Clifton Scannell Emerson Associates

Outline Construction Environmental Management Plan

VDC DUB11 SUBSTATION - KILCARBERRY

Client: Vantage Data Centers

Date: 01st November 2021

Job Number: 21_115

CONSULTING ENGINEERS

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Document Control Sheet

Project Name:	VDC Dub11 Substation Kilcarberry
Project Number:	21_115
Report Title:	Outline Construction Environmental Management Plan
Filename:	RPT-21_115-003 Outline Construction Environmental Management Plan
CSEA Reference:	RPT-21_115-003

Issue No.	Issue Status	Date	Prepared by	Checked by
1.0	DRAFT	01/11/2021	DAB	PM
2.0	PLANNING	10/12/2021	DAB	PM
3.0	FINAL	10/02/2022	PM	PM

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1 INTRODUCTION

This Outline Construction Environmental Management Plan (CEMP) has been prepared by Clifton Scannell Emerson Associates (CSEA) on behalf of Vantage Data Centers in support of a planning application to South Dublin County Council for planning permission for the proposed development of a greenfield site of approximately 1.69 hectares. The site lies approximately 700m north of Casement Aerodrome and 12km west of Dublin City Centre, and is accessed from the R134 New Nangor Road.

This Outline CEMP defines the approach to environmental management at the site during the construction phase. It provides a basis for achieving and implementing the construction related mitigation measures identified in the Environmental Impact Assessment Report (EIAR) and promotes best environmental on-site practices for the duration of the construction phase.

The outline CEMP provides a framework from which a final CMP (Construction Management Plan) will be developed to avoid, minimise or mitigate any construction effects on the environment prior to commencement on site.

The contractor will prepare specific method statements, which should identify perceived risks to the environment and detail mitigation measures to be employed which will negate the risk to the environment.

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.

Preparation of the final CEMP should comply with the Mitigation Measures presented in the EIAR and all additional measures may be added to following consultation with relevant consultees in preparation of specific method statements prior to commencement of works.

2 DESCRIPTION OF THE PROJECT

2.1 Subject Site Characteristics

The overall site extends to over 1.69 ha. of mainly greenfield lands located within Profile Park. The surrounding area is characterised by a variety of energy, industrial and technology sector use. The subject site is bounded to the north by a greenfield site with planning permission granted for a large data centre, to the south by a greenfield site with planning permission granted for a logistics / distribution warehouse, to the east by a greenfield site with planning permission granted for a retail / office development and to the west by a greenfield site with planning permission granted for future roads and infrastructure development of Profile Park.

The greenfield site is free from development. The topography of the site falls slightly in a west east direction (75 AOD – 74 AOD). There are no known protected structures on the site, nor is the site located within an architectural conservation area.

The subject site is highly accessible to the national road network and is located less than 5km from the N7/R136 interchange. The site is directly accessible from the R134 via a service road to the south. The subject site is identified in Figure 1 below.

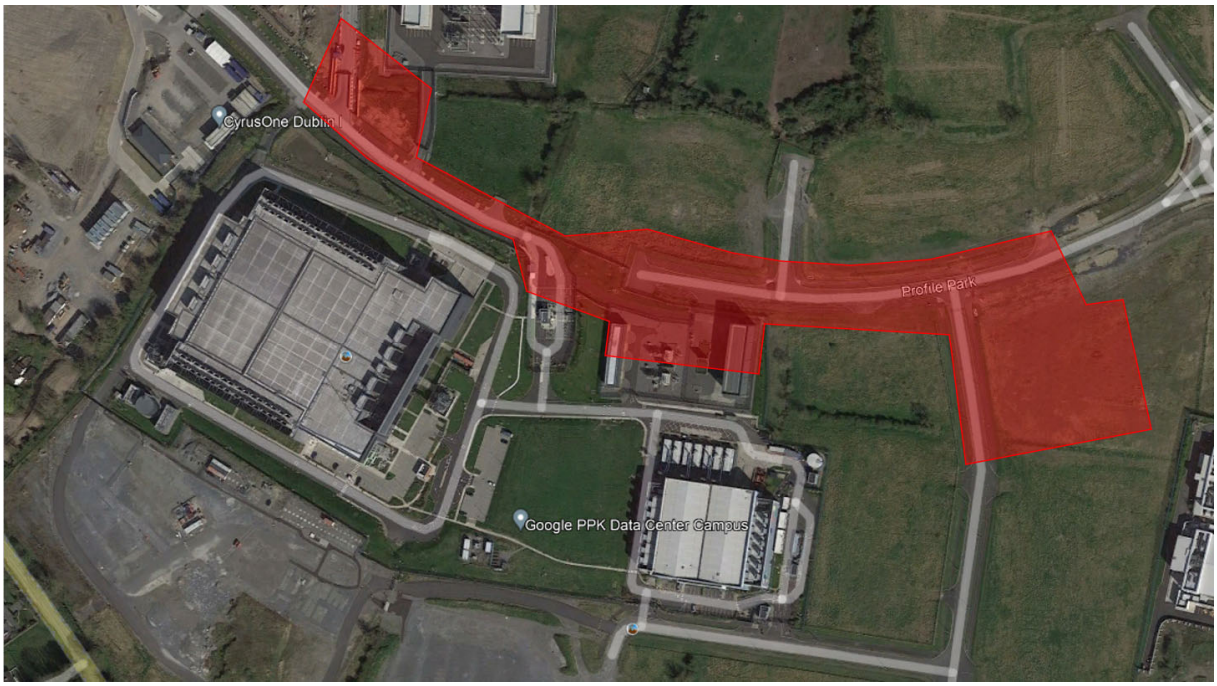

Figure 1: Aerial View showing the site outlined in red.

2.2 Project Description

The proposed development primarily comprises the provision of two no. 110kV underground transmission lines and a 110kV Gas Insulated Switchgear (GIS) substation compound along with associated and ancillary works and is described as follows:

The proposed 110kV GIS Substation Compound is to be located on lands to the south of those that are subject of an application for 2 no. data centres under South Dublin County Council Reg. Ref. SD21A/0241 and to the south of Falcon Avenue within Profile Park, and within an overall landholding bound to the north by Falcon Avenue, Profile Park; to the west by Casement Road, Profile Park; and to the east and south by undeveloped lands; and partly by the Digital Reality complex to the south-east within Profile Park, Clondalkin, Dublin 22. The site of the proposed development has an area of c. 3.19 hectares.

The proposed 110kV Gas Insulated Switchgear (GIS) Substation Compound includes the provision of a two storey GIS Substation building (with a gross floor area of 1,477sqm) (known as the Kilcarbery Substation), three transformers with associated ancillary equipment and enclosures, a single storey Client Control Building (with a gross floor area of 51.5sqm), lightning masts, car parking, associated underground services and roads within a 2.6m high fenced compound and all associated construction and ancillary works.

One proposed underground single circuit 110kV transmission line will connect the proposed Kilcarbery 110kV GIS Substation to the existing 110kV Barnakyle Substation to the west. The proposed transmission line covers a distance of approximately 274m within the townlands of Aungierstown and Ballybane, and Kilbride and will pass under the internal road network within Profile Park to where it will connect into the Barnakyle substation.

One proposed underground single circuit 110kV transmission line will connect the proposed Kilcarbery 110kV GIS Substation to the existing 110kV underground Castlebaggot - Barnakyle circuit to the west within the Grange Castle South Business Park. The proposed transmission line covers a distance of approximately 492m within the townlands of Aungierstown and Ballybane, and Kilbride and will pass both under, and to the north of the internal road network within Profile Park and Grange Castle Business Park South where it will connect into the Castlebaggot - Barnakyle circuit at a proposed new joint bay.

The development includes the connections to the two substations (existing and proposed) as well as to the Castlebaggot - Barnakyle circuit, associated underground services, and all associated construction and ancillary works.

3 CONSTRUCTION PROGRAMME AND PHASING

Programme and Phasing

It is proposed to commence construction Q3 2022 with the main building and civil works completed Q2 2023 with commission and handover to Eirgrid/ESB Q3 2023. The project will be carried out in a single phase.

Site Preparation

It is proposed that the accesses and haul roads for vehicles, the contractors' compound and fencing will be established for the proposed development utilising the existing entrance from the internal Profile Park Road to the South of R134 as the primary construction entrance for this development.

The construction compound will facilitate office, portable sanitary facilities, equipment storage, parking etc. for contractors. It will be used for the duration of the works.

The primary activities that will be required during the site preparation phase for the development will be site clearance, excavations and levelling of the site to the necessary base level for construction, surveying and setting out for structures and any rerouting of services/connections to services.

A combination of excavators, trucks and other soil shifting plant will commence the main site clearance and levelling aspects.

Building Construction Works

Foundations and Structure

Following the completion of site clearance and levelling, all structures will require foundations to the structural engineer's specifications. Building structures will comprise of standard structural steel frames.

It is anticipated that foundations will require moderate scale excavations. Local minor dewatering may be required during excavation works and groundworks.

Levelling/Cut and Fill

It is predicted that the majority of the cut material generated during site preparation/levelling (2,829m^3) will be disposed of offsite.

Circa 10,800m^3 fill will be required to facilitate construction of the proposed roads, carparks, buildings and landscaping berms.

Contractors will be required to submit and adhere to a method statement (including the necessary risk assessments) and indicating the extent of the areas likely to be affected and demonstrating that this is the minimum disturbance necessary to achieve the required works.

Any temporary storage of spoil required will be managed to prevent accidental release of dust and uncontrolled surface water run-off which may contain sediment etc.

Building Envelopes and Finishes

The outer finishing of the building envelopes are intended to be of a high quality and appearance as per the architects drawings.

Roads, Services and Landscaping

The internal road system will be completed as per the engineer's and architect's details.

Landscaping will be undertaken in accordance with the landscape plan for the proposed development.

4 EXCAVATION

4.1 Archaeological and Architectural Heritage

A detailed report on the Archaeological and Architectural Heritage of the site can be found in the EIAR. The following is a summary of the construction effects on the Archaeological and Architectural Heritage of the site:

Archaeology

There are no recorded archaeological sites listed on the SMR or RMP anywhere within the site boundary. The geophysical survey undertaken across the site by ACSU in 2020 revealed four anomalies of probable archaeological origin pertaining to previous activity. A scheme of test trenching in June 2021 revealed the remains of an oval/circular enclosure c.40m in diameter, as well as two linear ditch features likely to be former field boundaries. Other similar circular enclosures of probable medieval date are recorded or have been fully excavated in the study area (TOR 11 & 12) and are generally considered as being included on the RMP. The on-site archaeological resource is therefore considered to be of local value and low significance.

However, the proposed development will involve groundworks which will inevitably have an impact on below ground archaeological remains where they are yet known and recorded. The risk of impacts would come from the damage to the below ground site / features / localised findspots that were revealed by the trenching. There would be a direct construction effect on the oval/circular enclosure and associated linear ditches as documented in the site investigations (Appendix 2.4). The construction stage would result in a negative effect of moderate significance. This would be permanent and irreversible and would be significant in terms of EIA.

Architecture

There would be no direct construction effects on any of the identified built heritage features in the study area during the construction stage. The site is a distance away from the protected structures in the study area and the visual presence of construction activity, including cranes, and the related noise and vibration would not be perceptible from any of the assets or their setting. The ongoing construction of the business parks is also an established aspect of the character of the study area. The construction stage would not result in any change to the buildings of heritage interest in the study area or the character of their setting and no effects are predicted.

4.2 Ground Condition

Ground works will be required to clear the site and to facilitate construction of building foundations, access roads, the installation of utilities and landscaping. The Land, Soils, Geology & Hydrogeology Chapter of the EIAR details the existing ground conditions at the site and provides a summary of the anticipated stratigraphy of the soil beneath the site.

Any surplus material that requires removal from site for offsite reuse, recovery and/or disposal and any potentially contaminated material (in the unlikely event that it is encountered), should be segregated, 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’ using the HazWasteOnline application (or similar approved classification method). If the material is to

be disposed of to landfill, it will then need to be classified as clean, inert, non-hazardous or hazardous in accordance with the EC Council Decision 2003/33/EC and landfill specific criteria. This legislation sets limit values on landfills for acceptance of waste material based on properties of the waste including potential pollutant concentrations and leachability.

The surplus soils and stones may be suitable for acceptance at either inert or non-hazardous soil recovery facilities/landfills in Ireland or, in the event of hazardous material being encountered, be transported for treatment/recovery or exported abroad for disposal in suitable facilities.

5 SITE LOGISTICS

5.1 Site Establishment and Security

The site office and welfare facilities will be situated on site at an agreed location within the site boundary.

All the sub-contractors as well as the main contractor and project managers will occupy offices in the same area. The site parking for staff, contractors and visitors will also be in this area.

5.2 Consents and Licences

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.
- Road opening licences.

5.3 Service and Utilities

Welfare facilities (canteens, toilets etc.) will be available within the construction compound on site. Temporary connections to the existing estate services in the existing estate road will be utilised to provide service and utilities subject to relevant applications and approvals.

5.4 Material Handling and Storage

Key materials will include, steel structure, concrete, cladding, ducting and piping. A 'Just in Time' delivery system will operate to minimise storage of materials, the quantities of which are unknown at this stage.

Where possible it is proposed to source general construction materials from the surrounding area to minimise transportation distances.

Aggregate materials such as sands and gravels will be stored in clearly marked receptacles in a secure compound area within the contractors' compound on site. Liquid materials will be stored within temporary bunded areas, doubled skinned tanks or bunded containers (all bunds will conform to standard bunding specifications) 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 material along the public roadway.

Most construction waste materials generated will be soil from excavation works. Soil requiring removal offsite will be removed from site regularly to ensure there is minimal need for stockpiling.

5.5 Visitor Management

Visitors will only be allowed to enter the main site compound at the western boundary of the site from the internal road in Profile Park. A dedicated, secured footpath to the security 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 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.

5.6 Site Working Hours

Construction of the proposed development would take place over a period of approximately 8 months from the commencement of construction for site development works.

Majority of works are to be done off-road within the site boundary, except for service connections which will be done under licence from the Local Authority and Utility providers.

During the off-road section of works, construction staffing personnel will arrive prior to 07.00am to mitigate against traffic peak. Site development and building works shall be carried only out between the hours of 08.00 to 19.00 Mondays to Fridays inclusive, between 08.00 to 14.00 on Saturdays.

Deviation from these times will only be allowed in exceptional circumstances where prior written approval has been received from South Dublin County Council. Such approval may be given subject to conditions pertaining to the circumstances being set by South Dublin County Council.

5.7 Employment and Management Workforce

Construction traffic would consist of the following:

- Private vehicles belonging to site construction staff;
- Private vehicles belonging to site security staff;
- Occasional Private vehicles belonging to professional staff (i.e. design team, utility companies);
- Construction material delivery;
  and
- Excavation plant and dumper trucks used for site development works.

It is anticipated that the worst case construction traffic impact for the proposed development would occur in Q2 2023.

The transport assessment of the EIAR Volume reports that during the construction period (in 2022/23) there would be a maximum additional 140 vehicle movements per day (of which 20 would be heavy goods vehicles (HGV) and all highway links assessed would have an increase in vehicle movements of 10 % or less. This increase in vehicle movements is reported to created no discernible environmental effect (imperceptible) and not significant in EIA terms in relation to pedestrian severance, delay, amenity, fear, and intimidation, driver delay and accidents and safety.

All employees working on the site will be required to have a Safe Pass 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

During construction of the proposed development, construction traffic will travel to and from the site via the construction site access located on the east section of the site. It is expected that the origins and destinations of construction traffic will continue to match the distribution of traffic currently using the surrounding road network with the majority of construction traffic via the N7 National Road.

The following measures will be put in place during the construction works:

- The contractor will be required to provide wheel cleaning facilities, and regular cleaning of the main access road;
- Temporary car parking facilities for the construction workforce will be provided within the site and the surface of the car park will be prepared and finished to a standard sufficient to avoid mud spillage onto adjoining roads;
- Monitoring and control of construction traffic will be ongoing during construction works. Construction Traffic Management will minimise movements during peak hours.
- Construction Traffic routes minimising traffic impact on surrounding residential development will be used by construction vehicles.

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.

Site Hoarding and Security Fencing

Security fencing will be established around the site compound.

Site access will be restricted by dedicated security personnel who will check all incoming and outgoing vehicles and workers.

7 SAFETY, HEALTH AND ENVIRONMENTAL CONSIDERATIONS DURING CONSTRUCTION WORKS

The appointed main contractor will be required to prepare a Construction Health & Safety Plan which will be put in place prior to commencement of the works. At a minimum, this plan will include:

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

7.1 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 following measures have been formulated by drawing on best practice guidance from Ireland, the UK and the US, such as:

- 'Guidance on the Assessment of Dust from Demolition and Construction' (IAQM, 2014);
- 'Planning Advice Note PAN50 Annex B: Controlling The Environmental Effects Of Surface Mineral Workings Annex B: The Control of Dust at Surface Mineral Workings' (The Scottish Office, 1996);
- 'Controlling the Environmental Effects of Recycled and Secondary Aggregates Production Good Practice Guidance' (UK Office of Deputy Prime Minister, 2002);
- 'Controlling Particles, Vapours & Noise Pollution From Construction Sites' (BRE, 2003);
- 'Fugitive Dust Technical Information Document for the Best Available Control Measures' (USEPA, 1997); and
- 'Compilation of Air Pollutant Emission Factors, AP-42, Fifth Edition' (periodically updated) (USEPA, 1986).

Site Management

The site activities will be undertaken with due consideration of the surrounding environment and the close proximity of sensitive receptors such as watercourses, 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 telephone calls and letters of complaint 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 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. When rainfall is greater than 0.2mm/day, dust generation is generally suppressed (UK Office of Deputy Prime Minister (2002), BRE (2003)). The potential for significant dust generation is also reliant on threshold wind speeds of greater than 10 m/s (19.4 knots) (at 7m above ground) to release loose material from storage piles and other exposed materials (USEPA, 1986). Particular care should be taken during periods of high winds (gales) as these are periods where the potential for significant dust emissions are highest. The prevailing meteorological conditions in the vicinity of the site are favourable in general for the suppression of dust for a significant period of the year. Nevertheless, there will be infrequent periods where care will be needed to ensure that dust nuisance does not occur. The following measures shall be taken in order to avoid dust nuisance occurring under unfavourable meteorological conditions:

- The Principal Contractor or equivalent will monitor the contractors' performance to ensure that the proposed mitigation measures are implemented, and that dust impacts and nuisance are minimised;
- During working hours, dust control methods will be monitored as appropriate, depending on the prevailing meteorological conditions;
- The name and contact details of a person to contact regarding air quality and dust issues shall be displayed on the site boundary, this notice board will also include head/regional office contact details;
- Community engagement shall be undertaken before works commence on site explaining the nature and duration of the works to local residents and businesses;
- A complaints register will be kept on site detailing all telephone calls and letters of complaint received in connection with dust nuisance or air quality concerns, together with details of any remedial actions carried out;
- It is the responsibility of the contractor at all times to demonstrate full compliance with the dust control conditions herein; and
- The procedures put in place will be reviewed at regular intervals and monitoring conducted and recorded by the principal contractor. It is recommend that reviews are conducted on a monthly basis as a minimum.

The dust minimisation measures shall be reviewed at regular intervals during the works to ensure the effectiveness of the procedures in place and to maintain the goal of minimisation of dust through the use of best practice and procedures. In the event of dust nuisance occurring outside the site boundary, site activities will be reviewed and satisfactory procedures implemented to rectify the problem. Specific dust control measures to be employed are described below.

Site Roads

Site access routes (particularly unpaved routes) 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%.

- A speed restriction of 20 km/hr will be applied as an effective control measure for dust for on-site vehicles;
- 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;
- Access gates to the site shall be located at least 10m from sensitive receptors where possible; and
- Any hard surface roads will be swept to remove mud and aggregate materials from their surface while any unsurfaced roads shall be restricted to essential site traffic only.

Land Clearing/Earth Moving

Land clearing/earth-moving 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 shall 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 should be postponed until the gale has subsided.

The movement of truck 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 rubble 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 stockpiles should be located downwind of sensitive receptors;
- 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;
- There will be no storage of soil along the cable route; and
- Where feasible, hoarding will be erected around site boundaries to reduce visual impact. This will also have an added benefit of preventing larger particles from impacting on nearby sensitive receptors.

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:

- Vehicles delivering or collecting material with potential for dust emissions shall be enclosed or covered with tarpaulin at all times to restrict the escape of dust;
- At the main site traffic exits, a wheel wash facility shall be installed if feasible. All trucks leaving the site must pass through the wheel wash; and
- Public roads outside the site will be regularly inspected for cleanliness and cleaned as necessary.

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.

The key features with respect of dust control will be:

- The specification of a site policy on dust and the identification of the site management responsibilities for dust issues;
- The development of a documented system for managing site practices with regard to dust control;
- The development of a means by which the performance of the dust minimisation plan can be regularly monitored and assessed; and
- The specification of effective measures to deal with any complaints received.

7.2 Ecology

The proposed development will have a neutral imperceptible effect on designated sites within the zone of impact of the development site. The proposed development is located in an area of low ecological value and as such predicted to have a neutral imperceptible effect on biodiversity.
To minimise the extent of light spill onto perimeter habitats, all lights that are pole mounted will be directional and/or cowled to ensure that light is directed downward and inwards. Lights will be programmed or otherwise to be off unless required.

7.3 Noise and Vibration

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

The earthworks will generate typical construction activity related noise and vibration sources from use of a variety of plant and machinery such as rock breakers (where required), excavators, lifting equipment, dumper trucks, compressors and generators.

The noise limits to be applied for the duration of the infrastructure works are those specified in the B Category of BS 5228. This has been discussed as part of the EIAR – Noise and Vibration and all relevant mitigation measures are to be implemented.

It should be noted the Contractor shall liaise with the operators of the Dog's Trust site to the north in order to manage impacts during the construction phase.

Vibration limits to be applied for the infrastructure works are those specified in BS 5228 – code of practice for noise and vibration control on construction and open sites. This has been discussed as part of the EIAR, Noise and Vibration and all relevant mitigation measures are to be implemented.

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.

A designated noise liaison should be appointed to site during construction works. Any complaints should be logged and followed up in a prompt fashion. In addition, prior to particularly noisy construction activity, e.g. excavation close to a property, etc., the site contact should inform the nearest noise sensitive locations of the time and expected duration of the works.

All works on site shall comply with BS 5228 2009+ A1 2014 (Parts 1 & 2) which gives detailed guidance on the control of noise and vibration from construction activities.

In general, the contractor shall implement the following mitigation measures during the proposed infrastructure works:

- Avoid unnecessary revving of engines and switch off equipment when not required.
- Keep internal haul roads well maintained and avoid steep gradients.
- Minimise drop height of materials.
- Start-up plant sequentially rather than all together

More specifically the Contractor shall ensure that:

- In accordance with “Best Practicable Means”, plant and activities to be employed on site are reviewed to ensure that they are the quietest available for the required purpose.
- Where required, improved sound reduction methods are used e.g. enclosures.
- Site equipment is located away from noise sensitive areas, as much as physically possible.
- Regular and effective maintenance by trained personnel is carried out to reduce noise and / or vibration from plant and machinery.
- Hours are limited during which site activities likely to create high levels of noise and vibration are carried out.
- A site representative responsible for matters relating to noise and vibration will be appointed prior to construction on site.

Reference Chapter 9 of the EIAR for further guidance on the management of noise and vibration.

7.4 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.

The EIAR contains a detailed description of waste management relating to construction of the proposed development. A site-specific Construction and Demolition Waste Management Plan will be developed. The C&D Waste Management Plan has been prepared in accordance with the Best Practice Guidelines for the Preparation of Waste Management Plans for Construction and Demolition Projects (DoEHLG & NCDWC, 2006). This C&D Waste Management Plan will be refined and updated in advance of the works to ensure best practice is followed in the management of waste from the proposed development.

Adherence to the C&D Waste Management Plan 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 Acts 1996 – 2011 as amended 7, associated Regulations 7, the Litter Pollution Act of 1997 as amended 8 and the Eastern-Midlands Region Waste Management Plan 2015 – 2021 9, and achieve optimum levels of waste reduction, re-use and recycling.

The following mitigation measures will be implemented during the construction phase:

- Building materials will be chosen with an aim to ‘design out waste’;

- On-site segregation of waste materials will be carried out to increase opportunities for off-site reuse, recycling and recovery – it is anticipated that the following waste types, at a minimum, will be segregated:
  - Concrete rubble (including ceramics, tiles and bricks);
  - Plasterboard;
  - Metals;
  - Glass; and
  - Timber.
- Left over materials (e.g. timber off-cuts, broken concrete blocks/bricks) and any suitable construction materials shall be re-used on-site, where possible;
- All waste materials will be stored in skips or other suitable receptacles in designated areas of the site;
- Any hazardous wastes generated (such as chemicals, solvents, glues, fuels, oils) will also be segregated and will be stored in appropriate receptacles (in suitably bunded areas, where required);
- A waste manager will be appointed by the main contractor(s) to ensure effective management of waste during the excavation and construction works;
- All construction staff will be provided with training regarding the waste management procedures;
- All waste leaving site will be reused, recycled or recovered where possible to avoid material designated for disposal;
- All waste leaving the site will be transported by suitable permitted contractors and taken to suitably registered, permitted or licenced facilities; and
- All waste leaving the site will be recorded and copies of relevant documentation maintained.

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

7.4.1 Waste Minimisation

Waste minimisation measures proposed are summarised as follows:

- 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;
- Materials will be ordered in appropriate sequence to minimise materials stored on site; and
- Sub-contractors will be responsible for similarly managing their wastes.

All wood waste generated by site works will be inspected and examined and will be segregated as re-useable wood and scrap wood waste.

7.4.2 Waste Storage

A dedicated and secure compound containing bins, and/or skips, and storage areas, into which all waste materials generated by construction site activities are to be stored, is to be established within permitted site compound.

Waste materials generated will be segregated on at the site compound, where it is practical. Where the on-site segregation of certain wastes 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.

The site construction manager 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.

7.4.3 Responsibility

It will be the responsibility of the construction 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 licenced or permitted waste facility in compliance with the relevant Regulations.

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 determining the best methods for waste minimisation, reduction, re-use, recycling and disposal as the construction phase progresses and waste materials are generated.

Prior to commencement of the excavation and construction activity and removal of any waste off-site, details of the proposed destination of each waste material will be provided to the local authority.

7.5 Surface Water Management

Run-off into excavations/earthworks cannot be prevented entirely and is largely a function of prevailing weather conditions. Earthwork operations will be carried out such that surfaces, as they are being raised, shall be designed with adequate drainage, falls and profile to control run-off and prevent ponding and flowing. Correct management will ensure that there will be minimal inflow of shallow/perched groundwater into any excavation.

Care will be taken to ensure that exposed soil surfaces are stable to minimise erosion. All exposed soil surfaces will be within the main excavation site which limits the potential for any offsite impacts. No significant dewatering will 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 (up to 3m) during and after heavy rainfall events to ensure that the trenches are kept relatively dry.

Mitigation measures that will be put in place during the construction phase to ensure protection of surface waterbodies.

These measures should be in compliance with the following relevant CIRIA guidance documents:

- CIRIA, (2001), *Control of Water Pollution from Construction Sites, Guidance for Consultants and Contractors, (C532)* Construction Industry Research and Information Association;
- CIRIA (2002) *Control of water pollution from construction sites: guidance for consultants and contractors (SPI56)* Construction Industry Research and Information Association;
- CIRIA (2005), *Environmental Good Practice on Site* (C650); Construction Industry Research and Information Association;
- BPGCS005, *Oil Storage Guidelines*;
- Eastern Regional Fisheries Board, (2006), Fisheries Protection Guidelines: Requirements for the Protection of Fisheries Habitat during Construction and Development Works at River Sites;
- CIRIA 697 (2007), *The SUDS Manual*; and
- *UK Pollution Prevention Guidelines,* (PPG) UK Environment Agency, 2004.

8 SUMMARY

This Outline CEMP sets out the overall management strategy for construction works for the proposed development.

The Outline 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 Outline CEMP will form a basis for the CEMP to be developed by the Contractor. The CEMP will form a live document which will be updated as and when required.

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

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