May 2022

DN080-MOR-LS-XX-RP-V-XXXX-8062

Construction Environmental Management Plan

Proposed Development (Equinix DB8)

RKD

On behalf of

RKD Architects Ltd.

Profile Park, Co. Dublin

MALONE O'REGAN ENVIRONMENTAL

QUALITY
I.S. EN ISO 9001:2015
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Form ES - 04

MALONE O'REGAN ENVIRONMENTAL

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Title: Construction Environmental Management Plan, Proposed Development (Equinix DB8), RKD Architects Ltd.

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01	26/05/22	CEMP Report	Final	EM	SDC	DH

Construction Environmental Management Plan

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RKD Architects Ltd.

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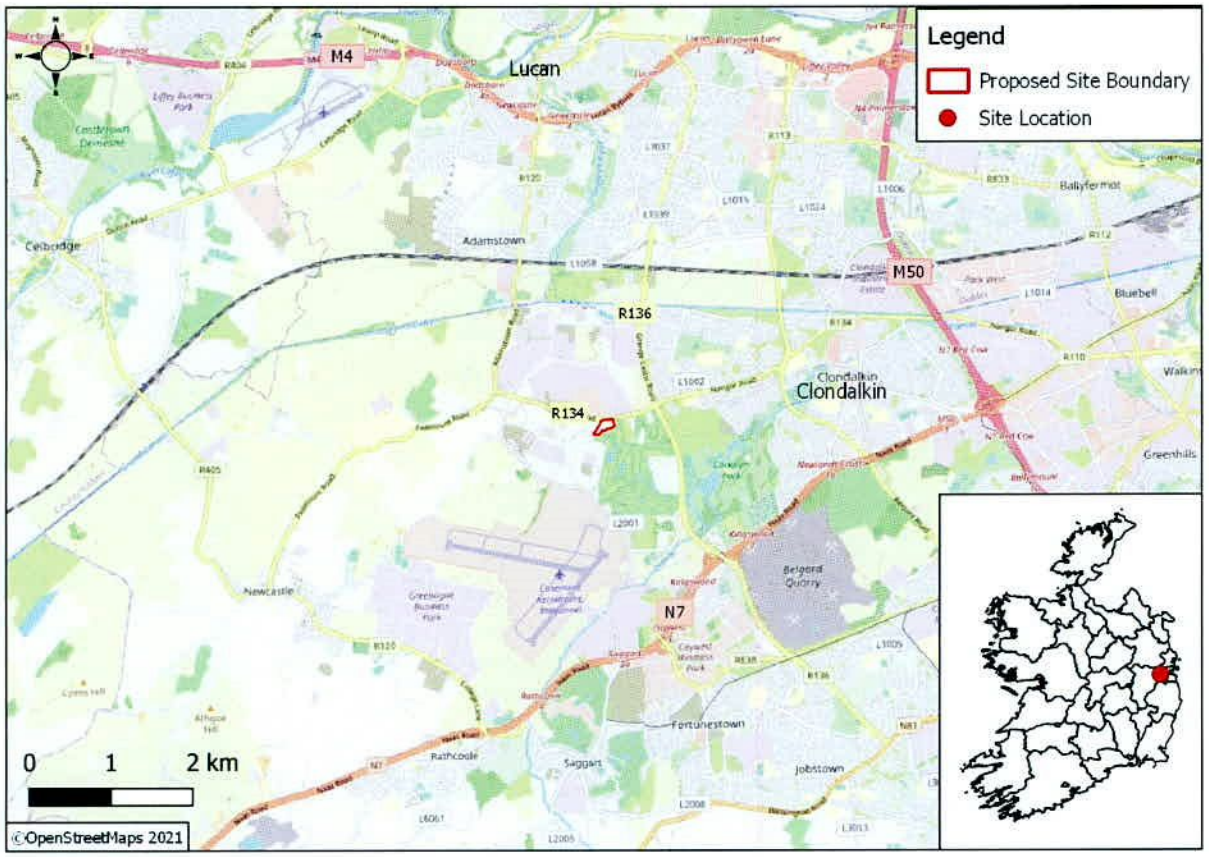
1 INTRODUCTION

Malone O'Regan Environmental (MOR) were commissioned by RKD Architects Ltd on behalf of Equinix (Ireland) Ltd. to undertake an Ecological Impact Assessment (EclA) for the construction of an onsite power generation plant and all auxiliary works (Proposed Development), at Profile Park, Kilcarbery, Dublin, Co. Dublin (OS Reference O 04052 30807).

This report contains modifications to the planning application (SD21A/0186), which proposed to construct a 3-4No. storey data centre, plant room, ESB substation, parking facilities and all other auxiliary works within the boundary outlined below (Figure 1-1). This planning application has been granted as of the 24th of March 2022.

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



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 a careful 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 risks to watercourses in the vicinity of the Site, full cognisance has been taken of:

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

- Guidance for the Treatment of Bats Prior to the Construction of National Road Schemes [3]; and,
- Guidance for the Treatment of Badgers Prior to the Construction of National Road Schemes [4].
- Guidelines on the Management of Noxious Weeds and Non-Native Invasive Plant Species on National Roads [5]; and,
- All works will be undertaken in accordance with the 'Requirements for the Protection of Fisheries Habitat during Construction and Development' [6].

To achieve this objective the CEMP will:

- Provide a method of documenting compliance with the Environmental Commitments / Environmental Management / 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.

Further guidance mentioned in the Natura Impact Assessment (NIS) and Ecological Impact Assessment (EcIA) regarding the protection of particular species may also be applicable to the construction period.

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 on-site works, it should be used as a working document. 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 on-site. The approved CEMP 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 adopted construction stage 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

2.1 Granted Planning

The following development has been granted planning permission under the South Dublin County Council (ref. SD21A/0186) within the Site boundary. The following elements are proposed for construction as part of this development:

- Construction of a 3 storey (part 4 storey) data centre known as 'DB8.' The total gross floor area excluding hot air plenums and external staircase is ca.9,601m^2. The overall height of the data centre ranges from ca.16m to ca.20m to roof level and ca.20m to ca.24m including roof top plant, flues and lift overrun. This building will include:
    - Data halls,
    - Electrical / plant rooms,
    - Offices,
    - Lobbies,
    - Ancillary staff areas including breakrooms and toilets,
    - Stores,
    - Stair/lift cores throughout and photovoltaic panels at roof level.
- Provision of 5No. external generators, 8No. x 75m^3 fuel tanks and ancillary plant contained within a plant yard to the north of DB8;
- Provision of a water tank plant room, air cooled chillers and ancillary plant contained within a chiller plant yard to the south of DB8;
- Provision of a sprinkler pump room (ca.23m^2), 2No. sprinkler tanks (ca.12m high each), heat recovery plant room (ca.17m^2), ESB substation (ca.44m^2), waste/bin stores (ca.52m^2). Total floor area of ancillary structures and plant (ca.303m^2);
- Provision of a delivery yard and loading bays, 64No. car parking spaces, 5No. motorcycle spaces, bicycle shelter serving 14No. spaces, smoke shelter, internal access roads and footpaths, vehicular and pedestrian access to the west from Falcon Avenue and closure of an existing vehicular entrance from Falcon Avenue; and,
- All associated Site development works, services provision, drainage works including attenuation, landscape and boundary treatment works including berming, hedgerow protection areas and security fencing.

The 8No. fuel tanks, with a capacity of 75m^3, will be installed and utilised onsite during the operational phase of this development. These tanks will be double skinned and have a minimum of 10% additional capacity. In addition, these tanks will be stored on an area of hardstanding and will be protected by a wall to the north. There is also a dedicated refuelling point for these tanks, which is located within an area of hardstanding.

2.2 Proposed Development

The Proposed Development will consist of:

- Modifications to the permitted data centre granted under SDCC Reg. Ref. SD21A/0186 comprising the following:
    - Reconfiguration and alteration to the data centre building to include removal of front of house offices at third floor level, alterations to floor levels at second floor to provide consistency between front of house and data halls, parapet height increase of front of house to ca.16.8m, provision of storage at second

floor level in lieu of relocated internal generators to the external generator yard and associated elevational alterations.

- Extension of loading dock at ground floor level by ca.60m² in area with minor height increase to ca.5.3m.
- Removal of 3No. air plenums to the front (north) elevation and provision of screening to generator flues in lieu of omitted plenums.
- Alterations at roof level to include removal of 2m high gantry screening.
- Alterations to the permitted generator plant yard to the north of the data centre to include the removal of fuel tanks, reconfiguration of plant and generators, provision of 2No. additional external generators (increase from 5 to 9No. external generators), provision of 4No. additional external plant rooms, provision of diesel pump tank cabinets and stepover, relocation of generator yard doors and enlarged generator yard to accommodate the proposed modifications.
- Reconfiguration of plant within the permitted chiller plant yard to the south of the data centres.
- Removal of 1No. sprinkler/ water tank and removal of stairs and door to the side of the waster compound.
- Reconfiguration of car parking and motorcycle spaces and removal of 1No. accessible space. 64No. total number of car parking spaces.

- The proposal also includes provision of on-site gas power generation compound (ca.2604m² in area) in the area previously reserved for a future data centre. The compound comprises 7No.modular plant rooms (totalling ca.180m² in area), 10No. gas fired generators and associated flues ca.14.7m high, gas skid, associated modular plant, boundary treatment surrounding the compound ca.6.5m high and 2No. vehicular access points including general and emergency access.
- All associated site development works, services provision, drainage works, access, landscaping and boundary treatment works.
- No buildings are proposed above the existing ESB and SDCC wayleaves to the west and north of the Site.
- Overall Gross Floor Area of the development is reduced by ca.44m² to ca. 9795m² from previously permitted under SDCC Reg. Ref. SD21A/0186.

Refer to Appendix A for Site Layout.

2.2.1 Drainage

2.2.1.1 Surface Water

The On-Site Power Generation (OSPG) covers a site area of 2 604m². The runoff generated from this area and surface water storage requirements have already been included in the site attenuation pond and overall drainage scheme of the site, as granted under Planning Registration No. SD21A/0186. Thus, no additional attenuation storage elements are required for the proposed OSPG development, in order to meet the GDSDS requirements.

The OSPG will drain by pipes, gulley's and channels towards the central pond where storage capacity for a 1:100yr storm event + 20% climate change has already been catered for. The central pond provides a storage volume of circa 756m³ and is adequately sized to cater for this development, particularly as this area was considered as being 100% hardstanding under the aforementioned granted application and now, as can be seen, this area consists largely of

concrete plinths and gravel type surfaces - refer to Dwg. No.'s DB080-PIN-00-ZZ-DR-C-PLAN-1207 Rev. P04 & DB080-PIN-00-ZZ-DR-C-PLAN-1295 Rev. P04.

The overall site QBar is 3.9l/s and the total site surface water drainage will be restricted to this discharge rate. Please refer to the Planning Letter prepared by Pinnacle Consulting Engineers for further details.

2.2.2 External Lighting

The external lighting will be installed as per the original grant of planning (Planning Registration No. SD21A/0186.

2.2.3 Landscaping

The Proposed Development design includes for boundary landscaping works. The proposed layout masterplan, reference DB080-MA-LS-XX-DR-L-PLNT-1050, presents both boundary and internal Site breakout landscaping works.

3 CONSTRUCTION WORKS

3.1 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.

Works will be limited to:

- Monday - Friday 07:00 hours – 19:00 hours
- Saturday 09:00 hours – 13:00 hours
- Sundays and Public Holidays Closed

An Ecological Clerk of Works (ECoW) will be appointed to the project and inspect the Sites in advance of works commencing and will undertake monthly Site inspections during the works as well as being present during any works adjacent to or near waterbodies or treelines to ensure that these works are completed in line with the mitigation measures detailed within this CEMP, the NIS and EclA. In addition, the ECoW will also supervise the works associated with the BMP.

3.1.1 Temporary Compound

A temporary construction compound will be set up within the northern section of the Site away from the Baldonnell Stream.

4 ENVIRONMENTAL MANAGEMENT FRAMEWORK

4.1 Environmental Policy

The project will be carried out in accordance with the policies / objectives listed below:

- South Dublin County Council's Environmental Policy and Procedures; and,
- 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 landfill.

Monitoring of the construction processes against the project environmental objectives will be the responsibility of the Appointed Project Manager.

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 (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 Site Waste Management Plan 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, including those arising from the Environmental Report. Responsible for reporting incident responses and where required, communicating the incident details to 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, water quality monitoring and supervising the segregation and collection of waste.
Health and Safety and Environmental Officer (Assigned by Appointed Contractor)	The Contractor's appointed Health and Safety Office will report to the Project Manager. They will be responsible for the following: • Carrying out duty of health and safety coordinator during the construction works; • Safety Induction of all staff and personnel on Site; • Implementing the contractor's Health and Safety Plan; and, • Auditing the Site Health and Safety Plan and updating as necessary.
Environmental Consultant (Assigned by Appointed Contractor) (MOR)	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. Key activities and environmentally sensitive operations will also be briefed to staff and Contractors. 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 Project 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 [7] 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 risk arising from known sources, an assessment of risk for an unplanned event/incident onsite were also assessed. These were rated as per the EPA 'Guidance on assessing and costing environmental liabilities,' [8]. 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;
- Pluvial flood risk posed by heavy rainfall and associated surface water ponding;
- Water quality impairment during construction and operation;
- The watercourses within and adjacent to the Site boundaries;
- An increase to noise emissions during the construction stage; and,
- The biodiversity value of the Site and its surrounding habitats.

Mitigation measures to prevent and manage likely environmental risks are outlined within Table 5-4. Additionally, the following detailed Site-specific plans will be completed by the appointed Principal Contractor:

- Construction Management Plan (CMP);
- Outline Construction Methodology; and,
- Final Construction Environmental Management Plan (CEMP).

These plans will be supplied to South Dublin County Council prior to the commencement of site works. They will be prepared by the appointed contractor to ensure best practicable policies are incorporated in the management of the Site.

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

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

Aspect of Construction	Potential Hazard	Magnitude	Likelihood	Risk Management Procedures – Mitigation Measures
1. Site Operations and Design	**a.** Potential nuisance towards public (out of hour's activities).	Slight	Low	• Normal construction hours will be restricted to 07:00 to 19:00 Monday to Friday and 07:00 to 14:00 on Saturdays.
	b. Traffic	Moderate	Low	• Best practice measures will be implemented; • Hydrocarbon spill kits shall be in place on all Site vehicles / plant; and, • Adequate signage shall be provided on the public network identifying the Site, access, speed limits etc.
2. Water Quality – Suspension solids	**a.** Suspended sediment due to run-off from construction areas entering the drainage ditches causing potential detriment to water quality.	Moderate	Low	• Silt traps will be placed on all outflows from the Site; • A silt fence will be erected below along the south and east boundaries; • Existing vegetation will be retained where possible; • The working area will be clearly defined, and construction activities will be carefully planned to minimise ground disturbance; and, • Runoff will be diverted away from stripped areas. • Excavations will be left open for minimal periods to avoid acting as a conduit for surface water flows.
	b. Run-off entering Baldonnell stream, affecting water quality of Grifeen River and River Liffey.	Moderate	Low	• Weather conditions will be considered when planning construction activities to minimise risk of runoff from Site; • All materials shall be stored at the main contractor compound and transported to the works zone immediately prior to construction; • Run-off will be diverted away from stripped areas; • All valves should be of steel construction and the open and close positions should be clearly marked; and, • No surface water runoff will be discharged onto public roads, foul sewers or adjacent property.
3. Water Quality - Oil	**a.** Oil Spill to ground / surface water. Oil pollution is known to cause significant damage aquatic habitats and communities and loss	Moderate	Low	• All materials shall be stored at the main contractor compound and transported to the works zone immediately prior to construction;

Aspect of Construction	Potential Hazard	Magnitude	Likelihood	Risk Management Procedures – Mitigation Measures
	of bulk stored oil or oil from construction vehicles will likely have an adverse impact on the aquatic environment.			• Any chemical / oils to be stored onsite will be placed within a bund on an area of hardstanding to ensure there is no seepage of pollutants into groundwater or surface water; • All bunds will have a capacity of the largest tank volume plus 10 percent, at a minimum, with additional capacity to hold 30mm of rainfall; • Steel tanks will be protected from corrosion; • All valves should be of steel construction and the open and close positions should be clearly marked; • All drainage from bund area must be directed to secure containment prior to suitable disposal; • Preventative maintenance and relevant maintenance logs will be kept for all onsite plant and equipment; • Adequate spill kits including absorbent booms and other absorbent material will be maintained onsite; • All contractor workers will be appropriately trained in the use of spill kits; • Fuels, lubricants and hydraulic fluids for equipment used in the construction site will be carefully handled to avoid spillage, properly secured against unauthorised access or vandalism, and provided with spill containment according to current best practice; • Any sediments adversely effected by contamination will be excavated and stored in appropriate sealed containers for disposal offsite in accordance with all relevant waste management legislation; • 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, • In order to prevent potential water pollution risk when drainage lines are in place but not fully commissioned, no discharges to the surface water drainage system at the Site will be made until all trains are fully connected to the proposed approved petrol interceptor.

Aspect of Construction	Potential Hazard	Magnitude	Likelihood	Risk Management Procedures – Mitigation Measures
	b. Oil spill during refuelling operations.	Moderate (low volume)	Low	• Adequate fuel storage facilities and re-fuelling protocols will be provided; • Fuel will be delivered onsite by a dedicated tanker or in a delivery bowser dedicated to that purpose; • Emergency Response Procedures will be put in place to enable trained response in the event of a spill by Site operatives; • Vehicle or equipment maintenance work will be carried out in a designated area on the Site. In the event that refuelling is required outside this area a spill tray will be employed during the refuelling operation; • The Appointed Contactor will put in place a specific, step-by-step refuelling procedure which will be communicated to all relevant employees onsite.
3. Water Quality - Cement	**a.** Cement and Concrete entering waters resulting in water pollution and contamination to the environment.	Moderate	Low	• Concrete pours will be adequately planned and executed; • Washouts of equipment used for concrete operations will be done either offsite or within a designated washout area, which will comprise a container that will capture the washout material / water for reused or disposal offsite; • Any spillage of cementitious materials will be cleaned-up immediately; • Any pouring of concrete will only be carried out in dry weather; • Excavations will be left open for minimal periods to avoid acting as a conduit for surface water flows.
5. Waste Management	**a.** Incorrect management of general Municipal Wastes / welfare facilities resulting in litter onsite and / or attraction of rodents	Slight	Medium	• Waste materials will be collected and stored in suitable receptacles before they are taken off Site; • Waste materials will not be allowed to accumulate because of the fire/vermin risk; • The waste will be separated into recycling types and general waste in designated general waste and refuse and recycling stores; and • Measures will be implemented to minimise waste and ensure correct handling, storage and disposal of waste.

Aspect of Construction	Potential Hazard	Magnitude	Likelihood	Risk Management Procedures – Mitigation Measures
	b. Welfare – Toilet waste.	Slight	Trivial	• Welfare facilities will be available at the Construction Compound, it is proposed that these facilities will be used for the duration of the works. • There will be no foul effluent discharge arising from the initial Site development works – portable toilet facilities will be used (emptied as required).
6. Nuisance – Dust / Dirt	**a.** Generation of dust / dirt onsite adversely affecting water quality within surrounding watercourses and further downstream to the SAC.	Slight	Low	• Earth movements and soil stripping operations will not be carried out during dry and windy weather without suitable mitigation measures; • Stockpiles, tips and mounds will be constructed in such way to minimise dust creation; and, • Water bowsers, sprays and mists will be used to suppress dust arising from stockpiles, and screening activities, during dry weather as required.
	b. Generation of dust from truck movements to and from Site could adversely affect waterbodies if left uncontrolled.	Slight	Low	• Speed restrictions within and around the Site; • Maintenance of good road surfaces; • Dampening of access road by bowser during dry periods; and, • Heavy plant will be fitted with upswept exhausts and radiator fan shields.
7. Nuisance - Noise	**a.** Generation of noise resulting in disturbance to protected species during construction	Slight	Medium	• A Site Representative will be appointed to receive and respond to noise complaints and enquiries during construction by local residents, the Local Authority and any other regulatory body. Relevant details will be provided to the Local Authority prior to construction, and will be made available to third parties, including local residences; • Activities and deliveries to the Site to occur only during permitted hours; • All plant where possible shall be low noise rated; • All vehicles and mechanical plant will be fitted with effective exhaust silencers and maintained in good working order for the duration of the contract;

Aspect of Construction	Potential Hazard	Magnitude	Likelihood	Risk Management Procedures – Mitigation Measures
				• Compressors will be attenuated models, fitted with properly lined and sealed acoustic covers which will be kept closed whenever the machines are in use and all ancillary pneumatic tools shall be fitted with suitable silencers; • Where necessary the use of enclosures and noise screens shall be used to control noise from plant; • Evaluation of construction methods to ensure the quietest option is utilised; • Onsite policy for all plant and equipment, including Site delivery vehicles, to power off rather than to be left with idling engines; and, • All plant and vehicles on the Site will be in a fit condition for use, to prevent the addition of noise from maintenance issues.
8. Nuisance - Vibration	Generation of vibration resulting in disturbance to humans / local fauna during construction	Slight	Medium	• Appropriate vibration isolation shall be applied to plant, where feasible; and, • Cut off trenches to isolate the vibration transmission path shall be installed where required.
9. Biodiversity Protection	General Measures	Medium	Low	• All activities will comply with all relevant legislation and best practice to reduce any potential environmental impacts. The mitigation measures detailed within this EcIA and the NIS will be fully adhered to; • The Site manager shall ensure that all personnel working onsite will be trained and made aware of the mitigation measures detailed within this EcIA and the NIS; • An ECoW will be appointed for the construction works and will be available as required. If protected or notable species are encountered during operations at the Site, the ECoW will be contacted for advice; • Protected and notable species posters will be erected on the Site notice board and maintained throughout the duration of the works; and, • In advance of works, all Site personnel will receive a toolbox talk regarding notable and protected species. Everybody working onsite must understand the role and authority of the ECoW.
	a. Hedgerow / Treeline	Medium	Low	• Trees, treelines and hedgerows to be retained that will be in close proximity to the construction areas will be fenced off by effective

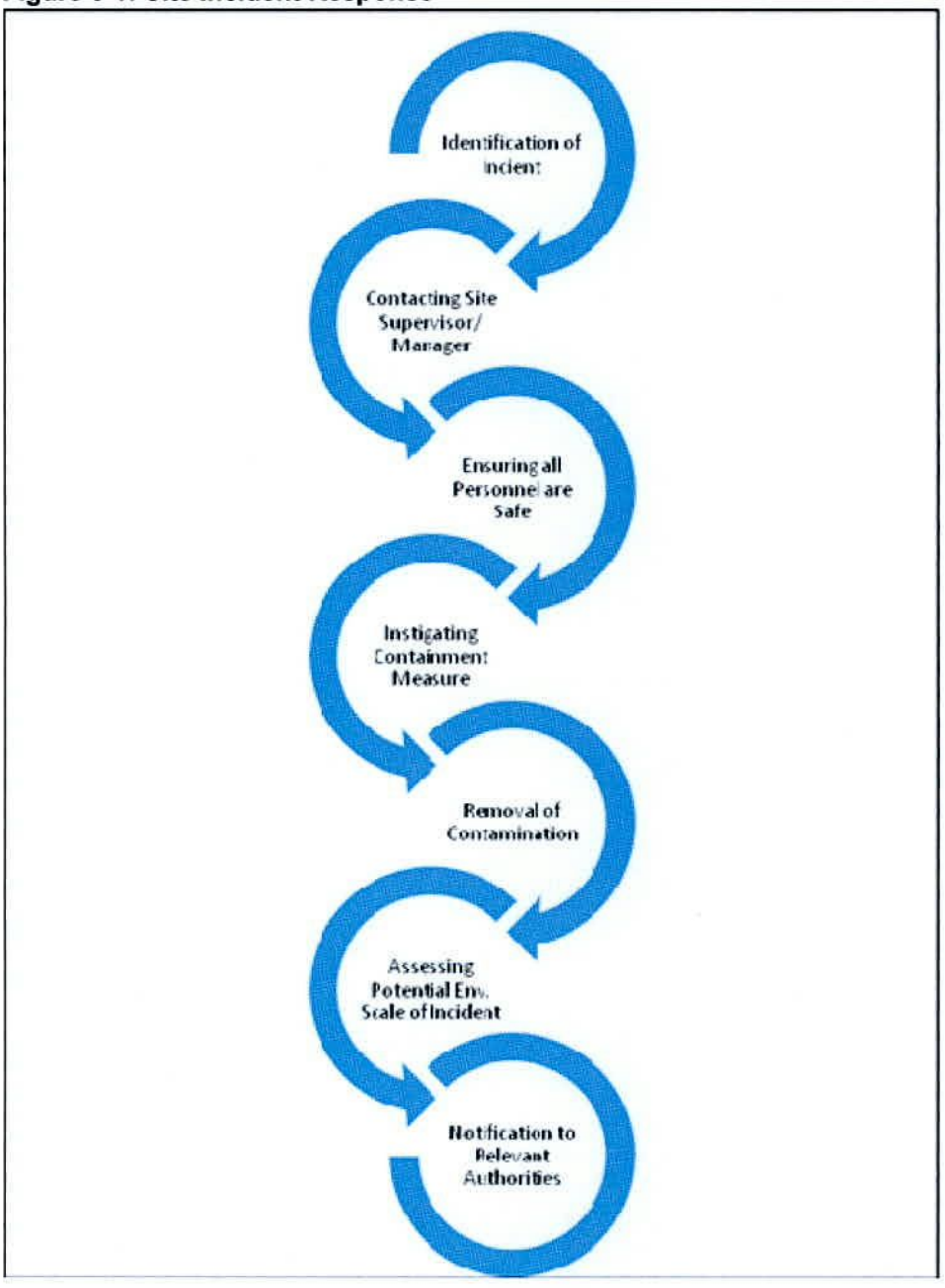
Aspect of Construction	Potential Hazard	Magnitude	Likelihood	Risk Management Procedures – Mitigation Measures
				construction proof barriers before construction works commence. These barriers will remain in place for the duration of the works to prevent accidental disturbance and define the limits for construction vehicles and other construction staff; • Care will be required to prevent disturbance to root systems – a buffer zone / construction exclusion zone of unexcavated ground will be maintained along the retained hedgerows and mature tree; • Where machinery access has to encroach areas within close proximity to the retained hedgerows / treelines or the mixed broadleaved woodland, a Root Protection Area (RPA) will be established and suitable ground protection will be put in place to prevent any significant soil compaction or root damage. This should take the form of suitable strength ground protection mats or cellular confinement system capable of supporting the appropriate weight; • All weather notices will be erected on the fences, and the fencing will be inspected on a regular basis during the construction process; • Trench digging or other excavation works for services etc. will not be permitted within close proximity to retained trees and hedgerows unless approved and supervised using methods outlined in BS5837: Trees in relation to design, demolition and construction (2012); • No materials, equipment or machinery will be stored within close proximity to retained hedgerows and trees; • In order for treeline protection measures to work effectively, all personnel associated with the operation of heavy plant machinery must be familiar with the above principles for the protection of treelines; • Care will be taken when planning Site operations to ensure that wide or tall loads or plant with booms, jibs and counterweights can operate without coming into contact with retained trees. Such contact can result in serious damage to them and might make their safe retention impossible; • Notice boards, wires, etc. will not be attached to any trees. Site offices, materials and contractor parking will all be outside the Construction Exclusion Zone; and, • The retained trees will be assessed following the completion of the construction works.

Aspect of Construction	Potential Hazard	Magnitude	Likelihood	Risk Management Procedures – Mitigation Measures
	b. Impacts on Badgers/Terrestrial Mammals	Medium	Low	• Where deep excavations will be required onsite, appropriate measures to protect mammals from ingress will be installed; • Should construction works be required outside of daylight hours, the appointed project ECoW will be consulted as required; and, • If unidentified burrows are identified within the works area during construction, works will cease within that area and the project ECoW will be contacted for advice.
	c. Impacts on Amphibians	Low	Low	• Should amphibians be encountered during the construction works, a suitable qualified ecologist should be consulted for advice; • Hibernacula and habitat piles will be installed in the wider area surrounding the Site to support any potential amphibians in the area;
10. Invasive Species	**a.** Spread of Invasive Alien Species	Slight	Low	• 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. • 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 and supplies will be maintained. • Measures outlined in Section 3.1 of C744 (Invasive non-native species) will be considered.

6 EMERGENCY MANAGEMENT PLAN

Although the Site will be managed, there remains a low risk from the unexpected occurrences, such as accidental spillages onsite, that 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 Health and Safety Officer. 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 Project 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

A pre-construction Site walkover by a suitably qualified environmental professional and Ecologist will take place followed by additional Site visits as required. The aim of these visits will be to ensure compliance with procedures set out in the CEMP and environmental conditions established under planning.

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 within the Site office.

7.3 Control of Records

Environmental records, including waste management 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 commencement of Site works. The Site Manager will be responsible for ensuring compliance with the CEMP with Ecological support provided by the Ecological Clerk of Work (ECoW) as required. 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 be required to have the appropriate training and certification to undertake their specific roles.

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;
- Environmental posters and site notices;
- Method statement and risk assessment briefings;
- Toolbox talks, including instruction on incident response procedures; and,
- Key project specific environmental issues briefings.

Furthermore, the provision of an Environmental Induction Sheet informing them of the specific measures which have been put in place and that must be adhered to.

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 covered. The Construction Manager 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 Project 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];
- CIRIA C741- Environmental Good Practice on Site (4th edition) [2];
- Guidance for the Treatment of Bats Prior to the Construction of National Road Schemes [3]; and,
- Guidance for the Treatment of Badgers Prior to the Construction of National Road Schemes [4].
- Guidelines on the Management of Noxious Weeds and Non-Native Invasive Plant Species on National Roads [5];
- BS 5228-1+A1:2014: Code of Practice for noise and vibration control on construction and open sites- Part 1: Noise [9] and Part 2 Vibration [9];
- All works will be undertaken in accordance with the Inland Fisheries Ireland (IFI) 'Requirements for the Protection of Fisheries Habitat during Construction and Development' [6]; and,
- The recommendations included within the National Roads Authority (NRA) Guidelines for the Crossing of Watercourses [10].

The Appointed Contractor will be required to develop an updated CEMP prior to the commencement of any construction works and this will be submitted to South Dublin County Council for approval.

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

10 REFERENCES

[1] CIRIA, "C532 – Control of Water Pollution from Construction, Guidance for Consultants and Contractors," 2011.

[2] CIRIA, "C741 - Environmental Good Practice on Site (4th edition).," 2015.

[3] NRA, "Guidelines for the Treatment of Bats prior to the Construction of National Road Schemes," National Roads Authority , Dublin, 2006.

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

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

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

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

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

[9] 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.

[10] NRA, "Guidelines for the Crosssing of Watercourses during the Constrcution of National Road Schemes," National Roads Authority, Dublin, 2005.

APPENDICES

APPENDIX A