

# Construction Environmental Management Plan

(Working Document)



**Bellmount Developments Limited  
Strategic Housing Development  
Wilton Road, Victoria Cross,  
Bishopstown, Cork.**



MALONE O'REGAN





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Strategic Housing Development  
Bellmount Developments Limited**

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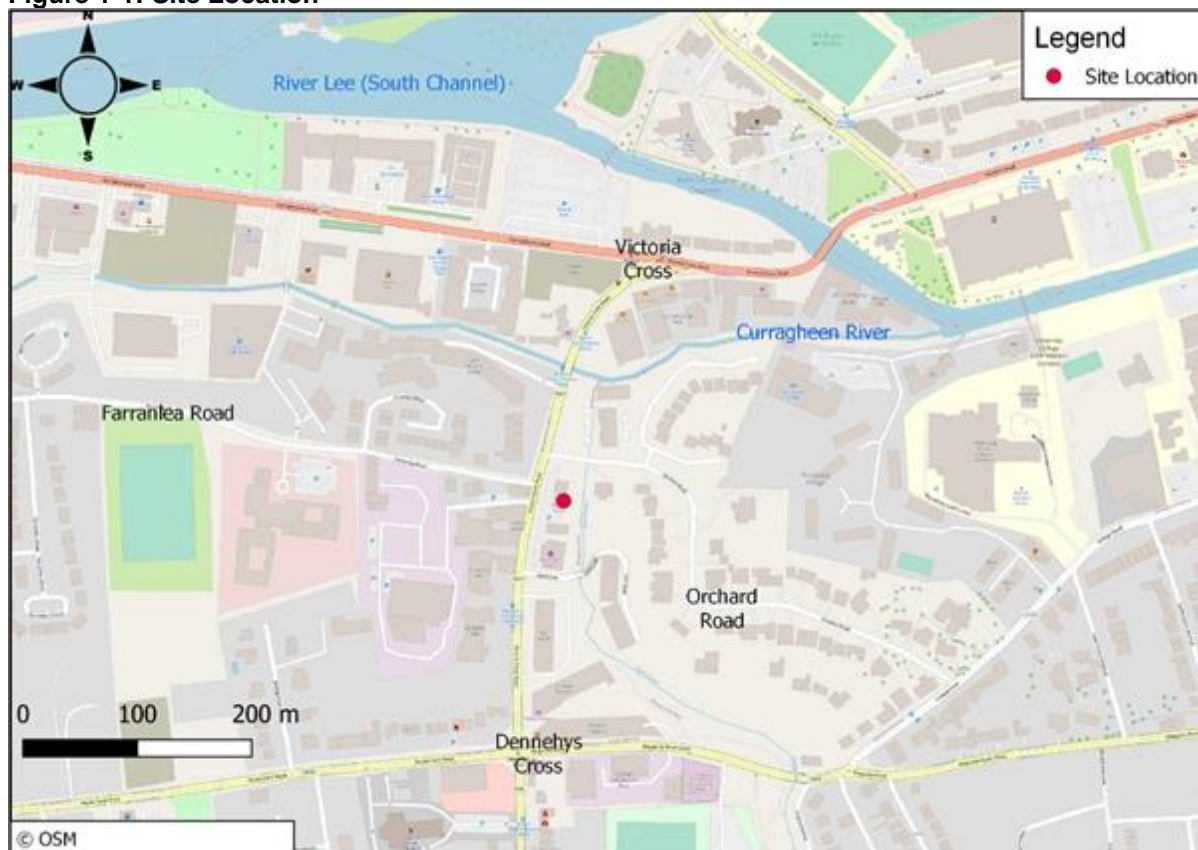
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## 1 INTRODUCTION

Malone O' Regan Environmental Services (MOR) was commissioned by Bellmount Developments (the Applicant) to prepare a Construction Environmental Management Plan (CEMP) to accompany a planning application for the development of a Strategic Housing Development (SHD) and all associated works (Proposed Development) on lands at Wilton Road, Victoria Cross, Bishopstown, Cork (OS Reference W 65206 71067).

The location of the Proposed Development (the Site) is shown in Figure 1-1.

**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:

- CIRIA C741 Environmental Good Practice on Site (4<sup>th</sup> edition) [1];
- C532 – Control of Water Pollution from Construction, Guidance for Consultants and Contractors [2];
- C753 - The SuDS manual [3];

- Guidance from the Bat Conservation Trust (BCT) '*Bats and Artificial Lighting in the UK*' [4]
- Guidelines on The Management of Noxious Weeds and Non-Native Invasive Plant Species on National Roads [5]; and,
- BS 5228-1 + A1:2014: Code of Practice for noise and vibration control on construction and open sites- Part 1: Noise [6] and Part 2 Vibration [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 the Planning Authority 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

Bellmount Developments Limited intend to apply to An Bord Pleanála for planning permission for a strategic housing development at The Former Finbarr Galvin Motor Dealership, Fronting on to Victoria Cross Road and Orchard Road, Bishopstown, Cork.

The development will consist of:

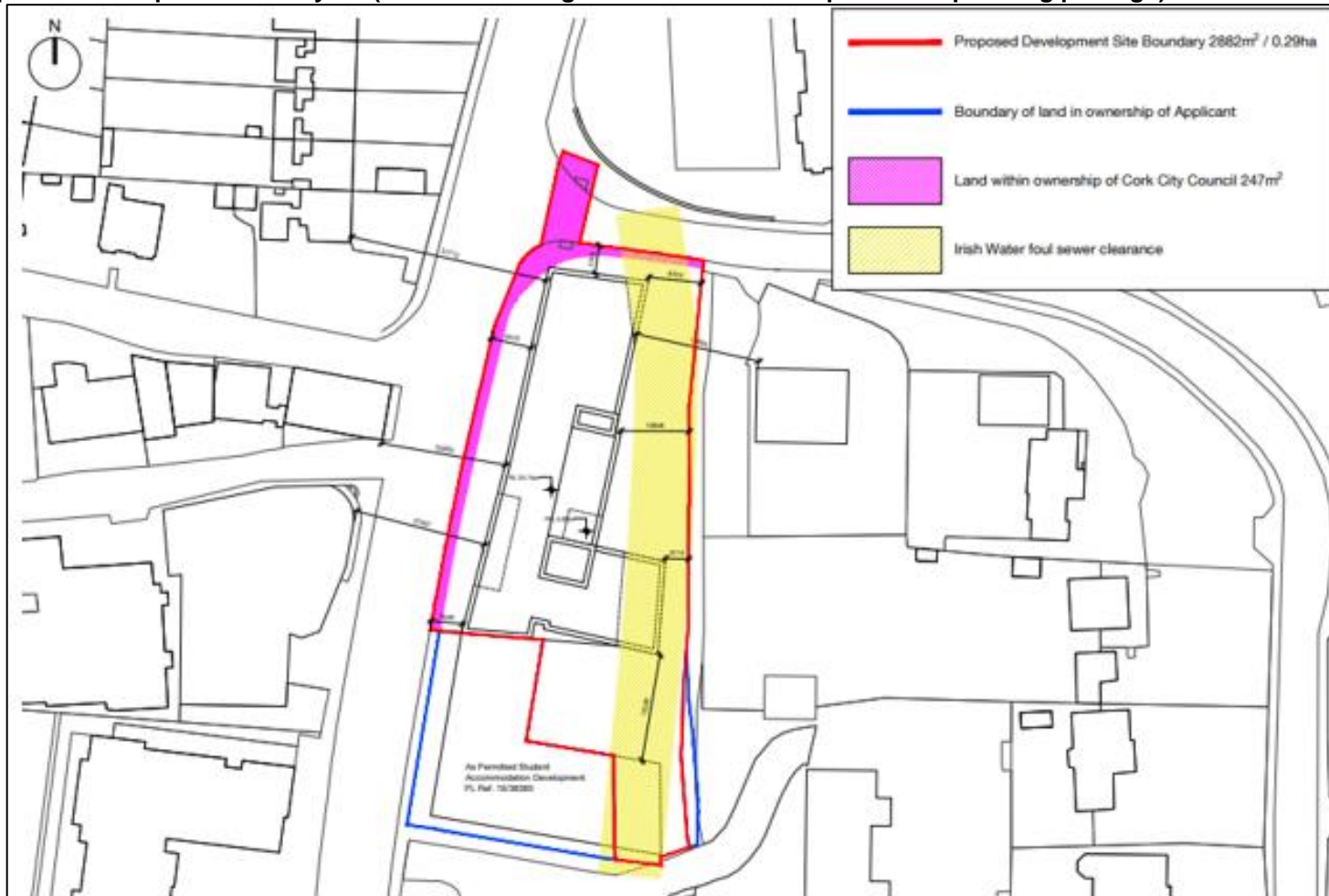
- The demolition of existing structures on site;
- The construction of 78 no. student accommodation apartments (ranging in size from single bed studio apartments to 8-bed apartments) comprising a total of 206 no. bed spaces in 1 no. 6 storey block;
- Student amenity facilities including a study area, games room, lounge space, laundry room and server/ICT room;
- The provision of landscaping and amenity areas including a courtyard space (including modifications to the external amenity area of the student accommodation scheme permitted under An Bord Pleanála Ref. 19/38385), 1 no. rooftop terrace and a riverfront amenity incorporating a pedestrian and cycle path accessing onto Ashbrook Heights and Orchard Road;
- The provision of a set down area, 1 no. access point (for emergency vehicles only), footpaths and repositioned pedestrian crossing and associated tactile paving on Orchard Road;
- The provision of a new junction build out at the junction of Orchard Road and Victoria Cross Road;
- The provision of footpaths and landscaped areas along Victoria Cross Road; and,
- All associated ancillary development including pedestrian/cyclist facilities, lighting, drainage, boundary treatments, bin and bicycle storage and plant at ground and roof top levels.

Full details of the Proposed Development are provided as part of the overall planning application. Figure 2-1 below shows the existing site layout and Figure 2-2 below shows the proposed site layout.

Figure 2-1: Proposed Development existing Site Layout



Figure 2-2: Proposed Development Site Layout (Refer to Drawing A01-10 submitted as part of the planning package)



### **3 CONSTRUCTION WORKS**

#### **3.1 Construction Programme**

It is envisaged that construction of the Proposed Development will be completed by the beginning of 2024/25 3<sup>rd</sup> level term.

#### **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 timelines will be as follows:

- 08:00am to 18:00pm Monday to Friday;
- 08:00am to 14:00pm 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 relevant 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. The compound will be located at the proposed lay-by on the eastern boundary. Sewage will be chemically treated and removed offsite by a licensed contractor to a licensed disposal facility or a temporary connection to the Irish Water sewer will be applied for.

During the construction works, construction vehicles (i.e., Heavy Goods Vehicles (HGVs)) are proposed to access the Site via the existing entrances for the duration of the works.

#### **3.4 Construction Traffic and Site Access**

During the construction works, construction vehicles i.e. Heavy Goods Vehicles (HGVs) are proposed to approach the site via the existing most northerly entrance off Orchard Road.

Pedestrian, cyclist and vehicle access along neighbouring roads will be maintained throughout the construction phase. The developer will provide information on the requirements of the site traffic access rules, which will include the following:

- Access routes from the entrance to the compound.
- Permitted HGV site access between 7:00am to 6:00pm, no permitted access out of these times.
- No parking will be allowed on any public access roads to the site.
- No construction traffic will be permitted via any existing occupied residential areas.
- No vehicle may park on or around any footpaths in the adjoining areas.
- Caution must be exercised entering and leaving the site.
- All vehicles must stop at the site entrance
- All instructions from the developer or development staff must be obeyed.

- Vehicles leaving the site must do so only at an appropriate break in the traffic and must not force their way into traffic.
- Only vehicles with specific business on the site can enter the site once permission has been granted by the developer and / or his staff.
- Heavy vehicle drivers must check their tyres for lodged stones and remove them prior to returning to the public roads.
- It is proposed that construction vehicle movements would be restricted to the main arterial routes and not pass through predominantly residential areas.

Traffic and access management measures will include the following road maintenance, delivery and pedestrian measures.

### **Road Maintenance**

- Provision of wheel cleaning facilities will be made available on-site where it is deemed necessary or if space constraints do not permit this, the provision of power washing facilities for lorry wheels prior to egress off the site onto the public road to maintain the road in a clean condition.
- A road sweeper will be utilised as required on the public road at vehicular access / egress points.

### **Deliveries and Off Loading**

- Vehicles will be directed to the delivery points for holding/off-loading/storage, these deliveries will be controlled by a dedicated person allocated to overseeing all deliveries and controlling the entrance.
- All deliveries will be notified to the site management team at least 24 hours in advance.
- No large deliveries will be allowed to the site during peak traffic times for the area.

### **Pedestrian and Vehicle Separation**

- All pedestrian routes will be adequately segregated from vehicular routes across the site.
- All vehicle crossing points will have appropriate signage to alert pedestrians of vehicle crossing points.
- All site operatives will be given a specific site induction, giving information on the pedestrian access routes.

Road closures are not anticipated, however if they are required for the delivery of large items of plant or materials then such temporary road closures will be planned and approved by the Local Authorities.

## 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,
- Reduce / avoid impacts on biodiversity.

### 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)	<p>Responsible for management of the construction phase of the project. Has overall responsibility for the environmental performance of the project.</p> <p>Responsible for implementing the CEMP during the construction phase to ensure compliance with environmental legislation, consents, objectives, targets, and other environmental commitments, including those arising from the Environmental Impact Assessment Report.</p> <p>Responsible for reporting incidents and where required, communicating the incident details to the Client and relevant regulatory authorities.</p> <p>Monitoring of the construction processes against the project objectives.</p> <p>Liaison with all staff and local stakeholders dealing with any complaints or queries from the public.</p>
Site Staff (Assigned by Appointed Contractor)	<p>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.</p>
Environmental Clerk of Works / Consultant (Assigned by Appointed Contractor) (MOR)	<p>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.</p>

### 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 are outlined in Table 5-4 below.

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(s);
- Final Construction Environmental Management Plan (CEMP); and,
- Final Construction and Demolition Resource Waste Management Plan.

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

Aspect of Construction	Potential Hazard	Magnitude	Likelihood	Risk Management Procedures – Mitigation Measures
<b>1. Site Operations and Design</b>	a. Potential nuisance towards public (out of hour's activities).	Slight	Low	<ul style="list-style-type: none"> <li>Normal construction hours will be restricted to 08:00 to 18:00 Monday to Friday and 08:00 to 14:00pm;</li> </ul>
	b. Traffic	Moderate	Low	<ul style="list-style-type: none"> <li>Best practice measures and the Construction Traffic Management Plan will be agreed with the Planning Authority in advance of commencement of the works and implemented;</li> <li>Access to the Site for HGVs will be via the existing site entrance at the northern boundary of the Site;</li> <li>Hydrocarbon spill kits shall be in place on all site vehicles / plant; and,</li> <li>Adequate signage shall be provided on the public network identifying the Site, access, speed limits etc, see Section 3.4 for further details.</li> </ul>
<b>2.A Water Quality – Suspension solids</b>	a. Suspended sediment due to run-off from construction areas entering the Glasheen River causing potential detriment to water quality.	Moderate	Medium	<ul style="list-style-type: none"> <li>Standard measures to control run-off will be incorporated into the Method Statements, to include Construction Industry Research and Information Association (CIRIA) 2001 C532 – Control of Water Pollution from Construction Sites, Guidance for Consultants and Contractors and CIRIA 2015 C741 Environmental Good Practice on Site;</li> <li>Excavations will be left open for minimal periods to avoid acting as a conduit for surface water flows;</li> <li>During the construction period appropriate containment measures, sandbag or similar, shall be installed onsite where material is required to be stored temporarily, thus ensuring adequate protection in silt-laden runoff draining offsite;</li> <li>All construction works associated with the new drainage infrastructure onsite will be completed, checked and cleaned where required, in advance of discharging to the Glasheen River;</li> <li>A silt fence or similar sediment control structure will be installed along the eastern boundary of the Site to prevent sediment running off into the Glasheen River;</li> <li>The Contractor shall ensure that sediment / silt-traps, and check dams are regularly maintained during the construction phase;</li> <li>Existing drains which are not being used as part of the Proposed Development will be grouted at both ends and associated gullies will be blocked in advance of any excavations;</li> <li>Weather conditions will be considered when planning construction activities to minimise risk of run off from the Site;</li> <li>Provision of exclusion zones and barriers between any stockpiled materials and any surface water features to prevent sediment washing into the receiving water environment;</li> </ul>

Aspect of Construction	Potential Hazard	Magnitude	Likelihood	Risk Management Procedures – Mitigation Measures
				<ul style="list-style-type: none"> <li>• If dewatering is required as part of the proposed works e.g. in trenches for services in wet areas, water must be analysed to determine how it is to be managed i.e. apply for a temporary connection to the sewer from Irish Water or to removal offsite by a licensed contractor for disposal in accordance with all relevant waste regulations;</li> <li>• Entry by plant, equipment, machinery, vehicles and construction personnel into watercourses, wet drainage ditches or the river riparian zones shall not be permitted;</li> <li>• All routes used for construction traffic shall be protected against migration of soil or wastewater into watercourses;</li> <li>• An Environmental Clerk of Works shall be engaged to periodically inspect all elements of the works for their entire duration;</li> <li>• Emergency response procedures will be put in place; and,</li> <li>• Any oils, fuels and potential pollution substances shall be stored on hardstanding or within a suitably bunded area.</li> </ul>
<p><b>2.B Water Quality – Oil &amp; other construction related chemicals</b></p>	<p>a. Oil Spill / Oil leaking from bulk container to ground / surface water. Oil pollution is known to cause significant damage to the aquatic environment.</p>	<p>Moderate</p>	<p>Medium</p>	<ul style="list-style-type: none"> <li>• All materials shall be stored at the main contractor compound and transported to the works zone immediately prior to construction;</li> <li>• Appropriate containment facilities will be provided to ensure that any spills from vehicles are contained and removed offsite. Adequate stocks of absorbent materials, such as sand or commercially available spill kits shall be available;</li> <li>• The Contractor shall ensure that all personnel working onsite are trained in pollution incident control response;</li> <li>• A regular review of weather forecasts of heavy rainfall is required;</li> <li>• No storage of hydrocarbons or any polluting chemicals will occur within 5m of watercourses or surface water features;</li> <li>• Any diesel or fuel oils stored onsite will be bunded to 110% of the capacity of the storage tank;</li> <li>• Re-fuelling of plant will not occur within 5m of any watercourse or surface water feature and only in bunded refuelling areas;</li> <li>• Design and installation of fuel bowsers to be in accordance with best practice guidelines;</li> <li>• Drip trays and spill kits will be kept available onsite;</li> <li>• Cabins, containers, workshops, plant, materials storage and storage tanks shall not be located within 5m of the river;</li> <li>• 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; and,</li> </ul>

Aspect of Construction	Potential Hazard	Magnitude	Likelihood	Risk Management Procedures – Mitigation Measures
	b. Oil spill during refuelling operations.	Moderate (low volume)	Low	<ul style="list-style-type: none"> <li>Any existing drainage and fuel / oil interceptors will be maintained until they are ready to be replaced or are decommissioned.</li> <li>Refuelling of plant and machinery will be completed in a controlled manner using drip trays (bunded container trays);</li> <li>Fuel containers will be stored within a secondary containment system, e.g. bunds for static tanks or a drip tray for mobile containers. Bunds for the storage of hydrocarbons and chemicals will have a holding capacity of 110% of the volume to be stored;</li> <li>Only emergency breakdown maintenance will be carried out onsite;</li> <li>Emergency procedures and spillage kits will be available and construction staff will be familiar with emergency procedures;</li> <li>Fuel and oil stores including tanks and drums will be regularly inspected for leaks and signs of damage;</li> <li>Drip trays will be used for fixed or mobile plant such as pumps and generators in order to retain oil leaks and spills;</li> <li>Only designated trained operators will be authorised to refuel plant onsite;</li> <li>Procedures and contingency plans will be set up to deal with emergency accidents or spills;</li> <li>An emergency spill kit with oil boom, absorbers etc. will be kept onsite for use in the event of an accidental spill; and,</li> <li>Any existing drainage and fuel / oil interceptors will be maintained until they are ready to be replaced or decommissioned.</li> </ul>
<b>2.C Water Quality - Cement</b>	a. Cement and Concrete entering waters resulting in water pollution and contamination to the environment	Moderate	Low	<ul style="list-style-type: none"> <li>All concrete pours will be carefully planned to avoid any impacts;</li> <li>Water supply points, if required, will be agreed with the appointed Contractor in advance of the works;</li> <li>Shutters will be designed to prevent failure. Grout loss will be prevented from shuttered pours by ensuring that all joints between panels achieve a close fit or that they are sealed;</li> <li>Chemicals used will be biodegradable where possible;</li> <li>Any spillages will be cleaned up immediately and disposed of correctly;</li> <li>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;</li> <li>Where possible, concrete skips, pumps and machine buckets will be prevented from slewing over water when placing concrete;</li> <li>Concrete washout of trucks and larger plant should not occur onsite;</li> </ul>

Aspect of Construction	Potential Hazard	Magnitude	Likelihood	Risk Management Procedures – Mitigation Measures
				<ul style="list-style-type: none"> <li>Concrete washing from smaller equipment will be collected and disposed of offsite, not to the onsite drainage system; and,</li> <li>Surplus concrete will be returned to batch plant or offsite concrete wash facility after completion of a pour.</li> </ul>
<b>3. Earthworks</b>	a. Encountering contaminated materials during excavation works	Moderate	High	<ul style="list-style-type: none"> <li>Given the past industrial use at the Site, contaminated materials are likely to be encountered during the earthworks phase of the project. A risk assessment should be completed by an independent competent person to determine the most appropriate control measures and disposal options; and,</li> <li>All excavated contaminated soils will be removed offsite in a timely manner, in accordance with the relevant waste legislation.</li> </ul>
<b>4. Waste Management</b>	a. Incorrect management of general Municipal Wastes / welfare facilities resulting in litter onsite and / or attraction of rodents	Moderate	High	<ul style="list-style-type: none"> <li>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;</li> <li>Measures will be implemented to minimise waste and ensure correct handling storage and disposal of waste;</li> <li>During the construction phase, covered skips should be available across the Site to allow for appropriate segregation of wastes in accordance with existing legislation; and,</li> <li>No burning of waste material shall take place onsite.</li> </ul>
<b>5. Nuisance – Dust / Dirt</b>	a. Generation of dust leading to dust soiling at receptors	Moderate	Medium	<ul style="list-style-type: none"> <li>All potential demolition phase environmental impacts will be addressed through the implementation of a comprehensive Construction and Demolition Resource Waste Management Plan (C&amp;D RWMP) in accordance with current best practice guidelines. This plan will be agreed with the Planning Authority and relevant statutory bodies for the proposed works.</li> </ul>
<b>6. Nuisance - Noise</b>	a. Generation of noise resulting in loss of amenity to the local area and cause disruption to the local species;	Slight	Medium	<ul style="list-style-type: none"> <li>While increased levels of background noise are unavoidable during any construction works, all construction activities will be confined within the site boundary;</li> <li>A noise complaint procedure shall be implemented;</li> <li>A solid and continuous hoarding shall be erected across the entire site perimeter;</li> <li>Onsite vehicles / equipment shall be throttled down / switched off when not in use;</li> <li>Selection of low noise rated machinery and equipment;</li> <li>Use of acoustic enclosures / screens where applicable;</li> </ul>

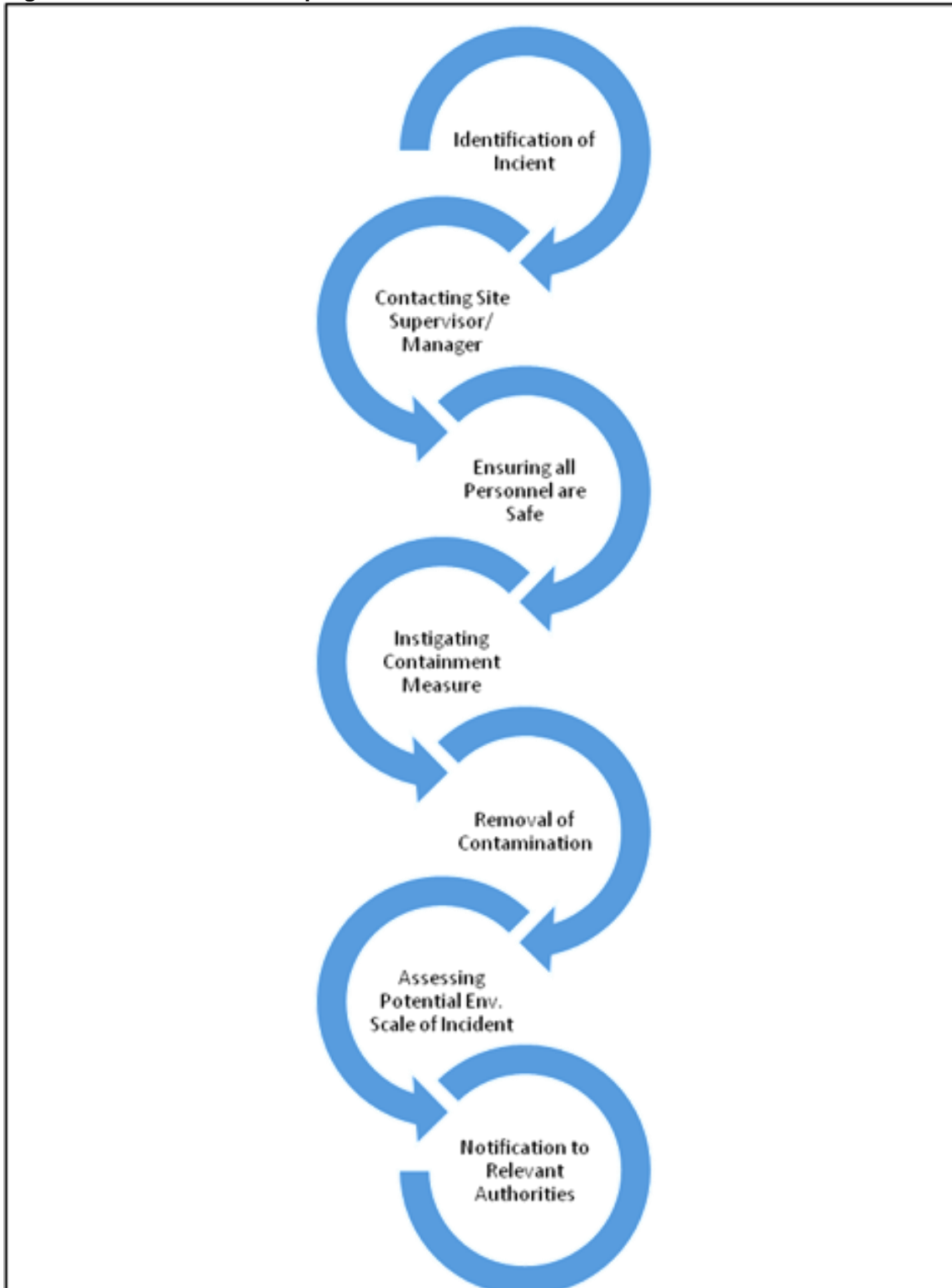
Aspect of Construction	Potential Hazard	Magnitude	Likelihood	Risk Management Procedures – Mitigation Measures
				<ul style="list-style-type: none"> <li>Isolation of vibrational sources such as pumps / compressors where required;</li> <li>Cut off trenches to isolate vibration transmission path installed where required; and,</li> <li>Noise compliance monitoring is undertaken.</li> </ul>
<b>7. Biodiversity Protection</b>	a. Impacts on Bats	High	Medium	<ul style="list-style-type: none"> <li>Immediately prior to works on the roof structure / demolition of the buildings, an updated internal and external building inspection will be required to confirm the presence / absence of roosting bats within the building;</li> <li>If bats are found to be roosting within the building, then further measures may need to be considered in order to protect bats against any disturbance (i.e. lighting or noise levels). The NPWS will be consulted for advice and a delegation licence will be if required; and,</li> <li>The findings of the updated bat surveys will be submitted to the planning authority prior to the commenced of the demolition works.</li> </ul>
	b. Impacts on Otters	Medium	Low	<ul style="list-style-type: none"> <li>Construction will be limited to the hours detailed in Section 3.4 which will minimise adverse effects on nocturnal fauna;</li> <li>In advance of works, all Site personnel will receive a Site induction or toolbox talk which will include reference to measures detailed in the CEMP;</li> <li>A solid and continuous hoarding shall be erected across the entire Site perimeter;</li> <li>Onsite vehicles/equipment shall be throttled down/switched off when not in use;</li> <li>Selection of low noise rated machinery and equipment;</li> <li>Use of acoustic enclosures/screens where applicable;</li> <li>Isolation of vibrational sources such as pumps/compressors where required;</li> <li>Cut off trenches to isolate vibration transmission path will be installed where required; and</li> <li>Noise compliance monitoring will be undertaken.</li> </ul>
	d. Impacts on Birds	Low	Low	<ul style="list-style-type: none"> <li>Vegetation clearance will not be conducted between the 1<sup>st</sup> March and the 31<sup>st</sup> August (bird breeding season).</li> </ul>
<b>8. Invasive Species</b>	a. Spread of Invasive Alien Species	Slight	Low	<ul style="list-style-type: none"> <li>All vehicles, machinery and any other equipment used for the works will be washed prior to its use at the Site to prevent the import of plant material or seeds;</li> <li>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;</li> </ul>

Aspect of Construction	Potential Hazard	Magnitude	Likelihood	Risk Management Procedures – Mitigation Measures
				<ul style="list-style-type: none"> <li>• Any vehicles and machinery that are not clean will not be permitted entry to the Site;</li> <li>• All materials to be imported to the Site including additional planting will be sourced from a reputable supplier and records of all material and supplies will be maintained; and,</li> <li>• Measures outlined in Section 3.1 of C744 (Invasive non-native species) will be taken into account.</li> </ul>
<p><b>9. Unexpected Contamination</b></p>		<p>Moderate</p>	<p>Medium</p>	<p>Visual and olfactory indicators of contamination may include the following;</p> <ul style="list-style-type: none"> <li>• Asbestos Containing Materials (ACMs) – board, pipe, free fibres and fragments;</li> <li>• Refuse material (other than concrete and brick);</li> <li>• Odour (petroleum, oil, creosote, solvent, sulphur &amp; gas); and,</li> <li>• Discoloured soil (black / green staining is most common).</li> </ul> <p>If any unexpected materials are identified during the excavation process which differ from those outlined in the Site Investigation Report, works should cease in the area. The area should be fenced off with barrier tape (2.0m buffer zone) and a competent person contacted. The competent person will advise on how to safely proceed which may require a visual inspection / sampling / analysis and / or further investigations.</p>

## 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 CEMP**

### **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(s) 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(s) 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(s) 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:

- CIRIA C741 Environmental Good Practice onSite (4<sup>th</sup> edition) [1];
- C532 – Control of Water Pollution from Construction, Guidance for Consultants and Contractors [2];
- C753 - The SuDS manual [3];
- Guidelines on The Management of Noxious Weeds and Non-Native Invasive Plant Species on National Roads [5];
- Guidance from the Bat Conservation Trust (BCT) '*Bats and Artificial Lighting in the UK*' [4]; and,
- BS 5228-1+A1:2014: Code of Practice for noise and vibration control on construction and open sites- Part 1: Noise [6] and Part 2 Vibration [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, "C:741 Environmental Good Practice on site (fourth edition)," Construction Industry Research and Information Association, London, 2015.
- [2] CIRIA, "CIRIA C532 Control of Water Pollution from Construction, Guidance for Consultants and Contractors," CIRIA, 2001.
- [3] CIRIA, "C753 - The SuDS Manual," CIRIA, London, 2015.
- [4] BCT, "Bats and artificial lighting in the UK Bats and the Built Environment Series," Bat Conservation Truct & Institute of Lighting Professionals, 2018.
- [5] NRA, "Guidelines on The Management of Noxious Weeds and Non-Native Invasive Palnt Species on National Roads," National Roads Authority, Dublin, 2010.
- [6] BSI, BS5228-1:2009+A1:2014 Code of Practice for noise and vibration control on construction and open sites. Noise, London: British Standards Institution, 2009.
- [7] BSI, BS 5228-2:2009 2009 Code of practice for noise and vibration control on construction and open sites – Part 2: Vibration, London: British Standard, 2009.
- [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.
- [10] National Roads Authority, "Guidelines on the Management of Noxious Weeds and Non-Native Invasive Plant Speices on National Roads," National Roads Authority, 2010.