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Belmayne 110kV/38MW Distribution Substation Outline Construction Environmental Management Plan

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Belmayne 110kV/38MW Distribution Substation
Outline Construction Environmental Management Plan

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Change History of Report

Date	New Revision	Author	Summary of Change

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List of Acronyms

AA	Appropriate Assessment
ACP	An Coimisiún Pleanála
BS	British Standard
CEMP	Construction Environmental Management Plan
CIRIA	Construction Industry Research and Information Association
CTMP	Construction Traffic Management Plan
dB	Decibel
DCC	Dublin City Council
EPA	Environmental Protection Agency
ESB	Electricity Supply Board
GIS	Gas Insulated Switchgear
HGV	Heavy Goods Vehicle
kV	Kilovolt
LED	Light-Emitting Diode
LV	Low Voltage
MV	Medium Voltage
MVA	Megavolt-Ampere
MW	Megawatt
NBDC	National Biodiversity Data Centre
NPWS	National Parks and Wildlife Service
NWCPO	National Waste Collection Permit Office
oCEMP	Outline Construction Environmental Management Plan
OPR	Office of the Planning Regulator
PER	Planning and Environmental Report
pNHA	Proposed Natural Heritage Area
RAL	Reichs-Ausschuß für Lieferbedingungen und Gütesicherung
RWMP	Resource Waste Management Plan
S.I.	Statutory Instruments
SAC	Special Area of Conservation
SPA	Special Protection Area
SuDS	Sustainable Drainage Systems
TBC	To be Confirmed
UV	Ultraviolet Radiation
WFD	Water Framework Directive
Zol	Zone of Influence

1 Introduction

This Outline Construction Environmental Management Plan (oCEMP) has been prepared by Electricity Supply Board (ESB) Engineering and Major Projects to accompany a planning application being made by ESB to An Coimisiún Pleanála (ACP) for a 110kV/38MV Distribution Substation, at Belmayne, Clonshagh, Dublin 17. For the purposes of the planning application ESB is acting in its capacity as licensed operator and asset owner of the distribution system (see further Section 2.1 of the PER).

This oCEMP is an outline document of the proposed works to ensure that the construction works have the least impact on the environment and the local community. Implementation and operation of this oCEMP is the responsibility of the appointed Contractor.

The planning application for this development includes a Planning and Environmental Report (PER) and an Appropriate Assessment Screening which have informed the content of this oCEMP.

All elements of this oCEMP will be included into the final CEMP, which will be prepared by the Contractor prior to construction and approved by the employer (ESB). The final CEMP will also contain measures outlined in ESB's 'Employer's Minimum Environmental Requirements for Construction and Demolition Projects and Related Works and Activities'.

The final 'live' CEMP will be subject to continuous review (throughout the construction phase of the proposed development), supported by regular environmental auditing and site inspections. These reviews will ensure the effective implementation of all mitigation measures and commitments outlined in the planning application.

This oCEMP also outlines the environmental mitigation measures to be implemented during the construction phase of the proposed development, refer to Section 6 of this document.

2 The Proposed Development

This section of the oCEMP provides a summary of the site location and an overview of the proposed development.

2.1 Site Location

The proposed development is located in Belmayne, Clonshagh, Dublin 17, within the townland of Belcamp in North Dublin, County Dublin (Figure 2-1). The southern boundary of the site is adjacent to the R139, with direct access from this road to the site. To the east lies the Northern Cross Business Park, with the closest premises being the Bewley's production facility. The northern boundary is adjacent to the Mayne River, with

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a buffer zone between the proposed site boundary and the river. To the west, the adjoining lands consist of grassland with a paved private roadway.

The planning application boundary (Figure 2-2) encompasses c. 2.27 ha. The site is bounded by hedgerows and trees along its northern, southern and eastern boundaries and an internal access track to the west. The trees that bound to the north of the site are not located within the site boundary. The land is highly modified and disturbed, located in a predominantly built-up area with residential housing estates and commercial units. Existing habitats within the site include soil and bare ground, recolonising bare ground and dry meadows and grassy verges. The site is relatively flat with a gentle slope towards the stream from south to the north.



Figure 2-1 Site Location Map



Figure 2-2 Planning Application Boundary

2.2 Project Overview

The project for which planning permission has been sought is called the “Belmayne Distribution Substation” on the R139, Belmayne, Clonshagh, Dublin 17. The proposed site is located c. 1 km southeast of the Belcamp 220 kV substation and it is intended to loop the proposed development into this substation.

The proposed development will consist of the construction of a 110 kV / 38 MV electrical substation and will include the following elements:

1. Construction of 1 no. substation compound (c. 5,650 sqm) securely enclosed with 2.6 m high palisade fencing and gates, containing:
 - i. 1 no. 110 kV Gas Insulated Switchgear (GIS) building (c. 707 sqm; c. 12 m in height).
 - ii. 1 no. 38 kV Gas Insulated Switchgear (GIS) building (c. 232 sqm; c. 7 m in height).
 - iii. 2 no. Bunded 110 kV/38 kV Transformers (c. 5 m in height) with associated electrical equipment.
 - iv. 2 no. Bunded 38 kV/MV Transformers (c. 5 m in height) with associated electrical equipment.
 - v. 2 no. fire walls (c. 5.5 m in height by c. 5 m length) separating the 110 kV/38 kV Transformers and 38 kV/MV Transformers.

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- vi. 3 no. banded Arc Suppression Coils (c. 4 m in height) with associated electrical equipment.
 - vii. 2 no. Neutral Earth Resistor (c. 2 m in height) and Neutral Earth Switch (c. 3.9 m in height).
 - viii. Perimeter RC wall with Stone Facing on West, North and South Elevations (2.6 m high).
2. Removal and reinstatement of 2 No. Gate Piers at existing entrance and provision of vehicular gate (c. 5 m wide x c. 2.6 m in height) and all associated works at the existing entrance on the R139.
 3. All associated site development works including internal access roads, lighting poles (c. 5.75 m in height), 3 no. lightning monopoles (c. 15 m in height), 1 no. emergency stand-by diesel generator, telecommunications, landscaping, site services including drainage, trenching and ducting and all other ancillary works.

2.3 Scope of Works

This section of the oCEMP outlines the scope of works associated with the proposed development.

The scope of works will involve the following activities:

- Site Preparation and Enabling Works
- Civil Construction
- Ancillary Civil Works
- Electrical Installation
- Electrical Commissioning

2.3.1 Construction Programme

The commencement date for the development is subject to the date of grant of planning permission, pre-commencement obligations, and completion of the tender process for the selection of the contractor.

The construction programme below (Table 2-1) may vary depending on availability of required outages at Belcamp 220 kV Substation from the electrical transmission system operator, and the time of year, weather conditions and the availability of specialised equipment.

The timing of stages and activities are approximate based on experience of similar projects, and this is meant as a guide, rather than a definitive programme of events.

Table 2-1: Outline Construction Schedule

Phase	Activity	Approximate Timeline	Total
Civil Construction	Site Preparation & Enabling Works	8 Weeks	52 Weeks
	Civil Construction	44 Weeks	
	Ancillary Civil Works	24 Weeks	
Electrical Installation	Electrical Installation	52 Weeks	78 Weeks
	Electrical Commissioning	26 Weeks	

The total construction duration for the project is estimated as 130 weeks from commencement.

The main construction works will comprise the construction of the substation compound and all electrical equipment foundations. The ancillary civil works will comprise of site works including installation of cable ducting, drainage, site boundary treatments, surfacing works etc.

Electrical installation works will commence following completion of the main civil construction works and will consist of the installation of the primary electrical equipment.

Some items of the ancillary civil works, the electrical installation and commissioning works will overlap.

2.3.2 Working Hours

The proposed working hours for the construction phase of the project are tabulated below (Table 2-2). No construction works will take place outside these hours, unless such work:

- Is required under exceptional circumstances; or
- Is carried out with the prior written approval of the local authority (e.g. abnormal load permit).

Table 2-2: Construction Working Hours

Day	Working Hours
Monday to Friday	07:00 – 19:00
Saturday	08:00 – 16:00
Sunday or Bank Holiday	N/A

2.3.3 Construction Personnel

A maximum daily workforce of approximately 45 personnel is expected during the peak period for construction works on site. However, typical daily workforce requirements will be less than this, approximately 30 personnel. Car parking for workers and visitors will generally be provided in the Contractor's compound.

2.4 Existing Environment

This section of the oCEMP summarises the existing conditions of the site as set out in the accompanying Planning and Environmental Report submitted as part of the planning application.

2.4.1 Land Cover

The proposed development site is a greenfield site located northeast of Darndale Park and regional road (R139), west of Bewley's Tea and Coffee Head Office Golf Club, south of Washington Memorial Tower, and southeast of Belcamp 220 kV substation and Craobh Chiarans Pitch Clonshaugh.

According to NPWS Flora (Protection) Order 2022 map viewers opposite-leaved pondweed (*Groenlandia densa*) was recorded within 1 km hectad O24 in 2017, which overlaps with the proposed development. There are no recent records (i.e. last 25 years) of protected and/ or rare plant species within the proposed development site according to NBDC map viewer 2 km grid square O24A. No Third Schedule or high impact invasive species were recorded during the field survey. There are records of invasive plant species (giant hogweed (*Heracleum mantegazzianum*) and butterfly bush (*Buddleja davidii*)) according to NBDC map viewer 2 km grid square O24A, which overlaps with the proposed development. No protected and/ or rare plant species were recorded during the field survey.

The site, at the time of survey, comprised the following habitat types (Figure 2-3):

- Recolonising bare ground (ED3) – recently disturbed consisting of common ruderal species i.e. dock (*Rumex obtusifolius*), broadleaf plantain (*Plantago major*), common nettle (*Urtica dioica*), scentless mayweed (*Tripleurospermum inodorum*), and dandelion (*Taraxacum sp.*) Bare ground cover is 30%, with this habitat considered to be of local importance (lower value).
- Buildings and artificial surfaces (BL3) – hardstanding area on entrance road on western side of the site considered to be of local importance (lower value).
- Treelines (WL2) – immature treeline consisting of willow (*Salix spp*), blackthorn (*Prunus spinosa*), and ash (*Fraxinus excelsior*) and english ivy (*Hedera helix*). There were pockets of the invasive butterfly bush (*Buddleja davidii*) throughout. This habitat is considered to be of local importance (higher value).

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- Tilled Land (BC3) – This habitat was located on the western side of the access track, it appeared to be dominated by one species however it was recently cut therefore crop identification was not possible. This habitat is considered to be of local importance (lower value).
- Eroding upland rivers (FW1) – This habitat (Clonshagh Stream) was located on the northern side of the proposed development, approximately 10 m outside of the proposed development boundary. This stream forms part of the Mayne_010 water framework directive (WFD) river waterbody (waterbody code: IE_EA_09M030500) and was classed as having a “poor” water quality status during the WFD monitoring period of 2019-2024 and is considered “at risk”. This habitat is considered to be of local importance (higher value).

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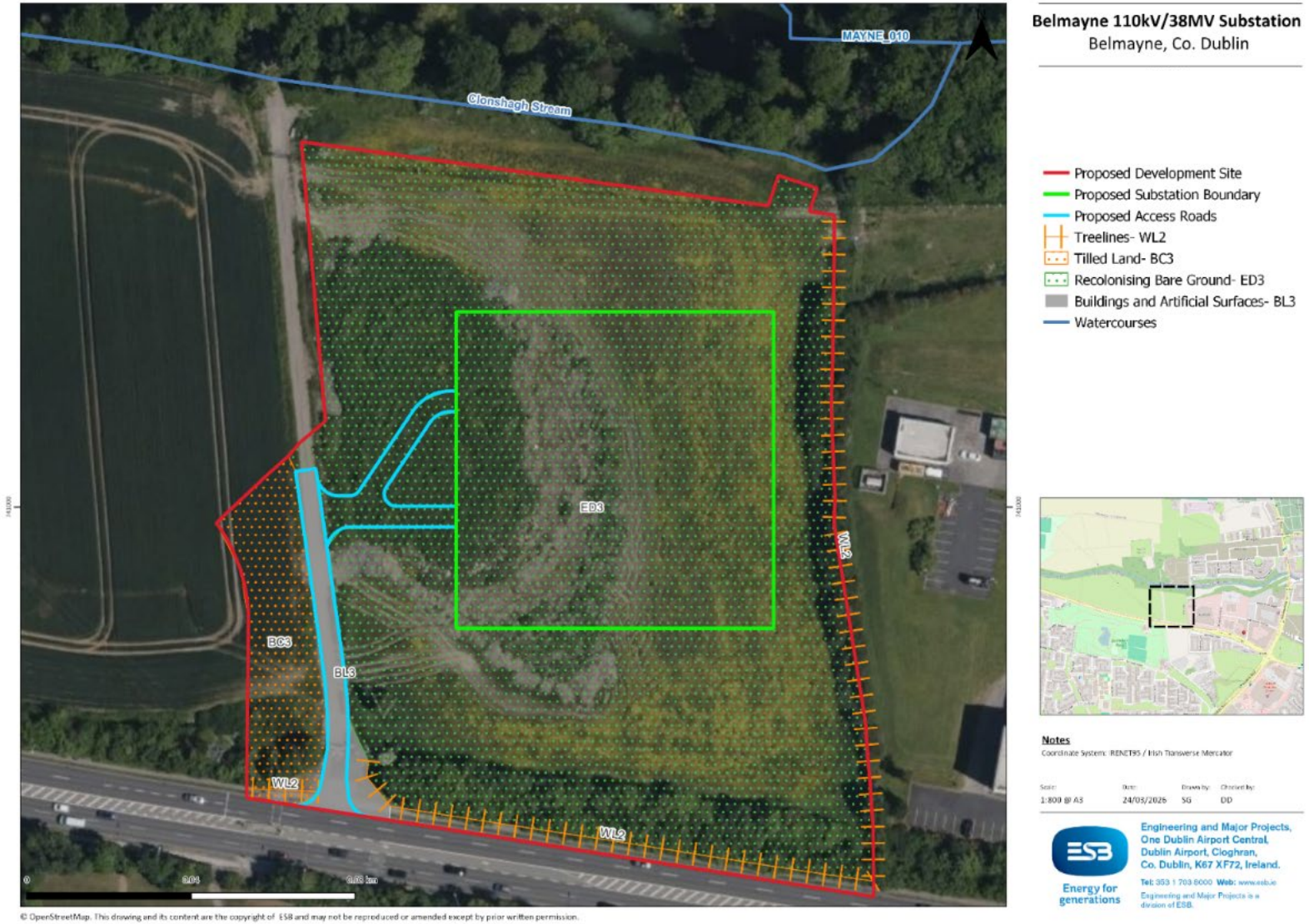


Figure 2-3 Habitats Present within the Proposed Development Site

2.4.2 Designated Sites for Nature Conservation

The proposed development site is not located within or immediately adjacent to any European sites (Figure 2-4) or nationally designated site(s) (Figure 2-5). The nearest site is the Baldoyle Bay SAC (000199), which is located approximately 2.9 km northeast of the proposed development site. This is followed by the Baldoyle Bay SPA (004016), which is located 3.4 km northeast of the proposed development site. The nearest nationally designated site is Baldoyle pNHA (000199), which is approximately 2.9 km northeast of the proposed development site.

The only potential impact pathway that exists between the proposed development and designated sites is via a hydrological connection – i.e. instream distance of 110 m of Clonsburgh Stream, a further 2.9 km instream distance via the Mayne River, before reaching Baldoyle Bay SAC (and Baldoyle Bay pNHA) and a further 500 m of the Mayne River before reaching Baldoyle Bay SPA. All other designated sites are considered to be beyond the Zol of the proposed development. European sites are valued as being of international ecological importance, while pNHAs are valued as being of national ecological importance.

The assessment of potential impact on European sites arising from the proposed development is fully assessed and presented in the AA Screening report submitted as part of the planning application.

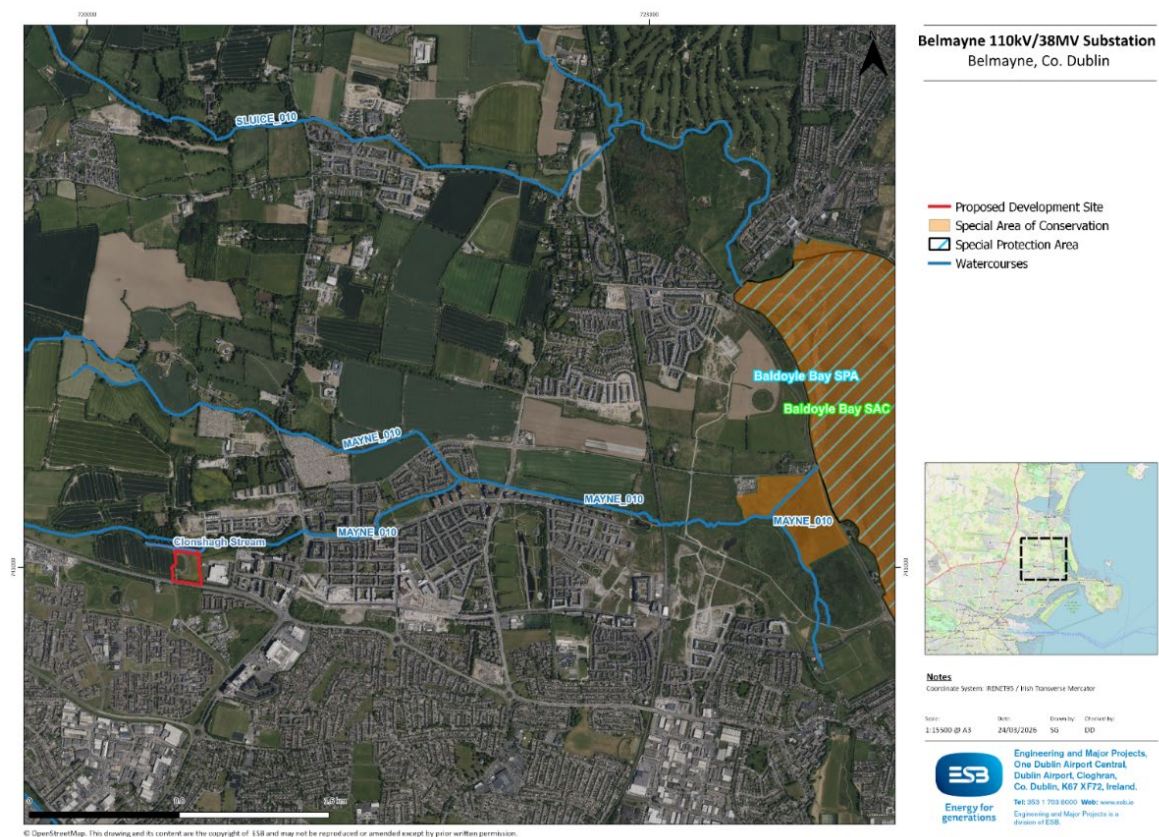


Figure 2-4 European sites located within the vicinity of the proposed development site

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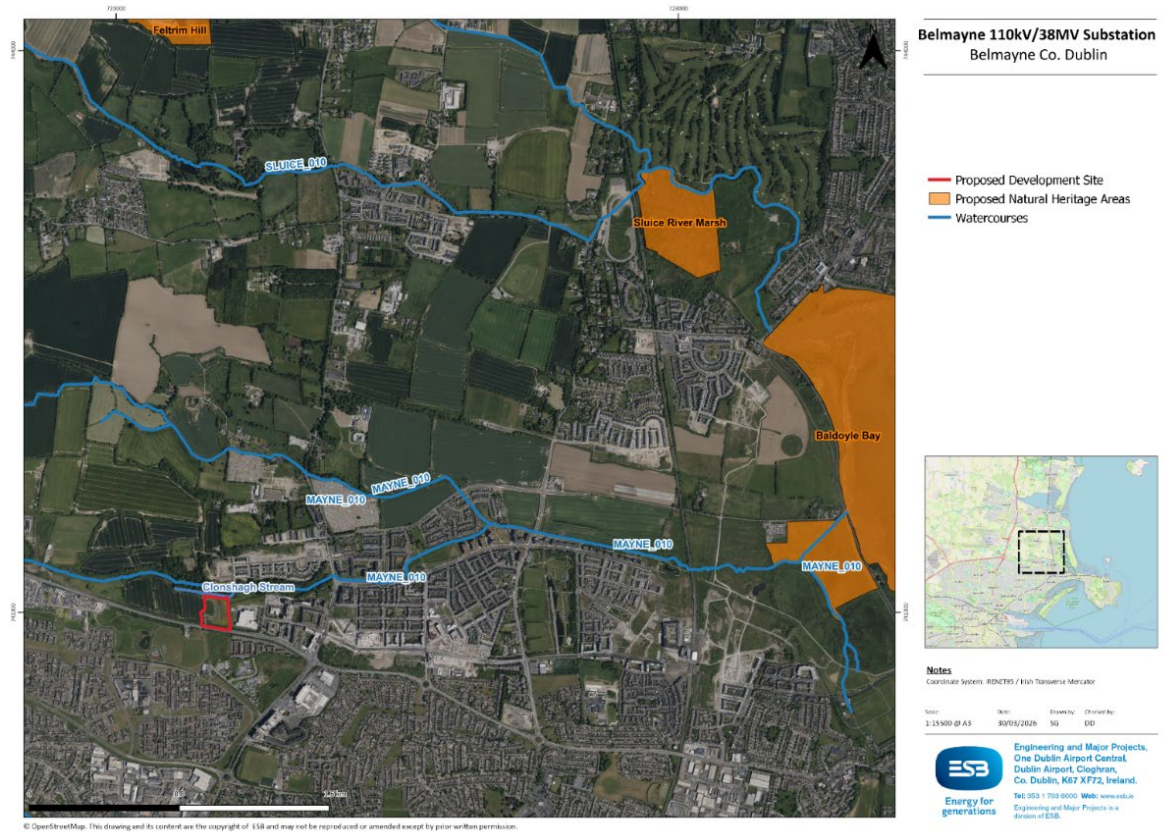


Figure 2-5 pNHA sites located within the vicinity of the proposed development site

3 Construction Works

This section of the oCEMP provides an overview of the main works associated with the proposed development, as detailed in the accompanying PER submitted within the planning application.

The commencement date for construction is subject to the date of grant of planning permission, pre-commencement obligations, and progression of the design to construction stage.

The construction works will take place in three broad phases, details of each phase are outlined below.

3.1 Enabling Works

The exact programme of works will be proposed by the Contractor prior to mobilisation to site. The following is a non-exhaustive list of the works to be carried out:

- Site demarcation and establishment of temporary construction compound including welfare facilities, site office etc.
- Demarcation of clearances required by Uisce Éireann to Foul Line to the North of the Site and Watermain to the South of the site.

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- Site entrance modifications and creation of access road.
- Earthworks including site levelling and cut/fill works. Civil Construction.

3.1.1 Construction Plant and Machinery

The following is a list of plant that will be utilised at the site during construction:

- Tracked Excavators
- Dumper
- Ride on Roller
- Concrete Pump
- Drills, Saws and other Power Tools
- Water Pump
- Generators
- Mobile Cranes

3.1.2 Temporary Construction Facilities

Site Access and Signage

The site is located immediately to the west of Bewley's production facility with an access directly from the R139. It is surrounded by open lands, but this area is undergoing development with residential development located to the north-east and future development of residential and industrial/infrastructure to the north and west.

Site access and construction traffic signage will be established by the Construction Contractor. Advance warning/hazard signage shall be erected in both directions leading to the substation in accordance with health and safety legislation and in accordance with Chapter 8 of the Traffic Signs Manual.

Laydown Areas

Dedicated temporary laydown and storage areas will be identified for construction plant and equipment by the Contractor. This area will be available for any fabrication that may be necessary.

Contractors Site Compound and Services

A temporary construction compound will be set up upon commencement of the construction phase. The compound will be located within the greenfield site of the proposed substation and a temporary surface comprising granular stone material will be constructed for the compound. There is sufficient space to the north and south of the proposed substation to accommodate a temporary construction compound.

The compound will be constructed early in the project in order to provide site offices and accommodation for staff and for the delivery of materials. Facilities will include office space, meeting rooms, canteen area, a drying room and sanitary provisions. This will be

maintained by the Contractor on a regular basis and will be removed from the site on completion of the construction phase.

Any surface water management, bunding and waste management measures will also be put in place at the outset. A bunded containment area will be provided within the compound for the storage of lubricants, oils and site generators etc.

The compound will be in place for the duration of the construction phase and will be removed once works are complete.

3.2 Civil Construction

The exact programme of works will be proposed by the Contractor prior to mobilisation to site. The following is a non-exhaustive list of the works to be carried out:

- Construction of 110 kV GIS Building and 38 kV GIS Building.
- Construction of electrical equipment foundations.
- Construction of site drainage works.
- Trenching and ducting works for underground 38 kV and MV cables.
- Trenching and ducting works for underground LV and control & protection cables.
- Installation of substation earth-grid.
- Permanent surface water drainage works.
- Construction of new palisade fence to compound boundary.
- Construction of concrete post and rail fence outside new palisade fence to outer boundary/ legal line.
- Compound stoning and paving.
- Finishing and Completion works.

All works will be carried out in accordance with the building regulations and up-to-date design codes at the time of mobilisation.

3.3 Electrical Installation

Electrical installation includes the following:

- Delivery and installation of 2 No. 110 kV/38 kV Transformers.
- Delivery and installation of 2 No. 38 kV /MV Transformers.
- Delivery and installation of 3 no. Arc Suppression Coils.
- Delivery and installation of all other outdoor HV equipment.
- Pulling and termination of 38 kV & MV cables.
- LV cabling and wiring of 38 kV equipment and protection and control equipment.
- Installation of compound lighting and security systems.
- Commissioning of electrical substation.

4 Environmental Management

This section of the oCEMP outlines all the environmental aspects that will be affected by the works described above.

4.1 Earthworks Management

Excavated soil and rock will be stockpiled in designated areas only. Stockpile areas will be located and arranged so that risk to receiving water, and other receptors, from silt and contaminants is minimised.

Any stockpiles of hazardous or potentially hazardous waste soils created as a result of the proposed development must be correctly and appropriately managed. Stockpiles must be stored on an impermeable surface to avoid cross contamination. Furthermore, the stockpile must be covered with polyethene plastic or similar to avoid run-off.

It is anticipated that some excavated material will be reused onsite, subject to geotechnical and environmental testing, and/or that clean excavated material will be reused offsite (subject to the appropriate permissions). For the purposes of this planning application, it is assumed that all excavated material will be subjected to waste classification and removed offsite to a licenced facility.

The CEMP for the proposed development will detail the Contractor's requirement to handle, transport and recycle/recover/dispose of waste in a manner that ensures that no adverse environmental impacts occur arising from these activities.

4.2 Water Protection and Management

Concrete chute washout from concrete trucks will only be carried out at designated locations, on a contained impermeable area and with treatment facilities including adequately sized settlement tanks where appropriate.

In order to mitigate against spillages contaminating the surrounding surface water and hydrogeological environments, all oils, fuels, paints and other chemicals will be stored in a secure bunded hardstand area. Refuelling and servicing of construction machinery will take place in a designated hardstand area (where not possible to carry out such activities off site).

Any fuels or other liquids spill or leak from any vehicles these will be cleaned immediately, and any affected soils excavated and removed. Spill kits will be available within each active work location and where appropriate plant items and vehicles shall be equipped with mini 'spill' kits.

Excavations will be managed using control measures such as bunding areas to prevent surface run-off and protecting drains. Any excavated vegetation, soil and subsoil will be temporarily stockpiled away at least 20 m from any watercourse / site drain in order to reduce the potential for entry of suspended solids.

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Silt traps will be installed prior to commencement of works and will be inspected daily to inform adaptive management as required. The Contractor will ensure that procedures are adopted to ensure that the works do not have a negative impact to fish in inland waterways or maritime waters and/or to shellfish in maritime areas.

Dewatering will be in accordance with *CIRIA Report C750 Groundwater Control: Design and Practice (second edition)* or equivalent and in accordance with any discharge licence /permit requirements stipulated by the relevant authority. Any leakage of groundwater during excavations will be gathered locally and passed through silt traps prior to discharging to the local network under licence. Further details will be included in the Contractor's CEMP, to be submitted to the council prior to construction, if requested.

In addition, the Contractor will comply with *CIRIA Report C532 Control of Water Pollution from Construction Sites – Guidance for Consultants and Contractors* and ensure that all site-specific environmental requirements are effectively managed and implemented in accordance with *CIRIA Report C811 Report Environmental Good Practice on Site Guide (fifth edition)*.

4.3 Noise

The construction phase of the proposed development will be undertaken in three broad stages. The construction activities with the greatest potential to generate significant noise levels are outlined in the bullet points below.

- Construction of site entrance.
- Earthworks, including site levelling and cut/fill works.
- Construction of temporary site drainage works.
- Trenching and ducting works.
- Construction of internal roads.
- Construction of site buildings, including foundation works and structural steelwork.
- Construction of transformer compounds.
- Construction of permanent foul and surface water drainage works.
- Construction of paving, fencing, landscaping and completion works.

Appropriate hoarding will be installed to shield neighbouring properties from potential noise during construction works (Figure 4-1). Construction activities for the proposed development will be carried out Monday to Friday between 07:00 and 19:00, and on Saturdays between 08:00 and 16:00. No construction works are proposed outside these hours, unless such work:

- Is required under exceptional circumstances; or
- Is carried out with the prior written approval of the local authority (e.g. abnormal load permit).



Figure 4-1 Indicative Location of Proposed Construction Phase Noise Barrier

Diesel generators will be enclosed in sound proofed containers to minimise the potential for noise impacts, where appropriate. Regular maintenance of plant will be carried out in order to minimise noise. All vehicles and mechanical plant will be fitted with effective exhaust silencers. Use of noisy or vibrational equipment will be by experienced personnel to ensure smooth machinery operation/driving, and to minimise unnecessary noise generation. Machines, which are used intermittently, will be shut down during those periods when they are not in use.

The above measures should be implemented and subject to adaptive management. These measures will be outlined in the detailed CEMP to be prepared by the Contractor.

4.4 Air Quality

Siting of activities and the generation of any temporary stockpiling will take note of the location of sensitive receptors and prevailing wind directions in order to minimise the potential for significant dust nuisance. Excavated soil or topsoil will be protected from exposure to wind by storing the material in sheltered parts of the site, where possible pending reinstatement. Ensure temporary stockpiles will be sealed or covered.

Speed restrictions will be in place to control site traffic where required to minimise airborne dust. When necessary, sections of approach roads to the site will be swept using a street cleaner and / or damped down with water using a mobile bowser.

These measures should be applied and overseen through an adaptive management approach. A comprehensive outline of them will be included in the Contractor's CEMP.

4.5 Fuel and Oil Storage

All hazardous substances on site will be controlled in accordance with Code of Practice for Chemical Agents Regulations 2016, as amended. Fuel and oil storage on site, including generator fuel tanks, will be in tanks that are externally bunded and lockable. Bunds will be capable of containing at least 110% of the largest capacity vessel stored therein and have sufficient freeboard. No pipework or other ducting should pass through the bund floor or walls and there should be no direct outlet.

In the unlikely event of a spillage occurring into a bunded area, the effluent will be pumped out to a road tanker for re-use or disposed of in accordance with relevant legislative requirements. No tanks or pipework containing liquids such as oils or chemicals will be stored below ground. All tanks containing liquids whose spillage could be harmful to the environment will be bunded.

4.6 Refuelling

Accidental spills of hydrocarbons, such as diesel and lubrication oil during refuelling of plant machinery is a potential risk during the construction phase of the proposed development. Refuelling off-site is the most effective way of controlling hydrocarbon spillages from construction plant.

Where fuelling of plant/vehicles is to take place on site, a dedicated bunded refuelling area adjacent to the storage tank should be provided. The area will be located on level ground away (>10m) from streams and open drainage ditches. Spill kits will be stored adjacent to fuel storage / filling area.

Where refuelling in a dedicated area is not feasible, plant will be re-fuelled by delivery via tanker/bowser around the site with appropriate mitigation measures in place. All refuelling will only be from tanks equipped with proper fuel nozzles. Mobile fuel bowsers/tankers shall be integrally bunded and carry spill kits at all times. Refuelling at work locations will utilise mobile drive-in bunds or drip trays to minimise the possible accidental release of fuel.

All small plant will be refuelled and serviced on the designated refuelling area. Small plant will be collected at the end of the working day and re-fuelled in the evening or prior to commencement of work in the morning. Small plant, such as pumps, that must remain in-situ, will be refuelled from approved jerry cans with pouring nozzles in conjunction with drip trays. Spill kits will be carried by all refuelling vehicles.

Any fuels retained on drip trays, mobile bunds, will be emptied without delay into a secure bunded waste oil drum to await appropriate disposal. The waste oil will be disposed of by a licenced waste contractor.

4.7 Traffic Management

A Construction Traffic Management Plan (CTMP) will be prepared by the Contractor in advance of the commencement of works. This can be agreed with DCC in advance of

construction, if requested. Parking arrangements and other traffic mitigation measures and / or restrictions will be specified in the CTMP.

All signage will comply with Chapter 8 of the 'Department of Transport Traffic Signs Manual' August 2019. Temporary signage will be provided indicating site access route for personnel and associated suppliers. Where multiple vehicles may be entering and exiting a site, a spotter will be put in place to direct construction traffic onto the road and appropriate signage placed on both sides of the site.

Appropriate abnormal loads permits will be sought from the local authority in advance of transporting and particularly heavy or oversized loads.

4.8 Ecology Management

Ecological management measures will be implemented throughout the construction phase to avoid, minimise, and mitigate potential impacts on local habitats and protected species. No vegetation clearance (trees, hedgerows & shrubs) will be carried out during the bird breeding season between March 1st – August 31st.

There is potential for the proposed development to result in disturbance to nesting and foraging birds. However, given the small scale of suitable habitat within the site and the availability of extensive alternative habitat in the surrounding area, any disturbance to local passerines is not expected to result in a significant effect on local bird populations at any geographical scale.

As part of the proposed development, a Biodiversity Enhancement & Management Plan has been prepared to secure, sustain and enhance the biodiversity value of the proposed development in the future.

All construction works will be undertaken in accordance with ecological legislation, best practice guidance, and site specific constraints identified through ecological surveys. The appointed Contractor will ensure appropriate ecological awareness training for personnel and will oversee the implementation and monitoring of all ecological mitigation measures to ensure compliance and adaptive management where required.

4.9 Waste and Resource Management

Prior to the commencement of development, and as part of the CEMP, a Resource Waste Management Plan (RWMP) will be prepared and implemented by the Contractor. The RWMP will include the classification, handling and management of all waste generated during the construction stage in accordance with the following regulations and best practice guidelines:

- 1) Waste Management Act 1996.
- 2) Waste Management (Licensing) Regulations 2004.
- 3) Waste Framework Directive 2006.
- 4) Waste Management (Facility Permit and Registration) (Amendment) Regulations 2008 S.I No. 86 of 2008.

- 5) European Communities (Waste Directive) Regulations 2011 (S.I. 126 of 2011)
- 6) Best Practice Guidelines on the Preparation of Waste Management Plans for Construction & Demolition Projects (EPA, 2021).

The recovery or reuse of waste material is a regulated activity and can occur where waste material generated as part of the works. The Contractor will organise and coordinate the supply of waste storage receptacles as well as collection and appropriate disposal of certain waste streams.

Material excavated during construction, if deemed suitable, will be re-used on site where possible e.g. backfill. It is expected that most of the material excavated during the construction, including excavations for trenches, ducting and underground tanks, will be disposed of by HGV off-site, in a licenced soil recovery/disposal facility.

4.10 Emergency Response

The appointed Contractor will prepare a documented Emergency Response Plan for the works, which is appropriate to the risk posed by the works.

The Emergency Response Plan will identify all potential emergency situations that could arise in relation to the works (e.g., major pollution incident, fish kill, peat slip, fire, gas leak, flood, traffic accidents etc) including any consequential effects or impacts.

As appropriate, the Emergency Response Plan can link into other documents relevant to emergency response. Site staff must be trained in actions to take in the event of an incident and emergency.

The Contractor will have pollution control equipment that is appropriate to the site and works covered by the contract and the risks that they pose.

The Emergency Response Plan will include (but not limited to):

- Emergency Response Plan responsible persons.
- Contact details for external bodies that may be needed to support emergency response (including emergency services the Fire Service, EPA, Local Authority).
- Location of appropriate emergency equipment (e.g., oil and chemical kits and containment booms and anchors).
- Contact details for identified trained personnel in deployment of emergency equipment.
- Contact details for specialist pollution control contractor (if applicable).
- Site plan including drainage, waste storage areas, chemical and material storage areas, and storage/refuelling areas.
- Up-to-date inventory of chemical, product and waste on site and associated Material Safety Data Sheets.
- A procedure for disposal of fire water/contaminated water that may arise during an emergency.
- Details of local environmental sensitivities and constraints.
- Procedures for spill containment and remediation.

Table 4-1: Environmental Emergency Contacts

Services	Number
National Emergency Services	999
National Parks & Wildlife Service	1890 383 000
Environmental Protection Agency	053 916 0600
Inland Fisheries Ireland	091 563 118
ESB Networks	1800 372 999

5 Implementation of CEMP

5.1 Organisation Structure

ESB will employ civil and electrical construction contractors. ESB's project specific organisation structure along with the contractor(s) organisation structure and relevant contacts will be included in the live CEMP once appointed, prior to commencement of the works. This will be updated as needed throughout the construction period.

5.2 Site Induction, Training & Toolbox Talks

The effective implementation of the CEMP will be supported through a structured programme of site inductions, training, and regular toolbox talks. All personnel entering the site will receive a mandatory environmental induction outlining the key mitigation measures, legal obligations, sensitive environmental receptors, and site-specific controls.

The appointed Contractor will ensure that staff receive any additional role-specific environmental training required to safely and correctly implement the CEMP measures. Toolbox talks will be delivered at appropriate intervals, and whenever new risks or activities arise, to reinforce good environmental practices and maintain awareness of current requirements.

5.3 Roles and Responsibilities

The general key personnel on site implementing the CEMP are listed below with roles and responsibilities detailed in the following sections:

- Project Manager
- Site Manager

5.3.1 Project Manager

The Project Manager is appointed by the Contractor to manage and oversee the entire project. The Project Manager is responsible for:

- Implementing the Construction and Environmental Management Plan (CEMP).

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- Implementing the Construction and Environmental Management Plan (RWMP).
- Management of the construction project.
- Liaison with the client/developer.
- Liaison with the project team.
- Assigning duties and responsibilities in relation to the CEMP.
- Production of construction schedule.
- Materials procurement.
- Maintaining a site project diary.

5.3.2 Site Manager

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

- Ensuring all operatives/personnel are inducted prior to commencing works on site. The induction process will include requirements of CEMP.
- Ensure all works are carried out by operatives with relevant competency.
- Ensure all risk assessment / method statements cover requirements of CEMP where applicable.
- Supervise and monitor works to ensure compliance with CEMP.
- Involved in preparing site-specific method statements for all works activities where there is a risk of environmental impact, by incorporating relevant mitigation measures.

5.3.3 Site Contacts

Table 5-1: Project Contacts

Position Title	Name	Phone	Email
Main Contractor	TBC	TBC	TBC
Project Manager	TBC	TBC	TBC
Site Manager	TBC	TBC	TBC
ESB Project Manager	TBC	TBC	TBC

6 Schedule of Commitments

This section of the oCEMP sets out the environmental mitigation measures for the construction phase of the proposed development.

The final CEMP will establish a framework for compliance auditing and inspection to ensure that all construction practices, mitigation measures, and relevant planning conditions are fully implemented and adhered to.

6.1 Construction Stage Mitigation Measures

Table 6-1 details all the construction phase mitigation measures from the PER.

Table 6-1: Construction Stage Mitigation Measures as Outlined in the PER

Reference Heading	Sub-Chapter	Mitigation Measures	Audit Results	Action Required
<p>Biodiversity Section 4.2.1 of the PER</p>	<p>Designated Sites Habitats and Protected / Rare Plant Species</p>	<p>Enhancement Measures: It is proposed to bolster 151m of existing hedgerows with native whips. The hedgerows will be planted up with native species: Hawthorn, Blackthorn, Pedunculate Oak, Grey Willow, Guelder Rose, Dog-Rose, and Honeysuckle.</p> <p>It is proposed that the northern, western, and southern boundary of the proposed development site will be planted with native tree whips (no. 55) (approx. 360m length), and fastigiata oak trees (no. 26) (approx. 250m length). Native species such as Blackthorn, Alder, Downy Birch, and Wild Cherry will be used. Refer to Biodiversity Enhancement & Management Plan included in this application for full species list.</p> <p>It is proposed to manage an area of 218sqm as GS2 dry meadows and grassy verges.</p> <p>Standard construction control measures such as silt traps and silt fences will be installed prior to construction and inspected daily to ensure there is no risk of silt-laden and/or contaminated surface water runoff arising from the proposed development.</p> <p>There is a terrestrial buffer between the proposed development and surrounding watercourses (including the Clonshagh Stream), with all works set back a minimum of 10 m and excavations at least 25 m, while retaining bankside hedgerows and vegetation and installing a perimeter fence.</p> <p>A pre-construction ecology survey will take place before the construction phase commences if 2 years has elapsed since the initial survey has taken place as good practice. These surveys will identify any newly established ecological constraints (such as the presence of invasive species) within the vicinity of the proposed development.</p>		
<p>Biodiversity</p>	<p>Designated Sites</p>	<p>Bats: Any construction lighting will be reviewed and agreed with an ecologist and will be positioned as to avoid light spill on to potential bat roosting, commuting or foraging sites – i.e. no light spill on to the hedgerows and</p>		

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Reference Heading	Sub-Chapter	Mitigation Measures	Audit Results	Action Required
Section 4.2.1 of the PER	Fauna	<p>treelines. Luminaries should lack UV elements when manufactured, with LED luminaires used where possible. A warm white light source (2700 Kelvin or lower) will be used, with peak wavelengths higher than 550 nm. Column heights will be considered to minimise light spill. Only luminaires with negligible or zero Upward Light Ratio, and within good optical control will be considered.</p> <p>Non-volant mammals: a pre-construction ecology survey will take place before the construction phase commences if 2 years has elapsed since the initial survey has taken place as good practice. These surveys will identify any newly established ecological constraints (such as the presence of mammal species) within the vicinity of the proposed development.</p>		
Water Section 4.2.2 of the PER	Sediment	<p>Sediment control in the construction stage is important to ensure that only high quality, treated runoff leaves the site. Silt traps will be installed prior to commencement of works and will be inspected daily to inform adaptive management as required.</p> <p>Other erosion control measures include:</p> <ul style="list-style-type: none"> • Minimising the area of exposed ground and ensuring excavation will not proceed faster than the rate of construction. • Monitoring of the weather forecast prior to planning excavation works. • Providing impermeable mats (plastic sheeting) as covers to mounded excavated material and open excavations during periods of heavy rainfall. • Any excavated vegetation, soil and subsoil shall be temporarily stockpiled away at least 20m from any watercourse / site drain in order to reduce the potential for entry of suspended solids. • Silt traps / check dams/ timber weirs will be erected on ground sloping towards cut drains and boundary hydrological receptors. 		
Water Section 4.2.2 of the PER	Accidental Release	<p>Concrete wash water will be retained on site and prevented from entering drains and refuelling will be undertaken using purpose designed equipment banded to prevent leaks. Any fuels or other liquids spill or leak from any vehicles these will be cleaned immediately, and any affected soils excavated</p>		

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Reference Heading	Sub-Chapter	Mitigation Measures	Audit Results	Action Required
		<p>and removed. Excavations for service runs will be managed using control measures such as bunding areas to prevent surface run-off and protecting drains.</p> <p>In order to reduce the risk of contamination arising as a result of spills or leakages, measures including, but not limited to, the following will be employed:</p> <ul style="list-style-type: none"> • All collected waste will be managed in accordance with the Waste Management Act 1996, and associated Regulations. • Fuels, chemicals, liquid and solid waste will be stored on impermeable surfaces. • Refuelling of plant, equipment and vehicles will be carried out on impermeable surfaces or using mobile drip trays where it's not possible to provide an impermeable surface. • All tanks and drums will be bunded in accordance with established best practice guidelines. • Spill kits will be provided at all compound locations and carried by all crews during underground cable installation works. • Concrete chute washout from concrete trucks will only be carried out at designated locations, on a contained impermeable area and with treatment facilities including adequately sized settlement tanks where appropriate. 		
<p>Water Section 4.2.2 of the PER</p>	<p>Flood</p>	<p>The surface water drainage proposals for the proposed development will be developed to mimic the natural drainage patterns of the site in accordance with the Best Management Practices of Sustainable Drainage Systems (SuDS). The surface water proposals will replicate the greenfield drainage conditions of the site where possible.</p>		
<p>Noise Impact Assessment Section 4.2.3 of the PER</p>	<p>Noise – Working Hours</p>	<p>Where construction activity takes place for a development in the vicinity of residential properties, it is standard practice that the activities would operate between the hours of 07:00 and 19:00 on Monday to Fridays, between 08:00 and 16:00 on Saturdays and there will be no activity on Sundays or Bank Holidays.</p>		

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Reference Heading	Sub-Chapter	Mitigation Measures	Audit Results	Action Required
Noise Impact Assessment Section 4.2.3 of the PER	Noise – Site Hoarding	It is proposed that a noise barrier in the form of site hoarding is erected at the site boundary during the construction phase. In Section 4.3, the Figure 4-1 provides an indicative indication of the location of this barrier (in yellow), which will be refined based on site requirements when a more detailed construction plan is in place. It is proposed that this is a minimum of 2m height with no gaps in it, which will provide noise attenuation of approximately 10dB(A) in the direction of the nearest noise sensitive properties.		
Noise Impact Assessment Section 4.2.3 of the PER	Noise – CEMP	<p>A detailed Construction Environmental Management Plan (CEMP) will be prepared and will include a range of measures aimed at reducing the potential construction noise impacts on the nearest receptors to the proposed development site. This plan will address the mode and timing of construction activity in close proximity to the site boundary with the nearest receptors, aiming to reduce the noisiest activities in the vicinity of the boundary of the proposed site. This should also include measures to communicate and coordinate construction phase activities at the nearest boundary to the most affected receptors so as to reduce these noise impacts to the lowest possible levels. The detailed CEMP will include the noise threshold limits included in Table 3.2 of Appendix D of the PER (BS5228:2009+A1:2014), which must be adhered to throughout the construction phase. On the basis of the noise monitoring survey completed, the lowest noise threshold limits included in this table (i.e. Category B) must be applied for all construction activities.</p> <p>British Standard BS5228:2009+A1:2014 – Noise and vibration control on construction and open sites outlines a range of measures that can be used to reduce the impact of construction phase noise on the nearest noise sensitive receptors. These measures should be applied by the contractor where appropriate during the construction phase of the proposed development. Examples of some of the best practice measures included in BS5228 are listed below:</p> <ul style="list-style-type: none"> • Ensuring that mechanical plant and equipment used for the purpose of the works are fitted with effective exhaust silencers and are maintained in good working order. 		

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Reference Heading	Sub-Chapter	Mitigation Measures	Audit Results	Action Required
		<ul style="list-style-type: none"> • Careful selection of quiet plant and machinery to undertake the required work where available. • All major compressors should be 'sound reduced' models fitted with properly lined and sealed acoustic covers which should be kept closed whenever the machines are in use. • Any ancillary pneumatic percussive tools should be fitted with mufflers or silencers of the type recommended by the manufacturers. • Machines in intermittent use should be shut down in the intervening periods between work. • Ancillary plant such as generators, compressors and pumps should be placed behind existing physical barriers, and the direction of noise emissions from plant including exhausts or engines should be placed away from sensitive locations, in order to cause minimum noise disturbance. Where possible, in potentially sensitive areas, acoustic barriers of enclosures should be utilised around noisy plant and equipment. • Handling of all materials should take place in a manner which minimises noise emissions. • Audible warning systems should be switched to the minimum setting required. 		
<p>Traffic and Transport Section 4.2.4 of the PER</p>	<p>Traffic</p>	<p>It is considered that there are no predicted impacts with respect to traffic and transport regarding the proposed construction and post-construction/operational phases of the proposed development.</p> <p>A Construction Traffic Management Plan (CTMP) will be prepared by the Contractor in advance of the commencement of works. This can be agreed with DCC in advance of construction, if requested. Parking arrangements and other traffic mitigation measures and / or restrictions will be specified in the CTMP.</p> <p>All signage will comply with Chapter 8 of the 'Department of Transport Traffic Signs Manual' August 2019. Temporary signage will be provided indicating site access route for personnel and associated suppliers. Where multiple vehicles may be entering and exiting a site, a spotter will be put in place to</p>		

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Reference Heading	Sub-Chapter	Mitigation Measures	Audit Results	Action Required
		direct construction traffic onto the road and appropriate signage placed on both sides of the site.		
Cultural Heritage Assessment Section 4.2.5 of the PER	Local History	It is noted that the existing hedgerow along the eastern boundary, positioned on the line of the civil parish boundary between Coolock and Balgriffin, will be protected during the construction works and bolstered, where necessary. Consequently, no mitigation measures, from the perspective of local history, are deemed necessary.		
Cultural Heritage Assessment Section 4.2.5 of the PER	Archaeological Heritage	<p>Based on the <i>OPR Practice Note PN03: Planning Conditions (October 2022)</i>:</p> <ol style="list-style-type: none"> 1. The developer shall engage a suitably qualified archaeologist (licenced under the National Monuments Acts) to monitor all topsoil stripping required of the development. The use of appropriate machinery to ensure the preservation and recording of any surviving subsurface archaeological remains shall be necessary. No subsurface work shall take place in the absence of the archaeologist without his/her express consent. 2. Should archaeological remains be identified during the course of archaeological monitoring, all works in the area of archaeological interest shall be suspended, pending a decision of the Planning Authority, in consultation with the National Monuments Service, Department of Housing, Local Government and Heritage. 3. The developer shall facilitate the archaeologist in recording any remains identified. Any further archaeological mitigation measures specified by the Planning Authority, following consultation with the National Monuments Service, shall be complied with by the developer. 4. Following the completion of all on-site archaeological interventions and any necessary post-excavation specialist analysis, the Planning Authority and the National Monuments Service shall be furnished with a final archaeological report describing the results of the monitoring and any other archaeological investigations/interventions that might 		

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Reference Heading	Sub-Chapter	Mitigation Measures	Audit Results	Action Required
		<p>subsequently have been required. All resulting and associated costs shall be borne by the developer.</p> <p>5. The CEMP shall include the location of any and all archaeological constraints relevant to the proposed development. The CEMP shall clearly describe all identified likely/potential archaeological impacts, and all mitigation measures to be employed to protect the archaeological heritage environment during all phases of site preparation and construction activities.</p>		
<p>Cultural Heritage Assessment</p> <p>Section 4.2.5 of the PER</p>	Architectural Heritage	<p>It is considered that none of these features have the ability to be directly or visually impacted by the proposed development due to their location outside the site and their topographical settings. Consequently, no mitigation measures are deemed necessary with respect to these structures and features.</p> <p>It is proposed that the Entrance Gateway along the road frontage of the site will be widened; such works will require the removal of the eastern piers and a new matching pier will be rebuilt a little to the east. Given that construction/reconstruction of the gateway was undertaken in the late 1990s, and the methodology to be employed, it is considered that no mitigation measures are required of this component of the development.</p>		
<p>Landscape and Visual Impact Assessment</p> <p>Section 4.2.6 of the PER</p>	Mitigation by Design	<p>The main mitigation by avoidance measure employed in this instance is the siting of the proposed development in a productive industrial landscape that is heavily influenced by anthropogenic activities.</p> <p>Retention of existing hedgerow boundaries within and around the site aids visual screening and maintains the existing field pattern. In this respect, the proposed substation is not perceived to impose itself on the existing landscape pattern.</p>		
Landscape and Visual Impact Assessment	Retaining Existing Hedgerow & New Boundary Hedgerow	The colour scheme of the building has been chosen to help anchor the building within their surrounding landscape. The building has a staggered pattern of Goosewing Grey (RAL 080 70 05) on the upper half and Olive Green (RAL 6003) on the lower half. The light grey of the upper half helps blend the building with the sky so as not to appear incongruous and stark in		

Reference Heading	Sub-Chapter	Mitigation Measures	Audit Results	Action Required
Section 4.2.6 of the PER		<p>the urban setting, while the Olive green will blend with the proposed mitigation planting outlined below further anchoring the building in the landscape.</p> <p>it is also proposed to bolster existing perimeter and internal hedgerows with under-planting and inter-planting of whip transplants (i.e. Hedgerow Type 1 - see Figure 1.9 of Appendix F of the PER) in order to ensure dense and consistent screening of the site in perpetuity. This will be undertaken where required to thicken and fill gaps in the existing hedgerow network prior to the construction phase, thus allowing for any growth in the period between a grant of planning permission and construction of the development. Advanced nursery stock in the form of 8-10cm girth trees will be used to fill any noticeable gaps and plant species will be selected to complement the existing broadleaf hedgerow species mix around the site and will be of local provenance. Where not already exceeded by existing vegetation, it is intended to manage hedgerows up to 3-4m in height. This height will be achieved by a combination of allowing lower sections of existing hedgerows to mature, filling obvious gaps with advanced nursery stock and providing an additional line of whip planting to selected hedgerows that require densification.</p> <p>It is also proposed to plant new 'Type 2' hedgerows (Figure 1.10 of Appendix F of the PER), with whips and a high proportion of advance nursery stock trees (c.3m planted height), along the boundaries of some of the proposed parcels to further screen the proposed development from some of the nearest surrounding receptors (Appendix H of the PER). All of this planting will be allowed to mature up to a maintained height of 3-4m to aid in the screening and softening of the proposed development from nearby dwellings and surrounding local and regional roads.</p> <p>The combination of consolidated and proposed 3-4m high hedgerows and native thicket (c.8-10m high) will further reduce the potential for visual impacts within the surrounding area. There will be a further screening effect. Overall, a reduction in potential visibility is noted throughout the immediate study area.</p>		

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Reference Heading	Sub-Chapter	Mitigation Measures	Audit Results	Action Required
		<p>Existing hedgerow field boundaries, which will have been maintained and reinforced with additional planting during the construction and operational phases, will remain intact following the restoration phase. Indeed, due to the supplementary planting proposed as part of the landscape mitigation the field boundaries are likely to be more consistent and consolidated than they are at present.</p> <p>The mitigation measures are indicated on the Landscape Mitigation Plan (Appendix H of the PER).</p>		
<p>Waste and Resource Management Section 4.2.7 of the PER</p>	<p>Waste</p>	<p>A R&WMP will be prepared and implemented by the Contractor. The key principles underlying the plan will be to minimise waste generation and to segregate waste at source.</p> <p>The following general measures will be applied on site:</p> <ul style="list-style-type: none"> • Disposal of construction waste will be to licensed disposal facilities. • On-site segregation of waste will be provided by the Contractor using skips for timber, metal, general waste, and recyclables. • All waste will be removed from site by one or more waste haulage Contractor(s) who hold a current valid Waste Collection Permit issued by the NWCPO. • All waste taken from site will be sent to suitably authorised waste facilities for disposal or recovery. <p>Any stockpiles of hazardous or potentially hazardous waste soils created as a result of the proposed development must be correctly and appropriately managed. Stockpiles must be stored on an impermeable surface to avoid cross contamination. Furthermore, the stockpile must be covered with polyethene plastic or similar to avoid run-off.</p>		

7 Monitoring Measures

This oCEMP section specifies the monitoring measures for the construction phase.

The monitoring measures for the proposed substation will ensure that all construction activities are carried out in accordance with the environmental regulations and commitments.

The appointed Contractor will be responsible for monitoring the implementation and effectiveness of all mitigation measures, undertaking inspections at defined intervals to verify compliance and identify any emerging environmental risks. This will include routine checks on the following:

- Noise
- Dust
- Surface Water Protection Measures
- Waste Management
- Ecological Protection Measures
- General Site Practices (e.g. housekeeping)

All monitoring findings will be recorded, with any non-conformances promptly addressed through corrective actions. Regular updates will be provided to the project team to demonstrate ongoing compliance throughout the construction phase.

8 Auditing

This section of the oCEMP sets out the auditing requirements for the proposed development during construction phase.

The following is to be considered by the Contractor when developing an environmental audit/inspection:

- Environmental control measures are reviewed and monitored on site via audits, inspections and monitoring.
- Environmental audits will be carried out during the construction phase of the project.
- Environmental audits will be carried out by the Site Manager or a member of the Contractor's Management Team.
- Environmental audits will be conducted at planned intervals to determine whether the CEMP is being properly implemented and maintained. The results of environmental audits will be provided to the Site Manager.
- A checklist will be prepared and form the basis for reporting.
- In the event that the measures set out in the CEMP are not being met, corrective action must be taken such as alteration of work practices, additional pollution control measures, additional training etc.
- The frequency and scope of inspections and monitoring will be agreed in advance with ESB and will be dependent on the nature of the work being carried out at the site through the development phases.

8.1 Environmental Compliance

The following definitions will apply in relation to the classification of environmental occurrences during construction:

- **Environmental near miss:** An occurrence which if not controlled or due to its nature could lead to an environmental incident.
- **Environmental incident:** Any occurrence which has potential, due to its scale and nature, to migrate from source and have an environmental impact beyond the site boundary.
- **Environmental exceedance event:** An environmental exceedance event occurs when monitoring results indicate that limits for a particular environmental parameter (as indicated in the Environmental Monitoring Programme) has been exceeded.
- **Environmental non-compliance:** Non-fulfilment of a requirement and includes any deviations from established procedures, programs and other arrangements.

An exceedance will immediately trigger an investigation into the reason for the exceedance occurring and the application of suitable mitigation where necessary.

Exceedance events can be closed out on achieving a monitoring result below the assigned limit for a particular environmental parameter.

8.2 Corrective Action Procedure

A corrective action is implemented to rectify an environmental problem on-site. Corrective actions will be implemented by the Site Manager. Corrective actions may be required as a result of the following:

- Environmental Audits
- Environmental Inspections and Reviews
- Environmental Incidents
- Environmental Complaints

A corrective action notice will be used to communicate the details of the action required to the main Contractor. A corrective action notice is a form that describes the cause and effect of an environmental problem on site and the recommended corrective action that is required. The corrective action notice, when completed, will include details of close out and follow up actions.