REPORT

# Construction Environmental Management Plan

Project Title: Ballycummin 110 kV Substation

| CLIENT | DOCUMENT REFERENCE | DATE |
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| Electricity Supply Board (ESB) | 257501.5407WMR02 | 31/10/2025 |

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# DOCUMENT CONTROL SHEET

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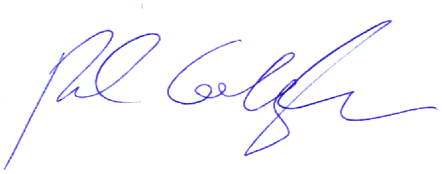
| **Signature** |  |  |
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| **Date** | 31/10/2025 | 31/10/2025 |

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# 1. INTRODUCTION

AWN Consulting, Trinity Consultants Company, has prepared this Construction Environmental Management Plan (CEMP) on behalf of the Electricity Supply Board (ESB). The proposed development will involve the installation of a new 110/38kV/MV station at a site in Raheen Business Park in Ballycummin, County Limerick.

This CEMP explains the construction techniques and methodologies which will be implemented during construction of the proposed development.

The CEMP mitigation measures will be implemented to ensure that pollution and nuisances arising from site clearance and construction activities is prevented where possible and managed in accordance with best practice environmental protection and legal obligations including Local Authority requirements and relevant Health and Safety legislation.

The CEMP will be implemented and adhered to by the construction Contractor and will be overseen and updated as required if site conditions change by the Project Manager, Environmental Manager/ Ecological Clerk of Works prior to and during the course of construction to take into account the conditions on-site as the construction progresses. All personnel working on the site will be trained in the implementation of this CEMP.

The construction contractors will provide an updated CEMP including a schedule of subsequent planning conditions and mitigation measures relevant to the proposed development and set out further detail of the overarching vision of how the construction Contractor of the proposed development manages the site in a safe and organised manner. The current schedule of mitigation can be found in appendix B of the Environmental report being submitted with this application.

The CEMP should be viewed as a live document that can be updated to add additional mitigation measures to adapt to changing site conditions.

This CEMP has been prepared to account for activities at the site during the excavation and construction phases of the project.

The main issues that have been considered within this document are as follows;

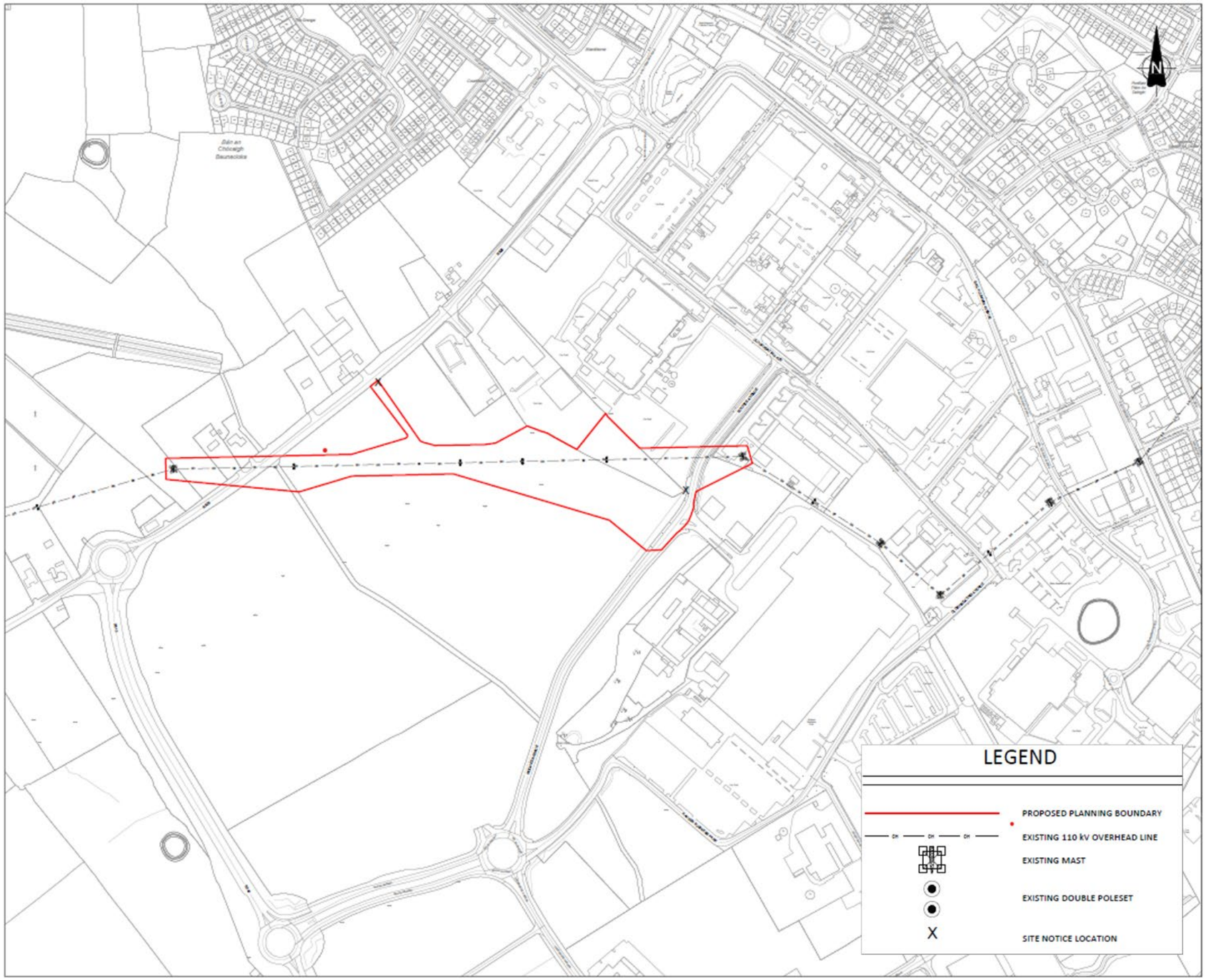
- Description of works;
- Construction programme and phasing;
- Site logistics;
- Workforce;
- Public relations and community liaison;
- Construction traffic and access; and
- Safety, health and environmental management.

# 2. DESCRIPTION OF THE PROJECT

The proposed development constitutes the provision of a new 110 /38 / 20 kV Gas Insulated Switchgear (GIS) electrical substation and will include the following elements:

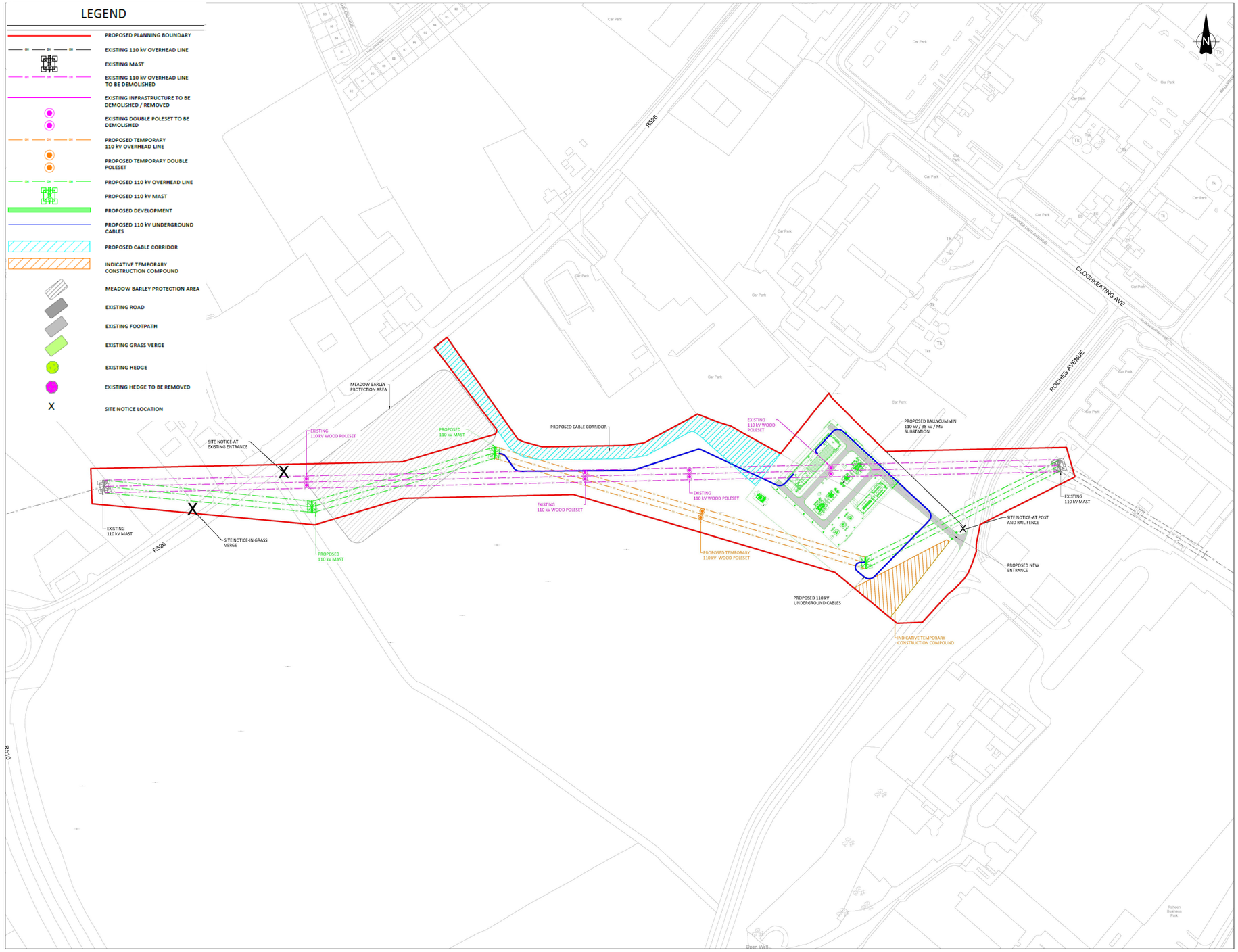
- Removal of four existing 110 kV Overhead Line timber pole sets (c. 15 m in height) and c.800 m of Overhead Line conductor
- Relocation of existing Interface Transformer
- Construction of:
  - A new substation compound (c. 5,950 sq.m.) with a 2.6 m high palisade fencing;
  - A new 110 kV GIS building with eight 110 kV bays (c. 700 sq.m.; 12 m in height);
  - A new 38 / 20 kV GIS building with fourteen 38 kV bays and eighteen MV (20 kV) bays (c. 235 sq.m.; 7 m in height);
  - Two bunded 110 / 38 kV power transformers bunds with associated electrical equipment;
  - Two bunded 38 / 20 kV power transformers bunds with associated electrical equipment;
  - Three bunded Arc Suppression Coils with associated electrical equipment;
  - Two new 110 kV double circuit overhead (OHL) line / cable interface end masts (c. 17m in height)
  - One new 110 kV double circuit overhead (OHL) line angle mast (c. 17 m in height)
  - One temporary 110 kV Overhead Line timber pole set (c. 16 m in height)
  - Temporary diversion of the existing 110 kV overhead line to the temporary timber pole set (c. 320 m of OHL conductor)
  - Diversion of the existing 110 kV overhead line to the new end masts (c. 510 m of OHL conductor);
  - 110 kV underground cabling between the 110 kV GIS building and the new line / cable interface end masts;
  - Associated and ancillary outdoor electrical equipment and other apparatus, including installation of underground cables and ducts;
- Site development works including provision of access roads, car parking area, lighting, telecommunications, fencing, landscaping, site services including drainage and all other ancillary works.

**Figure 2.1 Site Location Map (Indicative Redline Boundary)[1]**




[1] Drawing no. PE492-184-067-001-002 submitted with this application

## Figure 2.2 Proposed Site Layout Plan[2]




[2] Drawing no. PE492-184-067-002-001 submitted with this application

# 3. CONSTRUCTION PROGRAMME AND PHASING

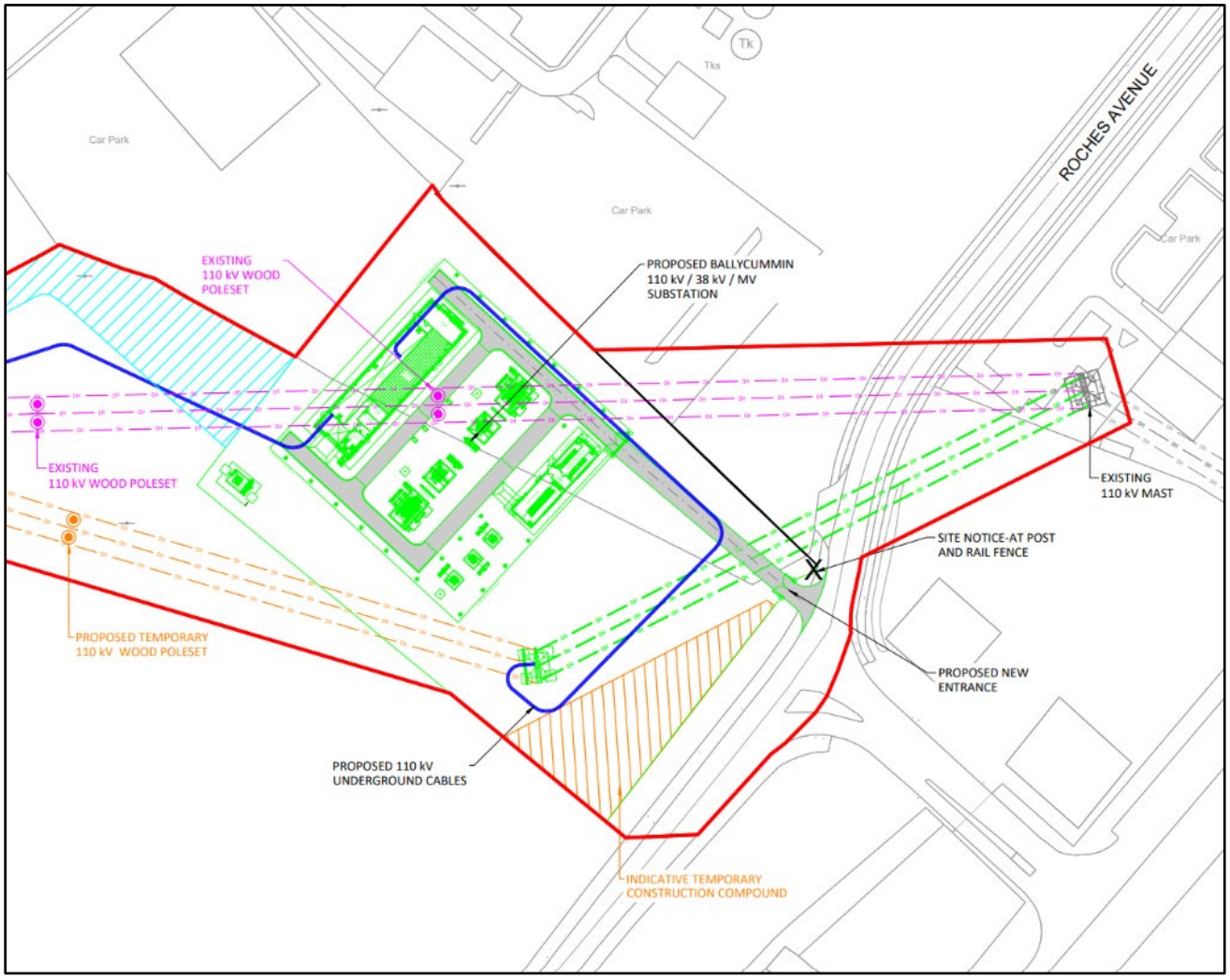
The construction programme is intended to follow a ca.30-month programme.

Subject to detailed planning at the excavation and construction phases, it is currently envisaged that the construction compound, offices, and storage areas will be located at the position indicated in Figure 3.1 and in Appendix A of this plan.

**Table 3.1 Outline Construction Schedule**

| Phase | Activity | Approximate Timeline | Total |
|---|---|---|---|
| Civil Construction | Site Preparation | 8 Weeks | 52 Weeks |
| | Civil Construction | 44 Weeks | |
| Electrical Installation | Electrical Installation | 52 Weeks | 78 Weeks |
| | Electrical Commissioning | 26 Weeks | |

**Figure 3.2 Indicative site construction compound location**




## 3.1 Demolition Phase

While there is no demolition associated with the proposed development there will be the need to Remove four existing 110 kV Overhead Line timber pole sets (c. 15 m in height) and c.800 m of Overhead Line conductor.

The proposed removal of the overhead timber line pole sets will take into account BS 6187 *"Demolition in Buildings"* [1] and all measures necessary will be taken to protect the adjoining buildings from damage and persons from injury. Prior to the construction works a Construction and Demolition Waste Resource Management Plan in accordance with The Environmental Protection Agency (EPA) of Ireland issued guildelines the '*Best Practice Guidelines for the Preparation of Resource & Waste Management Plans for Construction & Demolition Projects'* (2021) [2] will be updated and prepared by the appointed construction contractor to include any subsequent planning conditions.

The removal of the poles will commence with the removal of any hazardous materials by an appropriately qualified contractor for disposal at an appropriate licensed waste collection facility. All non-structural items will then be removed and segregated for re-use or re-cycling where possible.

## 3.2 Excavation & Construction Phase

The project excavations will involve excavations for new foundations, site levelling and excavations for services. The Resource Waste Management Plan (RWMP) prepared by AWN Consulting Ltd (257501.5407WMR01) for the proposed development will be updated by the main contractor and will be in compliance with the requirements of the *'Best Practice Guidelines for the Preparation of Resource & Waste Management Plans for Construction & Demolition Projects'* published by the Environmental Protection Agency (November 2021), which will identify and categorise any waste arising from the development.

The plan contains the proposals for the minimisation, re-use and re-cycling of site generated waste. As part of this plan separate storage areas will be designated on the site for various types of material in order to maximise the re-use and re-cycling potential. Procedure will also be put in place to ensure that all sub-contractors fulfil the requirements of the Waste Management Plan.

The project involves the installation of a new 110/38kV/MV station at a site in Raheen Business Park in Ballycummin, County Limerick.
The works will include:

- Site set up, welfare facilities and compound establishment, decommissioning and movement of site compound and facilities as needed.
- Set up of hoarding around compound and the site boundary.
- Erection of safety signage to all areas and implementation of traffic/pedestrian management plan.

## 3.3 Construction Phase Activities

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 work will take place in two broad phases:
- Civil Construction
- Electrical Installation

Details of each phase are outlined below.

### 3.3.1 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:

- Site entrance modifications and creation of access road.
- Demarcation of construction works area, including site levelling to prepare the works area.
- Site establishment including welfare facilities, site office, etc.
- Construction of site drainage works.
- Enabling works and the formation of a construction route.
- Construction of underground 110 kV cable ducts.
- Installation of substation earth-grid.
- Construction of GIS building, including foundations works, structural steelwork erection, cladding and building finishing works.
- Construction of civils bases for transformer bunds, lightning monopoles, compound lighting columns, LV control cable surface block ducts etc.
- Permanent foul and surface water drainage works.
- 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.

### 3.3.2 Electrical Installation

Electrical installation includes the following:

- Electrical and Mechanical fit out of buildings.
- Delivery and installation of 2 No. 110 kV/38 kV Transformers and 2 No. 38 kV to MV Transformers and associated equipment. These are large pieces of electrical plant and the deliveries will be managed in accordance with regulations governing the movement of large loads.
- Deliver and Installation of 3 No. Arc Suppression Coils
- Delivery and installation of all other outdoor HV equipment.
- Delivery and installation of all 110 kV GIS switchgear
- Pulling and termination of cables.
- LV cabling and wiring of 110 kV equipment and protection and control equipment.
- Installation of compound lighting and security systems.
- Commissioning of all newly installed equipment.

# 4. EXCAVATIONS

## 4.1 Archaeological and Architectural Heritage

Should archaeological features or material be uncovered during archaeological testing or any phase of construction, ground works will cease immediately, and the National Monuments Service of the Department of Housing, Local Government and Heritage will be informed. Time must be allowed for a suitably qualified archaeologist to inspect and assess any material. If it is established that archaeologically significant material is present, the National Monuments Service may require that further archaeological mitigation be undertaken.

However, it is noted that the site does not include, nor is it located within, a Recorded Monument or Place or Area of Archaeological Potential. The freestanding section of limestone wall to Dock Road is a Protected Structure, listed in the National Inventory of Architectural Heritage, and lies within the site boundary. All openings and arches will be reinstated during the excavation and construction phases of this proposed development.

It is considered that no direct impacts will occur at the excavation and construction phases to any sites, structures or features of historical, archaeological or architectural heritage interest or potential. Consequently, no mitigation measures are considered necessary.

## 4.2 Ground Conditions

In the unlikely event that contaminated material is found on site, this material will need to be segregated from clean/inert material, tested and classified as either non-hazardous or hazardous in accordance with the EPA publication entitled *'Waste Classification: List of Waste & Determining if Waste is Hazardous or Non-Hazardous'* [3] using the *HazWasteOnline* application (or similar approved classification method). The material will then need to be classified as clean, inert, non-hazardous or hazardous in accordance with the *EC Council Decision 2003/33/EC* [4], which establishes the criteria for the acceptance of waste at landfills

In the event unlikely that Asbestos Containing Materials (ACMs) are found, the removal will only be carried out by a suitably permitted waste contractor, in accordance with *S.I. No. 386 of 2006 Safety, Health and Welfare at Work (Exposure to Asbestos) Regulations 2006-2010.* All asbestos will be taken to a suitably licensed or permitted facility.

In the unlikely event that hazardous soil, or historically deposited waste is encountered during the construction phase, the contractor will notify Limerick City and County Council (LCCC) and provide a Hazardous / Contaminated Soil Management Plan, to include estimated tonnages, description of location, any relevant mitigation, destination for disposal/treatment, in addition to information on the authorised waste collector(s).

In the event that any additional engineering measures need to be designed for contamination hotspots, or areas where hazardous soil is encountered, the Contractor will include detail of these measures in any such Hazardous/Contaminated Soil Management Plan to be submitted to LCCC.

# 5. SITE LOGISTICS

## 5.1 Site Safety Compliance

The Contractor will be responsible for overall management of the site for the duration of the proposed works and will progress their works with reasonable skill, care, diligence and to proactively manage the works in a manner most likely to ensure the safety and welfare of those carrying out construction works.

The Contractor will comply with all relevant Statutory requirements such as the 2005 Safety Health and Welfare at Work Act, The Construction Regulations (SI 291 of 2013), the General Application Regulations (SI 299 of 2007), etc. (and any amendments thereof).

In addition, the Contractor will comply with all the reasonable safety requirements of the Client, the Project Supervisor for the Design Process (PSDS) and the Project Supervisor for the Construction Phase (PSCS).

## 5.2 Site Establishment and Security

The first activity to be carried out at the site will be the establishment of site facilities and security. It is anticipated that site establishment works will take approximately four weeks. The site office and welfare facilities will be confirmed in advance of the commencement of site works and agreed with LCCC. Figure 3.1 shows the proposed locations of the site compound.

All of the sub-contractors as well as the main contractor and project managers will occupy offices within the construction compound.

There will be no designated staff car park on the site due to site constraints and the use of public transport will be encouraged to reduce pressure on parking in the area.

## 5.3 Temporary construction facilities

Site access and signage

The Proposed Access to the Substation will be via a New Entrance on to Roches Avenue. Site access and construction traffic signage will be established by the Construction Contractor.

Temporary laydown areas

Dedicated primary 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

An area to the east of the site, near to the road, has been identified for use as Construction Compound. This will facilitate temporary accommodation for Construction phase and will also be used to accommodate temporary welfare facilities. Any discharges from the welfare facilities will be connected to a sealed holding tank to be emptied and disposed of off-site by a licenced contractor to an approved licensed facility. A temporary surface will be provided comprising granular stone material with passing bays provided. Storage of fuels and refuelling will be undertaken within a bunded hardstand area. Water will be tankered on to site as required. Foul waste will be disposed off-site using appropriate facilities. A suitably bunded generator may also be used for power.

## 5.4 Consents and Licenses

All statutory consents and licences required to commence on-site construction activities will be obtained ahead of works commencing, allowing for the appropriate notice period. These will include, but are not limited to:

- Site notices;
- Construction commencement notices; and
- Licence to connect to existing utilities and mains sewers, where required;

## 5.5 Services and Utilities

Welfare facilities (canteens, toilets etc.) will be available within the construction compound, and this will remain in place for the construction of the proposed development. The offices and site amenities will initially need to have their own power supply (generator), water deliveries and foul water collection until connections are made to the mains networks.

Electrical connections will be made by suitably qualified personnel following consultation with the relevant authorities and will be cognisant of subsequent construction works. High voltage connections will be established for heavy duty equipment and site facilities, as required.

The current electricity facilities on the site of the proposed development are supplied by the ESB through a ring network. All electrical works, including connection to the ESB network will be carried out by a suitably qualified contractor.

Water supply required for welfare facilities, dust suppression and general construction activities will be sourced from the existing public piped supplies running into the site.

Although before connections are established to the water supply it may need to be trucked onto site. As with electrical works, this will be carried out by a suitably qualified contractor. It will be necessary to service the site with a reliable and safe water supply.

Site welfare facilities will be established to provide sanitary facilities for construction workers on site. The main contractor will ensure that sufficient facilities are available at all times to accommodate the number of employees on site. Foul water from the offices and welfare facilities on the site will discharge into the existing sewer on site (the cabins may initially need to have the foul water collected by a licensed waste sewerage contractor before connection to the sewer line can be made).

## 5.6 Material Handling and Storage

Key materials will be ordered by specific order for the project, a 'Just in Time' delivery system will operate to minimise storage of materials. Where possible it is proposed to source general construction materials from the Limerick City and County area to minimise transportation distances.

Aggregate materials such as sands and gravels will be stored in clearly marked stockpiles in the compound area within the site. Liquid materials will be stored within temporary bunded areas, doubled skinned tanks or bunded containers (all bunds will conform to standard bunding specifications – *BS EN 1992-3:2006* [5]) to prevent spillage.

Construction materials will be brought to site by road. Construction materials will be transported in clean vehicles. Lorries/trucks will be properly enclosed or covered during transportation of friable construction materials and spoil to prevent the escape of material along the public roadway.

The majority of construction waste materials generated will be soil from excavation works. Material will be removed from site regularly to ensure there is minimal need for stockpiling.

## 5.7 Visitor Management

Visitors will only be allowed to enter the main site compound via the designated pedestrian access gate. A dedicated, secured footpath to the site office is established at the gate for registration and obtaining PPE prior to entering the site. A log will be maintained by security to control access to the site. Visitors will be required to attend a site-specific induction to allow access to the compound and/or construction site unless being accompanied by an inducted member of the site team.

Visitors will then be taken by an inducted member of the construction team to the required area of the site.

## 5.8 Site Working Hours

Site development and building works will only be carried out between the hours of 0700 to 1900 Mondays to Fridays inclusive and between 0800 and 1400 hours on Saturdays. Unanticipated issues may arise which require occasional working outside these periods including concrete pours, inspections etc. Construction and Dismantling works outside the above mentioned construction hours will only be undertaken with prior written approval of the local authority. There will be no construction works carried out on Sundays or public holidays. Deviation from these times will only take place when written approval is granted by LCCC in exceptional circumstances.

## 5.9 Employment and Management Workforce

It is estimated that there will initially be approximately 30 staff on site on a typical day, however during peak construction periods this is expected to fluctuate up to 45 staff and contractors on site per day.

It is anticipated that the key project managers and main contractor representatives will maintain a presence on site for the whole duration of the project and the labour workforce will be determined by the specialist contractors required on site.

All employees working on the site will be required to have a SafePass Card (or similar approved Construction Health & Safety card), manual handling training and the necessary certificates to operate machinery as required. The details of training required, records maintained, and induction procedures will be outlined in the Main Contractor's Health and Safety Plan(s).

# 6. CONSTRUCTION TRAFFIC AND SITE ACCESS

The proposed construction vehicle routes for the site will require a traffic management plan (TMP). This TMP can be agreed upon with LCCC and TII prior to site workings beginning, if requested. Advanced warning signs will be placed at sufficient distances to taper off the entry and exit points. Pedestrian marshals will be used as and when required. The traffic plan will be such that it will minimise the interaction between the construction site and the local residential areas. Permits for oversized loads and road openings will be applied for when and where necessary.

Traffic management will be undertaken for the site works in accordance with the principles outlined below and will comply at all times with the requirements of:

- Department of Transport *Traffic Signs Manual 2010 – Chapter 8 Temporary Traffic Measures and Signs for Roadworks* [6]
- Department of Transport *Guidance for the Control and Management of Traffic at Road Works* (2010)[7]
- Any additional requirements detailed in *Design Manual for Urban Roads & Streets* (DMURS) [8]

Construction traffic operation would be limited to 0700 to 1900 from Monday to Friday and 0800 to 1400 on Saturday for the off-road construction. These times may vary to facilitate specific site requirements and/or construction activities associated with the site. Any variation will be discussed and agreed in advance with LCCC.

It should be noted that construction traffic generated during the excavation and construction phase tends to be outside of peak hours. All construction activities will be agreed with LCCC's Roads Department prior to the commencement of the Construction Phase.

In general, the impact of the construction period will be temporary in nature. HGV vehicle movements per hour during the busiest period of construction works are estimated at a peak of 5 HGVs per hour arriving and leaving, but the exact figure will be confirmed by the contractor.

Approved traffic mitigation measures requested by LCCC can be submitted with an updated CEMP as part of compliance, prior to the commencement of works, if requested.

## 6.1 Traffic Queueing

Material deliveries and collections from site will be planned, scheduled and staggered to avoid any unnecessary build-up of construction works related traffic. Deliveries to site will be booked in advance using a delivery schedule, so as to prevent lorry congestion on the road networks surrounding the site. Alternative safe routeways will be established for traffic and pedestrians where existing routeways have to be altered, removed or worked on during the project.

Where possible, deliveries will be scheduled outside of peak traffic times to avoid disturbances to pedestrians and vehicular traffic in the vicinity of the site.

## 6.2 Site Hoarding and Security Fencing

All areas of construction will be fenced / hoarded off to prevent unauthorized access. This fencing will remain closed at all times during construction works and closed and locked after construction work hours / break times. This fencing will be erected in accordance with good practice and the Construction Regulations 2013. Fencing arrangements will be reviewed as the life of the project progresses.

# 7. SAFETY, HEALTH AND ENVIRONMENTAL CONSIDERATIONS DURING CONSTRUCTION WORKS

The appointed main contractor will implement a Construction, Health and Safety Plan during the life of the project, which contains health and safety measures covering the below items at a minimum:

- Construction Health & Safety training requirements;
- COVID-19 guidelines;
- Induction procedures;
- Emergency protocols; and
- Details of welfare facilities.

## 7.1 Construction Lighting

Where the provision of portable lighting is required (works on roadways and power floating floors as examples). Where possible and without jeopardising site safety lights will be pointed down at a 45-degree angle and away from sensitive receptors. The site compound will have external lights for safety and security. These lights will be pointed down at a 45-degree angle and away from sensitive receptors, where possible.

## 7.2 Air Quality

This section describes the site policy with regard to dust management and the specific mitigation measures which will be put in place during construction works. The objective of dust control at the site is to ensure that no significant nuisance occurs at nearby sensitive receptors. In order to develop a workable and transparent dust control strategy, the measures set out below have been formulated by drawing on best practice guidance from Ireland, the UK and the US, such as:

- Department of Environment, Heritage and Local Government (DOEHLG), *Quarries and Ancillary Activities, Guidelines for Planning Authorities* (2004) [9];
- US Environment Protection Agency (USEPA), *Compilation of Air Pollutant Emission Factors, AP-42, Fifth Edition* (periodically updated) (1986) [10];
- The Scottish Office – Development Department, *Planning Advice Note PAN50 Controlling the Environmental Effects Of Surface Mineral Workings Annex B: The Control of Dust at Surface Mineral Workings* (1996) [11];
- Institute of Air Quality Management (IAQM), *Guidance on the Assessment of Dust from Demolition and Construction V2.2* (2024) [12]; and
- Air Pollution Act, 1987.

### 7.2.1 Site Management

The site activities will be undertaken with due consideration of the surrounding environment and the close proximity of sensitive receptors such as residents and pedestrians. Dust management during the construction phase will be the most important aspect in terms of minimising the impacts of the project on the surrounding air quality. The following measures will also be implemented to ensure impacts are minimised:

- Complaint registers will be kept detailing all complaints received in connection with construction activities, together with details of any remedial actions carried out;
- Equipment and vehicles used on site will be in good condition such that emissions from diesel engines etc. are not excessive; and
- Pre-start checks will be carried out on equipment to ensure they are operating efficiently and that emission controls installed as part of the equipment are functional.

Dust deposition levels will be monitored, if requested by the planning authority,, in order to assess the impact that site activities may have on the local ambient air quality. The following procedure will be implemented:

- The dust deposition rate will be measured by positioning Bergerhoff Dust Deposit Gauges at strategic locations near the boundaries of the site for a period of 30 (+/- 2) days if required. Monitoring will be conducted as required during periods when the highest levels of dust are expected to be generated i.e., during site preparation works and soil stripping activities.
- The exact locations will be determined after consideration of the requirements of Method VDI 2119 with respect to the location of the samplers relative to obstructions, height above ground and sample collection and analysis procedures.
- After each 30 (+/- 2 days) exposure period, the gauges will be removed from the sampling location, sealed and the dust deposits in each gauge will be determined gravimetrically by an accredited laboratory and expressed as a dust deposition rate in mg/m2/day in accordance with the relevant standards.
- Technical monitoring reports detailing all measurement results, methodologies and assessment of results will be subsequently prepared and maintained by the Site Manager.

A limit value of 350 mg/m$^2$/day will be used in comparison with recorded values.

### 7.2.2 Dust Control Measures

The aim is to ensure good site management by avoiding dust becoming airborne at source. This will be done through good design, planning and effective control strategies. The siting of construction activities and the limiting of stockpiling will take note of the location of sensitive receptors and prevailing wind directions in order to minimise the potential for significant dust nuisance. In addition, good site management will include the ability to respond to adverse weather conditions by either restricting operations on-site or using effective control measures quickly before the potential for nuisance occurs.

- During working hours and upon planning authority request, technical staff will be available to monitor dust levels as appropriate; and
- At all times, the dust management procedures put in place will be strictly monitored and assessed.

The dust minimisation measures will be reviewed at regular intervals during the construction phase to ensure the effectiveness of the procedures in place and to maintain the goal of minimisation of dust generation. In the event of dust nuisance occurring outside the site boundary, site activities will be reviewed, and procedures implemented to rectify the problem. Specific dust control measures to be employed are presented below.

#### *Site Routes*

Site access routes (particularly unpaved areas) can be a significant source of fugitive dust from construction sites if control measures are not in place. The most effective means of suppressing dust emissions from unpaved roads is to apply speed restrictions. Studies show that these measures can have a control efficiency ranging from 25% to 80% [13].

- A speed restriction of 16 km/hr on unsealed roads and 32km/hr on sealed roads will be applied as an effective control measure for dust for on-site vehicles or delivery vehicles within the vicinity of the site;
- Bowsers will be available during periods of dry weather throughout the construction period. Research shown found that the effect of surface watering is to reduce dust emissions by 50%. The bowser will operate during dry periods to ensure that unpaved areas are kept moist. The required application frequency will vary according to soil type, weather conditions and vehicular use; and
- Any hard surface roads will be swept to remove mud and aggregate materials from their surface, as needed. Any unsurfaced areas will be restricted to essential site traffic only.

### *Excavation*

Excavation works during periods of high winds and dry weather conditions can be a significant source of dust.

- During dry and windy periods, and when there is a likelihood of dust nuisance, watering will be conducted to ensure moisture content of materials being moved is high enough to increase the stability of the soil and thus suppress dust;
- During periods of very high winds (gales), activities likely to generate significant dust emissions will be postponed until the gale has subsided.

The movement of trucks containing materials with a potential for dust generation to an off-site location will be enclosed or covered.

### *Stockpiling*

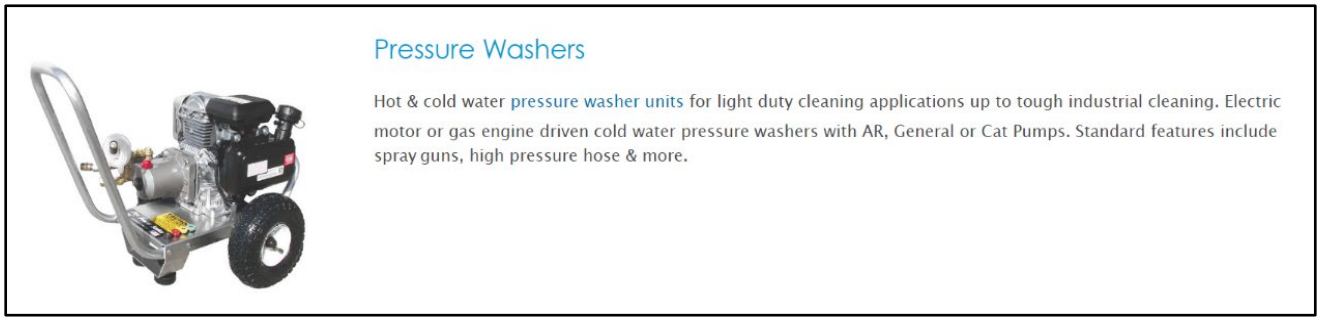
The location and moisture content of stockpiles are important factors which determine their potential for dust emissions. The following measures will be put in place:

- Overburden material will be protected from exposure to wind by storing the material in sheltered parts of the site, where possible;
- Regular watering will take place during dry/windy periods to ensure the moisture content is high enough to increase the stability of the soil and suppress dust;
- Where it is expected that overburden / topsoil will need to be stockpiled for some time, these should be seeded to prevent wind whipping. In such cases, the stockpile(s) may need to be watered periodically during dry weather until seed is established

### *Site Traffic on Public Roads*

Spillage and blow-off of debris, aggregates and fine material onto public roads will be reduced to a minimum by employing the following measures:

**Figure 7.1 Example of Proposed wheel cleaning equipment example**




- Vehicles delivering material with potential for dust emissions to an off-site location will be enclosed or covered at all times to restrict the escape of dust;
- Any hard surface site roads will be swept to remove mud and aggregate materials from their surface, as needed. Any unsurfaced roads will be restricted to essential site traffic only.
- A power washing facility or wheel cleaning facility will be installed near to the site compound for use by vehicles exiting the site when appropriate, and an example of the washing equipment can be seen in insert 7.1 ;
- If required a wheel wash will be installed within the Site Compound to wash dirt from the wheels of trucks exiting the site; and
- Road sweepers will be employed to clean the site access route as required.

*General*

The pro-active control of fugitive dust will ensure that the prevention of significant emissions, rather than an inefficient attempt to control them once they have been released, will contribute towards the satisfactory management of dust by the construction contractor.

## 7.3 Ecology

The key strategies to be undertaken to minimise impact on the local flora and fauna during site clearing and construction are as follows:

- All site clearance works will comply with current legislative requirements and best practice;
- Cutting of vegetation will occur outside the bird nesting season March 1 to August 31, where possible. Pre-construction nest checks shall be undertaken by an experienced ecologist prior to works commencing where works during the breeding season are unavoidable;
- Taking measures to limit the working area during the construction phase will reduce the impacts of the development on adjacent areas. The construction area will be clearly delimited by the site boundary and machinery will operate only within this allocated site area. Key ecological receptors, such as the hedgerows onsite will be cordoned off with appropriate set back distances, as advised by the environmental/ ecological clerk of works;
- Any trees with potential roosting features for bats will be checked for bats in advance of any felling/ trimming works by an experienced ecologist;
- All re-fuelling of plant, equipment and vehicles will be carried out at the construction site boundary. All fuels, chemicals, liquid and solid waste will be stored in areas bunded in accordance with established best practice guidelines at the construction compound also; and Provision of spill kits;
- Provision of a water and sediment management plan, providing for means to ensure that surface water run-off is controlled such that no silt or other pollutants enter local water courses or drains; and
- The measures outlined in Section 7.6 will ensure that silt run-off and potential flooding risks are minimised which will protect any ecological receptors associated with the site.
- Construction lighting will be designed so as to be sensitive to the potential presence of bats and will adhere to the following guidance:
  - Bats and Artificial Lighting in the UK' Guidance Note GN 08 / 23 (Bat Conservation Trust, 2023)
  - Bats & Lighting: Guidance Notes for Planners, engineers, architects and developers (Bat Conservation Trust, 2010) [14];
  - Guidance Notes for the Reduction of Obtrusive Light GN01 (Institute of Lighting Professionals, 2011) [15];
  - If lighting is required near site boundaries, the lighting poles will be installed on the boundary and will face inwards (i.e. towards the centre of the site). This will ensure that lighting is not directed outside the site boundaries or along bat commuting features such as hedgerows and treelines.
  - All lights around the site boundary will be fitted with directional hoods and/or luminaires to direct the light downwards onto targeted areas and to prevent unnecessary light-spill.
  - The intensity of lighting will be kept to the minimum level required for safety and security. Where appropriate, external security lighting should be set on motion-sensors for as short as possible. 1 or 2 minutes should be appropriate.
  - Luminaries should lack UV elements when manufactured, with LED luminaires should be used where possible.
  - A warm white light source (2700Kelvin or lower) should be used, with peak wavelengths higher than 550nm.
- Standard best practice biosecurity measures will be implemented onsite (in accordance with The Management of Invasive Alien Plant Species on National Roads – Standard (TII, 2020). If any high impact or First Schedule invasive species are recorded in advance of or during construction, an Invasive Species Management Plan will be produced and implemented for the site.

## 7.4 Noise and Vibration

### 7.4.1 Noise Criteria

Noise impacts arising from excavation and construction activities have the potential to cause annoyance or nuisance to local residents and businesses in the area.

Appropriate criteria relating to permissible construction noise levels for this development are taken from British Standard BS 5228 – 1: 2009 +A1 2014 [17]: Code of Practice for Noise and Vibration Control on Construction and Open Sites – Noise. The approach adopted here calls for the designation of a noise sensitive location into a specific category (A, B or C) based on exiting ambient noise levels in the absence of construction noise.

In accordance with the standard, ambient measured noise levels representative of noise sensitive locations will be rounded to the nearest 5 dB and construction noise limits are then set according to the category definitions above. This then sets a threshold noise value that, if exceeded at this location, indicates a potential significant noise impact is associated with the construction activities depending on context. The approach is summarised in Table 7.1.

**Table 7.1: Threshold of Potential Significant Effect at Dwellings (BS5228-1)**

| Assessment Category and Threshold Value Period | Threshold Value (dB) | | |
|---|---|---|---|
| | Category A | Category B | Category C |
| Night Time (23:00-07:00) | 45 | 50 | 55 |
| Evenings and Weekends D) | 55 | 60 | 65 |
| Daytime (07:00-19:00) and Saturdays (07:00 – 13:00) | 65 | 70 | 75 |

A) Category A: threshold values to use when ambient noise levels (when rounded to the nearest 5 dB) are less than these values.
B) Category B: threshold values to use when ambient noise levels (when rounded to the nearest 5 dB) are the same as category A values.
C) Category C: threshold values to use when ambient noise levels (when rounded to the nearest 5 dB) are higher than category A values.
D) 19:00–23:00 weekdays, 13:00–23:00 Saturdays and 07:00–23:00 Sundays.

### 7.4.2 Vibration Criteria

Vibration criteria are taken from BS 5228-2:2009+A1:2014 Code of Practice for Noise and Vibration Control on Construction and Open Sites- Vibration. This document sets the following vibration limits for transient vibration. For buildings or structures that are structurally unsound, lower vibration magnitudes will apply, typically 50% of those for structurally sound buildings. Protected or historic buildings are not automatically assumed to be more vulnerable to vibration unless they have existing structural defects. The recommend transient vibration thresholds from BS5228-2 for the avoidance of cosmetic damage to light and heavy framed buildings are summarised in Table 7.2.

**Table 7.2: Transient Vibration threshold values for buildings**

| Type of Building | Peak component particle velocity in frequency range of predominant pulse Note 1 | |
|---|---|---|
| | 4 Hz to 15 Hz | 15 Hz and above |

| | | |
|---|---|---|
| Reinforced or framed structures. Industrial and heavy commercial buildings | 50mm/s | |
| Unreinforced or light framed structures.<br><br>Residential or light commercial buildings. | 15 mm/s at 4 Hz Note 2 increasing to 20 mm/s at 15 Hz | 20 mm/s at 15 Hz increasing to 50 mm/s at 40 Hz and above |

Note 1: Values referred to are at the base of the building.

Note 2: At frequencies below 4 Hz, a maximum displacement of 0.6 mm (zero to peak) is not to be exceeded.

### 7.4.3 General Noise and Vibration Mitigation

Best practice noise and vibration control measures will be employed by the contractor during the excavation and construction phases in order to control noise and vibration impacts at the nearest noise sensitive locations. All works on site will comply with BS 5228 2009+ A1 2014 (Parts 1 & 2) which gives detailed guidance on the control of noise and vibration from construction activities.
This includes guidance on several aspects of construction site mitigation measures, including, but not limited to:

- Selection of quiet plant;
- Noise control at source;
- Screening, and;
- Liaison with the Public

The following key examples of noise control that may be implemented at the site are set out below:

- Site compounds will be located away from noise sensitive boundaries within the site constraints;
- For mobile plant items such as cranes, dump trucks, excavators and loaders, the installation of an acoustic exhaust and or maintaining enclosure panels closed during operation can reduce noise levels by up to 10dB. Mobile plant will be switched off when not in use and not left idling.
- For steady continuous noise, such as that generated by diesel engines, it may be possible to reduce the noise emitted by fitting a more effective exhaust silencer system and avoid idling of engines when not in use.
- For percussive tools, a number of noise control measures include fitting a muffler or sound reducing equipment to the breaker 'tool' and ensure any leaks in the air lines are sealed. Erection of localised screens around breaker or drill bit when in operation in close proximity to noise sensitive boundaries.
- The use of a high quality construction site hoarding will be included around all noise sensitive boundaries.
- For all materials handling, ensure that materials are not dropped from excessive heights, lining drops chutes and dump trucks with resilient materials.
- All items of plant will be subject to regular maintenance. Such maintenance can prevent unnecessary increases in plant noise and can serve to prolong the effectiveness of noise control measures.
- All site staff will be briefed on noise mitigation measures and the application of best practicable means to be employed to control noise.

#### *Liaison with the Public*

The designated complaints contact will be appointed to site during construction works. Any noise complaints will be logged and followed up in a prompt fashion by the complaints contact. In addition, where a particularly noisy construction activity is planned or other works with the potential to generate high levels of noise, or where noisy works are expected to operate outside of normal working hours etc.,

the complaints contact will inform the nearest noise sensitive locations of the time and expected duration of the noisy works.

Any noise complaints related to activities at the site will be logged and investigated and, where required, measures taken to ameliorate the source of the noise complaint.

### *Monitoring*

During the construction phase, spot check noise monitoring may be required where the construction noise thresholds have the potential to be exceeded at noise sensitive locations. If required ,the monitoring will be carried out by the contractor and used to inform the requirement for any control measures on site to reduce construction noise levels.

Noise monitoring will be conducted in accordance with the International Standard ISO 1996-2:2017 - *Description, measurement and assessment of environmental noise - Part 2: Determination of sound pressure levels* (ISO 2017)[18].

Where required, or requested by the local authority, unattended external noise monitoring will be undertaken at locations on the site boundary closest to sensitive locations. It is considered that it will be appropriate to amend the monitoring program and location as the works progress. Accordingly, monitors may be added, removed or relocated as necessary.

The noise monitoring terminals will provide the following at minimum:

- Logging at hourly intervals; and
- Remote access for information download.

Where required (i.e. where there is potential for exceedance of the vibration thresholds for buildings in Table 7.2), or requested by the local authority, vibration monitoring will be installed at the site boundary to monitor Peak Particle Velocity parameter (PPV, mm/s) in the X, Y and Z directions, in accordance with BS ISO 4866: 2010: *Mechanical vibration and shock – Vibration of fixed structures – Guidelines for the measurement of vibrations and evaluation of their effects on structures* [19].

The mounting of the transducer to the vibrating structure will need to comply with BS EN ISO 5348: 1998: *Mechanical vibration and shock – Mechanical mounting of accelerometers* [20]. In summary, the following ideal mounting conditions apply:

- The transducer and its mountings will be as rigid as possible;
- The mounting surfaces will be as clean and flat as possible;
- Simple symmetric mountings are best, and;
- The mass of the mounting will be small in comparison to that of the structure under test.

## 7.5 Resource and Waste Management

This section outlines the measures that will be undertaken to minimise the quantity of waste produced at the site and the measures to handle the waste in such a manner as to minimise the effects on the environment. A site-specific RWMP has been prepared by AWN Consulting (257501.5407WMR01) and will be employed to ensure sustainable and effective waste management throughout the excavation and construction phases of the project.

Adherence to the RWMP prepared for the construction works will ensure that the management of waste arising is dealt with in compliance with the provisions of the *Waste Management Act 1996* as amended [21], and associated Regulations, the *Litter Pollution Act of 1997* as amended [22] and the *National Waste*

*Management Plan for a Circular Economy 2024 - 2030 (NWMPCE) (2024)* [23], and that it will achieve optimum levels of waste reduction, re-use and recycling.

Typical waste materials that will be generated from the construction works will include:

- Soil and stones;
- Concrete, bricks, tiles and ceramics;
- Wood, glass and plastics;
- Metals;
- Gypsum-based construction material;
- Paper and cardboard;
- Mixed construction and demolition (C&D) waste;
- Chemicals (solvents, paints, adhesives, detergents etc.); and

The management of all hazardous waste arisings, if they occur, will be coordinated in liaison with Health and Safety Management.

### 7.5.1 Waste Minimisation

Waste minimisation measures proposed are summarised as follows (and are described in more detail in the RWMP):

- Materials will be ordered on an 'as needed' basis to prevent over supply;
- Materials will be correctly stored and handled to minimise the generation of damaged materials;
- A waste tracking log will be established;
- Sub-contractors will be responsible for similarly managing their wastes; and
- All wood waste generated by site works will be inspected and examined and will be segregated as re-useable wood and scrap wood waste.

### 7.5.2 Waste Storage

The main waste storage area will be located in the site compound. A dedicated and secure area containing bins, and/or skips, and storage areas, into which all waste materials generated by construction site activities, will be established within the development.

Waste materials generated will be segregated at the site compound, where it is practical. Where the on-site segregation of certain waste types is not practical, off-site segregation will be carried out. There will be skips and receptacles provided to facilitate segregation at source. All waste receptacles leaving site will be covered or enclosed. The appointed waste contractor will collect and transfer the wastes as receptacles are filled. There are numerous waste contractors in the LCCC Region that provide this service.
The site Resource Manager (this may an ESB or Contractor appointed person) will ensure that all staff are informed of the requirements for segregation of waste materials by means of clear signage and verbal instruction. Appointed employees will be made responsible for ensuring good site housekeeping.

### 7.5.3 Pest Management

A pest control operator will be appointed as required to manage pest onsite during the construction phase of the project. Organic and food wastes generated by staff will not be stored in open skips, but in closed waste receptacles. Any waste receptacles will be carefully managed to prevent leaks, odours and pest problems.

### 7.5.4 Responsibility

It will be the responsibility of the project manager to ensure that a written record of all quantities and natures of wastes removed from the site are maintained on-site in a waste file (in hardcopy or electronically).

It is the responsibility of the project manager or his/her delegate that all contracted waste haulage drivers hold an appropriate waste collection permit for the transport of waste loads and that all waste materials are delivered to an appropriately licensed or permitted waste facility in compliance with the relevant Regulations as outlined in the RWMP.

The contractor, as part of regular site inspection audits, will determine the effectiveness of the waste management strategy and will assist the project manager in implementing the measures under the RWMP and in determining the best methods for waste minimisation, reduction, re-use, recycling and disposal as the construction phase progresses and waste materials are generated. If requested by condition, prior to commencement of the excavation, construction activity and removal of any waste off-site, details of the proposed destination of each waste stream will be provided to LCCC, along with waste collection permit numbers.

## 7.6 Surface Water Management

Care will be taken to ensure that exposed soil surfaces are stable to minimise erosion. All exposed soil surfaces will be monitored and managed within the site which limits the potential for any offsite impacts. All run-off will be prevented from directly entering into any water courses as no construction will be undertaken directly adjacent to open water.

No significant dewatering are likely to be required during the construction phase which would result in the localised lowering of the water table. There may be localised pumping of surface run-off from the excavations during and after heavy rainfall events to ensure that the excavation is kept relatively dry.

The following measures will be put in place during the construction phase to ensure protection of surface waterbodies. Construction works are informed by best practice guidance from Inland Fisheries Ireland on the prevention of pollution during development projects:

- Control of Water Pollution from construction Sites, Guidance for consultants and contractors (C532); and
- Guidelines on Protection of Fisheries During Construction Works in and Adjacent to Waters (2016).
- Environmental Good Practice on Site (3rd edition) (C692).

Surface water discharge from the site will be managed and controlled for the duration of the construction works until the permanently attenuated surface water drainage system of the proposed site is complete. A temporary drainage system shall be installed prior to the commencement of the construction works to collect surface water runoff by the site during construction.

It is envisaged that a number of silt fences will be installed to ensure silts do not flow off site during the construction stage. This temporary surface water management facility will throttle runoff and allow suspended solids to be settled out and removed. All inlets to the settling basins will be 'riprapped' to prevent scour and erosion in the vicinity of the inlet.

### 7.6.1 Pollution Control

*Management of Suspended solids in run-off*

Any temporary storage of spoil, hardcore, crushed concrete or similar material will be stored as far as possible from any surface water drains and also stored in receptacles, where possible. In order to minimise the risk of contamination, the stockpiled material will be removed off-site as soon as possible. Surface water drain gratings in areas near or close to where stockpiles are located will be covered by appropriate durable polyurethane covers or similar.

There will be no direct pumping of silty water from the works to any watercourse. Sediment entrapment facilities will be installed to reduce sediment discharges to downstream properties and receiving waters. All run-off leaving a disturbed area should pass through a sediment entrapment facility before it exits the site and flows downstream such as straw bales, silt fencing, silt barriers and diversion dams.

### *Concrete Run-off*

No wash-down or wash-out of ready-mix concrete vehicles during the construction works will be carried out at the site within 10 meters of an existing surface water drainage point. Wash-outs will only be allowed to take place in designated areas with an impervious surface or will be sent back to the concrete batching plant, if possible.

### *Accidental Spills and Leaks*

No bulk chemicals will be stored within the active construction areas. Temporary oil and fuel storage tanks will be kept in the material storage area in suitable containers and will be appropriately bunded as required. Refuelling of vehicles and the addition of hydraulic oils or lubricants to vehicles will take place in designated areas of the site, where possible, which will be kept away from surface water drains.

Spill protection equipment such as absorbent mats, socks and sand will be available to be used in the event of an accidental release during refuelling. Training will be given to appropriate site workers in how to manage a spill event.

The following mitigation measures will be taken at the construction site in order to prevent any spillages to ground of fuels during machinery activities and prevent any resulting soil and/or groundwater quality impacts:

- Refuelling will be undertaken off site where possible;
- Where mobile fuel bowsers are used the following measures will be taken:
  - Fuel and oil storage on site, including generator fuel tanks, shall be in tanks that are externally bunded and lockable. Bunds shall be capable of containing at least 110% of the largest capacity vessel stored therein and have sufficient freeboard. Alternatively, where suitable, integrally bunded tanks may be used. No pipework or other ducting should pass through the bund floor or walls and there should be no direct outlet;
  - Operatives must have spill response training;
  - Portable generators or similar fuel containing equipment will be placed on suitable drip trays; and
  - Small plant, such as pumps, that must remain in-situ, should be refuelled from approved jerry cans with pouring nozzles in conjunction with drip trays. Spill kits shall be carried by all refuelling vehicles.

### *Monitoring*

Weekly checks will be carried out to ensure surface water drains are not blocked by silt, or other items, and that all storage is located at least 10m from surface water receptors. Additional checks will take place following and during period of particularly heavy rain as well as before, during and after any dewater or water pumping activities. A regular log of inspections will be maintained, and any significant blockage or

spill incidents will be recorded for root cause investigation purposes and updating procedures to ensure incidents do not reoccur.

# 8. SUMMARY

This CEMP sets out the overall management strategy for the excavation and construction works for the proposed development. The CEMP aims to ensure the management of construction activity is carried out in a planned, structured and considerate manner which minimises the impacts of the works on the local environment, residents and commercial activities in the vicinity of the site. Due to the nature of construction works, there may be unforeseen events which occur at the site and the project team will actively manage any changes and discuss with the relevant authorities, where required.

The CEMP will be reviewed regularly and will be updated by the construction contractor to account for any subsequent planning conditions issued, any updated guidance released and circumstantial changes at the site as the development progresses.

The project team are committed to ensuring that the construction activities to be carried out are pro-actively managed so as to minimise potential impacts.

# 9. REFERENCES


1. British Standards Institution (BSI), BS 6187:2011 Code of practice for full and partial demolition (2011)
2. Environmental Protection Agency (EPA) *'Best Practice Guidelines for the Preparation of Resource and Waste Management Plans for Construction & Demolition Projects' (2021).*
3. Environmental Protection Agency (EPA), *Waste Classification: List of Waste & Determining if Waste is Hazardous or Non-Hazardous* (2018)
4. Council Decision 2003/33/EC, establishing criteria and procedures for the acceptance of waste at landfills pursuant to Article 16 of and Annex II to Directive 1999/31/EC.
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11. The Scottish Office – Development Department, *Planning Advice Note PAN50 Controlling the Environmental Effects Of Surface Mineral Workings Annex B: The Control of Dust at Surface Mineral Workings* (1996).
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18. BS ISO 4866: 2010: *Mechanical vibration and shock – Vibration of fixed structures – Guidelines for the measurement of vibrations and evaluation of their effects on structures.*
19. British Standards Institution (BSI), *BS EN ISO 5348: 1998: Mechanical vibration and shock – Mechanical mounting of accelerometers* (1998).
20. *Waste Management Act 1996* as amended, including sub-ordinate and associated legislation.
21. *Litter Pollution Act 1997* as amended
22. Regional Waste Management Planning Offices*, The National Waste Management Plan for a Circulat Economy 2024-2030 (2024).*

# APPENDIX A. INDICATIVE SITE CONSTRUCTION COMPOUND LOCATION