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SWANSEA NORTH GREENER GRID PARK

CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN

JANUARY 2023

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STATKRAFT

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CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN

JANUARY 2023

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APPENDICES

1 INTRODUCTION

1.1 Project Description

1.1.1 Wardell Armstrong LLP (WA LLP) has been instructed by DWD LLP ('the Applicant') to prepare an Outline Construction Environmental Management Plan (CEMP) which is required to be submitted for approval by the Local Planning Authority (Swansea Council) to ensure appropriate environmental protection measures will be incorporated into the proposed construction process to be adopted by the Principal Contractor.

1.1.1 This Outline CEMP is in relation to the construction of a new Greener Grid Park ('the Development) on land east of the Swansea North National Grid Substation, Morriston, Swansea. The Site is located at National Grid Reference SN65355 01143. The Site is approximately 6.24ha located in on undeveloped, agricultural land west of Rhydypandy Road, Morriston, Swansea, with the nearest postcode of SA5 7DU. The proposed site layout are included in Appendix A. Due to the nature of the development, including the construction of small scale underground grid connection to the existing Swansea North Substation, it is important to address the following environmental elements:

- Geology and Soils
- Waste
- Ecology
- Noise and Vibration
- Traffic and Transport
- Air Quality
- Arboriculture

1.2 Purpose of the CEMP

1.1.2 The Outline CEMP establishes the main site-wide criteria against which all Contactors should comply when undertaking the works. This will then be updated and supplemented by contract-specific information contained within a detailed CEMP, once the project design development has progressed.

1.1.3 Included within this CEMP are statements for the methods and controls proposed to be employed to satisfy the general requirement to safeguard the environment and

mitigate any adverse effects of the works. All site activities must be undertaken in compliance with the CEMP.

1.1.4 The CEMP will be a live working document, subject to constant updating. Each section is to be reviewed and updated as and when necessary.

1.1.5 The CEMP is required to identify the steps and mitigation procedures that will be implemented during development resulting from the site preparation, groundwork and construction phases of the development regarding:

- Risk assessment of potentially damaging construction activities.
- Practical measures (both physical measures and sensitive working practices) to avoid or reduce impacts during construction.
- Soil Management: details of topsoil strip, storage and amelioration for re-use.
- Details of the persons and bodies responsible for activities associated with the CEMP and emergency contact details.
- Details of how noise, lighting, dust and other airborne pollutants, vibration, smoke, and odour from construction work would be controlled and mitigated where necessary.
- Demonstration of how relevant Guidelines for Pollution Prevention and best practice will be implemented, including details of emergency spill procedures and incident response plan.
- Details of invasive species management, specifically if any invasive non-native species (INNS) are identified prior to, during or post construction an INNS plan will need to be produced.
- Prevention of mud / debris being deposited on public highway / wheel washing facilities. Storage of plant and materials used in constructing the development and hazardous material storage and removal.
- Waste management and disposal and material re use.
- Details of proposed contractor parking areas and construction site accesses.

2 BASIC CEMP REQUIREMENTS

2.1 Contact Responsibilities

2.1.1 The Contractor will be responsible for safeguarding the environment and for mitigating the effects of the works by implementing the general environmental requirements outlined in the contract documentation and the specific requirements of the CEMP.

2.1.2 The Outline CEMP describes how construction activities will be undertaken and managed in accordance with legislative requirements and construction industry best practice. This CEMP is to be reviewed and further developed by the Contractor on award of Contract.

2.1.3 The Contractor will provide a dedicated environmental specialist team (collectively known as the Contractor's Environmental Team) and any other relevant specialist whom the Contractor deems to be necessary in discharging the contract's CEMP obligations. The roles and responsibilities may be amalgamated with those of others (such as the Contractor's Project Manager), provided that the individual's experience and qualifications meet the cumulative requirements of both roles and responsibilities.

2.1.4 A draft register of consents, undertakings and assurances, including a draft list of specific environmental licences, consents and applicable permits is detailed in Appendix B of this document. This is only an example and will be further reviewed and updated by the Contractor prior to and at regular intervals during the works.

2.1.5 All documentation in relation to the environmental management of the works will be maintained by the Contractor and be available to the Client (or the Client's Representative).

2.1.6 The performance of the Contractor's CEMP in meeting environmental objectives and targets and in achieving effective environmental management will be subject to on-going review. A suggested CEMP Project Review Table for use during the works is located in Appendix C of this document. Additionally, an example of an Environmental Impacts Register is provided as Appendix D.

2.2 Emergencies

2.2.1 Information regarding spill containment materials, methods and spill response equipment will be clearly defined and submitted to the Client (or the Client's Representative). A procedure for a general response will be included in the Health and

Safety Plan detailed by the Contractor; stating the chain of command and standby operatives, and clearly advised to all staff. An Environmental Manager/Coordinator will be appointed by the Contractor.

2.2.2 The emergency contact details for the works will be clearly displayed at the Site where all staff can see them. An example of a template for providing emergency contact details is provided in Appendix E.

2.2.3 A list of all nearby residential properties, downstream abstractors and other sensitive receptors that could be affected by an environmental incident will be reviewed, compiled and maintained by the Contractor.

2.2.4 The local community will be informed about any environmental incidents at the time if felt necessary by the Contractor. If a serious incident occurs, the media and local community will be issued with a fact sheet about the environmental incident and the action taken by the Contractor to remedy the situation.

2.2.5 Environmental incidents will be recorded by the Contractor including:

- Nature of spill / leak / incident;
- Time / date;
- Exact location;
- Type of material released;
- Approximate volume released;
- Actions taken to prevent contamination;
- Individuals reported to; and
- Lessons learnt.

2.2.6 Lessons learnt will be fed back to site staff through safety and environment briefings and used by the Environmental Manager/Co-ordinator to amend procedures and update the CEMP accordingly.

- Emergency procedures will be tested by the Environmental Manager/Co-ordinator and the results reported to the Contractor's Project Manager. Examples of procedures would include: The names and 24 hour contact details of all emergency response personnel and emergency services;
- The procedures for reporting and documenting an emergency incident;
- Personnel responsibilities during an emergency incident; and

- The location of on-site information on hazardous materials and spill containment materials.

2.3 **Monitoring & Auditing**

2.3.1 Daily inspections of the site will be undertaken to ensure compliance with the CEMP, and to minimise the risk of damage to the environment. Any environmental incidents will be reported to the Environmental Manager/Co-ordinator.

2.3.2 The Environmental Manager/Co-ordinator will undertake monthly inspections and complete an assessment of the works' environmental performance measured against environmental standards, relevant legislation and the CEMP objectives. The Environmental Manager/Coordinator will produce a monthly report detailing environmental performance and non-compliances and will inform the Project Manager of all findings.

2.3.3 Document control will be in accordance with the Client's Quality Management Systems (QMS) and copies of all environmental audit reports, consents and licenses will be maintained by the Project Manager and held on site for review at any time.

2.3.4 Internal and external environmental auditing and inspections will be conducted. The Contractor will be responsible for investigating and addressing any non-conformance raised by the audit within an agreed time frame and ensuring that corrective and preventative actions have been fully closed out.

2.4 **Communication**

2.4.1 The Contractor is required to manage the environmental impacts of all suppliers that provide services in relation to the works.

2.4.2 The environmental responsibilities of suppliers working with / for the Contractor will be managed, monitored and reported through the application of Method Statements.

2.4.3 The Contractor will cooperate fully with arrangements for auditing suppliers' safety and environmental procedures.

2.4.4 The Environmental Manager/Co-ordinator will advise the Project Manager on external communication with regulatory bodies, the public, and any other external stakeholders on environmental matters.

2.5 **Environmental Induction, Awareness, Information and Training**

2.5.1 The raising of environmental awareness is seen as a crucial element in the appreciation and implementation of the CEMP.

2.5.2 All staff will be suitably trained and competent for their roles and have received environmental awareness training. A record of training and team talks are required to be maintained by the Contractor, with all site personnel undergoing a pre-start induction training course and aspect-specific toolbox talks on the environmental issues related to the works and the CEMP.

3 PEOPLE

3.1 On Site Structure and Responsibility

3.1.1 The Contractor will provide a dedicated environmental specialist team and any other relevant specialist whom the contractor deems to be necessary.

3.1.2 The Contractor's Project Manager will be responsible for:

- Environmental Management and for the preparation review and implementation of this outline CEMP;
- Preparation and implementation of the detailed CEMP;
- Approval of environmental organisation structure;
- Monthly review of CEMP implementation;
- Allocation of sufficient resource to implement all Environmental Management requirements including the CEMP during site works;
- Review of environmental management reports prepared by the Environmental Manager/Co-ordinator;
- Signing off all permits, authorisations and consents; and will be the main point of contact with the Client (or the Client's Representative) regarding Environmental Management on site.

3.1.3 The Contractor's Environmental Manager/Co-ordinator will have experience as an Environmental Manager/Co-ordinator, preferably on similar development schemes together with good communication skills and will be responsible for:

- Developing and on-going review of the CEMP and relevant procedures;
- Ensuring that all environmental standards and commitments are adhered to;
- Monitoring compliance of construction activities with the CEMP;
- Conducting inspections and reporting non-compliances to the Contactor's Project Manager;
- Liaising with the Contractor's management and operatives on all matters regarding environment;
- Undertaking environmental inspections and audits throughout the works; recording and reporting all environmental works;
- Maintenance of related records;

- As far as reasonably possible, attendance at any environmental incidents on sites; and
- Attending formal contract progress meetings and third party interest groups as required; and reporting to the Project Manager.

4 OUTLINE GEOLOGY, SOILS AND WASTE MATERIALS

4.1 Basic Requirements

4.1.1 The Contractor will be responsible for safeguarding the environment and for mitigating the effects of the works in relation to geology, soil and waste materials, in line with relevant legislation.

4.1.2 ES Waste chapter

4.1.3 Waste planning support

4.1.4 Waste reports to support planning

4.1.5 Help

4.2 Purpose of the CEMP

4.2.1 The works have the potential to affect the geology and soils as a result of:

- the potential for increasing the natural rate of collapse of geological strata;
- the exposure of new geological strata;
- altering the hydrogeology of an area; or
- impacts on features which are, themselves, of particular scientific/ecological interest.

4.2.2 The receptors / resources which could potentially be affected by the works are:

- *Construction workers* - there would be earthworks and ground disturbance which could result in exposure to contaminated soil.
- *Site users & site neighbours (including members of the public)* – although there are no buildings on site, the works will occur in close proximity of an existing farm and just off from a road which may be used by the public either by vehicle, bike or walking.
- *Built environment* – piles or other concrete structures could be vulnerable to attack from contaminants in the ground e.g. sulphates.
- *Waste resources* – the works are likely to generate construction wastes such as excavated soils, potentially contaminated soils and highway materials. The generation and management of waste has the potential to impact upon a number of sensitive receptors that include, but are not limited to, waste management facilities (including void landfill space), traffic, air and water.

4.3 Specific Requirements

4.3.1 The Contractor must assess risks arising from the construction works. The Management of Health and Safety at Work Regulations 1999, require that employers (and the self-employed) must undertake a suitable and sufficient risk assessment.

4.3.2 Site specific risk assessments and method statements must also include comprehensive review of the amenities and assets of occupiers / land users on site (e.g. pylons and overhead cables) and any necessary mitigation measures to protect these features.

4.3.3 Off-site disposal of contaminated soils should be minimised and inert materials should be recycled or re-use on-site wherever possible.

4.3.4 The risk of site workers involved in the construction phase being impacted by contaminated soils, dusts and vapours will be reduced to acceptable levels through standard health and safety planning. This will incorporate details on personal protection equipment (PPE) and working methodology.

4.3.5 The levels of PPE required will vary dependent on the area of the site being worked on, any expected contamination, and the actual work being undertaken.

4.3.6 The Health & Safety Management Plan for the works should allow for additional measures to be implemented if visibly contaminated materials are detected, or changes in working methodology occur during the works. Where necessary, advance works should be overseen by a contamination specialist, and additional health and safety mitigation measures should be incorporated into the working plan appropriately. At the detailed design stage, intrusive investigation should be undertaken to further assess the potential risks, and to identify the most appropriate mitigation.

4.3.7 The following mitigation measures are likely to need to be employed as part of the works to protect site users and neighbours during the construction phase. Site access should be controlled and restricted to prevent public access.

4.3.8 Based on existing land use, the site presents a perceived low risk to human health and controlled waters.

4.3.9 Dust control will be required and is likely to include:

- covering of contaminated soils during transportation;

- regular inspection and, if necessary, cleaning and repair of local highways and site boundaries to check for the contaminated soil/dust deposits (and removal if necessary);
- where practical, use of mobile or fixed spray units to dampen surfaces of contaminated soil as indicated by weather conditions; and
- keeping contaminated soil stockpiles or mounds away from the proposed development site boundary and, where possible, enclosing contaminated soil stockpiles or keeping them secure sheeted.

4.3.10 Further measures to be employed to minimise the potential for the creation of land and contamination include:

- Refuelling of vehicles and other plant to only be carried out within a designated area or, where that is not possible, under the supervision of a suitable qualified and trained site foreman;
- Only well maintained equipment and vehicles to be permitted on site (all contractors will provide inspection certificates of the plant/equipment's suitability and will regularly inspect and check plant and vehicles throughout the project to ensure that they remain fit for purpose);
- any item of plant that leaks fuel or oil onto any surface will be considered unfit for use and will be repaired immediately or removed from site; and
- any spillages of contaminating liquids or other materials will be reported to the site manager immediately. Stocks of oil absorbent materials will be kept on-site to deal with small spillages.

4.3.11 All personnel on-site will be made aware of all of the above standard good practice measures and will be instructed to implement them.

4.3.12 A combination of material characterisation and removal, where appropriate, prior to stockpiling and construction control measures would be employed on site to ensure that the risk to off-site humans is minimised as far as is practicable.

4.3.13 All hazardous materials will be used, stored and transported in a safe manner. All personnel and contractors involved with hazardous materials handling will be made aware of the associated environmental hazards and risks and will be appropriately trained in routine activities and emergency actions/responses.

4.3.14 In the event that unidentified contamination is discovered on site the emergency response plan will be consulted.

4.3.15 An up-to-date list of the hazardous materials on-site will be prepared, specifying their location. The Environmental Manager/Co-ordinator will regularly review this.

4.3.16 All hazardous materials will be kept in adequate conditions of containment, within controlled areas and securely protected from contact by non-authorised personnel, including trespassers and vandals. The quantities of hazardous material stored at any one time will be minimised.

4.3.17 Storage tanks and pipelines containing or transporting hazardous materials will be above ground and will have leakage / spill identification and controls in place. Leaking or empty drums or other containers will be removed from the site immediately.

4.3.18 All hazardous materials will be used in line with manufacturers' instructions.

4.3.19 The correct quantity of chemicals will be used and, where possible, less hazardous alternatives considered. All hazardous materials will be used and stored within drip trays to prevent contamination. Drip trays underneath portable plant, such as generators, will also be used.

4.3.20 Any disposal of product or empty product containers will be in accordance with waste management legislation and related COSHH sheets.

4.3.21 The treatment of material on site or in-situ technology and re-use of material will be maximised. The re-use of excavated soil will be in accordance with the Definition of Waste: Development Industry Code of Practice (DoW CoP). The re-use of materials on site should be recorded to avoid any non-compliance with the waste regulations, notably the amended Duty of Care Regulations 1991 (2003).

4.3.22 An emergency response plan will detail any identified contamination on the site (to protect groundwater).

Waste Materials

4.3.23 The construction phase waste will be managed in accordance with the principles in the waste hierarchy, using the following phased approach: reducing the amount of waste generated, then re-using/recycling waste where possible, and finally removing remaining waste to an appropriate management facility.

4.3.24 The recycling and re-use of materials on site will reflect best practice guidance. This will include:

- Designing the construction site for effective material storage and segregation.
- Establishing recovery targets and recording the volume of materials re-used on site.

4.3.25 Waste arisings will be further identified and quantified in the detailed design stage and through management plans developed for the construction and operation of the proposed development.

5 OUTLINE WATER MANAGEMENT PLAN

5.1 Basic Requirements

5.1.1 The Contractor will incorporate the outline Water Management Plan requirements into the works and update and submit the fully developed Water Management Plan as part of the detailed CEMP to the client (or the Client's Representative).

5.2 Background

5.2.1 Construction activities may result in both direct and indirect impacts on the water quality, flooding, drainage and the hydrogeology of the site. Potential receptors are likely to include watercourses, aquifers, surface water and groundwater users, floodplains and flood sensitive areas. Impacts which extend beyond the site include indirect effects upon the wider catchment area, particularly with regard to flood risk.

5.2.2 The use of water for dust suppression may also increase runoff quantities during construction and any excavation of potentially contaminated soil could have an impact on both surface and groundwater quality.

5.2.3 Most pollution incidents are avoidable. Careful planning of operations, responsible waste management and suitable anti-pollution measures reduce the risk of spillage, along with simple precautions to deal with any potential spillages. The costs of cleaning up a pollution incident can be very high, and the consequences of a prosecution for environmental offences are likely to be serious. Any work carried out in or near watercourses or over the underlying aquifers will be regarded as high risk.

5.2.4 The Natural Resource Wales (NRW) TAN15 interactive flood mapping data is taken as a general guide to whether or not a site is at risk of flooding from various sources including rivers and seas for Flood Zoning classification.

Fluvial Flooding

5.2.5 The latest NRW fluvial flood map (included as Figure 2 below) shows that the site is not located within an area at a Low, Medium or High risk of fluvial flooding. It is

considered, therefore, that the risk of fluvial flooding is very low with an annual probability of flooding of less than 1 in 1000 (ie <0.1%).

Tidal Flooding

5.2.6 Due to the distance from the sea or tidally-influenced watercourses, this risk can be discounted.

Surface Water

5.2.7 The NRW mapping for surface water runoff and small (ordinary) watercourses shows that the majority of the site area is located outside of areas of Low, Medium and High risk of flooding, and is considered to be at a very low risk of flooding (with a less than 1 in 1000 annual probability of flooding).

5.2.8 In terms of surface water, it is recognised that as a greenfield site, the Proposed Development will result in an increase in impermeable area and a corresponding increase in surface water runoff. In line with current best practice and national guidance it is proposed that surface water discharge mimics that of the greenfield situation, incorporating a Sustainable Drainage System (SuDS) is a key requirement

Drainage

5.2.9 The proposed development will be in line with the requirements of the National Standards for Sustainable Development Systems which will be demonstrated through the application for Sustainable Drainage Approval to the Sustainable Drainage Approval Body (SAB), prior to the commencement of works.

5.2.10 The proposed development will be subject to the requirement of Schedule 3 of the Flood and Water Management Act 2010.

5.3 **Specific Requirements**

5.3.1 A construction drainage system will be established that will comply with BS6031:2009. The works will be undertaken in accordance with the pollution prevention guidelines of the local authority. This includes the installation and management of oil interceptors/separators in high risk areas.

5.3.2 Provided that the climate change allowance will be incorporated into the post development SuDS design and that the SuDS will perform adequately, the site should not be at significant risk from flooding as a result of climate change.

5.3.3 Mitigation measures during construction comprise measures to prevent runoff carrying sedimentation or construction materials into local watercourses via the use of bunds and interceptors where necessary. Surface water will be prevented from entering excavations, e.g. by the use of cut off ditches.

5.3.4 Construction vehicles will be maintained to reduce the risk of hydrocarbon contamination (defined for the CEMP as petrol, diesel and oils). Other construction materials will be managed in such a way as to effectively minimise the risk posed to the aquatic environment.

5.3.5 Natural Resources Wales (NRW) and other appropriate bodies will be consulted by the Contractor prior to the commencement of site activity. All documentation such as abstraction and discharge consents will be in place prior to any site activities.

5.3.6 Nothing will be permitted to enter the surface water drains which could cause pollution including silty water. No foul drainage or contaminated surface water runoff (including any silty water) will be discharged into any borehole, well, spring, soak away or watercourse (including dry ditches having a connection with a watercourse).

5.3.7 Any water that has come into contact with contaminated materials will be disposed of in accordance with the Water Resources Act 1991 and the Water Industry Act 1991 (if disposed to public sewer) to the satisfaction of regulatory bodies (e.g. NRW), sewerage provider and local authority as applicable.

5.3.8 Mitigation measures should be considered prior to the commencement of the works, and for example may include (but not limited to) the following:

- Any restriction on the use of List I and List II substances (Dangerous Substances Inventory) during construction; and
- Measures required ensuring List I and List II substances are not released to the water table during construction activities.

5.3.9 Good housekeeping should be practiced including:

- Where applicable, carrying out regular inspections of discharges, drainage systems, collection ditches, lagoons, interceptors and watercourses to ensure that they are in good order;
- Where possible, the installation of SuDS at the beginning of the project to assist in dealing with the construction site run-off; and
- Providing and maintaining spill clean-up kits on site at all times and training staff in their use; and stabilising surfaces and/or re-vegetating as soon as possible.

5.3.10 General risks to the water environment and control measures are set out in Table 5.1:

Table 5.1 General Risks

Issue	Requirements
Earthworks, excavation and digging	Run-off from earthworks, excavation and digging activities will be appropriately managed.
Completed earthworks	Stabilise surfaces and / or re-vegetate as soon as possible.

Issue	Requirements
Storage mounds	Cover with correctly secured tarpaulins.
Transitory soil mounds	Where appropriate, soil mounds will be treated with surface binding agents to reduce wind erosion. Re-seed any exposed ground and stockpiles to stabilise the ground and reduce erosion. Consultation with NRW is necessary before employing any binding agent.
Mixing and granual materials	The use of pre-mixed plasters and masonry compounds is recommended. The mixing of concrete or bentonite slurries will take place in designated and approved areas.
Materials Storage	All waste produced during the works must be stored in designated areas and isolated from surface drains. All oil storage tanks and drums must be stored on an impervious base within an oil tight bund. Use of bunded pallets for storage of plant.
Water, which has come in to contact with contaminated material	The contaminated land assessment will be referred to and complied with, and all arisings to be disposed of in accordance with regulatory body advice or to the satisfaction of water and sewerage supplier.
Non-compliance with permits; sub-standard treatment facilities	Maintain a full record of inspections, maintenance and measures required to ensure compliance with consents and permits. Treatment facilities to be regularly inspected and properly maintained.
Vandalism resulting in a pollution incident	Work sites to be adequately protected from intruders.
Suspended solids reaching water bodies	Where appropriate, cut-off ditches will be used at the edge of the work site.
Completion of Construction Activities - The completion of construction activities and site demobilisation carry significant risk of causing water pollution.	
Laying of surface courses on hardstandings will effectively mean that drainage systems become operational	Ensure that pollutants do not become mobilised via operational drains.
Paints and treatment products	Ensure pollutants do not become mobilised via operational drains
Topsoil stored on finished hardstandings	Other sites for each activities or control measures to be put in place

Issue	Requirements
Washing of finished surfaces	Conducted in such a manner that pollution does not reach surface water outfalls
Demobilisation (if required)	
Removal of storage facilities and plant	Measures to ensure that open ground is not exposed to erosion and formation of gullies
Contaminants liberated from plant wash down	Appropriate control measures such as the management of waste water and other arisings.
Decommissioning fuel storage areas, septic tanks, decontamination units and mess facilities	To follow pollution prevention measures

Silt

5.3.11 Table 5.2 provides guidance for managing silty water which can arise from excavations, exposed ground, stockpiles, plant and wheel washing and site roads. Adequate provision will be made for dealing with silty water within site-working plans.

5.3.12 All discharges off site will have formal approval from NRW.

Table 5.2 Potential Sources of Silt and Control Measures

Issue	Requirements
Water containing silt	No silty water will be pumped directly into a river, stream or surface water drain but, where possible disposed of to the foul sewer with the prior agreement of the appropriate authority.
Water entering excavations	Use cut off ditches to prevent entry of surface water and well point dewatering or cut-off walls for groundwater. The corner of the excavation can be used as a pump sump. Do not allow personnel or plant to disturb water in excavations.
Exposed soil and material stockpiles	Minimise the amount of exposed ground and soil stockpiles. Covering stockpiles and constructing silt fences from a suitable geotextile may be useful in reducing silt levels in run-off water.
Dusts and mud from roads	Site roads to be regularly brushed or scraped and kept free from dust and mud deposits
Wheel washes and plant washing facilities	Constructed securely with no overflow, the effluent contained for proper treatment and disposal in accordance with regulatory body guidelines.
Discharging to watercourse of any pumped clean water from dewatering or over pumping operations	Care will be taken when using powerful pumping equipment as disturbance / erosion of the riverbed and bank could occur, producing silty river water.

5.3.13 For long-term projects, involving on-site concrete production, careful initial siting of concrete mixing facilities is vital. A settlement and recirculation system for water reuse

will be considered. At no point will concrete or cement derived products enter a water body or drain. Table 5.3 details management procedures for concrete and cement.

Table 5.3 Manging Concrete and Cement

Potential Pollution Source	Control Measures
Washing out and cleaning of concrete batching plant or ready mix lorries	Carried out in a contained area as far from the watercourse as practical – referred to as the wash-down area. All wash-down areas to be signed. All plants contaminated with concrete to be clean in designated wash-down areas. Washout will not be allowed to flow into any drain or watercourse.
Concrete spills during site transportation	Loads managed to avoid spillages – load dependant on vehicle, slump of concrete and prevalent ground conditions.
Silane (trialkoxy isobutyl silane) is used to protect concrete structures against chlorides	Silane is highly damaging to the aquatic environment and rigorous containment measures will be implemented especially considering the proximity of the docks.

Wastewater and Drainage

5.3.14 Liquid wastes, including runoff from material storage areas and from wet methods of preparation, will never be released directly into surface waters or surface water drains without prior approval from the relevant regulatory bodies.

5.3.15 Foul water and sewage effluents produced by the construction workforce will be contained by temporary foul drainage facilities to be installed. A suitably licensed subcontractor will dispose of all foul water and sewage effluents off-site. Table 5.4 details associated risks and management of wastewater.

Table 5.4 Wastewater Control Measures

Potential Pollution Source	Control Measures
Surface washing	The most efficient method of containing generated waters is by a vacuum attached to the spray nozzle.
Wastewater used for pressure washing	To be contained and the resultant waste managed.
Dewatered from conduits/ducts may be contaminated with silt, oil, or other substances	To be contained and the resultant waste managed.
Uncontrolled releases and spillages	Implementation of the site emergency response plan

6 OUTLINE ECOLOGICAL MANAGEMENT PLAN

6.1 Basic Requirements

6.1.1 The Principal Contractor will comply with relevant legislation and should maintain habitats intact and undisturbed, and if possible, enhance natural habitats. If it is impossible to maintain habitats in their existing condition, the species should be relocated / transplanted or restocked to an equivalent or richer ecological status.

6.2 Background

6.2.1 The potential for adverse impacts on the application site arises largely from disturbance (noise, vibration, light, dust, and human presence), the presence of construction equipment (e.g. security fencing, buildings that act as barriers or deterrents) and the term habitat loss due to creating site access and work compounds.

6.2.2 The potential for adverse impacts will be minimised as far as possible through the application of good practice techniques and adherence to well-designed method statements managed through the CEMP.

6.2.3 The application area covers approximately 4.88ha and consists of agricultural grassland and broadleaves woodland. Other habitats include scrub, scattered trees, streams and ditches. The surrounding habitat includes a pastural landscape with areas of broadleaved woodland to the north west, south, and north east of the site. Building associated with the adjacent power grid station exist directly to the north west.

6.2.4 A Preliminary Ecological Appraisal (PEA) on the Site was carried out, with reference to current guidelines (Chartered Institute of Ecology and Environmental Management (CIEEM, 2017) and British Standard BS 42020:2013, which involves the evaluation of potential ecological constraints based on Extended Phase 1 survey data and background desk study.

6.2.5 The desk study has identified records for protected and notable species within 2km of the site. Receptors which the PEA has identified may be subject to adverse effects in the absence of mitigation are as follows:

- Statutory and Non-statutory designated sites;
- Broadleaved woodland;
- Scattered trees;
- Bats;
- GCN and common amphibians;
- European hedgehog;

- Otter;
- Badger
- Common reptiles; and
- Breeding birds.

6.3 **Specific Requirements**

6.3.1 An ecological inspection of the site and immediate surrounds will be undertaken by the Contractor's Ecologist prior to the start of construction to reconfirm the ecological baseline which will include a pre-construction check for signs of badger and invasive plant species.

6.3.2 The following hierarchy of measures will be followed:

- *Avoidance / prevention:* measures taken to avoid or prevent adverse effects, for example, scheme layout or timing of site works;
- *Reduction / mitigation:* measures taken to reduce adverse effects, for example, retaining walls or pollution interceptors; and
- *Compensation / offsetting:* measures taken to offset significant residual adverse effects, i.e. those which cannot be entirely avoided or mitigated to the point that they become insignificant; for example, habitat creation or enhancement.

6.3.3 In accordance with the hierarchy of mitigation proposed above, the Contractor will implement the following measures, shown in Table 6.1, which outlines key environmental aspects including ecology considerations.

Table 6.1 Environmental Mitigation Measures

Issue/Category	Control Measures
Ecological Assessment	Review and implementation of the **Ecological Assessment** by the *Contractor*; and a Works Method Statement(s) developed to illustrate how impacts on ecology and biodiversity will be managed throughout the construction process. Good site management will be implemented to avoid / minimise generation of excessive litter, dust, noise and vibration. Measures will be implemented to avoid / minimise potential for fuel and chemical spills.

Issue/Category	Control Measures
	There will be no storage of potentially contaminating materials in areas of ecological or hydrological sensitivity. A Pollution Incident Response Plan will be included as part of this CEMP to ensure that impacts from any potential accidental spills can be reduced to a minimum.
Work Compounds	Work compounds and access tracks, etc. will not be located in, or adjacent to, areas that maintain habitat value. Establish site boundary by erecting fencing to prevent access to areas outside working areas, particularly in areas adjacent to features of ecological interest / value.
Material Storage	Procedures will be implemented to address site safety issues, including storage of potentially dangerous materials.
Watercourses	Pollution prevention guidelines provided by the Environment Agency, which applies in Wales (including but not limited to PPG1, PPG2, PPG3, PPG4, PPG5, PPG6 and PPG7) will be followed to prevent pollution of watercourses by silt or chemicals.
Biodiversity	Briefings and instruction will be given to staff and contractors regarding the biodiversity issues associated with the site. All staff are to report any sightings of significant / protected species to the environmental manager.
Best Practice/Site Management Procedures	Workforce will be restricted to working areas through the erection of fencing to prevent additional damage. Cover trenches over night to prevent wildlife (for example, badgers) from falling in and becoming trapped resulting in injury or death. Restricted night-time working and minimal lighting directed away from retained habitats Best practice methods will be followed throughout. Protocols and contingency plans will be established.
Landscaping	All new landscape plantings are to be locally typical and / or species native to the South Welsh region, to complement the semi-natural habitats will they arise.

6.4 Mitigation measures:

6.4.1 Mitigation measures will include (but not be limited to) the following:

- If nesting birds are found, work within 5m of the active nest should stop until the chicks have fledged. Peak nesting season is usually April to July, and works may be delayed during these months;
- If the site is left dormant for two weeks or more during the construction and, then a suitably qualified ecologist will be brought on to the site to check for the presence of nesting birds before work continues. If any active nests are found, construction will cease and an appropriate buffer zone will be established;
- Any habitat removal should take place outside the breeding bird season, if this is not possible, mitigation advice should be sought from a suitably qualified ecologist. Any nesting birds should not be disturbed until they have left on their own accord;
- If bats are found work should stop immediately and advice sought from Natural Resources Wales (NRW) or the Environmental Manager/Co-ordinator. Construction related lighting must be minimised to that essential for security purposes and will be directed away from hedgerows and trees so that these remain dark areas for foraging and commuting bats. Light spillages in all areas should be avoided;
- To ensure that ground works do not result in the unnecessary suffering of wild mammals, vegetation clearance will take place prior to any earthworks taking place within any strips of vegetation, to allow any fox earths to be located. Any fox earths that are recorded will be excluded using mammal gates or excavated sensitively prior to construction, using handheld tools where possible. Excavation will also ideally not occur between March and May inclusive;
- Measures will also be employed during the ground preparation and construction phase to mitigate any adverse impacts on mammals that venture onto the site. This will include the covering of all deep holes and trenches overnight and / or the provision of planked escape routes for any trapped wildlife. In addition, any liquids held on-site will be stored in a secure lock-up;
- There is currently very little tree coverage at the Site and therefore there is no requirement to retain trees during the construction phase; and
- If any invasive non-native species (INNS) are identified prior to, during or post construction, an INNS plan will need to be produced.

7 OUTLINE NOISE AND VIBRATION MANAGEMENT PLAN

7.1 Basic Requirements

7.1.1 The Contractor will incorporate the outline Noise & Vibration Management Plan requirements into the works and update and submit a fully developed Noise & Vibration Management Plan as part of the detailed CEMP to the Client (or the Client's Representative).

7.2 Background

7.2.1 There are a number of noise and vibration sensitive receptors in close proximity to the site, including the Maes Eglwys Farm 400 m south of the Site, and Abergello Farm 400m north of the site. Beyond these are further residential properties, located 500m from the Site.

7.3 Specific Requirements

7.3.1 Noise limits and other specified parameters (such as working hours) will be agreed prior to the works by the Environmental Health Officer (EHO). These limits will be complied with in relation to the method of working, type of plant to be used and noise mitigation measures for each separate work site.

7.3.2 Best practicable means (BPM) will be used during the construction phase in order to minimise levels of construction noise and vibration. This will include the use of temporary noise barriers and acoustic enclosures, together with silenced plant and equipment that is maintained and in good working order.

7.3.3 The following measures will be put in place to minimise noise emissions:

- All machinery should be regularly maintained to control noise emissions, with particular emphasis on lubrication of bearings and the integrity of silencers;
- Site staff should be aware when working adjacent to a sensitive area and avoid all unnecessary noise due to misuse of tools and equipment, unnecessary shouting and radios;
- A further measure to reduce noise levels at the sensitive receptors would include, as far as possible, the avoidance of two noisy operations occurring simultaneously in close proximity to the same sensitive receptor;
- Adherence to any time limits imposed on noisy works by the local authority;
- Implement set working hours during the week and at weekends;
- Ensure engines are turned off when possible; and

- Should earthworks/earthworks and construction activities need to be carried out during night-time hours, the local authority could include a planning condition which requests advance notice and details of any night working to provided.

7.3.4 The use of BPM to control emissions constitutes a ground of defence against charges that a nuisance is being caused under Part III of the Control of Pollution Act 1974 or Part III of the Environmental Protection Act 1990.

7.3.5 Nearby residents and users of buildings within the vicinity will, as far as practicable, be protected from vibration. The Vibration Dose Values (VDV) will not exceed those specified in BS 6472: 2008 Guide to evaluation of human exposure to vibration in buildings (1 Hz to 80 Hz) which will result in a "low probability of adverse comment".

7.3.6 To protect buildings from physical damage, peak particle velocity levels will not exceed 5 mm / sec. There are no known particularly sensitive buildings in the vicinity of construction operations. However, a constraint will remain such that the peak particle velocity levels at particularly sensitive buildings will not exceed 3 mm / sec.

7.3.7 Further BPM to be used during the construction phase relevant to vehicles and plant is detailed in Table 7.1.

Table 7.1 Best Practicable Means to Minimise Construction Noise and Vibration Impacts

Issue	Control Measures
Noise and Vibration	<u>Vehicles and Plant</u> All vehicles and mechanical plant used for the works will be fitted with effective exhaust silencers and will be maintained in good and efficient working order. Lorries will enter and exit work sites in a forward direction, except where space restriction does not permit this. This will assist in the minimisation of noise from reversing alarms. All compressors will be "sound reduced" models fitted with properly lined and sealed acoustic covers which will be kept closed whenever the machines are in use, and all pneumatic percussive tools will be fitted with mufflers or silencers of the type recommended by the manufacturers. All machines in intermittent use will be shut down in the intervening periods between the proposed works or throttled down to a minimum.

Issue	Control Measures
	Items of plant will be maintained in good working condition so that extraneous noises from mechanical vibration, creaking and squeaking are reduced to a minimum

Monitoring

7.3.8 Subjective noise and vibration monitoring will be undertaken as part of the weekly site audits and inspections. More detailed monitoring will be undertaken should it be considered necessary. The nearby Farms to the south east and north of the site will continue to be used and therefore the landowner is incentivised to guard against the contractors causing uncontrolled noise wherever possible.

8 OUTLINE TRAFFIC AND TRANSPORT

8.1 Background

8.1.1 The proposed access route will be an extension of a shared track through the Abergelli Power Station site that will run through the land to the south of the substation to join the main substation access. Abergelli Power Station includes an access from the B4489, using the existing road to the substation and then a new road passing south of the Development**.**

8.1.2 The Contractor will incorporate the outline Traffic and Transport Management Plan requirements into the works.

8.2 Specific Requirements

8.2.1 No development shall take place, including any works of site clearance, until a Construction Traffic Management Plan/Method Statement has been submitted and approved in writing by the Local Planning Authority.

8.2.2 The Contractor will prepare a Travel Plan to minimise the vehicular trips from employees and sub-contractors and encourage car sharing and use public transport and/or cycle to travel to and from site. The travel plan will be distributed to the workforce and supply chain.

8.2.3 Construction plant and materials will be conveyed to the Site by existing roads. The fixed access points, temporary diversions and footpath are yet to be determined but will be carefully managed.

8.2.4 A freight management strategy will be developed to control the movement of Heavy Good Vehicles.

8.2.5 During construction, deliveries will be scheduled to arrive at the Site outside of the peak periods.

8.2.6 During construction, parking off site will not be permitted and construction vehicles allowed to park only within designated parking areas within the works compounds.

8.2.7 Local suppliers will be used where possible to keep distances travelled to a minimum.

8.2.8 Monitoring will be conducted by the Contractor to ensure traffic and transport management is acceptable.

Commented [FM1]: Client comment: Is this 100% required? On page 5 of this report - https://property.swansea.gov.uk/online-applications/files/BF10770BED210BC66D4DF72AB54C5270/pdf/2022_2988_S73-TRANSPORT_STATEMENT-1467841.pdf - it stats that a pre-commencement highway condition survey and annotated plan should be included in the Construction Traffic Management Plan. Do you think we remove this point because it is something included in the traffic management plan and isn't required as a standalone report as such (not that I can find anyway!).

9 OUTLINE AIR QUALITY MANAGEMENT PLAN

9.1 Background

9.1.1 The Contractor will incorporate the outline Air Quality Management Plan requirements into the works.

9.1.2 The works have the potential to affect air quality as a result of:

- Dust deposition, resulting in the soiling of surfaces from construction activities;
- Visible dust plumes;
- Elevated PM10/PM2.5 concentrations; and
- Increase in concentrations of airborne particles and nitrogen dioxide due to exhaust emissions and equipment used on site.

9.1.3 Measures outlined within Table 9.1 over page are required to be implemented to ensure that adequate mitigation procedures are in place on site.

9.2 Specific Requirements

9.2.1 The table below sets out the specific requirements that the Contractor will need to include in the detailed CEMP and observe during construction.

Table 9.1 Air Quality Requirements

Action	Issue	Requirements
Site Planning	General dust-causing activities	Implement a Dust Management Plan Carry out main dust causing activity in spring or autumn wherever possible and with due regard for prevailing weather. Plan site layout such that: Potentially dusty activities and stockpiles are located away from sensitive receptors; and movement of construction traffic around the site is minimised. Prohibit bonfires on site. Trained and responsible person to undertake site inspections and maintain logbook.
Roads, Surfaces & Highways	Major haul roads, unsealed site surfaces and traffic routes (including vehicles travelling along them)	Water suppression/damping Install permanent surfaces and conduct regular inspection and maintenance.

Action	Issue	Requirements
		Plan routes to be away from residents and other sensitive receptors, such as schools, hospitals and ecologically sensitive areas wherever possible. Hard landscaping of haul routes.
	Construction and maintenance of unsurfaced roads and verges	Keep roads in compacted condition using static sprinklers, bowsers, commercially available additives and binders. In certain cases consider permanent surfacing.
	Public roads	Clean regularly subject to Local Authority (LA) or Highways Authority (HA) approval.
	Edges of roads and footpaths	Clean by using hand broom with damping, as necessary.
	Vehicle waiting areas and hardstandings	Provide easily-cleaned hardstanding areas for vehicles entering, parking on and leaving the site or construction compound. Regularly inspect and keep clean by regularly brushing or vacuum sweeping. Spray regularly with water to maintain surface moisture if needed.
	Vehicle and wheel cleaning	All vehicles will be washed down before exiting the site.
	Exhaust heights	Exhausts will be positioned at a sufficient height to ensure adequate local dispersal of emissions.
	Location of plant and equipment	Plant and equipment will be operated away from residential areas or sensitive receptors near to the site.
Surfacing Activities	Bitumen overheating	Do not overheat bitumen but use minimum acceptable temperature. Measure temperature directly, especially on large heating plant. Avoid if possible, heating with open flame burners.
	Fume production	Cover pots or tanks containing hot bitumen, including during transportation. If necessary, water sprays will be used to reduce vapour emissions. As far as practical, locate production away from sensitive receptors.

Action	Issue	Requirements
	Small accidental fires	Extinguish immediately
	Spillage	Minimise spillages likely to contact open flames
	Direct application of open flames ('torching')	Minimise its use. Overheating the surface is prohibited.
Material Handling	Material handling operations	Keep the number of handling operations to a minimum by ensuring that dusty material is not moved or handled unnecessarily.
	Transport of fine powdery materials	Use closed tankers
	Transport of dusty materials and aggregates	Use enclosed or sheeted vehicles (ensuring sheeting of both sides and tops).
	Handling areas	Keep clean and free from dust.
	Vehicle loading	Use material handling methods that minimise the generation of airborne dust. Damp down using water as dust suppressant whilst having regard for BRE guidance 'Control of Dust from Construction and Demolition Activities'.
	Loading materials onto vehicles and conveyors	Ensure that vehicles are loaded in such a manner as to prevent spoil falling off during their journey. Drop heights must be kept to a minimum and enclosed wherever possible. Damp down with water.
	Chutes, skips and conveyor transfer	Drop heights must be kept to a minimum and points enclosed wherever possible. Damp down with water.
	Dust dispersing over the site boundary	Use static sprinklers, bowsers, hand-held hoses and other watering methods as necessary.
Stockpiling	Stockpile location	Stockpiles will be located away from sensitive receptors e.g. residential, commercial and educational buildings, places of public access or other features, such as watercourses.
	Building stockpiles	Ensure slopes of stockpiles, tips and mounds are at an angle no greater than the natural angle of repose of the material. Avoid sharp changes of shape.
	Small and short-term stockpiles	Where possible, ensure stockpiles are protected from wind erosion (enclosed or under sheeting).

Action	Issue	Requirements
		Dusty materials can be dampened down using suitable and sufficient water sprays. Wind barriers (protective fences) of similar size and height to the stockpile will be used.
Spillages	Cleaning up	Methods and equipment will be in place for immediate clean-up of spillages of dusty or potentially dusty materials.
	Inspection	Regularly inspect site for spillages
	Cement powder (and similar)	Clean up spillage using wet handling methods
Site Preparation & Restoration	Earthworks, excavation and digging	Minimise dust generating activities on windy and dry days. Vegetation and cover will be removed in discrete sections and not all at once (and in line with ecological constraints as applicable). Earthworks, excavation and digging activities will be kept damp and, if possible, be avoided during exceptionally dry weather periods. Use water as a dust suppressant whilst having regard for BRE guidance 'Control of Dust from Construction and Demolition Activities'. Use covered skips. Cutting equipment to use water as a suppressant whilst ensuring suitable local exhaust ventilation.
	Completed earthworks	Stabilise surfaces and / or re-vegetate as soon as possible.
	Storage mounds	Seal surfaces by seeding or surface with vegetation that has previously been removed from the site e.g. turf that has been removed will be stored and re-used. Alternatively, fence off and / or cover with secured tarpaulins.
Construction Activities	Cutting, grinding, drilling, sawing, trimming, planting, sanding	Cutting on site will be avoided by using prefabrication whenever possible. Avoid cutting errors and re-bars. Employ equipment and techniques that minimise dust emissions, using

Action	Issue	Requirements
		best available dust suppression measures whilst having regard for BRE guidance 'Control of Dust from Construction and Demolition Activities'. Use water sprays to minimise dust from cutting equipment. Local exhaust ventilation will be used where possible. Fans and filters will be serviced and maintained to ensure correct operation. Design to fill wherever feasible rather than cutting back oversized work.
	Cutting roadways, pavements, blocks etc.	Use a diamond bladed floor saw with water pumped through to suppress dust. Standard angle grinders and disk cutters with no dust control will not be used for this purpose.
	Raking out mortar/pointing	Standard angle grinders and disk cutters with no dust control features will not be used. A mortar raking kit, fitted on to a standard 5" angle grinder can be used on soft mortar but for hard mortar, a super-saw with oscillating blades should be used.
	Angle grinders and disk cutters	Dust extraction/minimisation systems will always be used.
Dust Monitoring	Sensitive properties immediately adjacent	A dust monitoring programme, using real- time particulate matter automatic monitors, should be in place prior to construction and throughout construction. It is proposed that monitors should be located at three locations adjacent to the site in order to assess any dust arising during construction activities: Summaries of monitoring results and complaints' issues to be circulated to the local community in order to demonstrate the developer's quality assurance/quality control procedures.

10 OUTLINE LANDSCAPE AND ARBORICULTURAL MANAGEMENT PLAN

10.1 Background

10.1.1 The Contractor will incorporate the outline Landscape and Arboricultural Management Plan requirements into the works.

10.1.2 The constriction activities that would give rise to landscape and visual impacts of the scheme would include the following temporary activities:

- Presence of construction compounds and activities within them;
- Movement of construction machinery, plant and HGV delivery vehicles on the existing road network and on the site; and
- Removal or changes to landform, including stripping of grassland, removal of existing trees where absolutely necessary and the formation of temporary stock piles of soil.

10.1.3 The Contractor will incorporate the requirements of the Arboricultural Method Statement (to be finalised and approved by the Local Authority) and Landscaping proposals into the works.

10.2 Specific Requirements

10.2.1 The Contractor should implement the following measures to reduce visual impacts:

- Locate site offices and storage of plant to reduce any potential and unnecessary impacts upon sensitive receptors.
- Avoid unnecessary impacts being experienced, such as the formation of unreasonably high spoil mounds;
- Use hoardings to screen site activities;
- Route construction traffic to avoid residential areas; and
- Avoid illuminated night time works as far as possible to reduce the lighting disturbance of the surrounding environment.

10.2.2 Areas identified for new planting should be protected during construction if possible, to prevent damage to the soils structure and consequent requirement for expensive re-instatement. The areas should be fenced off to prevent access and storage. Failing that, soils should be stripped and re-instated following completion of construction activities. This remediation will include the turnover of material within the subsoil

layers and planting medium, and the re-instatement or importing of topsoil in accordance with the recommendations in BS3882:2015 Specification for topsoil.

10.2.3 Planting of replacements for removed trees or new plants will be done at the end of the construction phase or at a time agreed with the Local Planning Authority (LPA). Species, sizes and positions will be agreed at the pre-contact meeting and will be marked on the landscape plan.

10.2.4 The successful integration of the planting proposal needs to take account of the following points:

- Plan of underground service routes;
- Schedule of tree protection measures, including the management of harmful substances;
- Method statements for constructional variations with regard to tree proximity (e.g. foundations, surfacing, scaffolding, etc.);
- Site logistics plan to include storage, plant parking/stationing, materials handling; and
- Tree works – required pruning and new planting. All tree works must be carried out by a competent arborist in accordance with BS 3998:2010 and any other prevailing good professional practice.

APPENDICES

APPENDIX A

Proposed Site Layout

APPENDIX B

Example Register of Consents, Undertakings & Assurances

APPENDIX C

CEMP Project Review Table

APPENDIX D

Example of Environmental Impacts Register

APPENDIX E

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