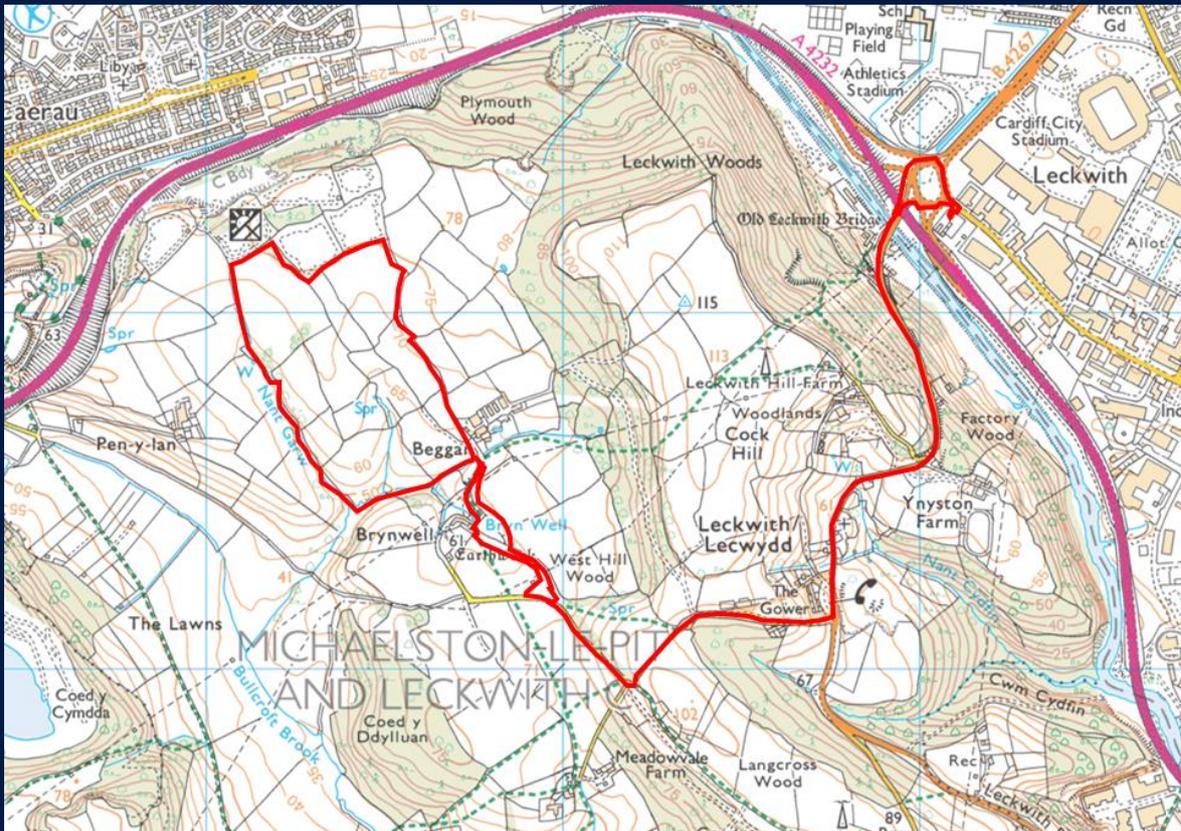


Outline Construction and Environmental Management Plan (CEMP)

Brynwell Farm Solar Project



Project: Brynwell Farm Solar Project

Client: Brynwell Farm Solar Ltd.

Job Number: TRP 2216

File Origin: Internal

Document Checking:

Prepared by: Nick Beddoe	Signed: 
---------------------------------	--

Checked by: Peter Grubb	Signed: 
--------------------------------	---

Verified by: Peter Grubb	Signed: 
---------------------------------	--

Contents

- 1.0 Introduction 1**
 - 1.1 General 1
- 2.0 Scope of Work 2**
 - 2.1 Location 2
 - 2.2 Description of the works 2
- 3.0 General Principles 3**
 - 3.2 Construction site audits 3
 - 3.3 Identification of potential impacts 3
 - 3.4 Working hours 4
 - 3.5 Waste Management 4
- 4.0 Construction Management Details 6**
 - (a) the phasing of construction works; 6
 - (b) the formation and position of the temporary construction compounds; 6
 - (c) contractor and operational on-site vehicle parking; 8
 - (d) dust management and suppression; 8
 - (e) Cleaning of site entrance, facilities for wheel washing and cleaning the adjacent public highway; 9
 - (f) Pollution control, including the protection of water courses and ground water; subsoil surface water drainage; bunding and siting of fuel storage areas; sewage and foul water drainage and disposal; and emergency procedures and pollution response plans; 10
 - (g) temporary site illumination during the construction period; 13
 - (h) the methods to be adopted to reduce the effects of noise occurring during the construction period to the lowest practicable levels and in accordance with BS 5228: Noise control on construction and open sites; 13
 - (i) storage of materials and disposal of surplus materials; 14
 - (i) the construction of the accesses into the site, the erection of any entrance gates and the creation and maintenance of associated visibility splays; 15
 - (j) access tracks and other areas of hardstanding, including areas of temporary road matting; 16

(k) the carrying out of foundation works, including the foundation of the solar arrays and any other structures to be installed on the site;16

(l) method of working cable trenches17

(m) general soil storage and handling;18

(n) post-construction restoration/reinstatement of the working areas, including cable trenches and area covered by any matting or other areas where the soil has been disturbed or compressed;19

(o) the sheeting of all heavy goods vehicles construction materials to, or spoil from, the site to prevent spillage or deposit of any materials on the highway;19

(p) details of the vehicles to be used on the site during construction activities19

(r) details of control of surface water to prevent it entering the public highway or carrying sediment to the surface water drainage network in the vicinity of the site.20

(t) means to exclude small animals from excavations.21

1.0 Introduction

1.1 General

1.1.1 This Outline Construction and Environmental Management Plan (OCEMP) describes how a detailed, site specific CEMP will be developed to avoid, minimise or mitigate any construction effects on the environment and the surrounding community. The plan relates to proposals for a solar farm for which planning permission is being sought through a submitted DNS planning application (DNS/3261558).

1.1.2 The document provides a framework for the planning and implementation of construction activities in accordance with environmental commitments made through the application. It aims highlight those site activities which require operational controls in relation to potential environmental impacts and details mitigation measures for minimising risks to the environment.

1.1.3 The report is set out against a comprehensive criteria which would cover all potential impacts arising through the construction stage. Upon any grant of consent, it is envisaged that an associated planning condition would require a detailed CEMP be submitted to, and approved in writing with the LPA prior to the commencement of the development.

1.1.4 The final, approved CEMP will include greater detail on the specific measures which will be implemented before any commencement of any construction works on site.

2.0 Scope of Work

2.1 Location

2.1.1 The site is located on agricultural land at Brynwell Farm, Leckwith, within the local plan area for The Vale of Glamorgan Council and Cardiff Council.

2.1.2 The site is irregular in shape and comprises agricultural fields, each separated and contained by established hedgerows with occasional trees. It is in arable agricultural use and accessed over an unnamed road from Leckwith Road (B4267).

2.2 Description of the works

2.2.1 The proposed development is for the erection of a solar farm comprising ground mounted solar panels and battery storage units with an installed generating capacity of up to 21MW, underground cabling, grid connection hub, associated infrastructure, landscaping and environmental enhancements, for a temporary period of 40 years.

2.2.2 The main construction activities are as follows:

- Piling of steel frame mounting systems in rows across the site
- Mounting of solar panels onto steel frame system
- Laying of stone aggregate to form access track through the site
- Mounting of invert units and transformer cabins
- Digging of trench and laying of electrical cables
- Erection of Gridyard area and electrical transmission components
- Laying temporary bridge structures across rheens and ditches
- Installing stock-proof fencing and ancillary equipment including CCTV cameras
- Eventual decommissioning of the site including the removal of all equipment and the reinstatement of the land as per its current use and profile

3.0 General Principles

Site monitoring

3.1.1 In accordance with best-practice construction principles, the relevant Contractor's Site Manager will be responsible for the monitoring of the site and construction practice for the following purposes:

- To ensure that site practices are being carried out in adherence to the CEMP;
- To check site equipment for damage or wear;
- Identify any environmental hazards that may be addressed prior to a potential incident; and

3.1.2 Work areas should be kept clean and free of obstacles wherever possible. All site materials and equipment would be stored appropriately within specific site yards.

3.2 Construction site audits

3.2.1 An audit shall be undertaken on a monthly basis by the during the construction period. This will consist of, but not be limited to, the following:

- An inspection of records held at site, such as waste transfer/consignment notes etc;
- Site walkover to assess compliance with the requirements of the detailed CEMP and with relevant environmental legislation;

Following completion of the audit, the findings will be summarised and reported to the Owner.

3.3 Identification of potential impacts

3.3.1 The detailed CEMP will identify all of the potential impacts resulting from the required construction activities. Prior to the preparation of this document, Table 1 sets out all of the potential impacts which have been identified at this stage of the projects.

Activity	Potential Impact
Transit to and from site	Pollution/nuisance from dust and emissions Noise Pollution from runoff to watercourses
Use of site machinery and vehicles	Noise Pollution from fuel leakages to water or land Damage to soil and vegetation
Production of waste	Pollution to watercourses caused by unsecured waste Litter nuisance to local community Potential health and safety risk posed by unsecured waste
Installation of framing system and solar panels	Disturbance of the integrity of the existing soil structures Damage to pasture and grassland Damage to geology resulting from piling process
Work near watercourses	Pollution to watercourses caused by fuel emissions, dust or soil runoff Disturbance of the surrounding habitat for which SSSI is designated
Vegetation coppicing and removal	Disturbance to existing flora (including trees or hedgerows not selected for removal) Disturbance to local wildlife populations

Table 1 Identification of potential impacts

3.4 Working hours

3.4.1 The detailed CEMP will set out the parameters for working hours and construction activities in order to ensure that any potential impacts or disturbances are properly managed.

3.4.2 Typical working hours are set out as follows:

- Monday to Friday – 07:00 – 19:00 hrs;
- Saturday – 07:00 – 19:00 hrs; and
- Sunday/Public Holidays – No construction activity to be permitted.

3.5 Waste Management

3.5.1 The relevant Contractor(s) will produce a Site Waste Management Plan (SWMP) prior to commencing work on site. This plan will set the way in which resources will be managed during the site preparation and construction phases and should include the following information:

- Actions to meet the waste hierarchy such as waste elimination, minimisation, re-use, energy

recovery and recycling measures;

- Assignment of the person within the Contractor's organisation with responsibility for the SWMP;
- Details of the types and quantities of waste that will be produced by the Contractor (and its subcontractors where appropriate); and
- Details of all consignments made (note that this may be a separate document, such as a WRAP waste recording and reporting spreadsheet).

3.5.2 The SWMP will be treated as a live document which can be updated and reviewed to ensure its accuracy. It will be prepared in conjunction with the detailed CEMP and will be agreed with the appropriate environmental advisor prior to any commencement on site.

3.5.3 No judgement is made within this OCEMP in relation to the quantities of waste, as the relevant Contractor will generate this information within the SWMP. However, wherever possible, waste will be eliminated, re-used or recycled as per the requirements of the waste hierarchy.

3.5.4 The following list serves to identify the possible types of waste which may be generated through the construction process:

- Cardboard and plastics from packaging of materials
- Organic waste from hedgerow coppicing
- Sewage and operational waste at site office/canteen areas
- Any unused materials – cabling, fencing etc.
- Removal of temporary construction materials used at site yards

3.5.5 In the operational phase of development there is not anticipated to be any significant quantities of waste produced as the development will only require a periodic inspection whilst its efficiency and output will be monitored remotely.

4.0 Construction Management Details

(a) the phasing of construction works;

4.1.1 The scheme is proposed to be constructed in two distinct phases;

- 1) Completing enabling works – Preparing the site for construction and carrying out certain environmental enhancement works
- 2) Completion of construction works – Carried out by the Engineering, Procurement and Construction (EPC) contractor

4.1.2 Enabling works would involve the preparation of the site and carrying out the following activities:

- Coppicing / removal of hedgerows
- Creation of temporary site accesses

4.1.3 Upon completion of the enabling works, the likely development construction programme is set out in the Construction Traffic Management Plan (CTMP) and is set out within the following table:

	Week											
	1	2	3	4	5	6	7	8	9	10	11	12
Ground works	█	█	█	█	█	█	█	█				
Mounting System					█	█	█	█	█	█	█	
Panel Fitting								█	█	█	█	
Test Commissioning												█

4.1.4 A more detailed plan would be prepared by the Engineering, Procurement and Construction (EPC) contractor and this would form part of the finalised CEMP to be agreed with the LPA or PINS as appropriate.

(b) the formation and position of the temporary construction compounds;

4.1.5 Temporary Compounds will be used in the construction of the development. These will measure approximately 30m x 40m.

Outline Construction and Environmental Management Plan

Brynwell Farm Solar Project



- 4.1.6 The precise locations of each compound will be determined following more detailed site investigation works taking place following any grant of consent.
- 4.1.7 The construction compounds constitute temporary works and will remain for the duration of the construction period. The compounds will include provisions for storage of materials, office and welfare spaces, car parking, etc. Locations & Typical layout to be added.
- 4.1.8 The compound areas will be positioned and built in a way that ensures minimal disruption to its surroundings in terms of noise to surroundings and any impact to nearby hedgerows or watercourses.
- 4.1.9 The plan below provides an indicative compound layout including all necessary components and resources.

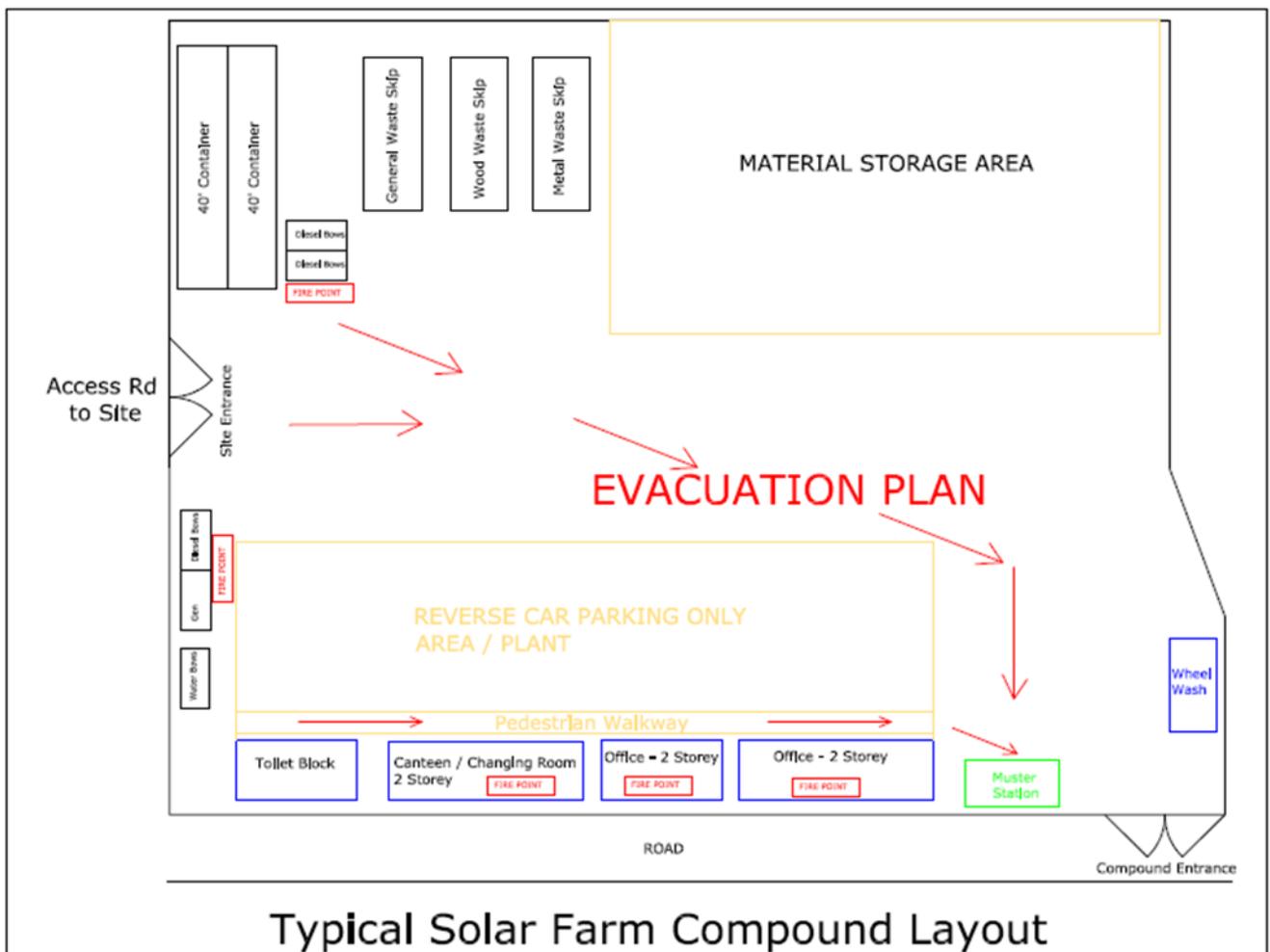


Figure 1 Example construction compound layout

(c) contractor and operational on-site vehicle parking;

- 4.1.10 On-site parking would be minimised to only a small number of vehicles (approx. 12 vehicles.) limited to key members of the project team.
- 4.1.11 Operational workers and sub-contractors would be transported from an agreed meeting point within the area via minibuses in order to reduce the number of individual traffic movements to the site.

(d) dust management and suppression;

- 4.1.12 Dust can be created from movement of construction traffic and from general construction activities and can be carried by prevailing winds impacting upon the local area.
- 4.1.13 Dust impacts can also arise from on-site construction works such as earthworks as well as from dust deposited on public highways by construction vehicles which then becomes re-suspended. Construction dust may lead to an adverse impact in terms of elevated particulate concentrations at sensitive receptors or nuisance impacts (e.g. soiling).
- 4.1.14 Dust can also arise from on-site construction works such as earthworks and from dust deposited on internal site access tracks as well as public highways by construction vehicles. Dust impacts on site shall be controlled by good housekeeping and by following best practice.
- 4.1.15 Indeed, the following site-specific dust-management plan has been prepared in accordance with the guidance offered in the most recent version of the Pollution Prevention Guidelines (PPG6).

Site specific dust management plan

A site-specific dust management plan will cover the following activities to control dust during construction;

- 1) Re-vegetation (seeding) of earthworks and exposed ground as soon as reasonably practicable.
- 2) Proprietary wheel cleaning bays shall be provided on site at the exit of construction compounds. Equipment specifics will depend on availability during the construction phase.
- 3) Using water bowsers on site for dust suppression as necessary (e.g. during a dry spell, to damp down access tracks with a fine mist – taking into considerations the prevailing weather conditions on site).

- 4) Locating plant and machinery away from site boundaries and away from watercourses, respecting the buffer zones at all times.
- 5) Locating stockpiles away from the site boundary and watercourses and considering predominant wind direction when siting. Stockpiles and exposed ground will be prevented from generating pollution as water run-off or dust. Stockpiles will be located on level ground and stability will be ensured by way of frequent inspections. The maximum height of stockpiles will also be controlled.
- 6) Ensuring availability of equipment to clean wet and dry spills.
- 7) Managing heights when handling materials, especially when loading and tipping (considering the site prevailing wind conditions by way of a dynamic assessment).
- 8) Maintaining a maximum speed limit on site (5mph).
- 9) Stockpiles that are to remain on site for a long time period shall be seeded as the seeds will help bind the material together and control any dust emanation.
- 10) Any unused cement bags shall be stored appropriately to prevent leaks or dust, using the storage containers provided on site. Subsequently, these will be disposed of legally off-site, as per the Contractor's company policy, which shall at all times be complied with, in regards to the disposal of waste (never buried or burned).
- 11) Construction traffic carrying loose material will be covered to reduce dust generation.

(e) Cleaning of site entrance, facilities for wheel washing and cleaning the adjacent public highway;

- 4.1.16 A proprietary wheel cleaning bay is proposed to be provided on site at the exit of the construction compound(s). The specific equipment employed will be dependent on availability during the construction phase.
- 4.1.17 The wheel wash facilities will be securely constructed with no overflow and the effluent will be contained for proper treatment and disposal.
- 4.1.18 The site entrances / exits will be monitored to ensure that no materials are deposited on the public

carriageways. Necessary cleaning shall be provided by road sweepers or equivalent mechanical equipment.

4.1.19 The locations of the wheel wash facilities will be located as close to the three points of access as reasonably practicable.

(f) Pollution control, including the protection of water courses and ground water; subsoil surface water drainage; bunding and siting of fuel storage areas; sewage and foul water drainage and disposal; and emergency procedures and pollution response plans;

4.1.20 The Principal Contractor shall be responsible for both the protection of controlled waters from pollution as well as the prevention of pollution of the environment, harm to human health and detriment to local amenity by waste management activities under the Environmental Protection Act 1990.

4.1.21 Further protection for the environment is afforded under the Water Resources Act 1991 (as amended) which sets out offences relating to water, discharge consents, and possible defences to the offences.

4.1.22 Under the Water Framework Directive (FMD), no deterioration may be allowed to occur to controlled waters, including surface and ground water. Therefore, no contaminated runoff may be allowed to enter either surface water drainage or be allowed to infiltrate the ground. All construction activities will be carried out in accordance with good practice, paying particular attention to best practice guidelines set out by the Environment Agency published in their Pollution Prevention Guidelines and checklist made available, as well as the Control of Pollution (Oil Storage) (Wales) Regulations 2006.

4.1.23 In case of any spills or other potentially contaminating incidents, an emergency protocol will be put in place, which will include the following steps:

1. If safe to do so, stop the incident at its source utilising appropriate Personal Protective Equipment, and involving potentially also a container, turning off taps or valves and preventing leaks.
2. If safe to do so, contain the pollutant by using appropriate absorbent materials.
3. If safe to do so, and if applicable, prevent further migration through infiltration, runoff etc.

4. If safe to do so, and if applicable, impede the pollutant using draining blocking equipment, or if it has entered the drain, block the exit manhole with sandbags or other proprietary equipment.

5. If safe to do so, and if applicable, divert from sensitive receptors using bunds, booms or kerbs.

4.1.24 It is proposed that any ground water entering excavated trenches will be pumped away from the direction of the watercourses towards the centre of the fields and allowed to percolate back through the soil.

4.1.25 It is important to control the potential for pollution proactively through:

- Responsible storage of substances with the potential to cause harm to the environment and to provide secondary containment for leaks and spills *(bundled areas or pallets).
- Planned preventative maintenance of plant and vehicles.
- Pre-use inspection of plant and vehicles and prompt reporting of any faults.

4.1.26 Spill kits comprise of absorbent material, there are two types of spill kits available to Operatives.

- Absorbent socks and pillows (preferred) also there are kits provided for the operational vehicles.
- Loose granular absorbent material is for use on hard standing and is best situated to the yard and warehouse environment. To be used for soaking up small spills, preventing further spread and absorbing oils etc. Once the granular material has absorbed the spill it should be cleaned up with a brush and shovel or similar.

4.1.27 If workers are uncertain about the spill and the level of protection required, they would firstly check the COSHH Risk Assessment which will give guidance on how to respond to the spill. In the event on pressing time constraints, use the highest possible level of protection, acting swiftly to minimise the harm to the environment.

4.1.28 PPE would include:

- Gloves (rubberised) to provide protection to the skin
- Respiratory Protective Equipment where appropriate
- Boots
- Coveralls

- 4.1.29 Used spill kits would be bagged and returned for appropriate disposal.
- 4.1.30 All fuel storage tanks will be bunded and located in the construction compound. No refuelling shall be permitted outside of the compound area.
- 4.1.31 Sewage and foul water drainage will be collected in appropriate collection tanks (toilet blocks & portaloos) at Welfare areas. Regular collection and disposal of sewage and foul water will be conducted by a licenced company.
- 4.1.32 In addition to the above measures, an incident response plan has been prepared with reference to Section 9 of GPP5 as follows:

INCIDENT RESPONSE PLAN

- 4.1.33 In case of any environmental incidents, these shall immediately be notified by calling the relevant Environmental Authority.
- 4.1.34 Incidents can include spillages (e.g. from oils or chemicals), contaminated surface water run-off, flooding, riverbed disturbance, damage to underground services, damage to habitats and poor waste disposal and storage. If in doubt, incidents shall be reported.
- 4.1.35 Incident response plans shall be in accordance with the Contractor's policy and Construction Phase H&S Plan, and shall always adhere to Section 9 of GPP5 (Works and maintenance in or near water), with reference to the following:
1. Site risks.
 2. List of key external and internal contacts such as regulatory authorities, local authorities, fire services.
 3. Reporting procedures.
 4. Site plans including drainage and location of storage and refuelling areas .
 5. List of stored materials.

6. Details of local environmental sensitivities.

7. Location of spill equipment.

8. Procedures for spill containment and remediation.

4.1.36 Staff and contractors shall be trained in the use of spill equipment and how to manage and dispose of waste materials legally.

4.1.37 In case oils and/or chemicals are used in close proximity to the water environment, suitable spill kits or absorbent materials shall be kept nearby. Appropriate storage for oils and chemicals shall be provided, and all spillages shall be contained using commercial available absorbents.

(g) temporary site illumination during the construction period;

4.1.38 Works are to be undertaken under normal daylight and night working will be avoided.

4.1.39 In case artificial illumination will need to be provided, such as task lighting or compound lighting, such lighting would be positioned at low level on posts / tripods and directed at the most frequently used areas of work.

4.1.40 Efforts will be made to ensure that any onsite lighting will be directed away from any of the identified site habitats. Inward facing security lighting would be provided at construction compounds on a 24 hour basis.

4.1.41 Cowled lighting would be used to minimise light spill beyond site compounds which would only be in place during the construction period.

4.1.42 As the construction programme requires a summer build programme, it is unlikely that temporary lighting would be required.

(h) the methods to be adopted to reduce the effects of noise occurring during the construction period to the lowest practicable levels and in accordance with BS 5228: Noise control on construction and open sites;

4.1.43 Noise nuisance could originate from the operation of machinery on site as well as from vehicle

movements to and from the site as well as within the site.

4.1.44 It is expected that construction activities will only be undertaken during normal hours of operation, i.e. Monday to Friday – 07:00 – 19:00 hrs; Saturday – 07:00 – 19:00 hrs; This accords with the approved Construction Traffic Management Plan.

4.1.45 No construction activities will occur outside these hours unless expressly agreed with the LPA.

4.1.46 In the interest of noise suppression, all plant will be properly maintained and contractors will be required to conform to the construction noise code of practice as per BS 5228 and to employ Best Practicable Means as defined by section 72 of the Control of Pollution Act 1974 to minimise the effects of noise, as well comply with the requirements of the Control of Noise at Work Regulations 2005, National Planning Framework (2012) and Construction noise and vibration HSE guidelines and advice.

4.1.47 These include inter alia:

1. Carrying out a risk assessment to identify where control measures are required for noise.
2. Restricting construction works and traffic movements to the working hours defined above.
3. Choosing methods and equipment in compliance with BS 5228.
4. Maintain all vehicles and plant in good working order and use appropriate silencers, including mufflers or acoustic covers where possible.
5. Shut down machines used intermittently in the periods between works, or throttle them down to a minimum.
6. Set a speed limit on site – Set at 5mph
7. Investigate and resolve any noise complaints.

(i) storage of materials and disposal of surplus materials;

4.1.48 Material deliveries are to be received at the temporary construction compounds. Delivery vehicles are to unload within the compound and the load is to then be distributed around the site as per the needs of the construction activities and programme.

- 4.1.49 Due to the planning of the number of deliveries per day, all delivery vehicles will be able to enter the site, unload within the compound areas, and exit the site. In the case of road construction, stone materials will be directly deposited to area of construction to minimise double handling, reduce traffic movements and avoid excess dust.
- 4.1.50 The site will operate with a JIT (just in time) delivery protocol, which signifies only accepting a delivery of material soon before said material is to be used in the construction. By definition, this means only a small storage area will be required within the temporary construction compounds.
- 4.1.51 In alignment with the position of the construction compounds, materials shall not be stored within proximity of the watercourses, reens or ditches.
- 4.1.52 Fuels are to be stored in double skinned, locked and banded fuel bowsers, as far away from watercourses as possible, and away from the regular passage of site traffic.
- 4.1.53 Spill kits shall be located next to the fuel bowsers and any other potentially hazardous material will also be stored within designated, impermeable, banded area, in keeping with the respective COSHH and MSDS.
- 4.1.54 Materials, plants, spill kits and fuel storage areas will be protected from vandalism and inspected regularly for signs of damage. Keys will be removed from unattended vehicles/plant.
- 4.1.55 Usable Surplus materials shall be returned to compound to either be returned to supplier or stored at our main warehouse.
- (i) the construction of the accesses into the site, the erection of any entrance gates and the creation and maintenance of associated visibility splays;**
- 4.1.56 The points of access are indicated on the site layout plans and care would be taken to ensure that appropriate visibility splays are in place to allow safe access and egress from the site.
- 4.1.57 Appropriate visibility splays would be maintained for the duration of the construction programme
- 4.1.58 Gates would be put in place to secure the site and these would be set back from the highway to allow vehicles to turn into the site without obstructing the highway while they are opened.

(j) access tracks and other areas of hardstanding, including areas of temporary road matting;

4.1.59 Typical access track construction shall consist of stripping of topsoil, storing of topsoil in a predefined area on site. installation of Geotextile (Terram) to provide increased bearing capacity and prevent the stone mixing with the soil a layer of between 250-350mm shall be installed and compacted.

4.1.60 The access tracks and compound hard standings will be constructed from either

a) standard access road construction of base layer of 6F5 with a top layer of Type 1 or

b) soil stabilisation with a top layer of Type 1.

4.1.61 Straight Quarried material would be used - Not using recyclable material avoiding potential contamination risk. The image below shows a cross section of the planned access tracks.

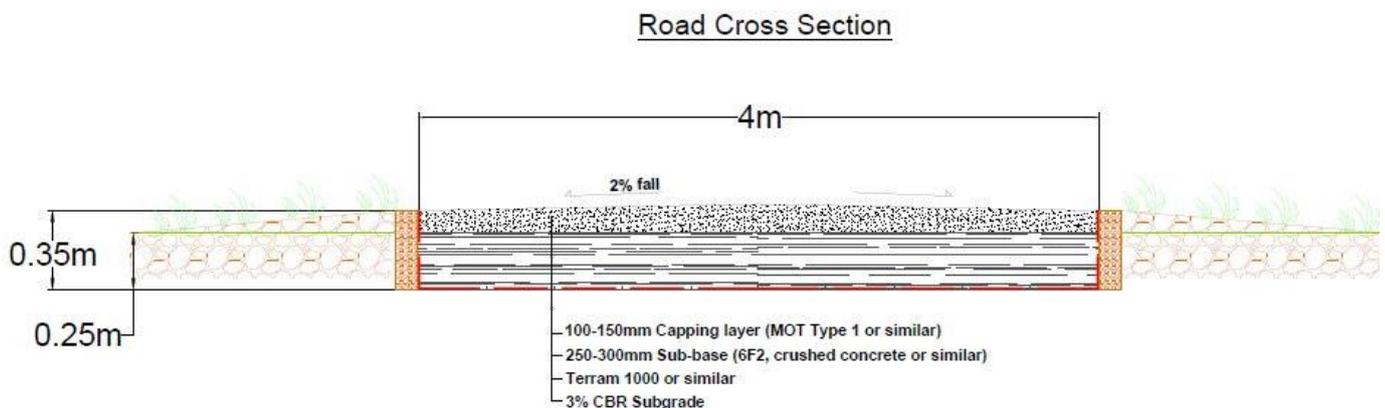


Figure 2 Cross section of proposed access tracks

(k) the carrying out of foundation works, including the foundation of the solar arrays and any other structures to be installed on the site;

4.1.62 All solar arrays will be pile-mounted and it is anticipated that the proposed development would have minimal impact on the existing ground conditions and would not require significant foundations (save from the foundation of transformer units).

4.1.63 The foundations for stations shall be formed by concrete; with due regard to the high alkaline properties of concrete, provisions shall be made for containing and recycling water for washing out concrete mixing

trucks and plants. The construction of the foundations will be monitored to avoid washings and concrete contaminating local watercourses, while activities involving pouring concrete should not take place during periods of heavy rainfall.

(I) method of working cable trenches

4.1.1 Where trench excavations are required, topsoil shall be stripped and deposited on one side of the trench line, and all further subsoils shall be deposited on the opposite side of the trench line so as to avoid contamination of the soils.

(i) No work shall be undertaken until the relevant utility drawings have been obtained and as far as is reasonably practicable all services identified and located.

(iii) Any works carried out using trenching machines and excavators require a banksman to be present at all times.

(iv) Trial holes shall be excavated as and when deemed necessary.

(v) Excavated materials shall be placed at the side of the trench but not as to cause a hazard from fall in or collapse.

(vi) Wherever possible materials shall be used as fill and reinstated in compacted layers.

(vii) Fine fill around cables and ducting shall be undertaken in accordance with the engineering specification.

(viii) Any arising not used as backfill shall be stockpiled at suitable intervals for clearance.

(ix) The site shall be left in a clean and tidy condition.

4.1.2 The cables shall cross the trenches in one of two ways:

1. Cable ducts shall be incorporated into watercourse of hedgerow crossings and be positioned in such a way that we do not have to excavate under / through the watercourse or hedgerow

2. Individual Cable pipe crossing, consisting of a galvanised pipe supported on either end of the watercourse by a galvanised pile. This will allow the cable pipe to span across features without any excavation.

4.1.3 Overnight, ramps will be left in place to provide means of escape for small animals.

(m) general soil storage and handling;

- 4.1.4 Areas to be stripped or excavated and the areas left in-situ shall also be identified. Methods for stripping, stockpiling, spreading and potentially also ameliorating the soils shall be defined following the results of a confirmatory geotechnical survey. Location of soil stockpiling as and when necessary is to be determined based on excavation needs and will under any circumstance be as far away as reasonably possible from the reens, ditches and watercourses.
- 4.1.5 Areas of soil to be protected from construction activities (e.g. retained trees, protected habitats, archaeology, etc.) shall be clearly marked out. Unnecessary vehicle movements across soil shall be avoided.
- 4.1.6 The selection of appropriate equipment and work practices in terms of soil handling is very important to ensure soil is not mishandled, as that could have adverse impacts on its properties, such as fertility, permeability, ecological diversity, visual quality of vegetated areas and underlying aquifer discharges. Mishandling also increases the risk of flooding and off-site discharges.
- 4.1.7 In case of sustained heavy rainfall during any earthwork operations, work must be suspended and not restarted until the ground has had at least a full dry day or agreed moisture criteria are reached. Lighter, free draining soil is easier to move with less risk of damage compared to a heavy clayey soil.
- 4.1.8 Soil stockpiling will be done with the main aim of maintaining soil quality and minimising damage to the soil's physical and structural attributes so that it can be reinstated and reused (e.g. in backfilling trenches and other excavations). Stockpiling should be done in away so as not to cause erosion, pollution to watercourses or increasing flood risk to the surroundings.
- 4.1.9 The Contractor will endeavour to not stockpile soil for long periods of time, as this would lead to anaerobic conditions and chemical/biochemical changes in the soil, which may take longer to be reversed depending on the ambient conditions.
- 4.1.10 As it is anticipated that the soil will be wet and/or plastic in consistency, the Contractor will endeavour to stockpile by tipping in a line of heaps to form a windrow, with the windrows spaces sufficiently to allow tracked plant to gain access between them so that the soil can be heaped. To avoid compaction, no machinery (including tracked plant) shall traverse the windrow.

(n) post-construction restoration/reinstatement of the working areas, including cable trenches and area covered by any matting or other areas where the soil has been disturbed or compressed;

4.1.11 Upon completion of the site construction work, the temporary construction compound and all other temporary works shall be dismantled and the top soil reinstated to its original state.

4.1.12 Following construction the areas between panel rows will be power harrowed, re-seeded with vegetation, as per the requirements of the planning permission. All developed areas of the Application Site will include a vegetation cover, appropriately managed, to promote low erosive sheet flow during the operational lifetime of the Development.

(o) the sheeting of all heavy goods vehicles construction materials to, or spoil from, the site to prevent spillage or deposit of any materials on the highway;

4.1.13 All loaded vehicles, including vehicles carrying construction materials to, spoil or waste materials from, the site are to be sheeted to prevent spillage or deposit of any materials to the highway.

(p) details of the vehicles to be used on the site during construction activities

4.1.14 It is envisaged that the following vehicles / plant will be used on site during the construction activities:

1. JCB diggers for trenching.
2. Dump trucks for soil removal and distribution of material from compound and in terms of reinstatement.
3. 'Bobcats' used to distribute low load materials on site.
4. Telehandlers for distributing heavier load materials on site.
5. Vibrating roller for compacting access tracks and compound areas.
6. Piling machine for ramming piles as part of the mounting frames.
7. Cranes for lifting inverter stations into place.
8. Delivery lorries to deliver inverter stations and other equipment (e.g. solar panels).

9. Fuel bowsers as required.

10. Normal passenger vehicles for the transport of personnel to and from the site

(r) details of control of surface water to prevent it entering the public highway or carrying sediment to the surface water drainage network in the vicinity of the site.

- 4.1.1 Surface water flooding (overland flow) can occur during intense rainfall events, when water cannot soak into the ground or enter drainage systems.
- 4.1.2 Measures will be put in place which will ensure that surface waters do not enter the public highways or carry sediments to existing water courses.
- 4.1.3 Appropriate buffer distances will be maintained at all times, in keeping with the planning consent requirements.
- 4.1.4 Under the Water Framework Directive (WFD) no deterioration may be allowed to occur to controlled waters, including surface and ground water. Therefore no contaminated runoff may be allowed to enter either surface water drainage or be allowed to infiltrate the ground.
- 4.1.5 Surface water run-off containment measures shall be considered and implement if required. Treatment methods would include settlement and filtering. Discharges will be limited to avoid pollution. Waters unfit for discharge would be disposed of site if required, in compliance with the relevant Waste Management regulations.
- 4.1.6 The area of the Proposed Development is currently bare ground. Due to the nature of the design of the solar panels, there will be no significant increase in hard standing as part of the proposed Development.
- 4.1.7 The area of solar panels will remain grass-covered but with the addition of the metal frames housing solar panels above. The piles of the metal frames will be driven into the ground. The area will remain as grass with the possibility to graze sheep underneath the panels.
- 4.1.8 As a result of the construction of the solar panels, some rainfall will be intercepted before reaching the ground level by the surface of the solar panels. This intercepted rainfall will either run down the face of the solar panels due to the angle at which they are positioned and drip onto the ground cover below or will be lost to evaporation from the face of the solar panels.

- 4.1.9 Rainfall that does reach ground level will continue to follow the pre-development drainage routes. Some of the rainfall will infiltrate into the ground below whilst some will be conveyed across the site as surface water runoff.
- 4.1.10 The construction process itself will not introduce any additional hardstanding beyond that specified under the approved plans
- 4.1.11 Existing topographical features will be retained to ensure runoff response is maintained.
- (t) means to exclude small animals from excavations.**
- 4.1.12 All ground excavations during the construction phase will be backfilled as much as practical to reduce the number of open trenches or excavated in such a way to allow a means of escape suitable for small mammals that may become trapped. e.g. steps in excavated trench, wooden plank.

Outline Construction and Environmental Management Plan

Brynwell Farm Solar Project





Savills (UK) Ltd
Kingston House, Blackbrook Business Park, Taunton, TA1 2PX
t 01823 445030 f 01823 445031 e taunton@savills.com
www.savills.co.uk