advice;

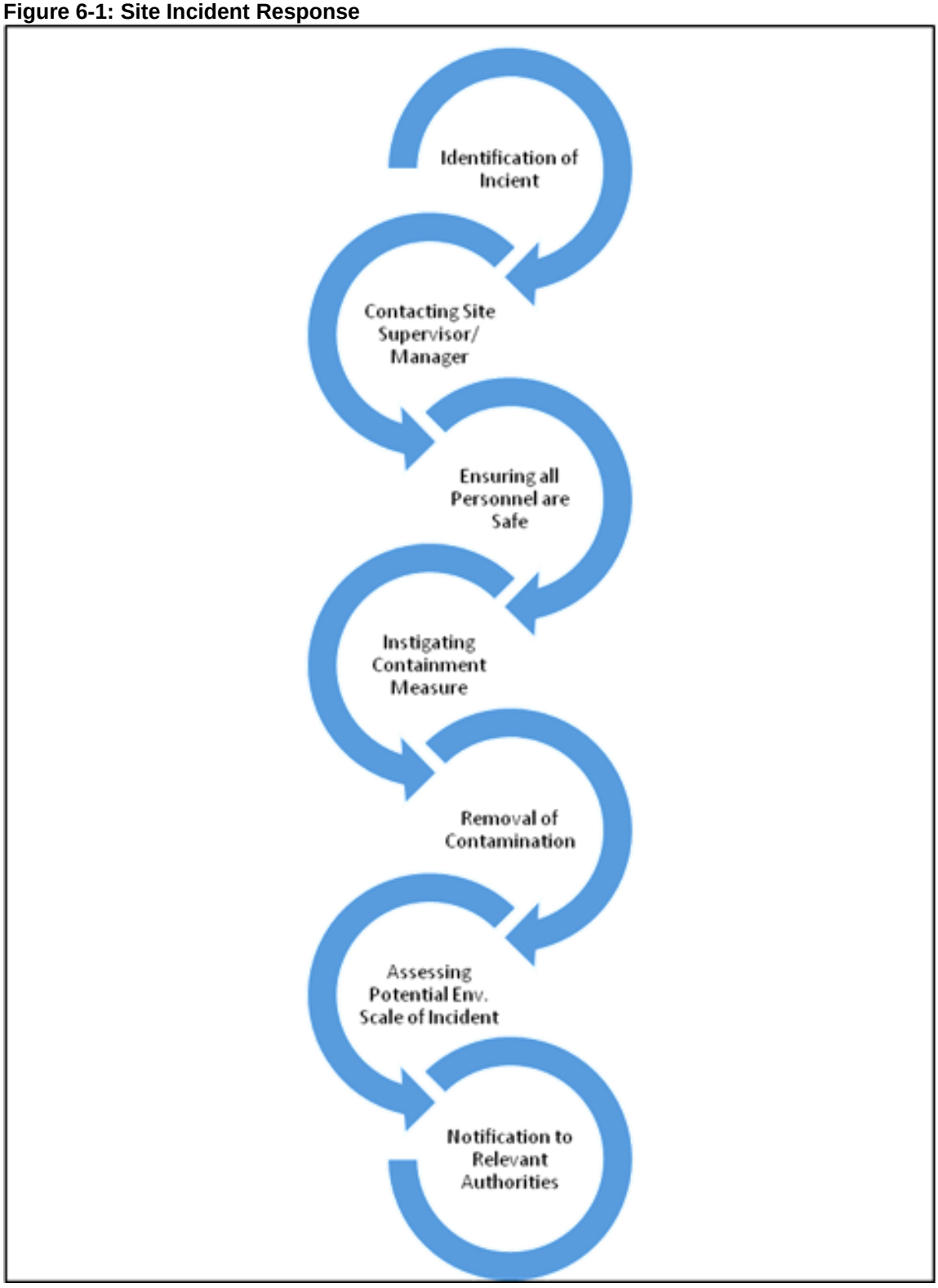
Aspect of Construction	Potential Hazard	Magnitude	Likelihood	Risk Management Procedures – Mitigation Measures
				• The vegetation removal is to be confined to plants impacting the structural integrity of the roof and masonry i.e., root-taking ivy and undergrowth.
	Impacts on Trees and Root Systems	Moderate	High	• All tree protection measures outlined in the Arboricultural Assessment Report submitted by County Tree Care Ltd as submitted as part of the Proposed Development will be adhered to. This includes for a tree protection plan and method statement.
	Impacts on amphibians	Minor	Low	• If any amphibians are discovered onsite during the construction works, all works within the affected area will cease and the project ECoW / NPWS will be consulted.
	Impacts on bats	Low	Low	• The establishment of additional / supplementary hedgerow / treelines as a part of the Development will provide additional foraging and commuting opportunities for species of bat that may occur within the area.
	Impacts on birds	Minor	Low	• Any vegetation clearance required will take place outside of the nesting bird season (1st of March to 31st of August), as per Section 40 of the Wildlife Act 1976, as amended by Section 46 of the Wildlife (Amendment) Act 2000; • In the event that vegetation clearance works need to be undertaken within the main breeding season, this would be undertaken in consultation with NPWS; • Prior to vegetation removal, the ECoW will inspect the Site and will supervise the Site during all vegetation removal works; and, • Should birds nest within the active working area during the construction phase, works within the area will stop and the ECoW will be consulted.
	Impacts on terrestrial mammals	Minor	Medium	• Should construction works be required outside of daylight hours, the appointed project ECoW will be consulted as required; • All vegetation clearance will be undertaken in a systematic way to allow any potential species that may be utilising these areas to disperse naturally as works progress;

Aspect of Construction	Potential Hazard	Magnitude	Likelihood	Risk Management Procedures – Mitigation Measures
				• New drainage infrastructure will be laid in sections and backfilled; • Waste will be kept contained in a designated area to avoid animals becoming trapped in litter; • Where deep excavations will be required onsite, appropriate measures to protect mammals from ingress will be installed; and, • If unidentified burrows are identified within the works area during construction, the project ECoW will be contacted for advice.
Invasive Species	Spread of invasive species	Moderate	Medium	• All vehicles, machinery and any other equipment that may be used for the works will be washed prior to its use onsite to prevent the import of plant material and seeds; • Before machinery or equipment is unloaded at the Site, equipment will be visually inspected to ensure that all adherent material and debris has been removed; • Any vehicles and machinery that are not clean will not be permitted entry to the Site; • All materials to be imported to the Site, including additional planting, will be sourced from a reputable supplier and records of all material / supplies to Site will be maintained; and, • In advance of works, all site personnel will receive an induction regarding invasive species.

6 EMERGENCY MANAGEMENT PLAN

Although, the Site will be managed, there remains a low risk from unexpected occurrences, such as accidental spillages onsite, which may result in environmental pollution. Incidents onsite will follow a similar emergency response template. This template is outlined in the schematic presented in Figure 6-1 below:

Figure 6-1: Site Incident Response



6.1 Incident Response

Where an environmental incident is identified then, it will be reported to the on-duty Project Manager and thereafter the Health and Safety Officer. Each incident will have the following information gathered and reported:

- Location of the incident;
- Time and date;
- Scale of the incident;
- Nature of the incident, including any specific environmental dangers;
- Remediation actions taken;
- Name of personnel noting the incident, and who they work for; and,
- Any other relevant details.

Works in the vicinity of the incident must be stopped until the incident is resolved and an all-clear is issued by the Site Manager or Environmental Manager. All personnel in the immediate area of the release / spill shall be alerted to the circumstances and any dangers to them (Health and Safety) and to the environment.

The Project Manager will ensure, where required, that the incident details are communicated to the relevant regulatory authorities.

7 MONITORING AND IMPLEMENTATION OF THE CE&WMP

7.1 Complaints, Comments and Enquiries

Any complaint related to the Site will be dealt with by the Site Manager. The source of the complaint will be investigated immediately. If possible, the source of the complaint will be stopped, moved or modified immediately. All complaints must be recorded including details of the complaint and any required corrective actions.

7.2 Site Visits and Evaluation of Compliance

An Environmental clerk of works (ECoW) will inspect the Site in advance of works commencing and will undertake Site inspections as required during the works. The aim of these visits will be to ensure compliance with procedures and mitigation measures set out in the CEMP.

This will be done by means of a site inspection and the auditing of different aspects of the works including documentation. Checklists for compliance will be drawn up, corrective actions will be required for any non-compliances identified and follow-up surveys will be scheduled to ensure compliance.

All monitoring results and reports detailing the compliance or otherwise of the works will be maintained at the site office. In the event of an incident, an incident report will be completed and that will document both the cause of the incident and the corrective action taken to address the incident. These incident forms will be available for inspection at the site office.

7.3 Control of Records

Environmental records will be maintained in accordance with the respective company procedure and legal requirements. The records are to be maintained, in either hard copy or electronic format as required by the individual procedure that the records relate to, in such a way that they are readily identifiable, retrievable and protected against damage, deterioration or loss. The procedure that the records relate to also specifies the retention time for the records and who has the authority to dispose of them.

8 IMPLEMENTATION, REVIEW AND TRAINING

The appointed Project Manager will be responsible for developing an updated site-specific CEMP prior to the commencement of site works. The Project Manager will be responsible for ensuring compliance with the CEMP. Each sub-contractor will be responsible for appointing a point of contact for matters related to environmental protection.

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

All staff will receive environmental awareness training as part of their site induction to ensure they are aware of their responsibilities under the CEMP. This will include:

- Site induction, including relevant environmental issues;
- Method statement and risk assessment briefings;
- Toolbox talks, including instruction on incident response procedures; and,
- Key task-specific environmental issue briefings.

The CEMP will be reviewed on an as needed basis if the scope of works changes significantly or if the need is identified following a site audit.

8.1 Training Awareness and Competence

Site personnel shall be trained appropriately to ensure they are competent to perform tasks that have the potential to cause a significant environmental impact as part of the proposed development. Competence is defined in terms of appropriate education, training and experience.

All managers and supervisors will be briefed on the CEMP.

Method statements will be prepared for specific activities prior to the works commencing and will include environmental management / best practice measures and emergency preparedness appropriate to the activity. The Site Manager or nominated deputy will review key method statements prior to their issue.

Method statement briefings will be given before personnel carry out key activities for the first time.

9 CONCLUSIONS

This CEMP document outlines the management procedures to enable the Appointed Site Manager to respond to potential environmental risks from construction activities onsite. The final CEMP will cover all aspects of the construction development.

In assessing risks onsite, full cognisance has been taken of best practice guidance including:

- C532 – Control of Water Pollution from Construction, Guidance for Consultants and Contractors [1];
- C741 - Environmental Good Practice on Site (4th edition) [2];
- All works will be undertaken in accordance with the Inland Fisheries Ireland (IFI) 'Requirements for the Protection of Fisheries Habitat during Construction and Development' [3]
- Guidance for the Treatment of Badger Prior to the Construction of National Road Schemes [4];
- Guidance for the Treatment of Otters Prior to the Construction of National Road Schemes [5];
- Guidance on the Management of Noxious Weeds and Non-Native Invasive Plant Species on National Roads [6]; and,
- IFI Biosecurity Protocol for Field Survey Work [7].

The appointed Contractor will be required to develop an updated CEMP prior to the commencement of any construction works and, if required, this will be submitted to the planning authority for approval.

The implementation of all the environmental management measures outlined in this working document CEMP will ensure that the construction programme will be completed without significant adverse effects on the surrounding environment.

10 REFERENCES

[1] CIRIA, “CIRIA C532 Control of Water Pollution from Construction, Guidance for Consultants and Contractors,” CIRIA, 2001.

[2] CIRIA, “C741 Environmental Good Practice on site (fourth edition),” Construction Industry Research and Information Association, London, 2015.

[3] IFI, “Guidance and Protection of Fisheries during Construction Works in an adjacent to Water,” Inland Fisheries Ireland, Dublin, 2016.

[4] NRA, “Guidelines for the Treatment of Badgers prior to the Construction of National Road Schemes,” National Roads Authority, Dublin, 2006.

[5] NRA, “Guidelines for the Treatment of Otters prior to the Constrcution of National Road Schemes,” National Roads Authority, 2006.

[6] NRA, “Guidelines on the Management of Noxious Weeds and Non-Native Invasive Plant Species on National Roads,” National Roads Authority, 2010.

[7] IFI, “IFI Biosecurity Protocol for Field Survey Work,” Inland Fisheries Ireland, 2010.

[8] EPA, “Revised Guidelines on the Information to be Contained in Environmental Impact Statements (Draft),” Environmental Protection Agency, Dublin, 2015.

[9] EPA, Guidance on assessing and costing environmental liabilities, Dublin: EPA, 2014.