



NEATH PORT TALBOT COUNCIL

GIANTS GRAVE SOLAR DEVELOPMENT

CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN (CEMP)

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PREPARED BY:

Chathurani Rajapaksha Waste and Resources
Consultant

Dan Lee Energy & Climate Change
Consultant

REVIEWED BY:

Paul Evans Service Area Director
(Energy & Climate Change)

APPROVED BY:

Simon Allen Technical Director
(Energy & Climate Change)



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CONTENTS

0	EXECUTIVE SUMMARY	1
1	INTRODUCTION	3
1.1	General.....	3
1.2	Purpose of the CEMP	3
1.3	Development Description & Wider Site Setting	4
1.4	Scope of Works and Construction Programme	5
1.5	Recommendations for construction	9
1.6	Working Hours	11
2	BASIC CEMP REQUIREMENTS	12
2.1	Legal Requirements	12
2.2	Planning.....	12
2.3	Contractor Responsibilities	13
2.4	Environmental Induction, Awareness, Information and Training	14
2.5	Construction Quality Assurance/construction	15
2.6	Site Security	17
3	EMERGENCIES AND INCIDENT RESPONSE	18
3.1	Incident Management Plans	18
3.2	Monitoring & Auditing	19
3.3	Adherence with Landfill Post-Closure O&M and Monitoring Plans	19
3.4	Emergency Spill Procedures.....	20
3.5	On Site Structure and Responsibility	20
3.6	Emergency Contact Details	20
4	MATERIALS MANAGEMENT	21
4.1	Storage and handling	21
4.2	Transportation and logistics	21
4.3	Monitoring and compliance.....	21
5	POLLUTION PREVENTION.....	22
5.2	Silt.....	22
5.3	Concrete and Cement	23
5.4	Wastewater.....	26
5.5	Plant and Spill Containment	26
5.6	Vehicle/Fuel Containment	27
5.7	Chemicals and Material Storage for Spill Containment.....	28
5.8	Other Source Containment Measures	29

5.9	Emergency Spill Procedures.....	30
5.10	Unanticipated Ground Conditions	30
5.11	Incident Review.....	31
5.12	Training	31
5.13	Spill Kit Provisions	32
5.14	Inspections	32
6	GEOLOGY AND GROUND CONDITIONS.....	33
6.1	Background	33
6.2	Geology	33
6.3	Hydrogeology.....	34
6.4	Flooding.....	34
6.5	Hydrology.....	35
7	EXPLOSIVE RISK MANAGEMENT	1
7.1	Background	1
7.2	Risk Identification	1
7.3	Preventative Measures	1
7.4	Emergency Response	2
7.5	Monitoring and Documentation	3
7.6	Integration with CQA and Health & Safety	3
7.7	Residual Risk	3
8	FLOOD RISK AND DRAINAGE MANAGEMENT.....	4
8.1	Flood Risk	4
8.2	Surface Water Runoff	4
8.3	Flood Risk Management	5
8.4	General Hydrological Risks.....	5
8.5	Drainage Strategy.....	8
8.6	Wastewater Management.....	10
9	DUST MANAGEMENT PLAN	11
9.1	Background	11
9.2	Mitigation.....	11
9.3	Monitoring	12
10	SITE WASTE MANAGEMENT	13
11	BIODIVERSITY MANAGEMENT	18
11.1	Background	18
11.2	Mitigation.....	21

12	NOISE AND VIBRATION	25
12.1	Background	25
12.2	Mitigation.....	25
12.3	Monitoring	27
13	CONSTRUCTION LIGHTING.....	28
14	TRAFFIC AND TRANSPORT PLAN	30
14.1	Background	30
14.2	Mitigation.....	30
15	COMMUNICATING THE CEMP	33
15.2	Complaints management.....	33
16	ADHERENCE WITH POST MONITORING schedules OF THE LANDFILL SITE	36

TABLES

Table 1-1: Hours of Construction.....	11
Table 3-1: Site Emergency Contacts	20
Table 5-1: Management of silt during construction	22
Table 5-2: Managing Concrete and Cement	25
Table 5-3: Wastewater Control Measures.....	26
Table 6-1- Summary of Geological Information	33
Table 8-1: Summary of Flood Consequences to the Site	4
Table 8-2: General Hydrological Risks and Management.....	5
Table 8-3: Wastewater Control Measures.....	10

FIGURES

Figure 1-1 Indicative area of the Proposed Development.....	5
Figure 8-1: Existing Drainage Plan (not to scale)	9
Figure 10-1: Waste Hierarchy	14

DRAWINGS

Site Layout Drawings (sheet 1)	
Site Layout Drawings (sheet 2)	
Site Layout Drawings (sheet 3)	
Typical Array Elevation	
Typical Inverter/Transformer Station Elevation	
Typical Trench Section	
Typical Deer Fence	

Abbreviations

Acronym	Description
AC	Alternating Current
BGL	Below Ground Level
BPM	Best Practicable Means
BS	British Standard
CCTV	Closed Circuit Television
CEMP	Construction Environment Management Plan
CLO	Community Liaison Officer
COSHH	Control of Substances Hazardous to Health
CQA	Construction Quality Assurance
CV	Curriculum Vitae
CVI	Confirmation of Verbal Instruction
DC	Direct Current
DEMP(s)	Decommissioning Environmental Management Plan
DNO	Distribution Network Operator
DSEAR	Dangerous Substances and Explosive Atmospheres Regulations
ECOW	Ecological Clerk of Works
EOD	Explosive Ordnance Disposal
EWC	European Waste Code
GPP	Guidance for Pollution Prevention
H&SM	Health and Safety Manager
HGV	Heavy Goods Vehicle
LCRM	Land Contamination Risk Management
LLDPE	Linear Low-Density Polyethylene
LPA	Local Planning Authority
MV	Mega Volt
MW	Mega Watt
NPTC	Neath Port Talbot Council (Neath Port Talbot County Borough Council)
NRW	Natural Resources Wales
O&M	Operations and Maintenance
PCC	Principal Construction Contractor
PEM	Project Environmental Manager
PIR	Passive Infra Red

PM	Project Manager
PPE	Personal Protective Equipment
PV	Photovoltaic
PWMS	Precautionary Working Method Statement
QMS	Quality Management System
RAMs	Reasonable Avoidance Measures
SLR	SLR Consulting Ltd
SM	Site Manager
SPZ	Source Protection Zone
SuDS	Sustainable Drainage System
TS	Transport Statement
UXO	Unexploded Ordnance
WA	Wardell Armstrong (Part of SLR)
WFD	Water Framework Directive
WTN	Waste Transfer Note

0 EXECUTIVE SUMMARY

This Construction Environmental Management Plan (CEMP) has been prepared to support the planning application for the proposed circa 6MW solar farm development at Giant's Grave, Briton Ferry, Neath Port Talbot.

The site comprises a restored landfill capped with engineered layers and associated infrastructure. The CEMP sets out the environmental management measures required to mitigate potential impacts during the construction phase and ensure compliance with regulatory requirements and best practice standards.

Key Objectives

- Minimise environmental risks during construction, including pollution prevention, waste management, and biodiversity protection.
- Ensure compliance with relevant legislation, planning requirements, and Natural Resources Wales (NRW) guidance.
- Provide clear roles, responsibilities, and procedures for contractors and site personnel.

Scope of Works

The construction works include installation of photovoltaic (PV) arrays, inverter/transformer stations, substation, cabling, and associated infrastructure. Works on the cap will be undertaken using non-penetrative foundations (or shallow screw pins) to protect the landfill cap integrity. Cable routing will be run above ground in conduit on the cap to avoid disturbance to landfill gas and leachate systems.

Environmental Risks and Mitigation

Landfill Gas and Explosives Risk: Continuous methane monitoring, non-penetrative foundations, and UXO awareness protocols will be implemented. Emergency response plans for gas exceedance and suspected ordnance are included.

Pollution Prevention: Measures for silt control, concrete washout, spill containment, and wastewater management will be applied in line with NRW Guidance for Pollution Prevention (GPP).

Flood Risk and Drainage: Sustainable Drainage Systems (SuDS) will manage surface water runoff to prevent downstream flooding.

Dust, Noise, and Vibration: Best Practicable Means (BPM) will be adopted to minimise nuisance, supported by monitoring and complaint procedures.

Biodiversity: Precautionary Working Method Statements (PWMS) and Reasonable Avoidance Measures (RAMs) will protect sensitive habitats and species, including reedbeds and SINCs.

Waste Management: A Site Waste Management Plan (SWMP) will follow the waste hierarchy, prioritising reduction, reuse, and recycling.

Emergency Preparedness

Incident management plans cover oil and fuel spills, fire risk, landfill gas leaks, and UXO discovery. Spill kits and emergency contact details will be maintained onsite, and drills will be conducted to ensure readiness.

Compliance and Monitoring

Environmental performance will be monitored through site inspections, audits, and reporting against key performance indicators. All documentation will be controlled under the Client's Quality Management System (QMS).

Community Engagement

A Community Liaison Officer (CLO) will manage communications with local stakeholders, ensuring timely responses to complaints and minimising disruption.

1 INTRODUCTION

1.1 General

- 1.1.1 Wardell Armstrong (WA), a part of SLR Consulting Ltd, has been commissioned by Neath Port Talbot Council (NPTC) 'the applicant' to prepare a Construction Environment Management Plan (CEMP) to support a planning application for the development of a solar farm with maximum output of circa 6MW and associated infrastructure on land to the north of Giant's Grave Road, Briton Ferry, SA11 2LP, Wales (Site). The approximate National Grid Reference for the centre of the site is SS 73427 95779. The development boundary covers an area of approximately 13 hectares and is within the administrative boundary of NPTC.
- 1.1.2 The existing Site forms part of the former landfill site (Briton Ferry Landfill), otherwise known as Giant's Grave Landfill site. The landfill site no longer receives any waste materials and was capped in the early 2010's following the approval of site restoration details. Since restoration, the Site comprises grassland cover. The existing internal Site access road from Giant's Grave Road has been retained for future maintenance.
- 1.1.3 The site is c.16Ha and irregular in size. The site boundary includes part of the land parcel of the former Giants Grave Landfill and a c.860m long tail extending southwards comprising of the access road to the landfill site from Giant's Grave Road.

1.2 Purpose of the CEMP

- 1.2.1 This CEMP has been prepared as part of the of the planning application that will be submitted to the NPTC for approval of the Proposed Development. This CEMP specifically has been prepared to identify the measures that will be implemented to mitigate against any significant environmental impacts of the construction works.
- 1.2.2 The successful management of construction-related environmental issues during the works will be delivered through the development and implementation of the CEMP.
- 1.2.3 The document also informs consultees and other stakeholders about the relevant CEMP requirements for the works. The CEMP will be a live working document, subject to constant updating as the works are progressed. Each section is to be reviewed and updated as and when necessary.
- 1.2.4 Once this CEMP is approved, any changes to the approach outlined within this document must be reviewed with the Local Planning Authority (LPA) and all other relevant parties. This process must be undertaken prior to carrying out any amended procedures.

1.2.5 The Site-specific mitigation measures contained within this document have been developed by WA, supported by information submitted with the application and the project team as a whole (as instructed by the Client).

1.2.6 An Environmental Aspects and Impacts Register will also be used alongside this document whilst undertaking the works. This will be used by the Principal Contractor to:

- Record all sensitive environmental features that have the potential to be affected by the works associated with the Proposed Development.
- Assess the severity of each impact on the relevant feature

1.2.7 The CEMP will be implemented by the Contractor under the pre-commencement conditions of their planning permission; however, the document may need amendment upon commencement dependent on operational or construction changes.

1.3 Development Description & Wider Site Setting

1.3.1 The Proposed Development comprises the development of a proposed circa 6MW solar farm including substation, inverters, internal access track and associated infrastructure.

1.3.2 During the construction phase, one main temporary construction compound will serve the Proposed Development within the site.

1.3.3 The layout of the internal site compound has not been determined at this stage (subject to a contractor being appointed). The compound will also include areas for the storage of plant and equipment.

1.3.4 The site comprises the grassed restored landfill cap, access arrangements and an area of hardstanding compound situated in the southeast of the main body of the site, which currently houses the landfill gas engines and substation.

1.3.5 The Site is bounded by the Rhondda and Swansea Bay Railway line to the north, Neath Canal to the east, wetland areas to the west, and a marshland area previously used as a landfill site to the south.

1.3.6 Construction and primary maintenance/operational access to the Proposed Development will be via the existing vehicular access from Giant's Grave Road.

1.3.7 Figure 1-1 below illustrates the site location. The proposed site layout is shown across three sheets in .

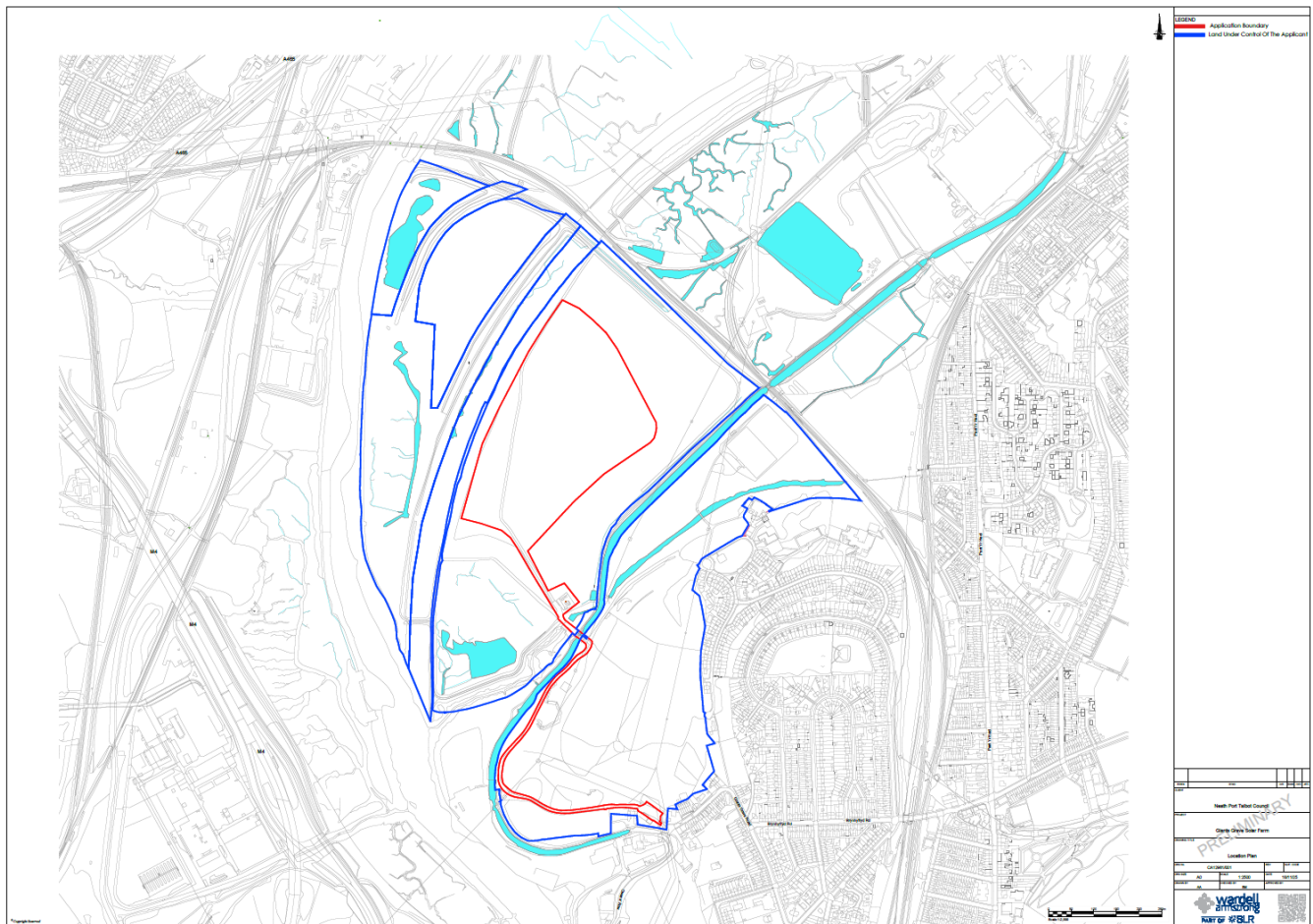


Figure 1-1 Indicative area of the Proposed Development

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1.4 Scope of Works and Construction Programme

1.4.1 The following paragraphs outline the approximate scope of works that will be undertaken as part of the construction process.

Pre-Construction Works

1.4.2 Prior to commencement of the construction phase, a detailed topographical survey and a geotechnical site investigation will be undertaken in order to confirm the findings of previous studies and to use as a baseline to detect any further settlement, should it occur, as a result of the additional weight of infrastructure and components being added to the landfill cap.

1.4.3 The Site will be prepared ready for construction to commence. This will include mowing and clearing the Site of any vegetation, taking care to avoid any areas being preserved for ecological reasons (such as the reed beds). The Site perimeter will be prepared ready for the deer fencing to be erected to provide additional security during

the rest of the construction process. Temporary amenities for construction workers will be installed onsite, within the laydown area.

Erection of Fence and Gate

- 1.4.4 Given the already relatively secure nature of the site it may be that a fence is not required, if it is required the following will be considered. There are no plans to remove any existing hedgerows which currently border the Site.
- 1.4.5 Fence posts will not be able to be piled into the cap without adversely impacting its integrity. Therefore, any installation of fenceposts will need to take place either outside of the capped area, or if within the capped area, fencing will need to be secured using a gravity system to hold the uprights firmly in place.
- 1.4.6 The permanent site entrance will consist of a double leaf security gate constructed of low visual impact fencing in a similar style to the security fence. The purpose of the gates is to allow access to various parts of the site whilst preserving safety and security.

Preparation of onsite tracks and laydown areas

- 1.4.7 A temporary laydown area will be established near the entrance to the Giant's Grave landfill site. This will receive deliveries and serve as a staging area during construction, as well as being the location for welfare facilities for the site workers during the operational phase. The existing site access tracks leading to the existing landfill gas engine and substation compound, and beyond to the landfill cap itself, will be inspected to ensure that it is suitable for the loads that will be deployed upon it. If any remediation or improvement works are considered necessary to facilitate the deployment of the solar farm and associated infrastructure these will be carried out.

Installation of Inverters, Transformer Stations and Substation

- 1.4.8 There are several potential inverter options that could be used at Giant's Grave, and these are all proposed to be included in the planning application to allow the final choice to be made following a tendering process and appointment of a suitable delivery partner.
- 1.4.9 Micro-inverters are usually installed on each individual panel and convert the generated Direct Current (DC) supply into an Alternating Current (AC) supply, virtually at source. As the name suggests, string inverters operate on a fixed string of panels, aggregating their DC currents and converting them to AC for onward transmission to the transformer. String inverters tend to be located at periodic intervals below the

panel arrays or at the end of rows of panels. Centralised inverters aggregate the DC supply from much larger groups of panels. Only one or two centralised inverters would be required for a site the size of Giant's Grave. Each system has different benefits and disadvantages, but provision for all of them is proposed in the planning application.

- 1.4.10 Micro inverters and string inverters are small and discrete and would not usually be separately identified on the layout drawings. Centralised inverters are much more obvious, and these would need to be separately identified. In this instance, in the event that they are required, it would be proposed to collocate the centralised inverters with the switchgear and transformers in a single containerised used known as a Medium Voltage (MV) station.
- 1.4.11 The MV-stations would be prefabricated and designed to be deployed without the need for additional foundations other than a gravel base.
- 1.4.12 Provision is also made for the installation of a substation unit which will be a prefabricated steel containerised building. It will have a flat roof, two doors and no windows although there will be some ventilation apertures to the rear. The substation will require a small concrete foundation with all cabling underground.
- 1.4.13 It would be proposed to locate the MV-stations and the substation building, if required, near to the existing landfill gas engines and substation building in the compound adjacent to the access road. It may be possible to use some of the existing landfill gas grid connection infrastructure directly, in which case the substation building may be surplus to requirements, however, provision is included in case it is subsequently considered necessary to have separate connection arrangements.
- 1.4.14 The existing compound is already quite full of infrastructure so it may be necessary to extend this to encompass the additional units, as has been shown indicatively on the site plans. This would also likely require some vegetation removal. As part of the EIA assessment process the effects of any vegetation removal will be fully assessed, and mitigation measures will be proposed as required.

Cable Laying

- 1.4.15 In a typical ground-mounted solar farm, lower voltage cabling near the panel arrays would initially be buried in ca. 600mm deep trenches, with higher voltage cabling being placed in deeper trenches as it is aggregated and stepped up. However, it is not possible to install trenches on top of the landfill cap. Instead, cable runs will be routed

above ground level in trays or conduit to preserve the integrity of the cap and to help ensure that the cables are suitably protected.

- 1.4.16 Once it has traversed the cap, the electrical cabling will be rerouted below ground level in accordance with the 'Typical Trench Section' drawing. These trenches will be excavated and backfilled by a tracked excavator. The trenches will carry the cabling to the existing landfill gas engine compound for connection to the MV stations (if required) and the new substation (if the existing substation is unable to accommodate the new connection).

Construction of Panel Frames

- 1.4.17 The panel frames will not be able to be piled into the cap as this will penetrate the impermeable layers, allowing water ingress and landfill gas to escape. Instead, it will be necessary to deploy a gravity ballast mounting arrangement where the panels are fixed to a frame which is held in place by a regularly spaced weighted load. There are various options that could be considered for the ballast material. Some designs make use of weighted buckets; others use concrete footings that are cast in situ above ground level. The most likely solution in this instance, is to use pre-cast concrete lintels, which could be laid along the lines of the arrays, or perpendicular to them running front to back (as illustrated in the Array Elevations drawing). The final choice may well vary across the Site and be influenced by the drainage requirements and run-off patterns at different places.
- 1.4.18 The PV panels will be bolted on top of the frames and, should it be determined that mini or string inverters be used rather than centralised ones, these will be mounted at regular intervals on the frames underneath the panels.

Testing and Commissioning

- 1.4.19 The testing and commissioning of the proposed photovoltaic plant would be undertaken by the general contractor and an appointed electrical engineer in conjunction with National Grid.

Site Reinstatement on Completion of the Construction Phase

- 1.4.20 Once the construction phase has been completed the Site will be landscaped and grass will be sown over any areas of disturbed land to provide a protective layer below the panels.

1.5 Recommendations for construction

- 1.5.1 The final project description and construction methodology is likely to evolve as the environmental studies are completed, and new information becomes available. At this stage, this CEMP is considered to provide a detailed guide to how the construction is expected to take place but in the absence of all of the site-specific knowledge that remains to be collected, it cannot be considered to be a completely finalised methodology for the construction process. Layout
- 1.5.2 The Desk Study report by WA indicates that the elevation of the site gradually increases from southeast site access towards the landfill and increases towards the centre of the landfill footprint.
- 1.5.3 PV arrays will be installed on the existing terrain, following the existing contours and without altering the surface profile where possible. It will be carefully planned to position the arrays in a way that minimizes their impact on the landscape.

Frames and Foundations

- 1.5.4 The panels will be mounted on steel or aluminium frames, with central legs that are supported by either shallow screw piles or pre-fabricated concrete ballasted foundations, or a mixture of the two. Exact depths for shallow screws and masses for gravity foundations will need to be identified subject to more detailed surveys of topsoil cover and wind loading. This will prevent damage to the landfill cap which can cause issues with gas being released or water ingress leading to excess leachate creation. Ballasted foundations add significant weight to the cap and can increase settlement rates, if this is considered likely following further investigation then ongoing monitoring will be put in place to ensure that settlement is manageable.

Cabling and trenching

- 1.5.5 Cabling on the cap will be placed on the surface and protected by ducting or trunking. This will allow easy maintenance and will eliminate possible damage to the cap from the cable installation.
- 1.5.6 Trenching on areas where there is no landfill will be buried underground at a typical depth to be determined.
- 1.5.7 As part of the design process the presence of underground utility lines and specifically the landfill leachate and gas management infrastructure plans have been assessed when designing the layout. For any work planned near these precautions such as physical barriers and marking on ground will be implemented.

1.5.8 According to the Giants Grave Landfill Drainage Plan, the following drains carry surface water from different sides of the site to their designated discharge points.

- **Northern surface water ditch**
- **Northern By-pass drain** - 750mm twin walled pipe installed for taking surface water and leachate from the eastern boundary to the Leachate Treatment Reed Bed.
- **Eastern Surface Water Ditch** -Installed within the clay cut-off bund (ref cut-off trammel drain). The ditch drains to settlement ponds both north and south.
- **Eastern Leachate Cut-off Trammel Drain** -Excavation was made to the base of the refuse plus 0.5m into the underlying clays. The excavation has been back-filled with clay and incorporate the trammel drain with a LLDPE membrane incorporating a 150mm perforated pipe laid at approximately 3m BGL. The drain flows from south to north driven by the head of leachate within the landfill.
- **South East Surface Water Grip** - Surface water running towards the southeast is collected by the South East Surface Water Grip installed in 2013 and directed to the Eastern Surface Water Ditch
- **South Surface Water Ditch** -Collecting surface water at the southern flank and draining to the Secondary Southern Leachate Cut-off Trammel Drain.
- **Leachate Cut-off Trammel Drains** -The 1st cut-off drain was constructed at the toe of the southern flank in and drains direct to the Leachate Treatment Reed Bed. The secondary drain was installed further south at a greater depth of 3m AOD.

1.5.9 In addition to above a western Leachate Treatment Reed Bed is located on Site. The northern-most 100m of the cut was engineered as treatment beds in the 1990's. Reeds have subsequently self-seeded throughout the length of the cut. Simple earth bunds have been constructed within the reed bed to increase the residence time of the leachate through the additional reeds and improve treatment.

1.5.10 The Desk Study report by WA indicates that overground black pipes for the landfill gas extraction were noted across the landfill footprint within tall grass/vegetation, orientated northwest to southeast.

1.5.11 Any cable trenches (used off the cap) will be backfilled with excavated materials to the original ground level status.

Grid connection

1.5.12 The landfill gas engines were designed to operate with the observed gas production rates from the landfill site. As time passes the gas production rate will always fall as the biological material inside the landfill gradually rots away. As that process occurs and the generation rate drops, the current c. 2MW spare capacity in the existing grid connection will increase, which can be used by the solar farm. This may present an incentive to phase the construction over a much longer period of time and to gradually build out the PV as the landfill gas generation diminishes and the landfill gas engines come offline. Any works required to facilitate the grid connection will also need to comply with this CEMP and any recommendations made during the planning process.

1.6 Working Hours

1.6.1 It is anticipated that construction activities will be conducted during daylight hours. Once the principal contractor has been appointed, and the detailed construction programme has been finalised, there may be a need to make some slight changes to the exact timings but generally it is expected that the hours of construction will be:

Table 1-1: Hours of Construction

Day	Time
Monday-Friday	08:00 – 18:00
Saturday	08:00 – 13:00
Sunday (and Bank Holidays)	No construction

2 BASIC CEMP REQUIREMENTS

2.1 Legal Requirements

2.1.1 There will be a procedure for identifying legal requirements applicable to the works as well as other requirements (i.e., contractual). Compliance will be periodically evaluated during audits.

2.1.2 The following sources can be used to ensure that site management is aware of the legal and other environmental obligations:

- Industry bodies;
- Specialist publications;
- Specialist waste disposal contractors;
- Natural Resources;
- The Local Authority ; and
- Existing Risk Assessments and Site Surveys.

2.1.3 This section stipulates that measures must be taken to contain pollutants on site, and ensure that no unacceptable impact will occur to people, amenities, properties and the natural environment from:

- Pollution of land, surface water, ground water and the air;
- Land contamination;
- Hazardous substances;
- Land stability;
- Noise, vibration, dust, odour nuisance and light pollution; or
- Any other identified risk to public health and safety.

2.2 Planning

2.2.1 There will be a procedure to identify environmental aspects related to the works and outline mitigation measures that are required to reduce the risk of environmental impact arising from that aspect. Aspects include the use of water, fuel or emissions, so may include any changes to site operations or identified areas that could have an environmental impact.

2.2.2 As a result of the assessment of environmental aspects, all appreciable impacts will be identified, and measurable objectives/mitigation set against them to reduce the impact of operation and service provision.

2.3 Contractor Responsibilities

- 2.3.1 The Principal 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.
- 2.3.2 Key roles and responsibilities during the construction phase in managing environmental impacts are anticipated to include, but are not limited to:
- 2.3.3 Site Manager (SM) - Responsible for all onsite activity and will be based onsite full-time.
- 2.3.4 Principal Construction Contractor (PCC) / Project Manager (PM) - Responsible for ensuring all elements within the detailed CEMP(s) are adhered to. Also responsible for managing onsite security, as well as ensuring that all environmental, legal and any other requirements are implemented (plus appropriately resourced, managed, reviewed and reported).
- 2.3.5 Construction Quality Assurance (CQA) Manager/Engineer – Responsible for ensuring that the is carried out in full compliance with the approved Construction Quality Assurance Plan (CQA). CQA engineer will oversee all construction activities, verify material quality and installation methods, and coordinate environmental monitoring such as gas and settlement testing. The CQA engineer will manage any non-conformances, ensure corrective actions are implemented, and compile a comprehensive validation report with test results and as-built documentation. Acting as a liaison with the Environment Agency, the CQA Engineer will help ensure the project meets all regulatory and environmental standards.
- 2.3.6 Project Environmental Manager (PEM) - Responsible for the overall management of environmental aspects onsite. Responsible for ensuring environmental legislation and best practices are complied with, and environmental mitigation and monitoring measures identified are implemented. The Project Environmental Manager will oversee environmental monitoring onsite and carry out regular environmental site inspections, reporting and responding to any incidents or non-compliance. The Project Environmental Manager will liaise with the local planning authorities and other relevant bodies (e.g. the Environment Agency) to the extent that this is required. The Project Environmental Manager will also be responsible for managing responses to flood incidents in-line with the Emergency Response Plan;

- 2.3.7 Ecological Clerk of Works (ECoW) – Responsible for the management of risks to ecological features / receptors during the decommissioning of the Site, providing advice on protecting valued ecological features / receptors and providing practical solutions in accordance with the detailed DEMP(s).
- 2.3.8 Health and Safety Manager (H&SM) - Responsible for the monitoring and control of health and safety compliance and related rules and regulations onsite.
- 2.3.9 Community Liaison Officer (CLO) - Responsible for engaging with local communities and authorities and establishing an appropriate and accessible method for recording and managing any complaints from the public.
- 2.3.10 The above roles and responsibilities are indicative, only, and will be confirmed with the LPA prior to construction commencing.

2.4 Environmental Induction, Awareness, Information and Training

- 2.4.1 The raising of environmental awareness is seen as a crucial element in the appreciation and implementation of the CEMP.
- 2.4.2 A general environmental induction will be developed to introduce all Site personnel to the environmental issues associated with the Site, important environmental controls, energy saving, and general emergency procedures as part of a wider Site induction. A full register of induction attendance will be maintained on Site.
- 2.4.3 All staff will be suitably trained and competent for their roles and have received environmental awareness training to ensure their competence in carrying out their duties on the project. Due to the limited scale of construction on this project the overarching level of environmental risk is not considered to be significant.
- 2.4.4 Where required, specialist training relating to certain environmental aspects will be developed and delivered to key members of the Site team throughout the project.
- 2.4.5 All training records will be maintained and filed on Site. The records will include the content of any courses or training (including induction and toolbox training information), record of attendance and schedule of review.
- 2.4.6 Task-specific toolbox talks and method statement briefings on environmental issues relating to the works will be conducted as the works progress. A full register of toolbox talks or method statement briefing attendance will be maintained on Site.
- 2.4.7 Evaluation of contractors will be conducted initially through assessment of the approved supplier/contractor questionnaire prior to appointment to conduct any

works. This evaluation will include a review of quality and environmental credentials. CVs of all specialist staff would be submitted for approval.

- 2.4.8 All activities that may have an impact on the environment will be controlled by the implementation of procedures and Method Statements.
- 2.4.9 Competency requirements for specific activities will be described in relevant Method Statements. All staff and operatives involved will be briefed on the Method Statement before each activity commences.
- 2.4.10 A set of Site rules will be developed that incorporate environmental control where applicable and will be posted in an appropriate manner that is visible to all staff and visitors.

2.5 Construction Quality Assurance/construction

- 2.5.1 Construction will be undertaken in accordance with a comprehensive Construction Quality Assurance (CQA) plan. This plan will be developed to meet the requirements of Natural Resources Wales (NRW) and to address the specific environmental and engineering challenges associated with landfill redevelopment. The CQA plan will ensure that all construction activities are executed in a manner that protects the integrity of the landfill cap, prevents environmental contamination, and supports long-term site stability. NRW has provided further detailed guidance on the preparation and submission of CQA plans for developers and operators undertaking works on or near closed landfills¹.
- 2.5.2 Prior to construction, a detailed site assessment will be carried out. This will include evaluations of the landfill cap condition, potential for differential settlement, and the presence of landfill gases such as methane. The design will incorporate PV designs to avoid breaching the landfill cap. Cable routing and other infrastructure will be planned to minimize disturbance to the existing landfill structure. All construction materials will be specified in advance and subject to conformance testing to ensure compliance with relevant standards
- 2.5.3 During construction, all activities will follow clearly defined procedures outlined in the CQA plan. These will include step-by-step installation methods, environmental

¹ Environment Agency (2020). *Landfill operators: environmental permits*,. Available at : <https://www.gov.uk/guidance/landfill-operators-environmental-permits/design-and-build-your-landfill-site#earthworks> (Accessed on June 2025).

protection measures, and health and safety protocols. Continuous monitoring will be implemented, including gas detection, settlement tracking, and surface water management. Any deviations from the plan will be documented and addressed through corrective actions.

- 2.5.4 All activities that may have an impact on the environment will be controlled by the implementation of procedures and Method Statements. Each procedure and Method Statement will be reviewed by a competent person or a relevant project manager to ensure that they are in line with this Plan as well as other applicable environmental requirements. The Principal Contractor should strictly adhere to construction method statements during construction and consult with the Site Manager if any unforeseen circumstances arise.
- 2.5.5 An independent CQA engineer will be appointed to oversee the works and verify compliance with the plan. Upon completion, a validation report will be prepared, including test results, photographic records, and as-built drawings. This report will be submitted to NRW as evidence of compliance and to support the ongoing environmental management of the site.
- 2.5.6 Environmental policies and Developer's environmental objectives are to be communicated to all personnel through induction procedures, specific designated workshops, and toolbox talks. Relevant policy documents will be available to view on Site notice boards.
- 2.5.7 Compliance with the environmental management requirements, policy, and objectives as well as compliance with the project environmental plan will be evaluated through periodic internal audits. The main monitoring tools are:
- Site visits and inspections.
 - Physical monitoring (noise, vibration, and air pollution).
 - Watching brief activities (i.e., ecology).
 - Waste records.
 - Records of material import.
- 2.5.8 Daily inspections of the Site will occur to ensure compliance with the CEMP, and to minimise the risk of damage to the environment. All environmental incidents will be reported by Contractor's to the Developer.

- 2.5.9 Regular inspections will be undertaken to assess the works' environmental performance measured against environmental standards, relevant legislation, and the CEMP objectives.
- 2.5.10 Environmental key performance indicators applicable to the works will be measured and included in the progress reports.
- 2.5.11 Document control will be in accordance with the Client's Quality Management System (QMS) and copies of all environmental audit reports, consents and licences will be maintained by the Project Manager and held on Site for review at any time.
- 2.5.12 Internal and external environmental auditing and inspections will be conducted. The Developer 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.

2.6 Site Security

- 2.6.1 The Principal Contractor, if required, will secure the site perimeter using suitable fencing which will be erected as soon as access is available and before any work commences, to protect the Site from vandalism and to restrict access. This will be installed as part of the enabling works phase.
- 2.6.2 The equipment for PV systems can be secured in a temporary lockable storage shed prior to installation, since PV panels and copper can be valuable targets for theft.
- 2.6.3 The necessity for on-site security, and the assessment of the appropriate level of protection and security is the responsibility of the Principal Contractor.
- 2.6.4 In addition, CCTV (infra-red security cameras) will be installed and positioned along the perimeter. These will be directed inwards and will require no external lighting.

3 EMERGENCIES AND INCIDENT RESPONSE

3.1 Incident Management Plans

- 3.1.1 The Principal Contractor will ensure that during the construction of the site, an incident management plan will be developed and reviewed and updated throughout the construction process.
- 3.1.2 This will be undertaken in line with GPP6 recommendations, ensuring that materials are stored appropriately, reactive compounds are stored in appropriate places, as well as the availability of kits to contain spills and manage on site incidents.
- 3.1.3 Information regarding potential risks from their operations, as well as spill containment materials / spill response equipment will be clearly defined and submitted to the Principal Contractor by any Sub-Contractors. 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/Co-ordinator will be appointed by the Principal Contractor.
- 3.1.4 Environmental incidents will be recorded by the Principal 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.
 - Lessons learnt.
- 3.1.5 Emergency procedures will be tested by the Environmental Manager/Co-ordinator and the results reported to the Project Manager. Examples of procedures include:
- The names, 24-hour contact details of and the quickest transport route to all emergency response personnel and emergency services.
 - The procedures for reporting and documenting an emergency incident.
 - Personnel responsibilities during an emergency incident.

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

3.1.6 Action plans for the following environmental incidents will be prepared:

- Oil and fuel spillage.
- Fire risk management
- Landfill gas leaks and exposure response
- Excessive noise.
- Excessive dust.
- Water pollution.
- Amenities / Utilities Disruption
- Site-specific ecological constraints.

3.2 Monitoring & Auditing

3.2.1 Monitoring and auditing for the Site will include regular inspections of gas and leachate management infrastructure to ensure continued containment and safety, alongside monitoring of ground stability and settlement that could affect panel foundations and cabling.

3.2.2 Environmental monitoring will track groundwater, surface water, and emissions against permit requirements, with results audited through periodic internal reviews and external regulator inspections. Emergency response drills, health and safety checks, and maintenance audits of solar equipment will also be undertaken, with findings used to update the sites emergency and incident response plan to ensure ongoing compliance and resilience.

3.3 Adherence with Landfill Post-Closure O&M and Monitoring Plans

3.3.1 Successfully integrating solar PV installations with the existing post-closure Operation & Maintenance (O&M) and monitoring plans of restored landfill sites is paramount for safety, environmental protection, and regulatory compliance. This can be achieved by using non-penetrative foundations and considering existing infrastructure such as leachate collection lines, existing landfill gas wells. Access should be maintained for routine monitoring and maintenance purposes.

3.3.2 Stormwater and vegetation management are also paramount to avoid any effect on the landfill cap due to run off and herbicides respectively. Drains to manage stormwater and the planting of native, low-lying plants would provide adequate protection to counter the effect of herbicides and maintain the integrity of the landfill cap.

3.4 Emergency Spill Procedures

3.4.1 In the event of a spill on site from transport, construction or other development associated activities, a site-wide emergency spill procedure will be followed.

3.4.2 The “Source, Pathway, Receptor” model will be considered, and efforts made by site to ensure that spills are prevented from entering pathways.

3.5 On Site Structure and Responsibility

3.5.1 The Principal Contractor’s 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 are detailed below:

3.6 Emergency Contact Details

3.6.1 The Emergency Contact details for relevant staff members are listed below in Table 3.1 and are indicative of the responsible persons on site.

3.6.2 These contacts will be updated and checked regularly, dependent on staffing and project allocation.

3.6.3 A named Ecological and Landscape Clerk of Works will be ascertained upon project commencement and will be provided as part of the formalised site emergency plan and on the site board, and as part of induction activities.

3.6.4 The named responsibilities may be subject to change, dependent on subcontractor involvement on site.

Table 3-1: Site Emergency Contacts			
Organisation	Title	Name	Contact
Text	Text	Text	
Text	Text	Text	

4 MATERIALS MANAGEMENT

4.1 Storage and handling

4.1.1 Long-term on-site storage is not required as the HGVs and other vehicles will provide the materials at regular intervals throughout the construction period as construction progresses, following 'just in time' principles, rather than everything being delivered concurrently at the commencement of construction.

4.1.2 Following the completion of construction activities no construction material will be stored on site and the temporary construction compound will be repurposed for the sub-station and inverter footings.

4.2 Transportation and logistics

4.2.1 All materials, including solar infrastructure, cabling, and ancillary construction supplies, will be transported to site using designated haul routes agreed with the Local Highways Authority to minimise disruption and community impact. Deliveries will be scheduled to avoid peak traffic hours, and vehicles will be fitted with appropriate sheeting and load security to prevent dust and debris release. Wheel washing facilities will be provided at the site entrance to prevent mud and soil tracking onto public roads, and vehicle movements will be recorded to ensure adherence to agreed routing and traffic management measures.

4.3 Monitoring and compliance

Compliance with materials management measures will be monitored through regular site inspections and audits against the CEMP. Delivery records, waste transfer notes, and vehicle logs will be maintained to demonstrate adherence to duty of care requirements and relevant permits. Site managers will oversee compliance with health, safety, and environmental controls, including dust suppression, spill prevention, and landfill gas safety protocols. Any non-conformances will be reported, corrective actions implemented, and records maintained as part of the project's environmental management system.

5 POLLUTION PREVENTION

- 5.1.1 Most pollution incidents are avoidable through careful planning of construction/excavation operations and responsible waste management. 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.
- 5.1.2 Pollution within the Proposed Development will be minimised and controlled by following the pollution prevention Guidelines outlined in this document and also refereeing to relevant NRW pollution prevention guidelines and recommendations.
- 5.1.3 This section has been prepared in line with industry standard pollution prevention guidance such as the Guidance for Pollution Prevention (GPP) documents; to avoid direct and/or indirect contamination of identified geo environmental receptors present across or nearby the Proposed Development.

5.2 Silt

- 5.2.1 Table 5-1 provides guidance for managing silty and sediment laden water, which can arise from excavations, earthworks, exposed ground, stockpiles, plant, and wheel washing and site roads. Adequate provision will be made for dealing with silty and sediment laden water within site-working plans.

Table 5-1: Management of silt during construction	
Issue	Requirements
Water containing silt and sediment	No silty and sediment laden water will be pumped directly into a river, stream, surface water drain or to land without prior treatment. Treatment options include but are not limited to settlement tanks, use of flocculants, silt fencing and silt socks. All required NRW permits would be applied for ahead of the start of construction.
Water entering excavations	Use cut-off ditches to prevent entry of clean surface water from entering excavations and well point dewatering or cut-off walls / drains for groundwater. The corner / low point of the excavation can be used as a pump sump. Do not allow personnel or plant to disturb water in excavations. Minimise the time excavations or open and try to avoid excavations works in forecast heavy or prolonged rainfall, where possible.

Exposed soil and material stockpiles	Minimise the amount of exposed ground and soil stockpiles. Covering stockpiles with a suitable geotextile, seeding longer term stockpiles, and use of silt fences at the base of stockpiles may be useful in reducing silt levels in run-off water.
Dusts and mud from roads	Site roads/access tracks to be regularly cleaned (e.g. road sweeper for tarmacked roads) brushed or scraped and kept free from dust and mud deposits. Vehicles and plant are required to be cleaned prior to entering and existing the construction area. This is particularly import if vehicle is using onsite watercourse crossings or working near water. All cleaning of vehicle and plant must be cleaned away from the water in dedicated vehicle washing areas to prevent potential pollutants entering the surface water system. The spread of dust and sediment will be controlled through fine water spraying of access tracks, stockpiles and working area, if required. Vehicles and plant will be regularly serviced in accordance with manufactures guidelines, monitored and inspected to ensure the site cleaning protocols are adhered to. Plant and machinery will have dedicated refuelling areas, with drip-trays / plant nappies used routinely and spill kits available.
Wheel washes and plant washing facilities	Use of a wheel wash, which will be 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 receiving water body (i.e., riverbed and bank) could occur, which may produce silty / sediment laden water. It is necessary to agree on discharge points with landfill management in order to avoid disturbing existing landfill leachate discharge points. The quality of the construction water discharged should not exceed the discharge limits maintained by Landfill management to prevent additional pollution occurring from construction activities at the solar farm if it will be discharged to the same sources.

5.3 Concrete and Cement

- 5.3.1 Where possible concrete needed in construction will be pre-cast to avoid issues. If mixing on site is essential in some cases the following will be adhered to.
- 5.3.2 If cement water (alkaline water from cement mixing) penetrates through a landfill cap during construction, it can lead to several environmental and structural issues. Cement water has a high pH and contains dissolved chemicals that can react with landfill materials, potentially weakening the cap and increasing leachate contamination risks. The landfill cap, which is designed to prevent water infiltration and gas escape, may degrade if exposed to the highly alkaline solution for an extended period. This could lead to the formation of cracks or increased permeability, allowing more water to enter the landfill.

- 5.3.3 Once inside the landfill, cement water can alter the chemistry of leachate, making it more hazardous. The high alkalinity may cause the dissolution of heavy metals, increasing the risk of groundwater contamination. Additionally, if cement water reacts with organic waste or other buried materials, it could accelerate decomposition processes and change gas production patterns, potentially leading to uncontrolled methane release. This can create safety hazards, including an increased risk of fires or explosions if methane accumulates in confined spaces.

Table 5-2: Managing 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 watercourses as practical – referred to as the wash-down area. All washout areas to be signposted. All plants contaminated with concrete to be cleaned in designated wash-down areas. Washout will not be allowed to enter into any drain or watercourse. Concrete washout area will be regularly inspected. The washout area will be doubled bunded and designed to facilitate removal of wet and solid concrete / cement washout water.
Concrete spills during site transportation	Loads managed to avoid spillages – select load dependant on vehicle, slump of concrete and prevalent ground conditions.
Silane (trialkoxo 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 watercourses.
Alkalinity monitoring and documentation	Regularly test the captured water to determine its pH level which helps to identify when the treatment is necessary. Records will be maintained by Environmental Manager or suitably qualified site staff, of pH tests, treatment process and disposal actions. This is vital for demonstrating compliance with environmental standards, and for identifying opportunities to improve practise. The quality of the construction water discharged should not exceed the discharge limits maintained by Landfill management to prevent additional pollution occurring from construction activities at the solar farm if it will be discharged to the same sources.
Neutralisation	If the water is too alkaline it shall be treated using neutralising agents to lower the pH to acceptable levels before any potential discharge or use.
Reuse and recycling	Whenever possible alkaline wash water will be recycled for subsequent mixing or cleaning tasks. This will minimise waste and reduces the risk of environmental contamination.
Training and standard operating procedures	Ensure that all personnel are trained in handling alkaline water and understand the procedures for its containment treatment and disposal.

5.4 Wastewater

- 5.4.1 Liquid wastes pertaining to runoff from material storage areas and from wet methods of preparation should never be released directly into surface waters or surface waters drains without prior approval from the relevant regulatory bodies.
- 5.4.2 Table 5-3 details associated risks and management of wastewater from construction materials and methods.

Table 5-3: 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

5.5 Plant and Spill Containment

- 5.5.1 Containment measures to ensure spill control will be implemented for Site plant vehicles. All plant will be well maintained to limit leakage from engines or hydraulic systems. Pumps and other similar equipment will be placed on drip trays or plant nappies with refuelling undertaken following strict procedures for spill control.
- 5.5.2 This includes the following:
- 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 suitably qualified and trained Site foreman.
 - All refuelling, oiling, and greasing will take place above drip trays / plant nappy or on an impermeable surface, which provides protection to ground and away from drains. Vehicles will not be left unattended during refuelling.
 - Only well-maintained equipment and vehicles to be permitted onsite. The earthworks contractor/plant and equipment contractor 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.
- Any spillages of contaminating liquids or other materials will be reported to the Site Manager immediately. Stocks of oil absorbent materials will be kept onsite to deal with small spillages.
- Appropriate bunding will be used for any fuel or chemical container on Site, ensuring containment at source to prevent spillage.
- All wash down of vehicles and equipment will take place in designated areas and wash water will be prevented from passing untreated into watercourses and will comply with best guidance and available.
- Drip trays will be placed below static mechanical plant.
- A spill kit is to be made available on-site and appropriate to the volume of fuel stored at any given point.

5.6 Vehicle/Fuel Containment

- 5.6.1 All fuels will be stored in fully bunded fuel tanks within the Site compound area and the plant storage area. Fully bunded mobile fuel bowsers will be utilised to distribute fuel to plant working on Site. A designated fuelling area will be set up where plant will be re-fuelled.
- 5.6.2 Fuel/oil spillage kits will be available at both re-fuelling areas and within each item of operational plant. All plant operators will be fully trained on the emergency application of these kits should an accidental spillage occur.
- 5.6.3 Weigh load indicators are fitted to HGVs to prevent overloading. Fuel tankers and roll on-off bins cannot operate when overloaded. Vehicles such as flatbed trucks, trailers or low loaders cannot be fitted with weight loaders.
- 5.6.4 Prior to commencing the works, the Principal Contractor will utilise the most appropriate methods to minimise mud and debris from Site being deposited onto public highways in line with the dust management measures implemented (i.e., a temporary wheel wash facility) that is considerate of the drainage measures of the detailed CEMP.

5.7 Chemicals and Material Storage for Spill Containment

- 5.7.1 Chemicals and other construction materials will be stored and contained in areas where they will not be easily mobilised to reach water courses. Procedures for the use of specific materials will be developed to reduce the risk of accidental release and ensure that water quality is appropriately protected, using bunds to ensure containment and separating chemicals appropriately onsite using GPP principles².
- 5.7.2 A combination of material characterisation and removal, where appropriate, prior to stockpiling and construction control measures would be employed onsite in order to ensure that the risk to offsite receptors is minimised as far as is practicable.
- 5.7.3 Adequate access arrangements will be made to provide suitable entry to a material storage compound, with chemicals, oils and fuels stored on an appropriate bund.
- 5.7.4 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.
- 5.7.5 An up-to-date list of any hazardous materials onsite will be prepared, specifying their location. The Environmental Manager/Co-ordinator will regularly review this.
- 5.7.6 All hazardous materials will be kept in adequate conditions of containment, within controlled areas and securely protected from contact by non-authorized personnel, including trespassers and vandals. The quantities of hazardous material stored at any one time will be minimised.
- 5.7.7 Control of Substances Hazardous to Health (COSHH) assessments will be held onsite for all hazardous materials. These give advice on the type of storage required for the chemicals, i.e., bunded areas, and storage of flammable products in locked cabinets to prevent reactivity and containment in the event of a leak/spill.
- 5.7.8 Storage bottles or tanks 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.

²Guidance for Pollution Prevention Dealing with spills: GPP 22.
<https://www.netregs.org.uk/media/1643/gpp-22-dealing-with-spills.pdf>

5.7.9 Above ground tanks, drum storages and pipelines that contain hazardous materials will have properly designed secondary containment. The primary storage container itself will be of sufficient strength and structural integrity to ensure that in normal circumstances it is unlikely to leak or burst.

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

5.7.11 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 / plant nappies underneath portable plant, such as generators, will also be used.

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

5.8 Other Source Containment Measures

5.8.1 Further preventative source containment measures include:

- 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 sewerage provider and local authority as applicable.
- The use of water for dust suppression may also increase runoff quantities during construction and any excavation of soil could have an impact on both surface and groundwater quality. This volume is expected to be minimal, and in the event of any contamination, is to be managed onsite using appropriate dust prevention measures to prevent any water contamination.
- Containers of contaminating substances will be leakproof and kept secure to prevent spills and vandalism.
- List I and List II substances (Dangerous Substances Inventory) will be restricted in use during construction.
- Where possible, carrying out regular inspections of discharges, drainage systems, collection ditches, interceptors, and watercourses to ensure that they are in good order as part of Site management.
- The completed works as designed should present minimal risk of impacts to the hydrological environment; status quo in terms of the drainage system is to be retained as far as possible to preserve the greenfield runoff rate, no active maintenance of the drainage system is planned in-line with current practices.

5.9 Emergency Spill Procedures

- 5.9.1 In the event of a spill on Site from transport, construction or other development associated activities, a site-wide emergency spill procedure will be followed.
- 5.9.2 A sufficient volume of spill kits (containing spill granules, bunds and containment equipment) will be available on the Site, and staff will be trained in how to use them effectively to ensure that materials are contained and can be safely removed from Site via an appropriately licenced waste contractor.
- 5.9.3 As part of auditing, a “spill drill” will take place onsite, checking that staff members are aware of how to find, operate and contain a spill onsite using Site equipment and further measures to be taken if needed.
- 5.9.4 In the event of a minor spill, containment will occur using onsite spill equipment and this will be removed by using a appropriately licenced waste contractor.
- 5.9.5 In the event of a major spill occurring that could contaminate the nearby watercourse or other receptors in the area beyond the capability of Site containment, local authority will be informed, and an appropriate contractor used to support the removal and containment of spilled material in order to prevent contamination.

5.10 Unanticipated Ground Conditions

- 5.10.1 A general watching brief for evidence of contamination should be undertaken during construction works. If visual/olfactory evidence of contamination is encountered, works in the area will cease and a suitably qualified and experienced environmental consultant / engineer should be contacted.
- 5.10.2 Under the direction of the Environmental Manager, the area of concern will be examined. If required, samples of potentially contaminated material will be taken and analysed at an accredited laboratory to determine if the material meets the required criteria to be protective of human health and the environment.
- 5.10.3 Pending the laboratory results of the samples, the extent of the potential contamination will be delineated where practicable. It may be appropriate to separately stockpile arisings of potentially contaminated material on low permeability membrane to prevent leaching.
- 5.10.4 Upon receipt of the laboratory results, the results will be screened against suitable generic assessment criteria and assessed in accordance with the Land Contamination Risk Management (LCRM) guidance. If concentrations above the criteria are

encountered, the findings of the assessment will be used to determine the risks and the appropriate course action.

5.10.5 A competent and licenced contractor will remove asbestos containing materials and other materials and structures contaminated with asbestos fibres, if positively identified onsite.

5.10.6 Relevant information should be included within the detailed CEMP, and any other relevant contractor's, Health and Safety risk assessment and method statement for the construction works. This should include instruction to maintain a watching brief during the works for evidence of contamination and measures such as appropriate use of Personal Protective Equipment (PPE) and dampening stockpiles of excavated material to prevent dust generation

5.11 Incident Review

5.11.1 Once the spillage incident has been appropriately dealt with, and the area impacted is remediated to a point where it is under no further immediate risk to the environment or human health and safety, the spill shall be recorded.

5.11.2 The Site Manager shall formally record any environmental incident and near misses shall be recorded by the health and safety personal.

5.11.3 Upon recording, the Director of Safety, Health and Environment shall investigate the environmental incident to establish the root of the causation and ensure any corrective action required is undertaken in order to prevent any potential spillage of the same or similar nature reoccurring. Any takeaway lesson shall be fed back into the project via toolbox talks, training, briefings and bulletins, where relevant.

5.12 Training

5.12.1 All personnel working onsite shall be trained with respect to the environmental control plan. This includes contractors and sub-contractors.

5.12.2 Training on the application and use of spill kits and clean-up will be provided by the Site Manager or nominate persons with appropriate knowledge, to all persons undertaking work where the risk assessment(s) identify the possibility for environmental harm on the first occasion before work and at intervals deemed necessary by the Site Manager. The details of training, including a signed attendance sheet shall be recorded and maintained onsite.

5.13 Spill Kit Provisions

5.13.1 Suitably sized stocked spill kits will be maintained at set locations across the Site. Spill kit locations will include, but are not limited to:

- Stores;
- Adjacent to all fuel storage and refuelling facilities;
- All mobile plant;
- All static plant with oil or fuel requirements;
- In close proximity to work areas;
- At site entrance; and
- At the Site office.

5.14 Inspections

5.14.1 Periodic inspections of the contents and location of spillage kits will be conducted by the Site Manager to ensure that the kits are suitable and complete, with appropriate PPE available in the same location. The contents of the spillage kit will be variable, dependent on the type, quantity and location of the potential substance that may be spilled.

5.14.2 Any defects that are identified during the inspections of spillage kits shall be reported to the Principal Contractor and resolved with immediate effect.

6 GEOLOGY AND GROUND CONDITIONS

6.1 Background

6.1.1 A review of the desk study has identified the following geotechnical constraints that should be taken into consideration during construction.

- Negligible to Very low risk of collapsible deposits, ground dissolution compressible ground, running sands, landslides, and shrink-swell clays beneath the former landfill area.
- Predominantly Negligible to Very low risk of collapsible deposits, ground dissolution compressible ground, running sands, landslides, and shrink-swell clays beneath the access road, with isolated areas of moderate risk of compressible ground, landslides and running sand.

6.2 Geology

6.2.1 A summary of the geological information is provided below in Table 6-1.

Table 6-1- Summary of Geological Information	
Strata	Description
Artificial Deposits	BGS records the majority of the Proposed Development Area and Access Road to be underlain by Made Ground deposits, likely associated with the historic land use (former landfill).
Superficial Deposits	The majority of the Proposed Development Area is underlain by Tidal Flat deposits, described by the BGS as consisting of “<i>unconsolidated sediment, mainly mud and/or sand</i>” and Glaciofluvial Deposits (“sand and gravel”). An approximate 60m stretch of the southern Access Road is underlain by Glacial Till described by the BGS as consisting of “<i>sandy clay with pebble to boulder-size clasts (Diamicton)</i>”. Sections of the southern Access Road (approximately 400m) are not underlain by superficial deposits, across the north, centre, and south of the Access Road.
Bedrock Strata	The Proposed Development Area is underlain by the Pennant Sandstone Formation comprising of Hughes Member and Brithdir Member. The north-eastern third of the Proposed Development Area is underlain by the mudstone, siltstone and sandstone bedrock of the Hughes Member. The northwest corner of the Proposed Development Area is underlain by sandstone bedrock of the Hughes Member. The Hughes Member is described by the BGS as consisting of “<i>green-grey, lithic arenites, with thin mudstone/siltstone and seatearth interbeds, and mainly thin coals</i>”. The remaining two thirds of the Proposed Development Area are underlain by the Brithdir Member (sandstone). An approximate 20m stretch of the southern extent of the Access Road is underlain by the mudstone, siltstone, and sandstone formation of the Brithdir Member. The BGS describes this bedrock as “<i>green-grey, lithic arenites ('Pennant sandstones') with conglomerate lenses at bases of units; thin mudstone/siltstone and seatearth interbeds and mainly thin coals</i>”.

Table 6-1- Summary of Geological Information

Strata	Description
Geological Structure	An inferred fault, known as the Neath Disturbance is mapped to cross the Proposed Development Area orientated north-east/south-west. Geological mapping indicates the local dip of the bedrock strata to be approximately 15° to the north, and no coal seams are recorded to outcrop across the Proposed Development Area.

6.2.2 Given that the site's current use is predominantly that of a man-made landfill with engineered cap that must not be penetrated, there are expected to be limited construction environmental risks associated with its underlying geology.

6.3 Hydrogeology

6.3.1 The site is underlain by Secondary A aquifers composed of Glaciofluvial Deposits (Superficial Aquifer) and Pennant Sandstone Formation (Bedrock Aquifer), as well as a Secondary Undifferentiated aquifer (Tidal Flat Deposits).

6.3.2 Secondary A aquifers consist of permeable layers capable of supporting water supplies at a local rather than strategic scale and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifer. Secondary Undifferentiated aquifers could be classed as either minor or non-aquifers depending on the variable characteristics of the rock type.

6.3.3 The Proposed Development Area is not located within a Source Protection Zone (SPZ). The Groundsure report indicates there are no active surface water or groundwater abstraction licences and no drinking water abstraction licences associated with the site or land within 500m of the site.

6.4 Flooding

6.4.1 The Natural Resources Wales (NRW) interactive Flood Risk Map viewer maintains flood maps based on ground level, predicted flood levels, information on flood defences and local knowledge. The flood maps show the predicted likelihood of flooding in an area in the context of current land use.

6.4.2 The NRW Flood Risk Map does not show that there is a risk of the following flood hazards on site:

- Rivers and Coastal Flooding.
- Surface Water and Small Watercourses Flooding.
- Reservoir Flooding.

- 6.4.3 The Groundsure Report shows that a section of the Access Road is at a medium to high risk from river or coastal flooding. Construction activities planned during times of high rainfall or storm surge should be aware of this risk and take appropriate action to ensure safe operating procedures are in place for workers, and to minimise any environmental risk such as pollution events.
- 6.4.4 The Groundsure Report records no historic flood events, flood defences or flood storage areas within the vicinity of the site.
- 6.4.5 The Groundsure Report records the Proposed Development Area and the northern part of the Access Road to lie within a Flood Zone 2 for river and coastal flooding, as well as a southern section of the Access Road within the Flood Zone 3.
- 6.4.6 The Ambiantal Risk Analytics surface water (pluvial) FloodMap included within the Groundsure Report records the highest risk of surface water flooding within the area of the Access Road, for 0.3-1.0m flood occurring following a 1-in-30 year rainfall event.

Groundwater Flooding

- 6.4.7 According to Ambiantal Risk Analytics groundwater flood data, presented within the Groundsure report, the site is at low to negligible risk from groundwater flooding.

6.5 Hydrology

- 6.5.1 The Groundsure report identifies 129No. records of surface water bodies within 250m of the site. The nearest surface water body is the disused Neath Canal (GB71010012) which runs east of the site, and crosses beneath the Access Road to run west and south. The Neath Canal has an overall 'Moderate' status consisting of a 'High' chemical rating and 'Moderate' ecological score. A NRW Main River, the River Neath, is located c.350m southwest of the site and has an overall status of 'Moderate' comprising of 'Moderate' ecological and 'High' chemical rating. The Tennant Canal runs c.600m west of the site.
- 6.5.2 The site is covered by the 'Tawe to Cadoxton' coastal Water Framework Directive (WFD) catchment (Water Body ID: 203), for which the coastal waterbody (Swansea Bay, ID: GB641008260000) has an overall 'Moderate' status, composed of 'Moderate' ecological and 'Moderate' chemical ratings. The Groundsure report found that the site is 'Not part of a river water body catchment' under the Water Framework Directive (WFD), but the nearest surface water body is identified as the Neath and Tennant canals (Water body ID: GB71010012) with Moderate status comprising of High chemical rating and a Moderate ecological component. The site is included in the

catchment for the WFD 'Swansea Carboniferous Coal Measures' groundwater body (Water body ID: GB41002G201000), which has an overall Poor status, consisting of a Poor chemical rating and a Good quantitative aspect.

6.5.3 .

7 EXPLOSIVE RISK MANAGEMENT

7.1 Background

- 7.1.1 Construction activities on restored landfill sites present two distinct explosive hazards.
- 7.1.2 Unexploded Ordnance (UXO) may originate from historic military activity, such as wartime bombing or military training exercises, or from the historic unauthorised disposal of prohibited material into the landfill site, such as industrial waste containing reactive substances, pressurised storage vessels, or even military contraband and other explosive materials.
- 7.1.3 Landfill gas, primarily methane (CH₄) and carbon dioxide (CO₂), can accumulate beneath the landfill cap or within voids. Methane is highly flammable and, when mixed with air at concentrations of 5–15%, poses a significant explosion hazard. Construction works that disturb the cap or create confined spaces can increase this risk.
- 7.1.4 Both hazards require proactive management to protect workers, the public, and the wider environment.

7.2 Risk Identification

- 7.2.1 Given the recent man-made nature of the site, it is unlikely that there will be historic military ordnance at risk of being disturbed. There is a marginal risk that potentially explosive materials could have been disposed of in the landfill site while it was still operating but the chances of this being the case and it being disturbed by solar farm construction activities which will be designed to avoid penetrating the cap, mean that the risk is very remote.
- 7.2.2 Landfill Gas Risk Assessment:
- Analyse existing gas monitoring data from post-closure O&M plans.
 - Identify areas with active or redundant gas wells, venting systems, and pipework.
 - Assess potential for gas migration into construction zones, trenches, or temporary compounds.
- 7.2.3 If either risk is assessed as medium or high, a detailed management plan must be implemented before works commence.

7.3 Preventative Measures

- 7.3.1 For UXO and Explosives:
- Train all personnel in UXO awareness and emergency protocols.

- Adopt controlled excavation methods and maintain a “stop work” protocol if suspicious items are found. There should be very limited (if any) need to excavate material on the cap, and if this is required, it should be done under the strict supervision of the site safety manager. Excavations are more likely to be required at the substation compound to construct the foundations for the transformer/inverter and install any underground cabling, once clear of the cap.

7.3.2 For Landfill Gas:

- Provide equipment and procedures to deal with accident and emergencies;
- Provide information and training to employees working on the cap or in the vicinity of the landfill;
- Classify places where explosive atmospheres may occur into zones, and mark the zones where necessary.
- Continuous Gas Monitoring: Install portable methane detectors in work areas, especially near the cap and trenches.
- Ventilation: Ensure adequate ventilation in any confined space or below-ground works.
- Non-Penetrative Foundations: Avoid breaching the landfill cap to prevent gas release.
- Hot Work Controls: Prohibit welding, grinding, or open flames unless gas levels are confirmed safe.
- Emergency Shut-Off: Maintain isolation valves for any redundant gas infrastructure.
- Ensure any electrical infrastructure being installed on the cap is appropriately designed and rated to ensure safe operation in this location.

7.4 Emergency Response

- 7.4.1 If a suspected UXO or explosive device is discovered, all work should stop immediately, with the area being evacuated to a minimum of 100m radius. Emergency services and the Ministry of Defence Explosive Ordnance Disposal (EOD) team should be contacted for further advice.
- 7.4.2 If methane levels exceed safe thresholds, all works on site should cease immediately with personnel being evacuated, and the area being ventilated as best as possible. The Site Manager and Environmental Manager should be notified, and the site-specific Gas Emergency Plan should be implemented without delay, including liaison with landfill gas management specialists.

7.4.3 Emergency contact details for UXO specialists and gas safety teams will be displayed on site boards and included in the Incident Management Plan.

7.5 Monitoring and Documentation

7.5.1 A combined Explosives and Gas Risk Register should be maintained at the site to record any UXO clearance certificates, gas monitoring logs, and incident reports. Daily site inspections and audits should be carried out by appropriately qualified members of staff to provide a reliable and auditable documentation.

7.6 Integration with CQA and Health & Safety

7.6.1 Explosives and gas risk management will be embedded within the Construction Quality Assurance (CQA) Plan and Health & Safety Plan. Compliance will follow:

- Dangerous Substances and Explosive Atmospheres Regulations (DSEAR).
- BS 5607:2017 (Explosives Safety).
- CIRIA C665 guidance on landfill gas risk assessment and management.
- NRW requirements for landfill redevelopment.

7.7 Residual Risk

7.7.1 Even after clearance and mitigation, residual risk remains. Excavation should proceed cautiously, and any unexpected metallic object or elevated gas reading should trigger immediate stop-work and emergency protocols.

8 FLOOD RISK AND DRAINAGE MANAGEMENT

8.1 Flood Risk

8.1.1 A summary of the flood consequences to the proposed development is given in Table 8-1 below.

Table 8-1: Summary of Flood Consequences to the Site				
Type	Source	Pathway	Risk	Description
Fluvial Flooding (Rivers)	Yes	Yes	Very Low to Medium	The majority of the site is at Very Low risk of fluvial flooding. The northern access track shows a small area of High Risk localised to the bridge over the River Neath.
Tidal Flooding	Yes	Yes	Very Low to High	The majority of the site is at Very Low risk of flooding from the sea. Northern and central areas of the access track shows areas of Flood Zone 3.
Surface Water Flooding (Pluvial)	Yes	Yes	Very Low	No surface water flooding within the main site area. Confined to low lying areas within the access track.
Groundwater Flooding	Yes	Yes	Very Low	Groundwater susceptibility of 25%-50%. LFRMS states no specific groundwater flooding incidents within the Neath Talbot area.
Sewer/Drain Flooding	Yes	Yes	Very Low	Welsh Water records show no public sewers on site. Any private drainage likely to be drainage and leachate ditches surrounding the site.
Artificial Flooding	No	No	Very Low	No risk of flooding from artificial sources within the vicinity.

8.2 Surface Water Runoff

8.2.1 With the exception of the hardstanding at the southeast of the site and the existing access track, the majority of the existing development comprises landscaped land draining naturally via a combination of infiltration and evaporation with drainage and leachate ditches located to the edges of the previous landfill site.

8.2.2 The Proposed Development will increase the impermeable area of the site and will, therefore, increase the rate and volume of surface water runoff generated during storm events. Mitigation measures are required to ensure the risk of flooding to areas downstream does not increase as a result.

8.3 Flood Risk Management

Surface Water Management

- 8.3.1 To mitigate the potential increase in flood risk, surface water runoff from the proposed development will be managed safely within the site area with sufficient attenuation provided for all storm events up to and including the 1 in 100-year storm event, with a 20% and 40% allowance for climate change included. This will be achieved using Sustainable Drainage Systems (SuDS), further detailed in Section 8.5 (Drainage Strategy).
- 8.3.2 Through these measures, the risk of flooding to areas of the site will not increase as a result of the proposed development.

Residual Risk

- 8.3.3 There is always a possibility of a storm event that exceeds the design standards of the proposed flood risk management measures for new developments. Potential risks include the exceedance of the surface water attenuation features during extreme storm events.
- 8.3.4 It is proposed that attenuation will be provided within above ground SuDS features have sufficient capacity for the 1 in 100-year storm event (plus an allowance for climate change). These features will include a freeboard allowance which will provide additional storage over and above the design storm event.
- 8.3.5 If an exceedance event does occur, any exceedance flows will follow the topography of the site, towards existing watercourses, causing no risk to areas previously unaffected by surface water flooding

8.4 General Hydrological Risks

- 8.4.1 Risks to the water environment and control measures are set out in Table 8-2.

Table 8-2: General Hydrological Risks and Management	
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.

Table 8-2: General Hydrological Risks and Management

Issue	Requirements
Storage mounds / Use of construction materials	Cover with correctly secured tarpaulins. Soil stockpiles /materials to be located away from watercourses and welfare facilities. Minimise storage time for excavated soil. High risk activities to be undertaken on gravelled areas away from watercourses e.g., concrete batching. Avoid use of wet concrete in and around watercourses If sewage from welfare facilities and Site toilets is stored on Site; it will be collected and disposed of by an approved sub-contractor. Sewage will drain to a cesspit / effluent tank, from where it will be collected and disposed of by a registered waste carrier (will be verified with the EA).
Waste Disposal	Any solid waste which cannot be used on Site will be recycled or disposed of off-Site, via a registered carrier to: a) A licensed landfill Site; or b) A licensed transfer station; or c) A licensed recycling/sewage treatment facility; or d) An exempt Site. The tanks within portable toilet facilities will be emptied regularly. Sewage from portable facilities will be disposed by a registered waste carrier. Waste transfer tickets for all waste movements will be retained on Site and kept on records.
Soil preservation	Access tracks to be formed pre-construction to minimise soil disturbance, generation of sediments and compaction - potential for water run-off intensification. Construction vehicles to use trackways for Site access and minimise disturbance of the main areas of the Site.
Mixing and granular 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 fuel, oil and chemical 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 into contact with contaminated material	Contaminated land assessment of the Site 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.

Table 8-2: General Hydrological Risks and Management

Issue	Requirements
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. Offtaker treatment facilities to be regularly inspected and properly maintained by sub-contractors. Monitoring plan to ensure compliance likely to include: Water quality monitoring. Regular inspection of drains/watercourses.
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.
Drainage/Sediment Risks	Identification and protection of existing drainage. Temporary drainage to be designed with suitable sediment, oil and fuel control to prevent sediments/pollutants entering the field boundary drainage system. Groundwaters pumped from excavations to be passed through sediment traps prior to discharge.
Vehicle Maintenance Spills & Leaks	Use of well-maintained vehicles only and maintenance works should be undertaken within designated areas, away from watercourses/identified drains.
Accidental Spillage	Details of emergency procedures in case of accidental spillage/release of fuels/chemicals to be disseminated at induction and readily available for reference. To include instruction on use of spill kits and contact details of specialist clean-up companies and details of which regulators to be informed in case of an incident.
Completion of Construction Activities	
Laying of surface courses on hardstanding 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 hardstanding	Other Sites/locations for such activities or control measures to be put in place.
Washing of finished surfaces	Conducted in such a manner that pollution does not reach surface water outfalls.

Table 8-2: General Hydrological Risks and Management	
Issue	Requirements
Demobilisation	
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 wastewater and other arisings.
Decommissioning fuel storage areas, septic tanks, decontamination units and mess facilities	To follow pollution prevention measures, appropriate spacing in line with COSHH and CDG 2009 regulations

8.5 Drainage Strategy

Surface Water Runoff Attenuation

- 8.5.1 Existing surface water management and drainage plans are in place for the Giants Grave site, as indicated on Figure 8-1, overleaf.
- 8.5.2 The proposal is for the drainage strategy to match the existing scenario on the site, with the solar panels not increasing the flood risk to the site. Surface water from the proposed solar panels will runoff off panels, flowing overland towards existing drainage ditches and reed beds across the existing site. Planting will take place across the site, such as between panels, providing some runoff protection and treatment, as well as intercepting some surface water runoff from the panels.
- 8.5.3 There are water resources near the site, however a Flood Risk Assessment will be undertaken and a Drainage Strategy developed, to reduce any impacts on flooding caused by the proposed development, where required. Natural Resources Wales Flood Risk Assessment Map shows that flood risk for the majority of the site is low.
- 8.5.4 Sustainable Drainage Approval Body (SAB) approval will be required for the Proposed Development as its construction area will exceed the statutory 100m² threshold. Initial SAB pre app consultation has been undertaken and has identified a number of points that need to be addressed for the full SAB application, in particular requesting further design detail that will be supplied as part of the planning application.

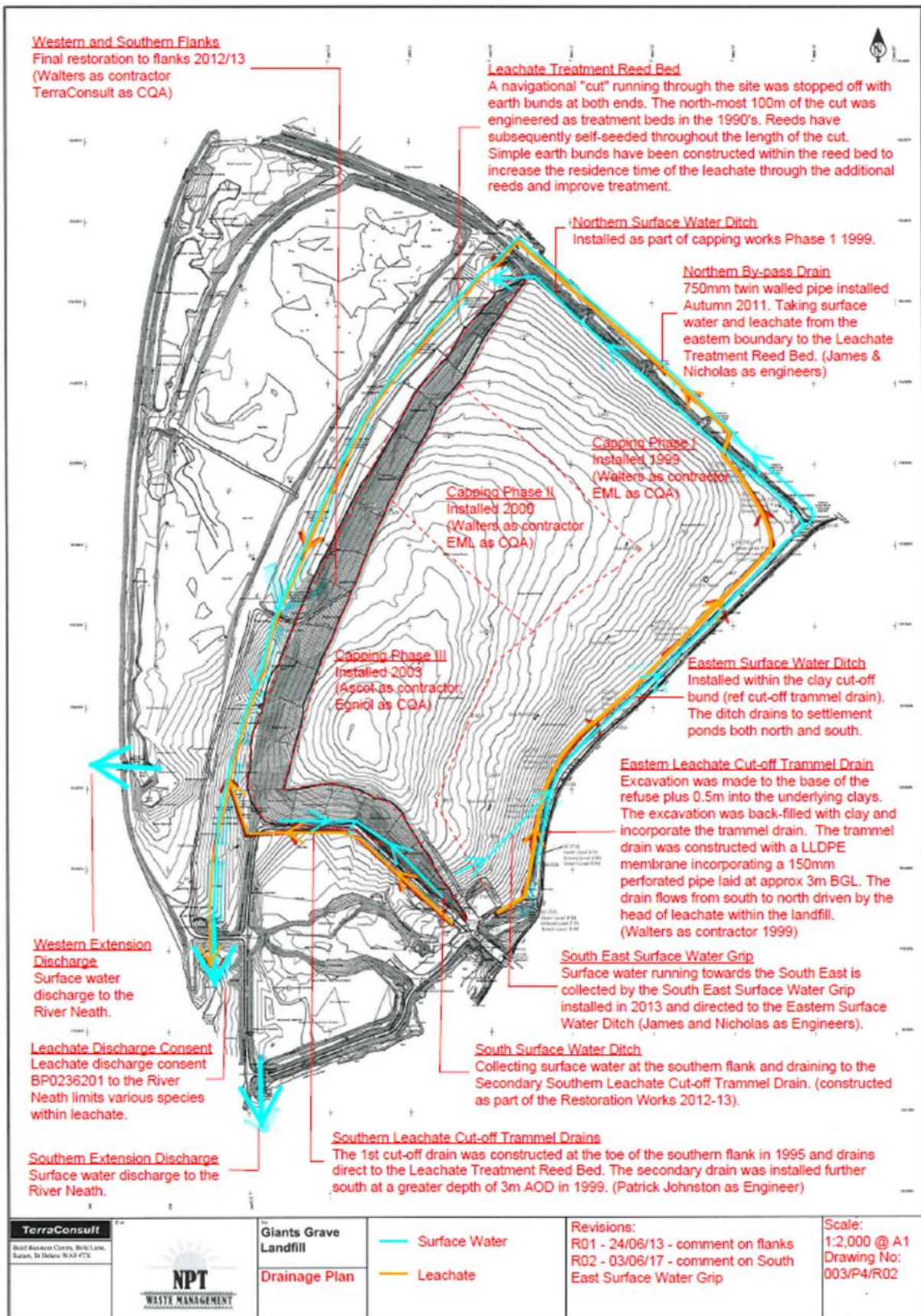


Figure 8-1: Existing Drainage Plan (not to scale)

8.6 Wastewater Management

8.6.1 Table 8-3 describes the Wastewater Control Measures that will be used during the construction phase on site.

Table 8-3: 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

9 DUST MANAGEMENT PLAN

9.1 Background

9.1.1 During construction work on a landfill site, landfill dust can pose several environmental and health risks. The dust, which may contain fine particles, heavy metals, organic compounds, and microorganisms, can become airborne due to excavation, vehicle movement, or strong winds. Inhalation of this dust can cause respiratory issues, eye irritation, and skin problems, particularly for construction workers and nearby communities.

9.1.2 At an ecological level, reedbeds could be adversely impacted during construction through increased dust on the Site.

9.1.3 Dust emissions during construction will be determined through Air Quality assessment.

9.2 Mitigation

9.2.1 The following mitigation measures will be employed as part of the works to protect Site users and neighbours during the construction phase from dust.

9.2.2 Dust control may be required with regards to construction material movements and activities during construction, and is likely to include:

- Covering of any soil during transportation.
- Regular inspection and, if necessary, cleaning and repair of local highways and Site boundaries to check for soil/dust deposits (and removal if necessary).
- Where practical, use mobile or fixed spray units to dampen surfaces of soil as indicated by weather conditions (and containment of water/moisture from this).
- Keeping soil stockpiles or mounds away from the Proposed Development Site boundary and, where possible, enclosing soil stockpiles or keeping them secure sheeted.
- Ensuring that any dust containment system and associated vapours are contained and prevented from blocking or disrupting the effectiveness of any surface water drainage systems (in tandem with the requirements of Section 4).

- Undertaking the above measures for clean soils where excessive dust production is identified on Site (i.e., from plant movement, during excavations, etc).

- 9.2.3 Site access should be controlled and restricted to prevent public access to ensure no further dust arisings can take place from non-construction operatives.
- 9.2.4 A hard standing area within the Site will be provided for vehicles to manoeuvre in and over prior to accessing the public highway to reduce the risk of mud being trafficked onto the public highway and the ensuing nuisance this can cause.
- 9.2.5 Advisory speed limits will be implemented to minimise dust production. Vehicles with heavy loads will be subjected to additional measures aimed at controlling dust movement.
- 9.2.6 Site-specific risk assessments and Method Statements must also include comprehensive review of the amenities and assets of occupiers / land users on Site and any necessary mitigation measures to protect these features.
- 9.2.7 Off-Site disposal of soils will be minimised and inert materials will be recycled for re-use on site wherever possible.
- 9.2.8 The contractors will take all steps necessary to prevent dust from spreading and posing an impact on residents and road users as it is common for dust to cause respiratory problems particularly in sensitive individuals.
- 9.2.9 The risk posed to Site workers involved in the construction phase by 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.
- 9.2.10 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 will be overseen by a contamination specialist, and additional health and safety mitigation measures will be incorporated into the working plan appropriately.

9.3 Monitoring

- 9.3.1 It is not anticipated that there will be any specific requirements for monitoring, beyond the implementation of CEMP/DEMP/CTMPs as proposed.

10 SITE WASTE MANAGEMENT

10.1 Background

10.1.1 It is noted that large-scale earthworks are not anticipated for the Proposed Development, as since the completion of landfilling in 2003, the site has been restored to final elevations the landfill has been capped in three phases; a clay cap was installed in two phases beginning summer 1999 by Walters and a LLDPE membrane cap was laid in the 3rd and final capping phase in autumn 2003 by Ascot.

10.1.2 The electrical infrastructure, including PV modules, will be manufactured offsite and delivered for installation when required. Therefore, Proposed Development construction phase waste is anticipated to be minimal.

10.1.3 Any materials that are generated during construction are likely to include inert construction materials, as well as packaging (e.g. wood and plastic) and materials generated during such activities.

10.1.4 The types of wastes generated during construction are likely to comprise:

- General waste from Site offices and welfare facilities;
- Small quantities of waste from the maintenance of construction vehicles;
- Packaging waste from incoming materials; and
- Other waste from construction of fencing, access roads and other supporting infrastructure

10.1.5 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.

10.2 Mitigation

10.2.1 This CEMP will manage Site waste generated through the construction phase in accordance with the principles in the waste hierarchy (Figure 10-1) and cost restraints, using the following phased approach: reducing the amount of waste generated, encouraging re-use/recycling waste where possible, and finally removing remaining waste to an appropriate management facility.

10.2.2 All the above phases will include the prevention of contamination, and that wastes are segregated and separated so that recovery and reuse can be maximised throughout the hierarchy by using appropriate waste containers and treatment methods.

10.2.3 In order to minimise the generation of waste, a detailed Site Waste Management Plan (SWMP) will be prepared during detail design stage and will include waste forecasting during each phase of the Proposed Development.

10.2.4 The SWMP will be prepared in advance of site clearance and other preparatory works, and prior to any construction work. The SWMP may form part of the overall Construction Environmental Management Plan (CEMP) and will be prepared in consultation with the appointed Contractor(s).

10.2.5 The Waste Hierarchy is presented below:

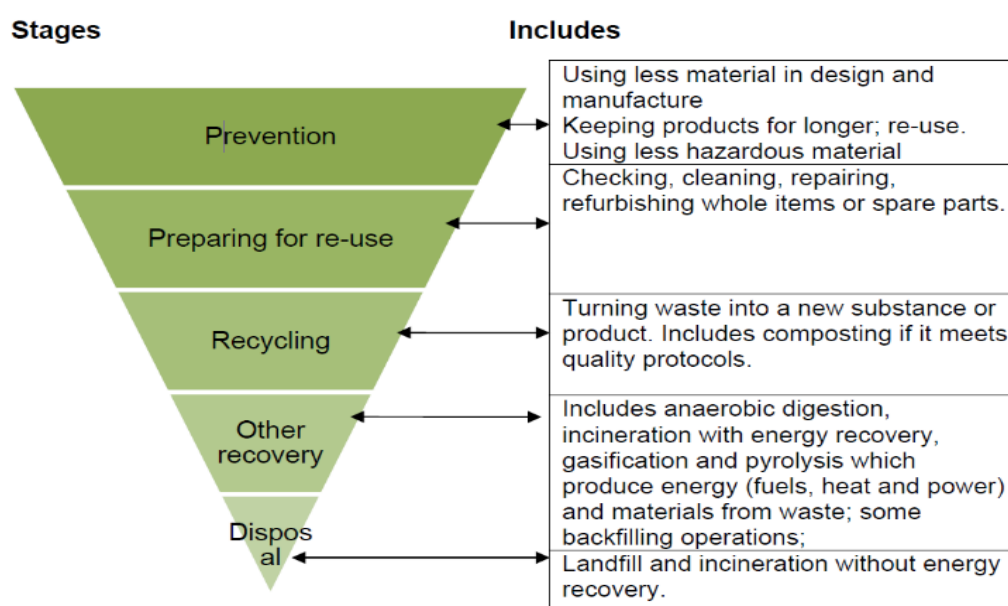


Figure 10-1: Waste Hierarchy

10.2.6 Waste materials will be disposed of by the contractor to appropriate recycling facilities or, as a last resort, appropriately licensed landfills.

10.2.7 It is the intention that, where possible, any excavation materials will be reused onsite for landscaping and all other materials will be segregated and stored for onward processing and recycling as a priority.

10.2.8 Contaminated soils that cannot be reused onsite will be disposed of in an appropriate landfill. The appropriate landfill for disposal will depend on the waste classification determined from the chemical analysis or Waste Acceptance Criteria testing as necessary.

10.2.9 A number of waste facilities will be identified through the SWMP within the site area that provide plentiful capacity for anticipated Construction wastes, secondary

Commercial and Industrial wastes yielded, as well as capacity for any hazardous wastes (i.e. WEEE, plaster) yielded through the construction process.

10.2.10 The Proposed Development will seek to minimise the impact on the natural environment from materials required for construction. This will be achieved through minimisation of waste generation and repurposing of available materials, whether available on Site or created during construction.

- Optimising materials for recycling and re-use on Site will include:
- Designing the construction Site for effective material storage and segregation; and
- Establishing recovery targets and recording the volume of materials re-used on Site.

10.2.11 Waste Management responsibility will be allocated on Site and will include monitoring the flow of inputs and outputs to the development at a high-level. This will include the transport of construction/excavation waste to the points of disposal/recovery and the quantities of waste materials diverted from landfill.

10.2.12 Waste avoidance and management measures to be considered and applied (where suitable) will include:

- Purchasing materials to the agreed design specification, to the required quantities and to the correct dimensions in order to avoid wastage and storage problems.
- Take-back agreements with material suppliers to ensure that surplus materials are returned and offered for use at other development Sites, as appropriate.
- Deliveries to be scheduled so that storage space requirements are minimised and managed efficiently, whilst reducing risk of potential material damage and/or deterioration.
- Material storage areas will be secure, weatherproof and with clearly identified segregation of incoming products and different waste streams.
- Identification of, and discussion with local providers of, construction waste recycling capacity (and waste streams requiring specialist treatment) prior to works commencement.
- The suitable location of skips, and relevant sizing to works undertaken to minimize transport movements and ensure maximum efficiency to reduce carbon emissions and improve efficiency throughout the development of the project.

- Copies of Waste Transfer Notes and relevant paperwork to waste generation and onward transport will be kept on Site.
- Appropriate washout and containment measures for concrete, soils and other materials to prevent contamination in water courses, drainage and to maximise containment to a suitable off-site location.

Duty of Care Regulations

10.2.13 The duty of care for waste management is set out under section 34 of the Environmental Protection Act 1990 (The Stationary Office, 1990) and The Waste (England and Wales) Regulations 2011 (as amended) (The Stationary Office, 2011). It requires anyone who produces, imports, keeps, stores, transports, treats or disposes of waste to take all reasonable steps to ensure that the waste is managed properly.

10.2.14 Anyone in possession of waste must take all reasonable steps to:

- Prevent unauthorised or harmful deposit, treatment or disposal of waste;
- Prevent a breach (failure) by any other person to meet the requirement to have an environmental permit, or a breach of a permit condition;
- Prevent the escape of waste;
- Ensure that waste is transferred to an authorised person; and
- Provide an accurate description of the waste when it is transferred to another person, by using a compulsory system of Waste Transfer Notes (WTN) that control the transfer of waste between parties. Failure to comply with the duty of care requirements is a criminal offence and could lead to prosecution.

Waste Transfer Notes

10.2.15 The relevant Sub-contractors removing wastes from the Site will have a valid Waste Carriers Licence if transporting waste and will ensure that an appropriate Duty of Care process is followed in accordance with EA legislation. This includes the Duty of Care Regulations (1991) and Waste Duty of Care Code of Practice (2016), with any hauliers issuing Duty of Care notes and completing them correctly with both Contractor, and Waste Disposal / Treatment information as required.

10.2.16 The Site Manager, and any relevant delegated authority will ensure that wastes leaving the Site are assigned the correct European Waste Code (EWC), ensuring the waste is appropriately classified and treated or disposed of by a permitted / exempt

facility. Wherever possible, the Waste Hierarchy will be followed in line with the Waste (England and Wales) Regulations 2011, and upcoming regulations related to Simpler Recycling to ensure the segregation of office-derived waste is separated accordingly.

- 10.2.17 Skips containing non-inert wastes (i.e.. putrescible wastes) will be stored within covered skips. Hazardous waste, if produced will be stored in such a way to avoid contamination by water or other contamination, such as covered battery boxes for waste batteries, or sealed drums for oil and associated wastes. In the case of defective solar panels or batteries, these will be stored under cover and removed from site and treated as a hazardous waste if unable to undergo repair. Hazardous wastes, if produced by site will be stored on site in a suitable manner and collected by a licenced carrier who will complete a relevant Hazardous Waste Consignment Note and issue a corresponding copy to the Site, who will keep this on record as part of the Site File.

11 BIODIVERSITY MANAGEMENT

11.1 Background

11.1.1 The Ecological Impact Assessment Report (EclA) prepared by Wardell Armstrong provides the overarching ecological mitigation strategy and biodiversity enhancement measures for the Site during the construction phase.

11.1.2 This chapter of the CEMP describes the ecological features which have the potential to be affected by the works and sets out the mitigation measures to ensure these are retained and protected.

11.1.3 EclA details the sites scoped in for further assessment due to their potential to be adversely affected by the Proposed Development, either directly or indirectly

Statutory Nature Conservation Designations

11.1.4 Construction activities have the potential to negatively affect the following Non-Statutory Nature Conservation Designations.

- *Crymlyn Burrows SINC*
- *Neath Estuary SINC*
- *Neath Canal SINC*
- *Giants Grave SINC*
- *Tennant Canal SINC*
- *NPT Watercourses SINC; and*
- *Square Pond SINC.*

11.1.5 Due to the close proximity of the site to the Neath Canal and Neath Estuary and their hydrological links, there is potential for adverse effects on these designated sites, should a pollution event occur. Possible adverse effects on water quality could arise from construction activities including soil stripping, use of machinery on site, earthworks and construction of impermeable surfaces.

11.1.6 There is potential that construction activities could generate elevated levels of dust beyond the application site boundary and directly affect flora and habitats within SINC designations, by covering vegetation and reducing their ability to photosynthesise and perform other biological functions.

11.1.7 Construction activities could cause the spread of Japanese Knotweed if seeds/parts of the plant enter the ditches or hydrologically linked watercourses and can colonise further downstream.

11.1.8 Therefore, EclA has been concluded in the absence of site-specific measures to control dust emissions, invasive species and water pollution, there is likely to be an adverse effect on the SINCs significant at up to a county scale for the duration of the construction works.

Habitats

11.1.9 No reedbeds are proposed to be lost as part of the development proposals.

11.1.10 The reedbeds within and adjacent to the site could be damaged by construction machinery encroaching into the habitat and from the generation of dust during construction. This would result in an adverse effect on nature conservation significant at a Local to County level.

11.1.11 Furthermore, reedbeds could be adversely impacted during construction through increased dust or water pollution.

11.1.12 However, no residual effects are anticipated with the correct mitigation implemented.

Grassland

11.1.13 The proposed development will be built mainly within the grassland of the site; therefore, a direct loss of this habitat will occur. There is also potential for the degradation of this habitat through pollution.

Ditches

11.1.14 Possible adverse effects on water quality via ditches on the site could arise from construction activities including soil stripping, use of machinery on site, earthworks and construction of impermeable surfaces.

11.1.15 Construction activities could result in the pollution of standing water within ditches, reducing the water quality.

11.1.16 There is also potential that construction activities could generate elevated levels of dust within the ditches and directly affect flora within this habitat, by covering vegetation and reducing plant ability to photosynthesise and perform other biological functions.

Protected species

Badger

- 11.1.17 While badgers are unlikely to be utilising the habitats within the site itself, there is a risk that individual badgers, commuting through the site could be harmed/disturbed during construction works, if present at the time of works. This could leave to adverse effects on any local badger social group significant at a local level.

Bats

- 11.1.18 It is anticipated that all work will be carried out during daytime. However, the use of handheld lighting may be necessary in some instances. No significant adverse impacts from lighting during construction are anticipated.
- 11.1.19 The development will result in the loss of grassland, and therefore a suitable area of foraging habitat for bats.

Birds

- 11.1.20 Bird species such as reed bunting and grasshopper warbler within the dry reedbeds may be adversely impacted during construction due to disturbance and potential habitat degradation from activities close to these sensitive areas.
- 11.1.21 The loss of open grassland will reduce suitable nesting and foraging habitats of Skylarks.

Other species

- 11.1.22 In addition to above species, brown hare, common Amphibians have been identified that may have risk from vehicle movements.
- 11.1.23 Vegetation clearance and direct habitat loss could have adverse effects on common reptiles.
- 11.1.24 There is a risk that individual hedgehogs could be harmed/disturbed during construction works, if present at the time of the works. This could lead to adverse effects on the local hedgehog population significant at a local level.
- 11.1.25 Invertebrates could be impacted during construction due to the destruction of grassland. The loss of this habitat could reduce food sources and expose individuals to predators. Furthermore, pollution during construction (dust and water quality) may directly harm invertebrates or degrade their supporting habitats potentially affecting the food chain.

11.1.26 Water Voles within the Neath Canal SINC could potentially have dispersed into the ditches along the northern and eastern boundaries of the site. If present, water voles could be disturbed, injured or killed during construction by vehicle movement, machinery operation, ground clearance or degradation of habitats by pollution.

11.1.27 Construction activities could lead to a decline in water quality, potentially harming water voles if they are present in nearby ditches.

11.2 Mitigation

Site specific requirements

11.2.1 Implementation of suitable water and dust prevention measures will reduce potential negative impacts on SINC, habitus and species from pollution.

11.2.2 Implementation of Reasonable Avoidance Measures (RAMs) under a Precautionary Working Method Statement (PWMS) can reduce the risk of harming badger and disturbing individuals during construction and further details on this have been provided in the EclA.

11.2.3 The PWMS will include the following where necessary:

- A toolbox talk should be given to contractors by a suitably qualified ecologist/Ecological Clerk of Works, to include the requirement and method to protect habitats and protected species;
- Wooden planks will be placed in all excavations which are to remain open overnight (including trenches, pits, ditches, ponds and/or drains) or these excavations will be covered at night. The planks will provide a means of escape for any wildlife which may enter the excavation; and
- Potential refuges will be destructively searched by an ecologist working alongside a contractor. Any captured reptiles/amphibians will be moved to a safe area of adjacent suitable habitat. Potential hibernacula will be removed prior to hibernation/torpor commencing which takes place between mid-October-March/April, weather dependent.
- A PWMS will be implemented during vegetation clearance, which will include clearance in a directional manner to allow invertebrates to disperse into retained habitats.

- The quality of the construction water discharged should not exceed the discharge limits maintained by Landfill management to prevent additional pollution occurring from construction activities at the solar farm.
- It is not anticipated any night-time working or lighting during development will be required. Site specific mitigations

11.2.4 For SINC sites to be protected from encroachment, a specialist contractor will map and eradicate Japanese Knotweed accurately.

11.2.5 Retained reedbeds will be protected in accordance with BS5837:2012.

11.2.6 The development has been designed so to not encroach within 7-10m of the wet ditches on the peripheries of the site.

11.2.7 Measures for badger will include the following:

- A pre-construction checks for any badger setts within the site and within a 30m radius of the site boundary; and
- To safeguard badgers during construction, wooden planks will be placed in all excavations which are to remain open overnight. This will provide a means of escape for any badger or other mammal which may enter the excavation. Any temporarily exposed open pipe system will be capped in such a way as to prevent badgers from gaining access.

11.2.8 Retained reedbeds will be protected in accordance with BS5837:2012, therefore ensuring bird species reliant on these habitats will not be significantly impacted by the construction.

11.2.9 Habitat clearance works and construction works will be undertaken outside of the bird breeding season (March-August inclusive).

11.2.10 A pre-construction check for active nests and nesting birds should be undertaken by a suitably qualified ecologist prior to the commencement of works, or up to 48 hours in advance of any suitable habitats. Any active nests should be identified and protected subject to the relevant legal provisions until the nesting attempt is complete and the young have fledged. Please note that protective buffers for Cetti's warbler nests may be larger to ensure that no disturbance to this species occurs whilst it is nesting and rearing young in the nest. A 7-10m buffer will minimise disturbance to bird species using the scrub and wetland habitats on the peripheries/adjacent to site.

- 11.2.11 Retained grassland habitats will be managed to create a range of conditions for invertebrates and other wildlife including keeping some areas of grassland tall on a rotational basis. This could provide a winter seed resource for skylark. An increase in invertebrates would benefit skylarks, meadow pipits and other breeding birds that feed on insects, spiders and other invertebrates.
- 11.2.12 In order to avoid works adversely affecting the local conservation status of hedgehogs, if present, works which may disturb potential hedgehog hibernacula, i.e. removal of scrub should avoid the hibernation period (November – March).
- 11.2.13 Measures to prevent harm and disturbance to hedgehogs during site clearance and construction works will be undertaken. This will include limiting night-time working, providing means of escape from excavations left open overnight and adhering to good construction practices.
- 11.2.14 Destructive searching of potential hibernacula and refuges such as log and debris piles by an ecologist will be undertaken. Materials and debris, which could be used by hedgehog, will not be stored in close proximity to retained suitable hedgehog habitats.
- 11.2.15 Any slack netting will be tied up to avoid entanglement. Rubbish must be kept contained in a designated area to avoid animals becoming trapped in litter.

General Mitigation Measures

- 11.2.16 Best practice dust control measures outlined in the Chapter 9 of the CEMP will be implemented throughout the construction phase to mitigate impacts on vegetation.
- 11.2.17 In addition to Pollution prevention measures outlined in the Chapter 5 of this report following measures will be implemented to will also be implemented during construction using best construction practices and following pollution prevention guidelines as outlined below.
- Use enclosed conveyors, chutes and covered skips;
 - Avoid dry sweeping of large areas;
 - Implement a dust suppression system; and
 - Ensure vehicles entering and leaving the site are covered to prevent escape of materials during transport.
 - Standard good practice measures that would be employed with respect to haulage include:
 - Regular compaction, grading and maintenance of any on-site non-metalled internal haulage routes;

- Restriction of site traffic to designated haul routes;
- Provision and enforcement of an internal speed limit;
- Use of best practicable means to restrict the generation of dust on the haul roads and access road, including watering during dry weather;
- Fitting of site vehicles with upswept exhausts and radiator fan shields;
- Implementation of measures to ensure that mud and detritus do not accumulate on the public highway;
- Securing and covering of loads; and
- Regular cleaning/sweeping of the public highway used to access the application site.
- Other general matters and site management during construction can also affect the likelihood of significant dust emissions. Such standard measures that can be readily employed include:
 - Minimisation of drop heights at unloading points;
 - Clear delineation of edges of any stockpiles;
 - Siting of stockpiles away from sensitive boundaries;
 - Maintenance of equipment to ensure its efficient operation;
 - High standards of housekeeping to minimise track-out and wind-blown dust;
 - Effective staff training in respect of the causes and prevention of dust;
 - Recording of any complaints along with subsequent remedial actions and changes to procedures; and
 - Avoid refuelling of machinery >10m from the river bank edge.

12 NOISE AND VIBRATION

12.1 Background

12.1.1 Any potential for noise nuisance arising from construction activities will largely be due to vehicle movements, and from plant and machinery operating on site, such as the movement of soils, piling and the construction of infrastructure, solar panels, and associated equipment. Noise generated from earthworks, excavation, construction and cleaning will mainly be from excavators, haulage lorries, hydraulic piling, cranes, mobile plant, concrete plant and power tools.

12.1.2 Work hours will be in accordance with the approved planning permission. Without prior approval from the Local Planning Authority, work and noise outside these agreed hours should not be performed.

12.1.3 In order to manage and control construction related noise impact and to reduce to a minimum, best practicable means (BPM) will be adopted for the duration of the construction works.

12.2 Mitigation

12.2.1 Best Practicable Means will be applied in compliance with the British Standard (BS) 5228-1:2009 + A1:2014 Code of practice for noise and vibration control on construction and open sites – Noise, and British Standard (BS) 5228-2:2009 + A1:2014 Code of practice for noise and vibration control on construction and open sites – Vibration.

12.2.2 The following measures will be adopted to reduce noise and vibration during the works:

- Methods should be selected that are least likely to give rise to unacceptable noise and vibration levels, depending on the ground conditions to be encountered and the loads to be supported.
- Noise and vibration generating equipment should be located as far from receptors as possible where reasonably practicable. The erection of acoustic screens, with no gaps or openings at joints in the barrier material, should be employed where necessary.
- When implementing hammer-driven piling methods, reduced hammer energy should be adopted where possible to control vibration impacts at receptors.

- Stationary plant (e.g generators, pumps, compressors) should be relocated if close to a receptor location or isolated using resilient mountings to reduce vibration impacts.
- Plant and equipment will be maintained in good working order, ensuring that all mufflers or other noise dampening features are correctly fitted.
- If heavy equipment is operated near sensitive receptors, damping mats or pads will be placed under the equipment to absorb vibration and reduce ground vibration.
- Reversing alarms will be set to the minimum required setting, and alternative alarm types will be considered, such as White noise that has less potential for annoyance.
- Careful handling of materials and waste. Materials should not be dropped from excessive heights.
- Haul routes and internal access tracks should be maintained and steep gradients avoided. Manoeuvring should be minimised to avoid unnecessary revving of engines.
- Machines not in use will be turned off or throttled down to a minimum. Engines should not be left idling between operations.
- No deliveries will be undertaken outside of the site's operation hours:
 - 08:00 – 18:00 on Mondays to Fridays
 - 08:00 – 13:00 on Saturdays; and
 - No work to be completed on Sundays or public holidays.

Instrumentation

12.2.3 The following are requirements for instrumentation and their application:

- Ideally instruments should be Type 1 and conform to the requirements in BS 7580-1:1997 'Specification for the verification of sound level meters - Comprehensive procedure'³;
- As a minimum instrument should be Type 2 conform with the requirements in BS 7580-2:1997 'Specification for the verification of sound level meters-Shortened procedure for type 2 sound level meters'.⁴

³ BSI, 1992. BS 7580- 1:1997 'Specification for the verification of sound level meters - Comprehensive procedure'. 15 June 1992, London.

⁴ BSI, 1997. BS 7580-2:1997 'Specification for the verification of sound level meters-Shortened procedure for type 2 sound level meters'. 15 January 1997, London

- Proof of calibration for the instrumentation tested in accordance with BS EN 61672-2:2013;
- Calibration checks before, during (maintenance visits for long term measurements) and after measurements shall be recorded.

12.3 Monitoring

- 12.3.1 All complaints associated with the construction of the project, including non-conformance will be reported and investigated using a details complaints procedure developed by the Principal Contractor.
- 12.3.2 A record will be made of the incident for audit purposes and any minor issues relating to the site incidents will be dealt by the Principal Contractor. For the escalation of these issues or for more serious issues, these will be dealt with by the client team.
- 12.3.3 Where complaints are received it is recommended that a combination of unattended and attended measurements are undertaken at a representative location. Measurements will be undertaken in accordance with BS 5228-1 and BS 5228-2. The site visits shall be conducted during operational hours for either weekdays or weekends as agreed.
- 12.3.4 Monitoring reports/ memos shall be produced and submitted to the Applicant within a week of each visit detailing the results of the noise and vibration measurements.

Daily Site Checks

- 12.3.5 Daily site checks will include regular observations and checks across the site to ensure that BPM is being employed at all times. These checks will be undertaken throughout the construction phase periodically to capture monitoring information in a range of scenarios. Site observations and checks will be logged, and any remedial actions recorded. Indicative checks will include:
- Compliance with hours of working;
 - Presence of mitigation measures e.g. engines doors closed, airlines not
 - leaking, and site hording in place;
 - Number and type of plant; and
 - Compliance with agreed working methods.

13 CONSTRUCTION LIGHTING

- 13.1.1 Based on the construction schedule provided it is likely that all work will be carried out during daytime which will minimise the adverse impact from lightning. However, due to shorter daylight availability during the winter months, construction work may be required to be completed during times of low light / darkness. The use of handheld lighting may be necessary in some instances; efforts will be made to minimise disruption.
- 13.1.2 The site will not be illuminated outside of agreed hours, except for the construction compound, which will be lit for security. The storage and supplies areas will be permanently and sensitively lit so as not to intrude on local receptors, whilst maintaining visibility to security personnel at all times.
- 13.1.3 No external lighting will be required generally, other than temporarily during construction, but the substation will be provided with PIR activated external lights to ensure safety of staff if visits are required outside of daylight hours.
- 13.1.4 Emergency lighting will be brought to site only as and when required. The CCTV cameras will be fitted with infra-red lighting or thermal imaging which is not visible to the naked eye.
- 13.1.5 The construction Site would be adequately lit to ensure safe working conditions. All lighting would be positioned and adjusted so that it does not cause a nuisance to neighbouring properties. Night-time illumination, outside of working hours, would be reduced to a minimum to maintain the Sites security requirements whilst reducing environmental impact through light pollution.
- 13.1.6 Additionally, lighting arrangements will also take into consideration the potential disturbance of wildlife and ecology. The lighting design will minimise the impacts of light spillage on adjacent retained habitats through the attachment of directional hoods to lights. Non-essential lighting will be fitted with automatic cut-off switches.
- 13.1.7 Lighting will be positioned and directed as not to unnecessarily intrude on adjacent buildings and land uses, ecological receptors and structures used by protected species, nor to cause distraction or confusion to passing motorists, river users or navigation lights for air or water traffic.
- 13.1.8 The following mitigation and best practice will be implemented:
- Adequate lighting of working areas is an essential safety consideration;

- Lighting units will be placed in such a way as to pose minimal risk of light disturbance;
- Lighting will be suitable for the works being undertaken;
- Unnecessary lighting will be avoided;
- Lights will be switched off when they are not needed; this will include periods outside of normal Site working hours;
- Any security lighting will be kept to a minimum and powered by mains supply where possible;
- Checks will be made each evening to ensure no lights are left on in error;
- Ensure that beams are not pointed directly at windows of other houses. Security lights fitted with passive infra-red detectors (PIRs) and/or timing devices should be adjusted so that they minimise nuisance;
- Make sure that any artificial lighting does not change the apparent colour or visibility of any safety signs or other safety related items such as fire extinguishers;
- Where emergency routes need artificial light, the Site must provide emergency lighting that comes on if the primary lighting fails e.g. battery or emergency generator-powered lighting;
- Emergency lighting does not have to provide the same level of lighting as under normal circumstances; merely enough to enable escape.⁵

⁵ <https://www.hse.gov.uk/construction/safetytopics/site-lighting.htm>

14 TRAFFIC AND TRANSPORT PLAN

14.1 Background

14.1.1 A Site-specific transport assessment, in the form of a Transport Statement (TS) has been undertaken by Wardell Armstrong LLP to review the likely impacts of the Proposed Development on transport and traffic. A summary of requirements outlined in the assessment is given below.

Vehicular movements

14.1.2 In addition to traffic movements associated with the delivery of construction components a number of additional trips will also be required in relation to construction staff in order to provide a robust assessment, in the TS it has assumed that 50% of staff arrive as private car driver with 50% arriving either as a car passenger or by minibus.

14.1.3 The construction workers will arrive in shared transport wherever possible, to minimise the volume of resulting light vehicle movements. Adequate parking for all light vehicles will be provided within the construction compound.

Construction access

14.1.4 Construction and primary maintenance and operational access to the proposed development will be via the existing vehicular access with Giant's Grave Road.

14.2 Mitigation

14.2.1 The primary means of controlling construction vehicular traffic will be through an approved Construction Traffic Management Plan (CTMP). As such, the Contractor must ensure that an up-to-date CTMP is available at the time of commencement of work. Site managers are responsible for making arrangements for TCMP implementation before starting any site work.

14.2.2 Within the Site itself, a construction compound area will provide an area for loading and unloading of vehicles and a turning area to allow vehicles to exit the Site in forward gear. All delivery drivers and construction workers will be advised of the construction route prior to making their delivery or commencing work.

14.2.3 The site manager will have responsibility for supervising, controlling and monitoring vehicle movements to and from the site. If required, marshals/banksmen will be provided to give drivers guidance when reversing within the Site noting that all

vehicles will enter and leave the site in a forward gear. There will be no reversing manoeuvres on the public highway.

- 14.2.4 A waiting area (exclusion zone) will be left clear so that vehicles arriving to the Site can drive directly onto the Site with appropriate areas for parking to avoid any tailback to the site access.
- 14.2.5 Suitable equipment to facilitate the washing of vehicle wheels will be provided on Site to ensure that mud/detritus materials originating from the Site is not deposited on the public road.
- 14.2.6 The origin of plant, machinery and materials is not known at this stage, however, deliveries of materials to Site will be required to arrive by way of the proposed construction access routes.
- 14.2.7 To reduce congestion and nuisance on the existing road and highway networks, delivery vehicles will avoid public peak hours whenever possible.
- 14.2.8 A driver information pack will be provided to all suppliers identifying the required access routes.
- 14.2.9 Signs to direct construction vehicles associated with the Development will be installed along the routes to the site.
- 14.2.10 It is also proposed that temporary signage be located in the vicinity of the Site access during the construction period to warn drivers of the site entrance and HGV movements.
- 14.2.11 The main vehicular spine has been designed so it can accommodate the swept path of a maximum legal HGV.
- 14.2.12 During the works, parking off site will not be permitted and construction vehicles allowed to park only within designated parking areas within the works compounds.
- 14.2.13 Local suppliers will be used where possible to keep distances travelled to a minimum.
- 14.2.14 Monitoring will be conducted by the Contractor to ensure traffic and transport management is acceptable.
- 14.2.15 The initial measures outlined here are based on experience of similar projects and current knowledge of the site. It is recognised that the contents of the CTMP and final measures will be formed through engagement with Neath Port Talbot Council in advance of commencement of the development.

14.2.16 For environmental and road safety all material containers leaving site will be appropriately covered to avoid soiling of the roads and public path.

15 COMMUNICATING THE CEMP

- 15.1.1 The Principal Contractor will manage the environmental impacts of all suppliers that provide services in relation to the works.
- 15.1.2 All correspondence between members of the project team relating to environmental issues will be written/emailed/confirmed via Confirmation of Verbal Instruction (CVI).
- 15.1.3 The environmental responsibilities of suppliers working with / for the Principal Contractor will be managed, monitored, and reported through the application of Method Statements.
- 15.1.4 The Principal Contractor and their contractors will cooperate fully with arrangements for auditing suppliers' safety and environmental procedures.
- 15.1.5 The Project Environmental Manager will provide advice to the Site Manager on external communications with regulatory bodies, the public, and other stakeholders regarding environmental matters. Key business information (Project overview, budget and finances, schedules and deadlines, contractual and legal status, resource, risk management etc) performance against targets, and the effectiveness of Method Statements will be shared with the Management Team during periodic meetings. Communication with site operatives will typically occur through toolbox talks or daily task briefings.
- 15.1.6 Communication regarding environmental impacts will take place during project progress meetings and recorded via minutes and progress reports which can include results of monitoring, incidents, complaints, progress, and status of license applications etc. Performance against the environmental objectives and targets can be reviewed at these meetings.
- 15.1.7 A full contact list containing names, job titles and contact numbers will be produced and maintained. On Site communication will be provided by use of radios and/or mobile telephone where use is permitted.

15.2 Complaints management

- 15.2.1 The construction process must be conducted in a timely and professional manner to ensure a positive relationship with the community and to have a smooth progress of the construction work. Therefore, a well-structured complaint handling process including records of receipt, investigation, response and resolution will be established by the Site manager.

15.2.2 The Principal Contractor will establish and oversee community engagement either through a Community Liaison Officer (CLO) and/or a Community Engagement Plan, which will outline the approach to engaging with the local community. This plan and any community liaison will be managed by an appointed Community Liaison Officer (CLO), who will be responsible for addressing concerns and resolving complaints. Steps will be taken to inform neighbouring property occupiers, nearby communities, Public Rights of Way users and businesses in advance of construction activities. The CLO or equivalent will be responsible for receiving, recording, and responding to external complaints. A Complaints Log will be maintained on site and reviewed regularly to identify any changes to management procedures or operational controls to mitigate causes of complaints wherever possible. All complaints will be recorded in the Site file.

15.2.3 Additional mitigation will be developed as required and tailored to potential complaints regarding the influx of workers affecting services such as local pubs, restaurants and shops. Community perception will be gathered through the CLO related to the impact of worker influx, and additional mitigations will be considered, if necessary, they could be:

- Staggering working hours or shifts to reduce local pressure on services and transport networks;
- Providing dedicated worker transport or car-sharing schemes to minimise traffic and parking impacts;
- Clear communication with local residents on construction schedules and potential disruptions;
- Encouraging the use of local suppliers and services to provide community benefit;
- Establishing a formal feedback and complaints procedure to ensure concerns are recorded and addressed promptly;
- Reviewing and updating the worker code of conduct to reflect local sensitivities and expectations.

15.2.4 Further to the above the CLO's role will also be to manage community expectations. Engagement with potentially affected communities will be inclusive, aiming to reach the most vulnerable members of the local community, especially in towns closest to the Solar Array Area, where most construction workers will be concentrated.

15.2.5 Complaints will be investigated and resolved within a defined timeline in a prompt manner by the Site manager in coordination with CLO and the feedback from

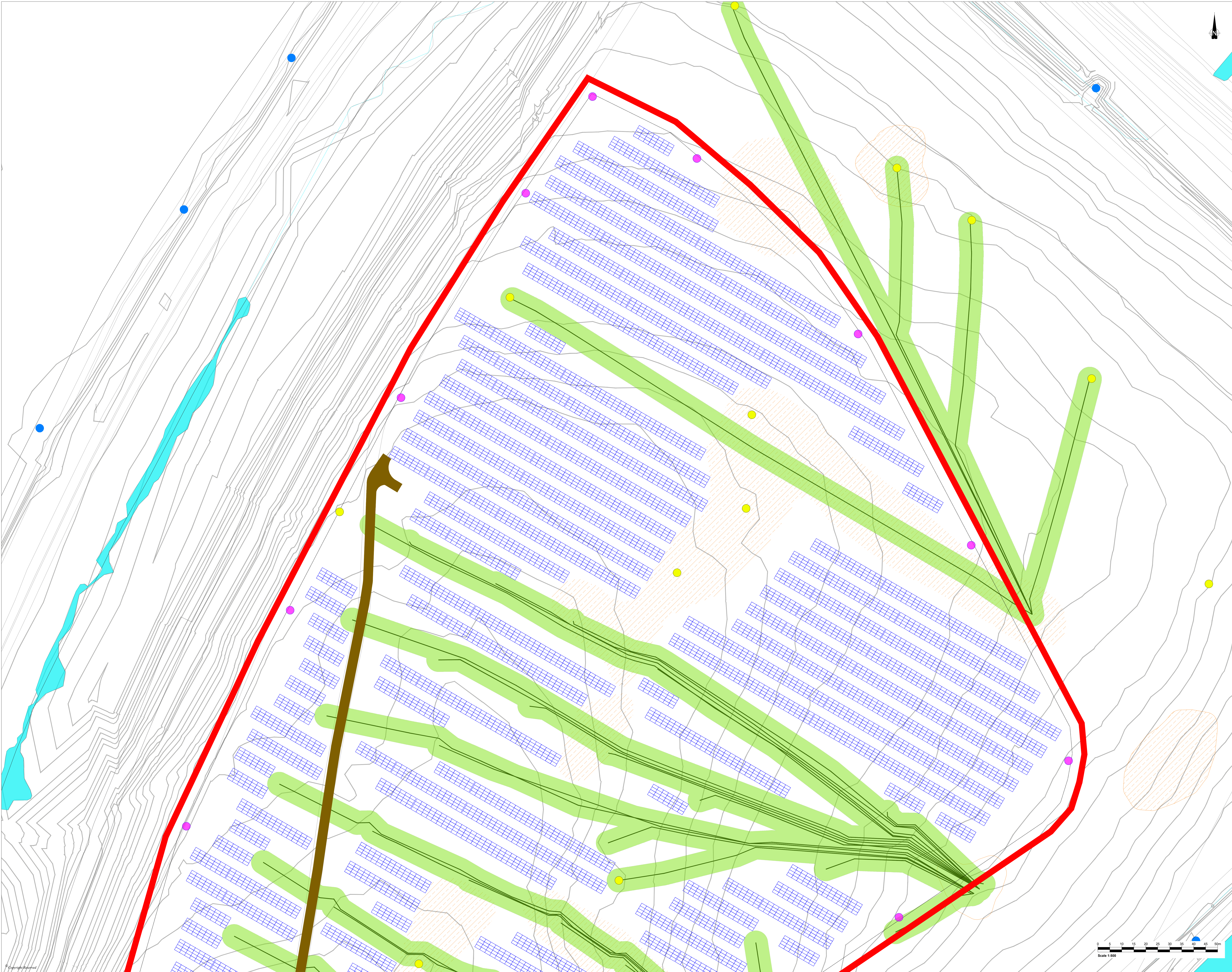
complaints will be used to make necessary changes to identify areas of improvement of the construction process.

16 ADHERENCE WITH POST MONITORING SCHEDULES OF THE LANDFILL SITE

16.1.1 Strict adherence to post closure operational and monitoring requirements is essential to ensure environmental safety structural stability and regulatory compliance. Landfills even after closure may continue to settle generate landfill gas and pose risks off leachate contamination, all of which could impact the long-term viability of the solar installation.

16.1.2 Upon installation of the PV system, it may be possible to integrate the landfill operations, maintenance, and monitoring requirements into the PV system. Furthermore, the possibility of combining maintenance scheduling and operational monitoring systems has been explored, not only for the purpose of identifying operational efficiencies but also for the purpose of enabling integrated analysis of monitoring data.

DRAWINGS



LEGEND

- Application Boundary
- Areas Under Control of the Applicant
- CCIV
- Gas Valve
- Gas Buffer 3m
- Gas Valve
- Existing Power Source
- Access Road
- Private Substation
- Power Transformer Station
- Waterbodies
- Fence Line

LOCATION PLAN
SCALE 1:10000

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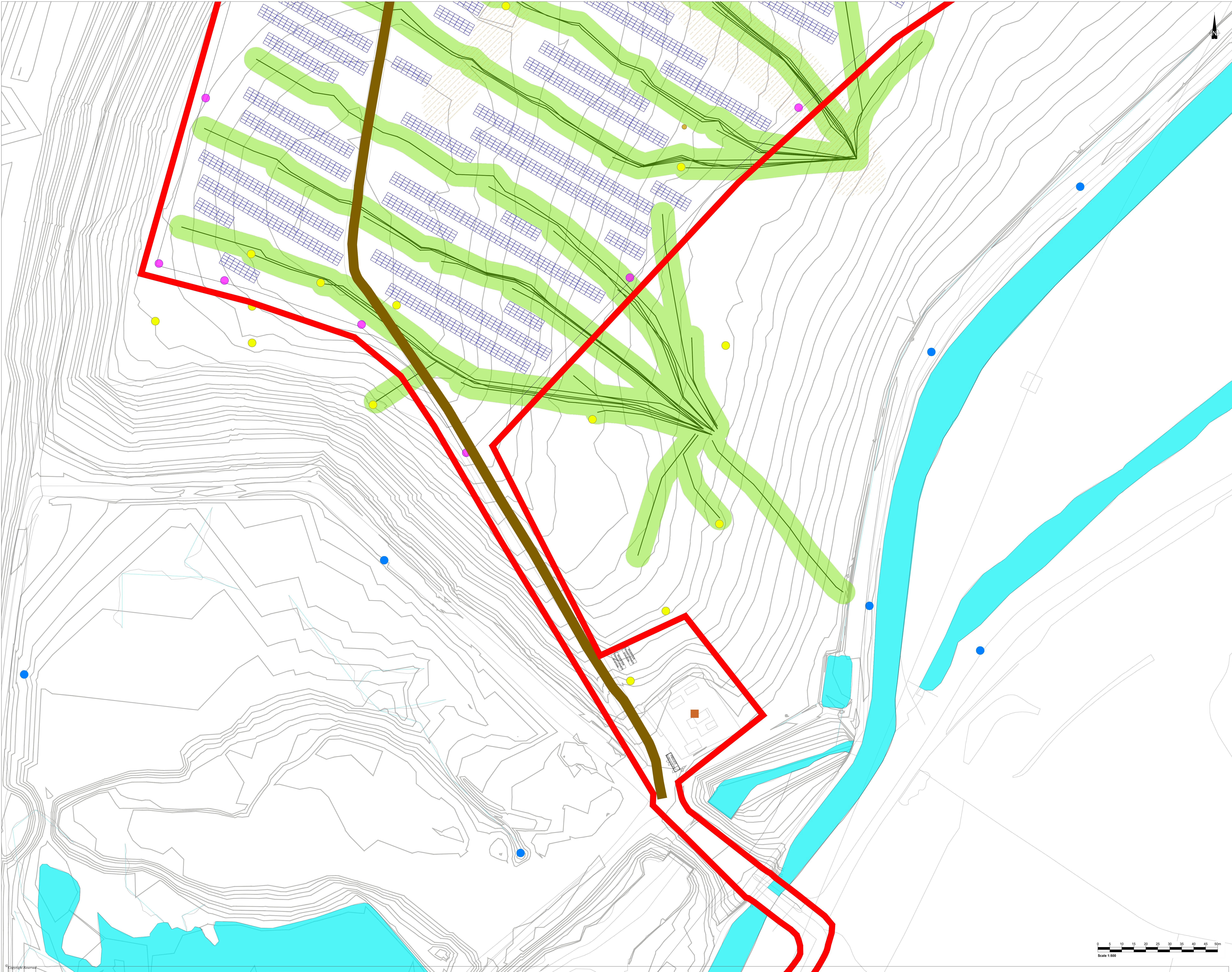
Neath Port Talbot Council

Giants Grave Solar Farm

Site Layout
Sheet 1

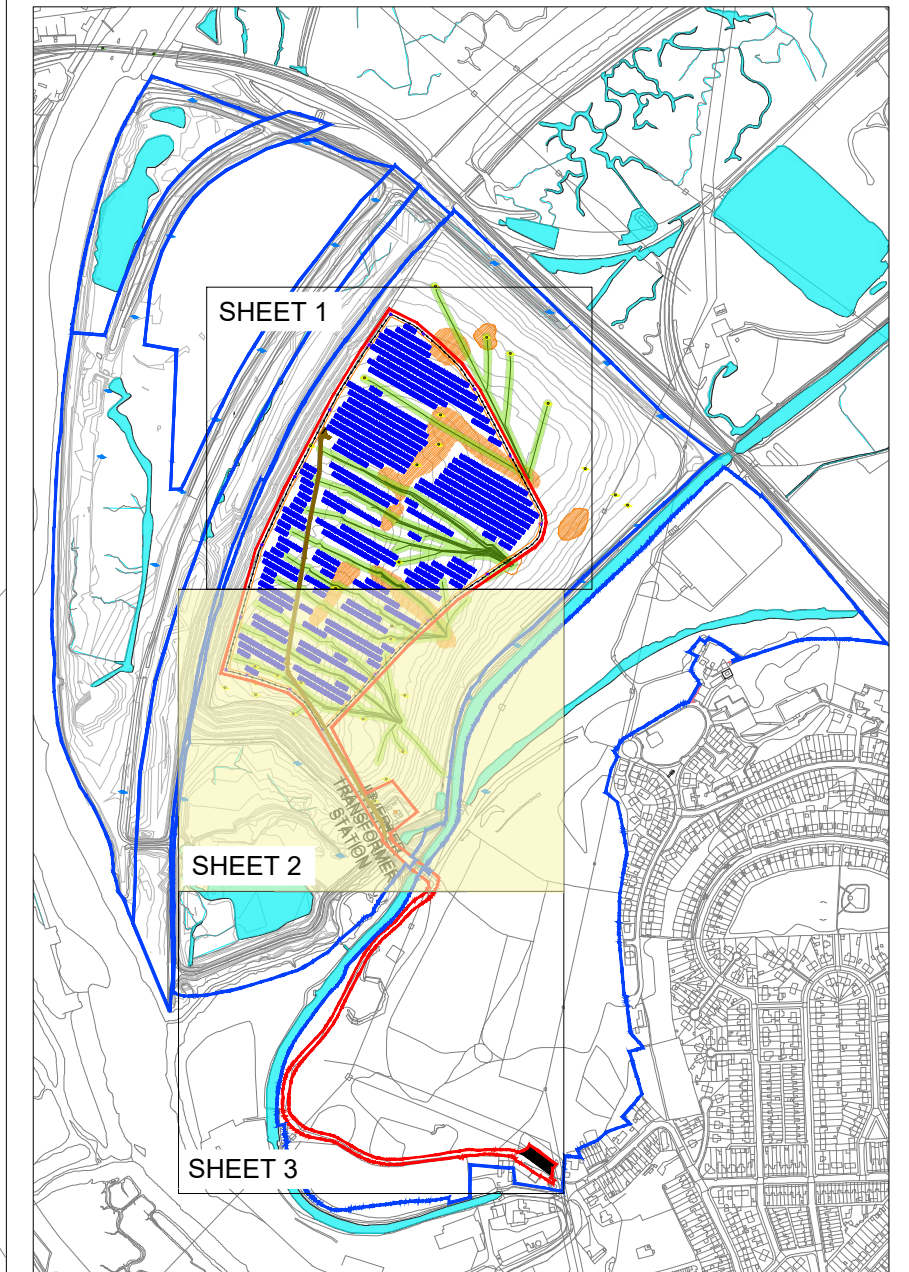
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DRG SIZE	A0	SCALE	1:500	CHECKED BY	SM
DRAWN BY	DR	APPROVED BY			

wardell armstrong
PART OF **SLR**



LEGEND

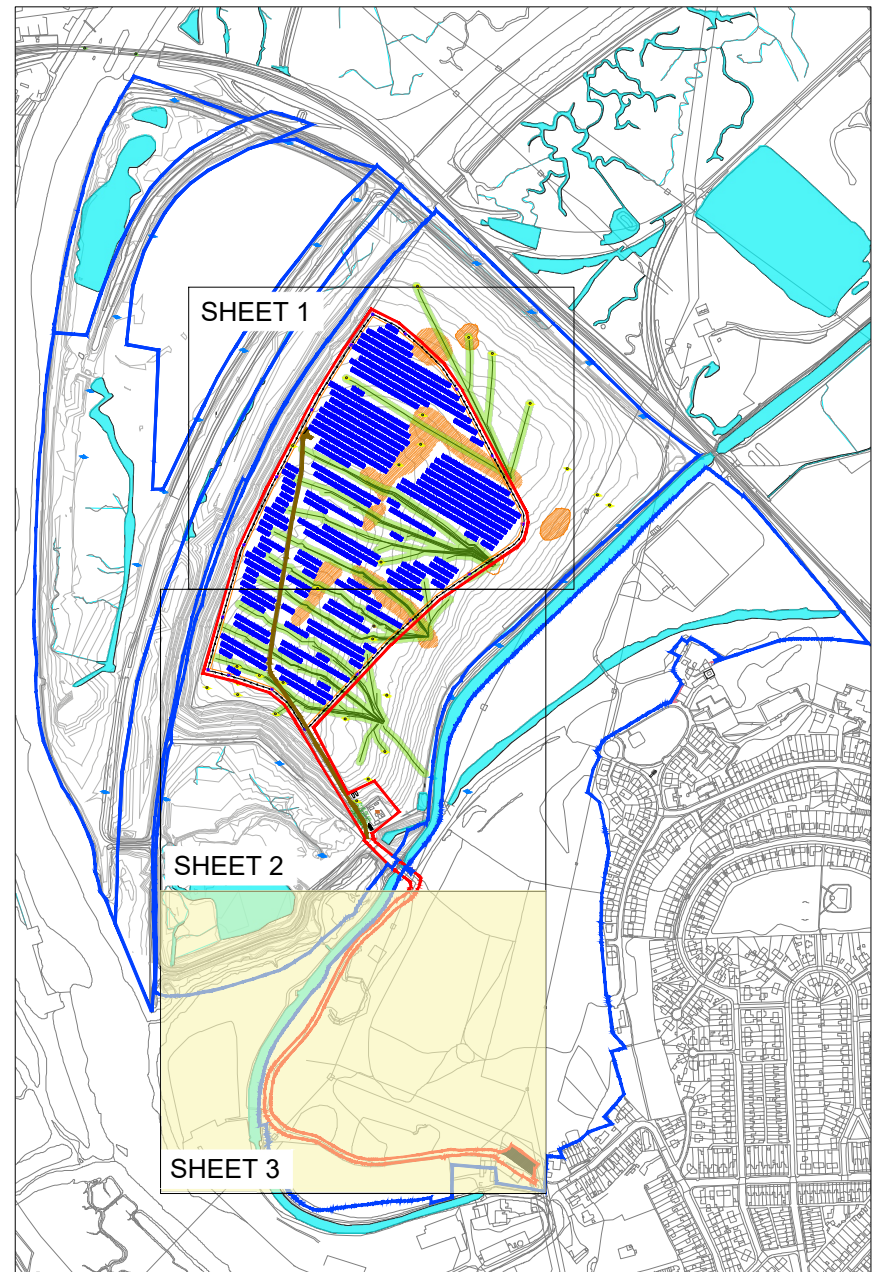
- Application Boundary
- Land Under Control of the Applicant
- CCTV
- Well Cuts
- Boundaries
- Well Cuts Buffer Zone
- 5m Buffer
- 5m Buffer
- Existing Power Source
- Access Road
- Private Substation
- Watercourse
- Watercourse
- Fence Line



REVISION	DATE	BY	CHKD	APPD
CLIENT				
Neath Port Talbot Council				
PROJECT				
Giants Grave Solar Farm				
DRAWING TITLE				
Site Layout Sheet 2				
DRG NO.	CA12961/002	REV	P0	BLK CODE
DRG SIZE	A0	SCALE	1:500	DATE
03/12/25	APPROVED BY	SM		
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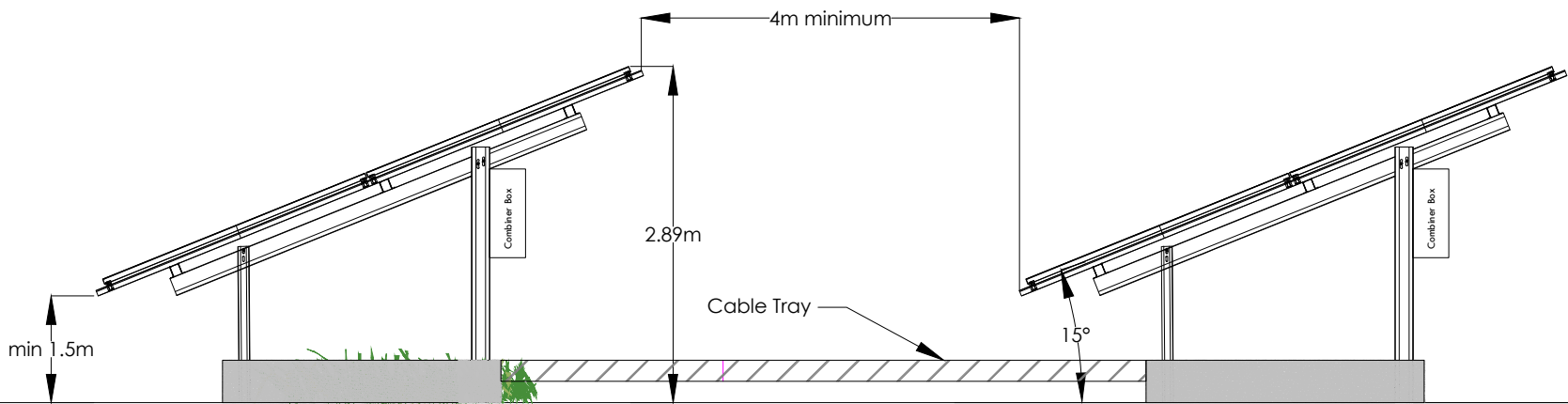
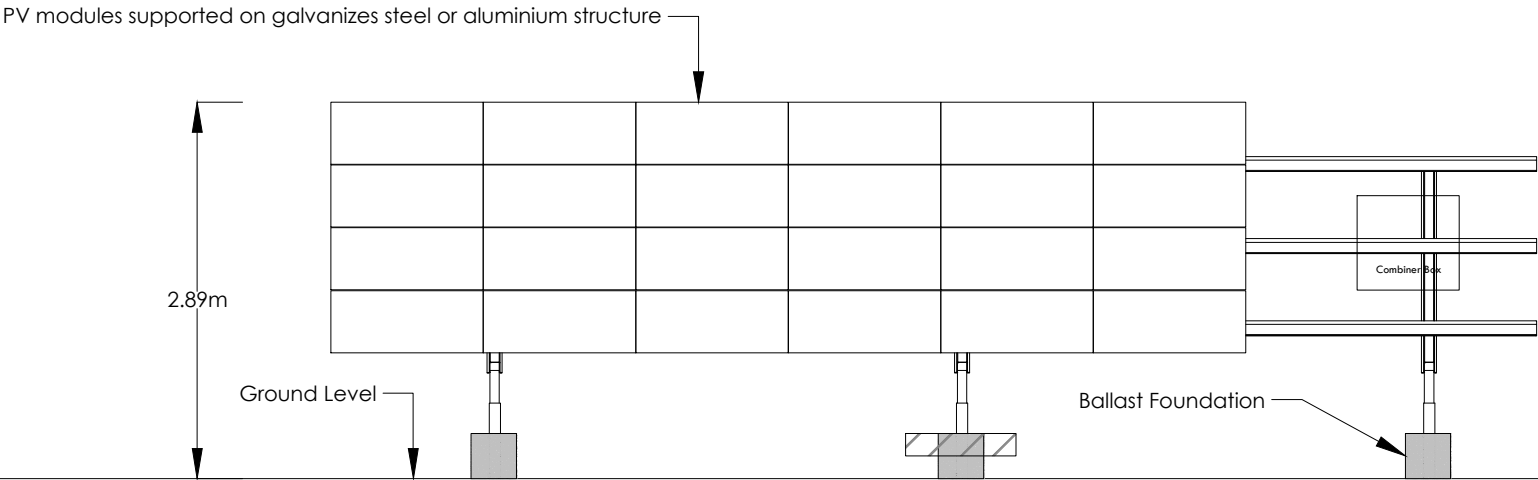
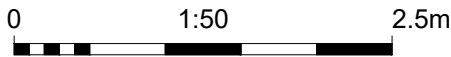


- LEGEND
- Application Boundary
 - Land Under Control of the Applicant
 - CCIV
 - Well Caps
 - Boundaries
 - Well Cap Buffer Zone
 - Gas Buffer 3m
 - Gas Headers
 - Existing Power Source
 - Access Road
 - Private Substation
 - Inner Transformer Station
 - Waterbodies
 - Fence Line
 - Temporary Construction Compound



LOCATION PLAN
SCALE 1:10000

REVISION	DATE	BY	CHKD	APPD
CLIENT				
Neath Port Talbot Council				
PROJECT				
Giants Grave Solar Farm				
DRAWING TITLE				
Site Layout Sheet 3				
DRG NO.	CA12961/002	REV	P0	BLAT CODE
DRG SIZE	A0	SCALE	1:500	DATE
DRAWN BY	SM	CHECKED BY	SM	APPROVED BY
wardell armstrong PART OF SLR				



01	Initial Issue	18/08/25	AA		
REVISION	DETAILS	DATE	DRN	CHK'D	APP'D

CLIENT

Neath Port Talbot Council

PROJECT

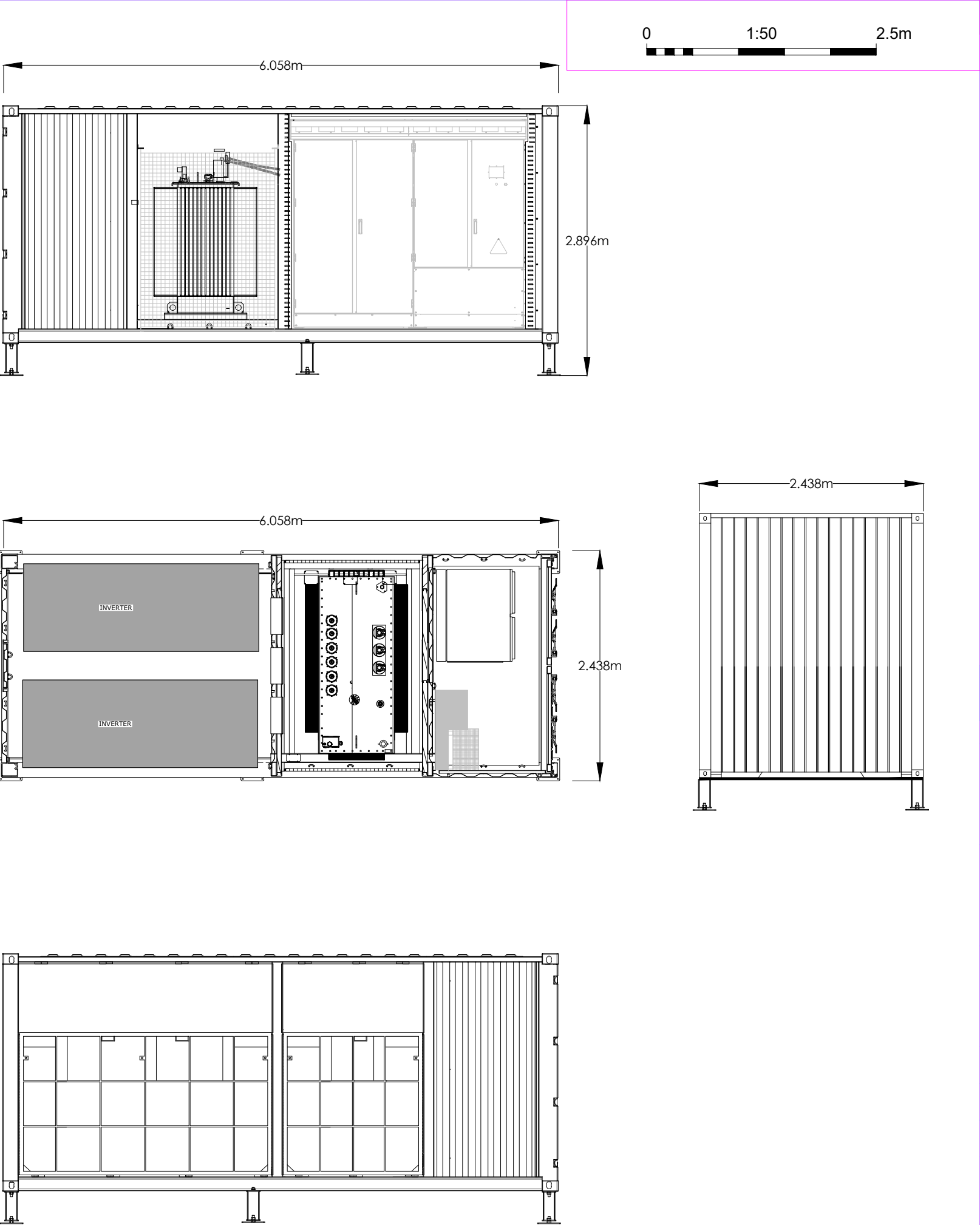
Giants Grave Solar Farm

DRAWING TITLE

Typical Array Elevation

DRG No.	REV	SUIT. CODE
	01	
DRG SIZE	SCALE	DATE
A3	1:50	1808/2025
DRAWN BY	CHECKED BY	APPROVED BY
AA	SA	





01	Initial Issue	18/08/25	AA		
REVISION	DETAILS	DATE	DRN	CHK'D	APP'D

CLIENT

Neath Port Talbot Council

PROJECT

Giants Grave Solar Farm

DRAWING TITLE

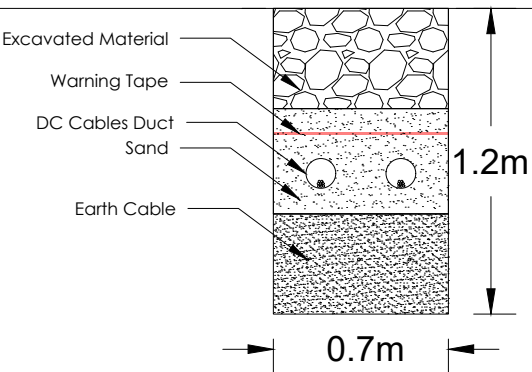
Typical Inverter Station

DRG No.		REV	SUIT. CODE
		01	
DRG SIZE	A3	SCALE	1:50
		DATE	18/08/2025
DRAWN BY	AA	CHECKED BY	SA
		APPROVED BY	

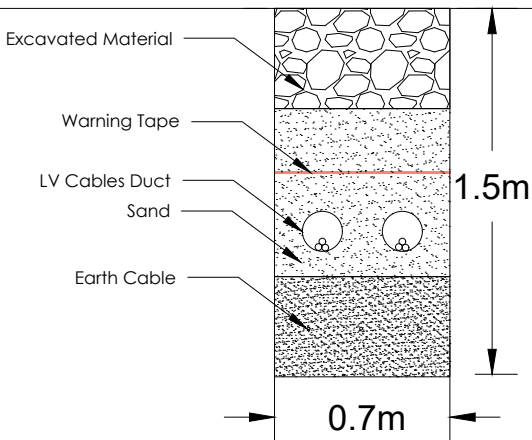




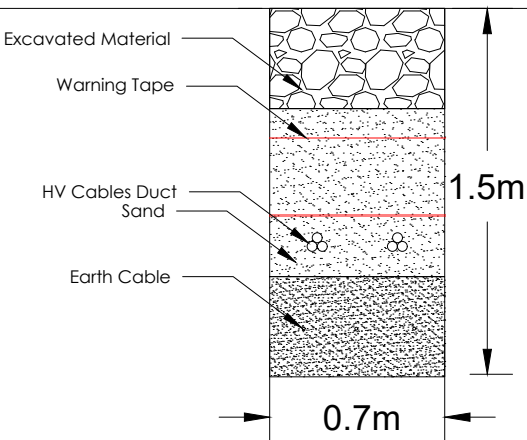
Typical DC Trench



Typical LV Trench



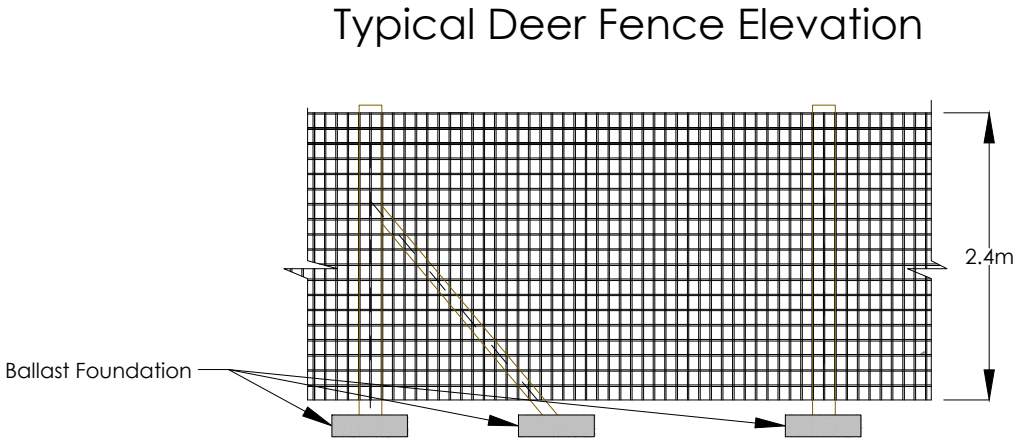
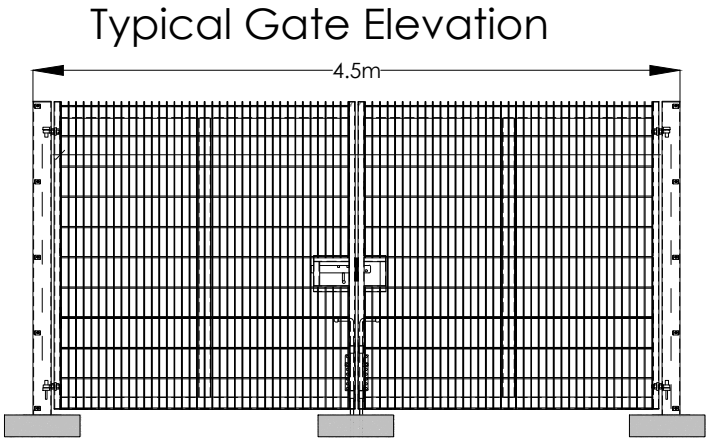
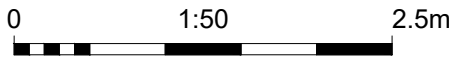
Typical HV Trench



Any electrical cabling on the surface of the landfill cap will be run above ground level, within a conduit, to preserve the integrity of the cap and ensure that the cables are suitably protected. Once off the landfill cap, they will be routed underground as shown in the trench section drawing

01	Initial Issue	18/08/25	AA		
REVISION	DETAILS	DATE	DRN	CHK'D	APP'D
CLIENT					
Neath Port Talbot Council					
PROJECT					
Giants Grave Solar Farm					
DRAWING TITLE					
Typical Trench Section					
DRG No.		REV	SUIT. CODE		
		01			
DRG SIZE	A3	SCALE	1:50	DATE	18/08/2025
DRAWN BY	AA	CHECKED BY	SA	APPROVED BY	





01	Initial Issue	18/08/25	AA		
REVISION	DETAILS	DATE	DRN	CHK'D	APP'D

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Giants Grave Solar Farm

DRAWING TITLE

Typical Deer Fence

DRG No.		REV	SUIT. CODE
		01	
DRG SIZE	A3	SCALE	1:50
		DATE	18/08/2025
DRAWN BY	AA	CHECKED BY	SA
		APPROVED BY	



STOKE-ON-TRENT

Sir Henry Doulton House
Forge Lane
Etruria
Stoke-on-Trent
ST1 5BD
Tel: +44 (0)1782 276 700

BIRMINGHAM

Two Devon Way
Longbridge Technology Park
Longbridge
Birmingham
B31 2TS
Tel: +44 (0)121 580 0909

BOLTON

41-50 Futura Park
Aspinall Way
Middlebrook
Bolton
BL6 6SU
Tel: +44 (0)1204 227 227

BRISTOL

3rd Floor
Brew House
Jacob Street
Tower Hill
Bristol
BS2 0EQ
Tel: +44 (0)117 203 4477

BURY ST EDMUNDS

Armstrong House
Lamdin Road
Bury St Edmunds
Suffolk
IP32 6NU
Tel: +44 (0)1284 765 210

CARDIFF

Tudor House
16 Cathedral Road
Cardiff
CF11 9LJ
Tel: +44 (0)292 072 9191

CARLISLE

Marconi Road
Burgh Road Industrial Estate
Carlisle
Cumbria
CA2 7NA
Tel: +44 (0)1228 550 575

EDINBURGH

The Tun
4 Jackson's Entry
Edinburgh
EH8 8PJ
Tel: +44 (0)131 555 3311

GLASGOW

24 St Vincent Place
Glasgow
G1 2EU
Tel: +44 (0)141 428 4499

LEEDS

36 Park Row
Leeds
LS1 5JL
Tel: +44 (0)113 831 5533

LONDON

Summit House
12 Red Lion Square
London
WC1R 4QH
Tel: +44 (0)207 242 3243

NEWCASTLE UPON TYNE

City Quadrant
11 Waterloo Square
Newcastle upon Tyne
NE1 4DP
Tel: +44 (0)191 232 0943

TRURO

Baldhu House
Wheal Jane Earth Science Park
Baldhu
Truro
TR3 6EH
Tel: +44 (0)187 256 0738

International office:

ALMATY

29/6 Satpaev Avenue
Hyatt Regency Hotel
Office Tower
Almaty
Kazakhstan
050040
Tel: +7(727) 334 1310