

# PHOENIX SOLAR PARK



**Code of Construction Practice, incorporating:**

**Part 1 - General Environmental Management Plan**

**Part 2 - Construction Environmental Management Plan**

**December 2023**

**Document Reference Number: BL009**

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Revision	Date Issued	Prepared By	Approved By
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## 1 Introduction

- 1 This document relates to the construction of Phoenix Solar Park. Figure 1.1 shows the location of the site.
- 2 This document forms the Code of Construction Practice (CoCP) for the development and comprises two parts. Part 1 comprises the general environmental management procedures; Part 2 comprises a series of construction environmental management plans covering specific environmental aspects developed with reference to the documents which form part of the approved planning application and the planning conditions listed within the decision notice for the application.
- 3 The purpose of this CoCP is to.
  - Comply with legal and other requirements appropriate to the proposed construction activities;
  - Provide a framework to identify and manage the environmental aspects, over which we have control, and to implement the appropriate control measures;
  - Provide the basis for setting objectives and targets for the project;
  - Demonstrate a professional Environmental Management approach during construction

## **Part 1**

### **General Environmental Management Plan**

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## 2 General Environmental Management Plan

### 2.1 Introduction

- 4 This Plan; the General Environmental Management Plan (GEMP), sets out general construction practices and site wide measures to minimise, as far as reasonably practicable, the adverse environmental impact of construction activities and inconvenience to the public, arising from the potential disruptive effect of construction. This Plan does not refer to specific environmental aspects. These are covered within Part 2 of the CoCP.
- 5 The GEMP contains information on the following areas:
  - Construction working hours
  - Plant and Equipment
  - Safety and security
  - Good site housekeeping

### 2.2 Construction working hours

- 6 All works will take place between 8am to 6pm, Monday to Friday.

### 2.3 Plant and Equipment

#### 2.3.1 Introduction

- 7 Steps will be taken to ensure that any plant and equipment used is fit for purpose and minimises the impact upon the environment of its selection, mobilisation, maintenance, operation, refuelling, storage, cleaning and demobilisation.

#### 2.3.2 Selection

- 8 Plant and equipment will be selected to minimise noise, vibration and disruption whilst remaining suitable for purpose.
- 9 Plant and equipment will be well maintained and all sources of potential contamination will be checked before it is allowed on site. Maintenance records will be checked.

#### 2.3.3 Mobilisation

- 10 Plant and equipment on site will be mobilised in such a way as to cause minimal ground disturbance.
- 11 All loading and unloading of vehicles will take place off the public highway.
- 12 Traffic routes are detailed in Figure 2.
- 13 No Public Rights of Way cross the site or will be affected by the proposed construction methods.
- 14 All vehicles will enter and exit the site in a forward direction. This will assist in the minimisation of noise from reversing alarms.

- 15 Unless otherwise agreed with the Local Planning authority vehicles arriving or leaving the site will do so during the working hours set out above and no deliveries will take place between the hours of 8am -9am and 4pm to 5.30pm Monday to Friday in order to avoid peak periods of traffic flow on the local road network.
- 16 Banksman/marshalls will be located at the junction of the A477 with the unnamed lane leading to the site as well as at the site entrance in order to minimise any disruption to other road users and ensure that delivery vehicles do not park on the highway prior to entering the site.
- 17 All vehicles waiting to leave the construction site will be required to switch off their engines to prevent unnecessary noise and air pollution.
- 18 Priority will be given to non-construction vehicles using the unnamed lane leading from the A477 to the site.
- 19 Strict measures will be taken to minimise the spillage of mud and loose materials on roads arising from construction works. These will include, but not necessarily be limited to:
  - the provision of hard surfacing for areas of vehicle movement.
  - the provision of wheel washing facilities at the access and egress. The wheel washing facilities area will be brushed clean at frequent intervals.
  - the adequate sheeting of the sides and tops of all vehicles carrying loose materials.

#### **2.3.4 Operation and refuelling**

- 20 Plant and equipment will be operated in a manner that minimises unnecessary ground disturbance and is within agreed noise limits and working periods.
- 21 All equipment / vehicles containing fuel or other hazardous materials will, where possible, be stored on hard standing (or other impermeable base) whilst not in use, be accompanied by a spill kit as necessary, and protected against vandalism.
- 22 Refuelling will take place on a designated impermeable area, with absorbent materials and drip trays to hand to prevent contamination.
- 23 All necessary precautions will be taken to prevent the occurrence of smoke emissions or fumes from site plant or stored fuel oils.
- 24 Drivers will switch off their vehicle's engine when stationary to prevent exhaust emissions (and noise) and keep their engines in tune and their catalysts working efficiently.
- 25 Spill kits containing materials such as leak-sealing putty, overdrums, drain seals, oil or chemical absorbents and personal protective equipment (PPE) will be located within and near storage and refuelling areas.
- 26 Before leaving the site all equipment / vehicles will be cleaned.

#### **2.3.5 Maintenance**

- 27 Plant will be well maintained and measures will be taken to ensure that it is not left running for long periods when not directly in use. Plant and equipment will be checked at

the start of the operations, and periodically to ensure efficiency and appropriate maintenance. Maintenance will take place to ensure the equipment is running efficiently. Records of maintenance activities undertaken will be kept.

- 28 Maintenance will take place away from sensitive environmental receptors.
- 29 Absorbent material and drip trays will be kept to hand to prevent contamination from leakages.

## **2.4 Safety and security**

### **2.4.1 Site security**

- 30 Security on site will be maintained on a 24 hour basis so as to prevent unauthorised entry to or exit from the work site.
- 31 Fencing will be installed as detailed within the approved planning documents.
- 32 No security lighting is proposed on site.

### **2.4.2 Site safety**

- 33 Additional lighting will not be required on site as it should be possible to install the panels during daylight hours. Therefore there will be no subsequent impacts upon amphibians within the proposed Solar Park for any period of time.

## **2.5 Emergency procedures**

- 34 This procedure sets out the actions to be taken when an emergency occurs which could result in an impact on the environment. Should an incident occur the actions detailed below should be taken. All emergency activities must be mindful of the Health and Safety of all personnel on site.
- 35 Emergencies which could have an impact upon the environment include:
  - spillage or leakage of hazardous materials
  - release of chemicals and creation of waste water in the event of a fire
- 36 In the event of an emergency, the most senior person on site will control the incident. They will be responsible for co-ordinating response measures, logging details, initiating investigations of near misses and incidents and reporting on the incident.
- 37 Personnel, as necessary, will maintain on site, and collate in a timely manner, a system for recording any incidents and any ameliorative action taken for inspection by appropriate organisations.
- 38 Any action taken will be monitored to ensure that the appropriate action has been taken. Procedures should be put in place to ensure, as far as is reasonably practical, that necessary action has been taken and steps to avoid recurrence have been implemented.

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### **2.5.1 Emergency Procedures and Contacts**

- 39 A list of Emergency Contacts will be created, and Emergency Procedures which will be displayed prominently at each site. These Procedures will be followed in the event of any site emergency.
- 40 The Procedures will contain emergency phone numbers and details of the method of notifying local authorities/services.

## **2.6 Good site housekeeping**

### **2.6.1 Site activities**

- 41 Reasonable endeavours will be used to ensure that 'good housekeeping' policy will be followed at all times. This will include, but not necessarily be limited to the following requirements:
- Smoking areas will be provided at suitable outside locations at ground level as far as practicable.
  - Open fires are prohibited at all times.
  - The site will be kept clean and tidy. This will include strict measures to minimise the spillage of mud and loose materials on roads arising from works, as described in Section 2.3 (Plant and Equipment).
  - Adequate toilet facilities will be provided for all staff. Toilet facilities will be kept clean.
  - The operation of plant and equipment, including lorries, will comply with Section 2.3 (Plant and Equipment).
  - Radios (other than two-way radios used for the purposes of communication between operators of the contract) and other forms of audio equipment will not be allowed on site.

### **2.6.2 Location of site accommodation and facilities**

- 42 All site huts, office accommodation, toilets and welfare facilities will be accommodated within the boundaries of the site. No living accommodation will be permitted on site. Portable mess rooms, locker rooms, toilets and showers will be permitted.



## **Part 2**

### **Construction Environmental Management Plan**

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## 3 Construction Environmental Management Plan

### 3.1 Introduction

- 43 This Construction Environmental Management Plan comprises a series of plans covering specific environmental aspects relevant to the location, nature and extent of the development proposals. The plans include:
- A Traffic Management Plan
  - An Ecology and Nature Conservation Management Plan
  - A Surface and Groundwater Management Plan
  - A Site Waste Management Plan
  - A Noise and Vibration Management Plan
  - A Dust and Air Pollution Management Plan
  - A Contaminated Land Management Plan
  - A Landscape Management Plan
- 44 An indicative Environmental Site Inspection Checklist is provided in Appendix G. This document sets out daily checks which would be completed by the site manager to ensure compliance with the general measures contained within this document. It is expected that following the appointment of a suitably qualified construction contractor they will wish to adapt or add to the checklist provided. For this reason it is provided as indicative but sets the minimum requirements for any daily checking schedule.

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## 4 Traffic Management Plan

### 4.1 Scope

- 45 Further to the traffic assessment included within the Environmental Statement Volume 1 (doc ref BL001) additional information is provided below. This information can also be found in the separate Draft Construction Traffic Management Plan (ES Vol 1: Appendix A13.1; doc ref BL010) but is included within this document in the interests of providing a comprehensive standalone CEMP.

### 4.2 The Construction Phase

- 46 Construction of the Solar Park is proposed to commence in Autumn 2024. The construction phase will take place over a 4 month period, plus a final week for site hand over and clearance.
- 47 The construction programme and associated traffic is detailed in Section 4.6.
- 48 During the construction phase no soil will be removed from the site. This will be stockpiled and reused in the restoration of the site following decommissioning.

### 4.3 The Operational Phase

- 49 The target date for operation is Spring 2024. It is intended that the facility will be operational for 40 years.
- 50 The development will not be open to the general public and will be maintained by a team of engineers who will visit the site as required.
- 51 The Solar Park will be equipped with a computer control system that will continuously monitor variables such as electrical voltage and current from a central off-site host computer or from a remote personal computer. In the event of any fault at the park the system will be able to automatically alert operations staff.

### 4.4 The Decommissioning Phase

- 52 The main decommissioning activities will comprise:
- Removal of PV panels, inverter and associated equipment;
  - Reuse / recycling / disposal of the above; and
  - Removal of cable and ancillary structures.
- 53 It is probable that most of the equipment will be at the end of its useful operating life and will be obsolete and unsuitable for further use. It will therefore need to be dismantled for recycling. Decisions on reuse of plant items, recycling of materials or the disposal to waste will be made at the time of decommissioning in the light of the technology then available, environmental and economic considerations and legislation. Unsalvageable material will be disposed of at a licensed landfill. A small crane would be required to dismantle the equipment.

- 54 The foundations would be removed and the soil surface would be restored to its original condition. Disturbed areas would be re-vegetated as appropriate. Access tracks will also be removed.
- 55 Disposal of all waste materials will only be via appropriate and authorised routes.
- 56 The decommissioning phase is expected to take approximately 6 weeks and will consist of the exact opposite construction sequence: starting with disconnecting the plant from the grid, removing the substations, inverters, opening of trenches to remove DC and / or AC cables, disconnecting all solar modules, and dismantling the modules and supporting structure.

## **4.5 Contractors' Arrangements**

### **4.5.1 Construction Access**

- 57 Access to the site during construction will be via the existing access point an unnamed lane leading from the A477 to the proposed site. This access point will be surfaced to allow access for larger vehicles without causing any damage. The suitability of this access point has been assessed as detailed in ES Vol 1 Appendix A13.2 (doc ref BL001). No significant widening works are considered necessary to these access points for the purposes of construction vehicle access.
- 58 Sufficient space will be provided on site for vehicles to turn. It will not be necessary for any vehicle to reverse out on to the public highway (Figure 6.6 shows the location of the proposed site compound).
- 59 Approximately 865m of new access track will be laid to aid construction and will comprise aggregate.

### **4.5.2 Hours of Construction**

- 60 Construction activity will take place between the following hours:
  - 8am to 6pm Monday to Friday
- 61 No construction (or decommissioning) works will be undertaken outside these hours or on Bank or Public Holidays without the prior written agreement of the Local Planning Authority. This will minimise the potential for disturbance to local amenity.

### **4.5.3 Site Compound**

- 62 Figure 6.6 shows the location of the proposed site compound which will be constructed prior to the commencement of construction.
- 63 The temporary construction facilities will comprise:
  - Anti-vandal potcabins including
    - site office
    - canteen
    - drying room
    - storage unit,

- welfare block - toilets
- Security Cabin
- Water bowser
- c.1600 sqm of stabilised area for parking and loading etc.;
- Lay-bys for two HGVs (this accords to the contractors' specification and is considered to be sufficient to accommodate HGV demand at the site based on their experience of similar construction scheme); and
- An area for one HGV to unload.

#### **4.5.4 Surfacing**

- 64 No excavation will be carried out to form the construction compound. This will sit on metal sheeting. Similarly, the parking area, unloading area, HGV turning area, and temporary access track will be formed of a temporary surface.
- 65 As detailed in Section 4.5.1 approximately 865m of new access track will be laid to aid construction and will comprise aggregate.

#### **4.5.5 Drainage**

- 66 A drainage system will be installed as detailed within the Flood Consequence Assessment (ES Vol1 Appendix 12.1). Once approved it will be included with this document.

#### **4.5.6 Wheel Washing**

- 67 Wheel wash facilities will be located within the site compound.

### **4.6 Construction Traffic**

#### **4.6.1 Programme**

- 68 The construction programme is provided in Appendix B.

### **4.7 Deliveries**

#### **4.7.1 Materials, Machinery and Vehicles**

- 69 Materials to be delivered are likely to include the following:
- Up to 25,500 PV panels (dimensions 2210 mm (l) x 1200mm (w)) and frames;
  - 5 inverter/transformer cabins (dimensions 10.4 m (length) by 2.6 m (width), and 3.18 m (height));
  - 1 prefabricated cabin to house switchgear/ materials to construct a control building (dimensions 7 m (length) by 3 m (width), and 4 m (height))
  - Electricity cables and communication cables;
  - Perimeter fence;
  - Steel poles with CCTV;
  - Materials to construct the access track;

- Surfacing materials for the compound area;
- Five prefabricated site cabins;
- Water Bouser; and
- A diesel generator (30 kVA) (only during construction).

70 Machinery to be delivered will include:

- 3 x 4WD forklift;
- 2 x 4WD site trucks to carry materials;
- 3 x driller for the fence erection;
- 1 x compacter; and
- 4 x excavator for the excavating and trenching.
- x2 Bobcat tracked digger - used for excavating and trenching
- x2 piling machine - used for installing panel mounting systems
- x1 80 tonne crane - used for offloading inverter houses into position
- x1 tractor - used for installing fencing.

71 The following types of vehicles will be used for the deliveries to the site:

- Low loaders and HGVs, to deliver equipment and plant;
- Flat bed lorries, to deliver substation and other components; and
- HGVs with regular deliveries of construction materials.

72 No abnormal loads will be required to access the site. The maximum size of delivery vehicle will be a 16.5m articulated vehicle.

#### 4.7.2 Number of Deliveries

73 A summary of the delivery vehicles required is provided in Table 4-1 and 4-2.

**Table 4-1: Summary of Deliveries**

<i>Item being Delivered</i>	<i>Vehicle Used</i>	<i>Quantity</i>
<b>Construction Plant / Equipment (Delivery and Removal)</b>	Low Loader	16
<b>Aggregate for the Access Roads</b>	HGVs	136
<b>Concrete for Foundation Pouring</b>	Concrete Mixer Truck	37
<b>PV Panels</b>	HGV (with low loader)	20
<b>Support Structures / Mounting System</b>	HGV (with low loader)	13
<b>Small Crane (Delivery and Removal)</b>	Low Loader	2

<i>Item being Delivered</i>	<i>Vehicle Used</i>	<i>Quantity</i>
<b>Inverters and Transformer</b>	HGV (with low loader)	10
<b>Cabling</b>	Trucks	8
<b>Backfilling Sand</b>	HGV	30
<b>Switchgear and Housing</b>	HGV (with low loader)	5
<b>Miscellaneous Items</b>	Trucks	35
<b>Total</b>		<b>312</b>

**Table 4-2: Indicative Programme of Deliveries**

Delivery	Month				Total
	1	2	3	4	
<b>Construction Plant / Equipment (Delivery and Removal)</b>	8			8	<b>16</b>
<b>Aggregate</b>	136				<b>136</b>
<b>Concrete</b>	37				<b>37</b>
<b>PV Panels</b>		20			<b>20</b>
<b>Support Structures / Mounting System</b>		13			<b>13</b>
<b>Small Crane (Delivery and Removal)</b>			1	1	<b>2</b>
<b>Inverters and Transformer</b>			10		<b>10</b>
<b>Cabling</b>			8		<b>8</b>
<b>Backfilling Sand</b>			30		<b>30</b>
<b>Switchgear and Housing</b>			5		<b>5</b>
<b>Miscellaneous Items</b>	25	10			<b>35</b>
<b>Total</b>	<b>206</b>	<b>43</b>	<b>54</b>	<b>9</b>	<b>312</b>

74 Over the construction period, the delivery of all material and equipment will be managed with around 312 delivery vehicles. Peak movements will equate to fewer than 2 deliveries an hour at the construction peak.

#### **4.7.3 Delivery Times**

75 Deliveries will take place within the hours of construction detailed in Section 4.5.2. In order to reduce the potential for congestion on the strategic road network, the arrival of multiple deliveries at any one time will be avoided. In addition, deliveries will be timed to

avoid peak times. Deliveries will therefore not occur between 8am to 9am and 4.30pm to 5.30pm.

#### **4.7.4 Vehicle Routes and Traffic Management**

- 76 Deliveries to the site will follow the route indicated in Figure 13.1.
- 77 All vehicles will enter and exit the site in a forward direction. This will assist in the minimisation of noise from reversing alarms.
- 78 Three banksmen/marshalls will be located at the junction of the A477 with the unnamed lane leading to the site as well as at the site entrance in order to minimise any disruption to other road users and ensure that delivery vehicles do not park on the highway prior to entering the site.
- 79 All vehicles waiting to leave the construction site will be required to switch off their engines to prevent unnecessary noise and air pollution.
- 80 Priority will be given to non-construction vehicles using the unnamed lane leading from the A477 to the site entrance.
- 81 To further minimise the impact of construction traffic on the existing road network the following construction traffic management principles will be observed:
  - Temporary 'Construction Access' warning signage, fully in accordance with Chapter 8 of the Traffic Signs Manual, will be provided and maintained for the duration of the works;
  - To minimise the impact that the construction works will have on existing road users and the surrounding environment, the Contractor will appoint a site based delivery and transportation manager.
  - The delivery and transportation manager will be responsible for ensuring all construction and delivery vehicles to and from the site are managed efficiently with the aim of minimising nuisance or unnecessary disruption to the operation of the existing highway network. The role will also include advising delivery companies and their drivers of the most appropriate route to follow when approaching the site in particular providing advice on any local width and weight restrictions;
  - To minimise journey distances to and from the site, local materials and labour will be used wherever practical and suitable with support from specialised companies and suppliers not located within the area; and
  - Parking for all the Contractor's vehicles will be provided within the site boundary.
- 82 Details of a traffic management scheme to include positive traffic control and a temporary speed reduction order on the A477 during the construction phase of the development will be agreed with Pembrokeshire County Council and the Trunk Road Agent and will form part of a CTMP which must be implemented prior to and during construction.
- 83 The provision and agreement of a construction schedule and details of the off-site management of vehicle movements including layover areas will be agreed with Pembrokeshire County Council and the Trunk Road Agent and will form part of a CTMP which must be implemented during construction.



- 84 No Public Rights of Way cross the site. There is a byway which follows the unnamed lane linking the A477 to Lower Nash Church, passing the site entrance. Some minimal disruption to this route may occur as a result of the proposed development due to the movement of large vehicles along the route. It is proposed that the byway will remain open for use by the public with banksmen controlling vehicle movements to ensure the continued safety of the other users.
- 85 In addition, should pedestrians wish to avoid the construction traffic, an alternative route exists for the PROW located 250m to the west. Access to this alternative route from the footpath link to the south is the same as that for the byway, with a requirement to walk approximately 150m west instead of east when leaving the southern footpath end point. This alternative route allows continued access to the listed Lower Nash Church and the surrounding PROW routes in the area.

#### **4.7.5 Construction Workforce**

- 86 The maximum number of construction personnel on site at any one time will be 50. Only 30 on-site car parking spaces will be provided. This level of provision is considered to be sufficient as much of the workforce will travel from outside the UK and will arrive on site via a minibus. There will be sufficient space to accommodate minibuses in the compound car park. The remaining contractors will be recruited from the local area where possible, minimising their travel distance to the site, and will be encouraged to car share with other personnel.
- 87 On weekdays, the majority of construction personnel will arrive before 8am and leave after 6pm, thereby avoiding the traditional network peak hours of 8-9am and 5-6pm. This will minimise any impact these vehicles may have on peak hour congestion on the local highway network.
- 88 Due to the low quantum of traffic associated with the construction workforce, the additional vehicle movements are not expected to have a noticeable impact on the highway network and as such a detailed green travel plan is not considered to be appropriate. Never the less, a tool-box-talk will be given to all site contractors detailing the potential benefits of car sharing including:
- Reduced travel cost,
  - Reduced travel stress,
  - Easy access and user friendly system,
  - Ability to use the scheme whether a driver or passenger,
- 89 Public transport availability to the site is poor. However, as many site staff will be staying in local accommodation, a minibus will be provided to transport staff between their accommodation and the site at the start and end of each day. Alternatively staff will be encouraged to park at an agreed central location which will minimise their travel distance and a minibus will transport them to and from site.
- 90 Traffic associated with the construction workforce will be monitored by the site manager and should evidence arise of any negative effects, the site manager will liaise with Pembrokeshire County Council to agree any necessary mitigation measures.

## **4.8 Monitoring**

- 91 A condition survey of the unnamed lane leading from the A477 to the site entrance has already been completed and has concluded that at present no works are required along the lane to make it suitable for access by the construction vehicles proposed. A further survey will be completed prior to construction and after the construction phase to monitor the condition and the need for repair if necessary. The scope of future surveys will be pre-agreed with the Council's Highways Officer. These surveys will be completed jointly with the appropriate highways officer.

## 5 Ecology and Nature Conservation Management Plan

### 5.1 Scope

92 This plan sets out the details of measures which will be taken to ensure compliance with all relevant legislation and guidance (detailed in ES Volume 2; Appendix A9.2 (doc ref BL002)).

93 This Ecological Management Plan includes:

- Information on protected/notable species which may be impacted upon as identified by the Ecological Impact Assessment completed as part of the planning application;
- Protection measures for trees and hedgerows;
- Site clearance measures in regard to protection of ecology; and
- Monitoring procedures.

94 This Plan also sets out the following:

- A summary of all known areas of nature conservation interest which may be affected on or adjacent to the project;
- Details of measures proposed to mitigate potential impacts on areas of nature conservation interest;
- Details of any restrictions on the timing of construction works and construction methods to protect species or areas of nature conservation interest;
- Details of appropriate watching briefs to be implemented during construction works;
- Procedures to be adopted in the event of unanticipated discovery or disturbance of protected species or important habitats;
- Reference to the relevant procedures in the Pollution Incident Response Plan to be implemented in the event of a pollution incident on or adjacent to a designated nature conservation site (Appendix C).

95 An Individual Species Plan for birds and bats and a Habitat Management Plan for trees and hedgerows can be found in Section 5.4 and 5.5 of this document.

### 5.2 Legislation and Guidance

96 Potential impacts on habitats, protected species and areas of nature conservation are strictly controlled by numerous legislative documents and guidance.

97 The legislation and guidance associated with the protection of habitats, protected species and areas of nature conservation is listed below:

- Habitats and Species Directive (92/43/EEC) 1992;
- Bern Convention (on the Conservation of European Wildlife & Natural Habitats; and on the Conservation of Migratory Species of Wild Animals) 1979;
- The Conservation of Habitats and Species Regulations 2010;
- Wildlife & Countryside Act 1981 (and subsequent amendments);
- Countryside and Rights of Way Act 2000;

- Environment (Wales) Act Section 7 2016;
- Technical Advice Note 5: Nature Conservation and Planning
- Natural Environment and Rural Communities (NERC) Act 2006;
- Protection of Badgers Act 1992;
- The UK Biodiversity Action Plan (UKBAP) 1994; and
- Pembrokeshire Biodiversity Action Plan (PBAP).

98 Additional legislation relating to protected species is summarised in ES Volume 2; Appendix A9.2 (doc ref BL002).

## **5.3 Detailed Control Provisions**

### **5.3.1 Ecological Commitments**

99 The contractor will minimise the working area used where possible to reduce the habitat loss from within the land made available.

100 Hedgerow creation will be undertaken by the contractor in accordance with the agreed Landscape Masterplan (Appendix A). Planting of this nature will use species of local provenance as requested by the LPA. There are more details on species provenance in the Landscape and Ecological Management Plan ES Volume 2; Appendix A9.4 (doc ref BL002).

### **5.3.2 Protected Habitats and Species**

101 The aim of this Management Plan is to ensure that the implementation of the project complies with the ecological commitments and provisions made in the Environmental Report.

102 Where possible and practicable, the programming of construction works will take cognisance of the requirements set out in the Environmental Report. In particular, the timing of construction works will be undertaken with due regard to any clearance works to mitigate potential impacts on terrestrial breeding birds. In this case a watching brief has not been deemed to be required.

103 In the event of unanticipated discovery or disturbance of protected species or important habitats, the following will take place:

- Immediate cessation of works in the immediate area.
- The area will be cordoned off and access restricted to all plant, machinery and personnel as required.
- The Environmental Manager will immediately seek advice from a suitably qualified ecologist.
- The necessary permits and provisions to enable works to proceed will be agreed with the Local Authority and /or Statutory Body, as required.
- Works will not recommence until the ecologist has confirmed that all necessary provisions are in place.

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## 5.4 Species Management Plans

- 104 Providing the mitigation, compensation and enhancement measures set out within the Ecological Impact Assessment (EclA) are implemented as part of the development, no significant impacts are predicted on any protected species. However, the in-built species specific mitigation measures are set out below.

### 5.4.1 Badgers

#### 5.4.1.1 Justification and Background

- 105 The Extended Phase 1 Habitat Survey (SK Environmental Solutions Ltd, 2019 and 2023) identified potentially suitable habitats for badgers as being present on site.

#### 5.4.1.2 Potential Impacts

- 106 If suitable mitigation was not implemented then badgers could be disturbed or injured.

#### 5.4.1.3 Mitigation Strategy

- 107 A pre-construction badger survey must be completed across the proposed development site to ensure that no setts have been created since this the assessment was completed and this document was written.
- 108 If no badger setts are found then then works can commence/continue. If badger setts are found then Natural England will be contacted to discuss the potential need for a licence prior to any works commencing.

#### 5.4.1.4 Monitoring

- 109 No ongoing monitoring is required unless otherwise stated within any future licence application.

#### 5.4.1.5 Emergency Measures

- 110 Environmental Manager to be informed immediately if any badgers sets are discovered.

#### 5.4.1.6 External Consultation

- 111 Consult NE regarding the potential need for a licence should a badger sett be discovered at any point during construction.

#### 5.4.1.7 Additional Method Statement

- 112 None otherwise stated within any future licence application.

#### 5.4.1.8 Consents/Licences

- 113 None required at this stage but may be needed subject to the findings of the pre-construction badger survey.

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## **5.4.2 Birds**

### **5.4.2.1 Justification and Background**

- 114 The Extended Phase 1 Habitat Survey (SK Environmental Solutions Ltd, 2019 and 2023) identified potentially suitable habitats for nesting birds as being present on site.

### **5.4.2.2 Potential Impacts**

- 115 If suitable mitigation was not implemented then birds could suffer reduced breeding success as well as suffer from accidental mortality, both of which may have impacts upon populations.

### **5.4.2.3 Mitigation Strategy**

- 116 No works will be undertaken on any form of vegetation including hedgerows, scrub, trees etc. during the breeding bird period which is considered to be March to September inclusive without a nesting bird survey being undertaken by a suitably qualified ecologist.
- 117 If no nesting birds are found then works can commence/continue. If nesting birds are found then an exclusion zone of 5m will be put into place and will remain there until the young have fledged. The time taken for the young to fledge depends upon the species and as such has not been determined within this document. The Ecologist who undertook the nesting survey will offer appropriate advice on the timescales.

### **5.4.2.4 Monitoring**

- 118 Monitoring will be undertaken by the Environmental Manager throughout the construction phase.

### **5.4.2.5 Emergency Measures**

- 119 Environmental Manager to be informed immediately if any vegetation clearance is required.

### **5.4.2.6 External Consultation**

- 120 Not unless additional vegetation removal is required.

### **5.4.2.7 Additional Method Statement**

- 121 Not unless additional vegetation removal is required.

### **5.4.2.8 Consents/Licences**

- 122 None required

## **5.4.3 Bats, Amphibians, Reptiles and Dormouse**

### **5.4.3.1 Justification and Background**

- 123 The Extended Phase 1 Habitat Survey (SK Environmental Solutions Ltd, 2019 and 2023) identified potentially suitable habitat for these species within the proposed

development site (site boundaries). No significant Impacts were identified by the EclA providing the in-built mitigation measures are implemented.

#### ***5.4.3.2 Potential Impacts***

- 124 No potential significant impacts were identified, providing on-site habitat loss are managed.

#### ***5.4.3.3 Mitigation Strategy***

- 125 No artificial lighting will be installed without prior written consent from the LPA.
- 126 The Habitat Management Plans will be implemented.
- 127 No works will be undertaken on any trees without an ecological assessment of the potential for the tree to provide suitable habitat for roosting bats.

#### ***5.4.3.4 Monitoring***

- 128 The Site Manager will monitor construction activities and contact the LPA should any artificial lighting be required beyond the specified working hours to complete a particular task.

#### ***5.4.3.5 Emergency Measures***

- 129 None required.

#### ***5.4.3.6 External Consultation***

- 130 None required.

#### ***5.4.3.7 Additional Method Statement***

- 131 None required.

#### ***5.4.3.8 Consents/Licences***

- 132 None required

### **5.5 Habitat Management Plans**

#### **5.5.1 Tree and Hedgerow Habitats**

##### ***5.5.1.1 Justification***

- 133 The Extended Phase 1 Habitat Survey (2019 and 2023 by SK Environmental Solutions Ltd) identified trees and hedgerows as being present on the site.

##### ***5.5.1.2 Background***

- 134 A range of mitigation, compensation and enhancement measures are set out in the EclA and LEMP (ES Volume 2; Appendix A9.4 (doc ref BL002)) in relation to habitats. These must be implemented as part of the development.

#### **5.5.1.3 Potential Impacts**

- 135 If suitable mitigation was not implemented valuable local habitats could be lost or damaged. This would reduce local biodiversity, and remove habitat used by protected species.

#### **5.5.1.4 Mitigation Strategy**

- 136 The Landscape Masterplan details the planting requirements and this should be followed in full.
- 137 The Landscape and Ecological Management Plan (ES Volume 2; Appendix A9.4) should be followed in full.
- 138 No additional trees or hedgerow shall be damaged, destroyed, felled or lopped as part of the development.
- 139 Prior to the commencement of construction, security fencing will be installed to protect existing trees and hedgerows from construction activities and vehicles. This fencing will be installed no closer than 5 metres from the centreline of any hedgerows and have badger gates every 50m to allow passage of badgers and other animal species. If for any reason the installation of the security fence is delayed a temporary fence shall be constructed 5m from the boundaries to ensure that the boundary features are protected.

#### **5.5.1.5 Monitoring**

- 140 Monitoring will be undertaken by the Environmental Manager/Site Manager throughout the construction phase and the operator during the operational period.

#### **5.5.1.6 Emergency Measures**

- 141 Environmental Manager to be informed immediately if any adverse impact to habitat occurs out with the areas set aside for construction.

#### **5.5.1.7 External Consultation**

- 142 Not unless additional vegetation removal is required or plants die and require replacement in which case the LPA should be consulted.

#### **5.5.1.8 Additional Method Statement**

- 143 Not unless additional vegetation removal is required.

#### **5.5.1.9 Consents/Licences**

- 144 None required

### **5.6 Monitoring**

- 145 The contractor's appointed Environmental Manager/Site Manager will be responsible for implementing the procedures in the plan and will undertake monitoring to ensure implementation to best practice standards.



146        The Landscape and Ecological Management Plan (ES Volume 2; Appendix A9.4) will be implemented to ensure that the ongoing management and maintenance of the site complies with the necessary landscape and ecological requirements and commitments.

## 6 Surface and Groundwater Management Plan

### 6.1 Scope

147 A variety of potential impacts upon water courses and flooding were identified within the Environmental Statement (BL001) and accompanying Flood Consequence Assessment (FCA) (ES Volume 2; Appendix A12.1). A drainage strategy was developed and included within the FCA which would minimise these impacts. The development will be implemented in accordance with these details.

148 In addition current legislation and guidance relating to the management of potentially polluting substances will be adhered to and a variety of best practice measures will be implemented during construction.

### 6.2 Legislation and Guidance

149 The legislation and guidance associated with the control of water pollution during construction is listed below.

**Table 6-1: Legislation and guidance associated with the control of water pollution during construction**

Legislation/Guidance
Water Resources Act 1991 (Amendment) (England and Wales) Regulations 2009
The Groundwater (England and Wales) Regulations 2009
The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017
Water Industry Act 1991
BS 6031: 2009 Code of Practice for Earthwork
Control of Water Pollution from Linear Construction Projects, CIRIA Technical Guidance, 2006 (C648)
Control of Water Pollution from Construction Sites, CIRIA Technical Guidance, 2001 (C532)
PPG1: Understanding your Environmental Responsibilities – Good Practice Guidance
GPP5: Works and Maintenance in or near Water
PPG6: Working at Construction and Demolition Sites

150 The legislation and guidance associated with the safe handling, storage, disposal and transportation of hazardous substances such as oils and chemicals is listed in the table below.

**Table 6-2: Legislation and guidance associated with the safe handling, storage, disposal and transportation of hazardous substances such as oils and chemicals**

Legislation/Guidance
Control of Substances Hazardous to Health (COSHH) Regulations 2002 (as amended)
Control of Pollution (Oil Storage) Regulations 2001

Legislation/Guidance
The Groundwater (England and Wales) Regulations 2009
Petroleum (Consolidation) Act 1928 as amended by Dangerous Substances and Explosives Atmosphere Regulations 2002 (DSEAR)
PPG1: Understanding your Environmental Responsibilities – Good Practice Guidance
GPP2: Above Ground Oil Storage Tanks
GPP5: Works and Maintenance in or near Water
PPG6: Working at Construction and Demolition Sites
GPP8: Safe Storage and Disposal of Used Oils
GPP21: Pollution Incident Response Planning
GPP26: Safe Storage - Drums and Intermediate Bulk Containers

## 6.3 Control Provisions

151 Water pollution associated with construction activities largely results from fuel spillages and suspended solids entering watercourses. Potential water pollutants of concern during construction include silt, cement, concrete, fuel, lubricating and shutter release oils, petrol, sewage, and other waste materials. Careful planning of operations, responsible waste management and suitable facilities reduce the risk of spillage, along with simple precautions to deal with any potential spillages.

152 This plan details working methods and procedures which will ensure that all necessary precautions are taken to protect surface and groundwater from pollution.

### 6.3.1 Best Practice Measures

153 In addition to good housekeeping contractors and subcontractors will implement good practice measures as detailed in the guidance documents listed above. Taking account of this guidance the following table outlines a general approach to managing and minimising the potential risk of water pollution.

**Table 6-3: Approach to managing and minimising the potential risk of water pollution**

Potential pollution source	Control measure
<b>Construction</b>	
Earthworks, excavation and digging	Vegetation and cover shall be removed in discrete sections as work progresses i.e. not stripped all at once and bare ground left exposed.  Run-off from earthworks, excavation and digging activities shall be appropriately managed.
Completed earthworks	Stabilise surfaces and/or re-vegetate as soon as possible.
Storage mounds	Cover with correctly secured tarpaulins.

Potential pollution source	Control measure
Transitory soil mounds	Stockpiles of loose, fine materials will be damped down or covered over if necessary, again to reduce erosion and the production of dust.  Re-seed or cover any exposed ground and stockpiles to stabilise the ground and reduce erosion.
Mixing and granular materials	The mixing of concrete shall take place in designated areas.
Vandalism resulting in a pollution incident	Work site to be adequately protected from intruders.
Suspended solids reaching water bodies	The proposed drainage strategy in The Flood Consequence Assessment alongside the proposed Site Specific Water Pollution Prevention Strategy set out in Appendix F are considered sufficient to prevent silt entering water courses.
<b>Demobilisation</b>	
Removal of storage facilities and plant	Measures to ensure that open ground is not exposed to erosion and gullyng.
Contaminants liberated from plant wash down	Appropriate control measures such as the management of waste water and other arisings.
Decommissioning fuel storage areas, and mess facilities	To follow pollution prevention measures as detailed below.

### 6.3.2 Best Practice Pollution Prevention and Control Measures

154 All contractors and sub-contractors involved with hazardous materials handling shall be made aware of the associated environmental hazards and risks and shall be appropriately trained in routine activities and emergency actions, including the use of personal protective equipment (PPE). The equipment used will be dependent on the hazardous material which will or may be encountered.

155 An up to date list of the hazardous materials on site shall be prepared, specifying their location.

156 COSHH assessments will be completed on site for all potentially hazardous materials. These give advice on the type of storage needed for the chemicals i.e. bunded areas, storage of flammable products in locked cupboards.

- 157 All oil, fuel or other chemical containers or other potential contaminants stored on the site will be controlled in accordance with the Control of Substances Hazardous to Health (COSHH) Regulations 2002 (as amended) and the Control of Pollution (Oil Storage) Regulations 2001.
- 158 All hazardous materials will be stored within controlled areas and securely protected from contact of non-authorised personnel. The quantities of hazardous material stored at any one time shall be minimised.
- 159 All hazardous materials shall be used in line with manufacturers' instructions. The correct quantity of chemicals shall be used and, where possible, less hazardous alternatives considered. All hazardous materials shall be used with drip trays to prevent contamination. Drip trays underneath mobile plant like generators shall also be used.
- 160 Leaking or empty drums or other containers shall be removed from the site immediately.
- 161 Any disposal of product or empty product containers shall be in accordance with waste management legislation and related COSHH sheets.

#### *6.3.2.1 Site Activities*

- 162 The Works will be carried out in compliance with BS 6031:2009 Code of Practice for Earthworks, regarding the general control of site drainage; control of construction site run-off to ditches; discharge of surface run-off or water in excavations; and control of use of potentially hazardous liquids.
- 163 All construction site works shall be undertaken in accordance with the EA's Pollution Prevention Guidelines and in particular GPP5: Works and Maintenance in or near Water and PPG6: Working at Construction and Demolition Sites.

#### *6.3.2.2 Drainage*

- 164 The drainage scheme detailed within the FCA and drainage strategy includes measures to ensure that surface water runoff is contained and managed appropriately, as described below. Such provisions will also prevent washout from temporary construction laydown and storage areas into local watercourses and on to the highway.

#### *6.3.2.3 Pollutant Specific Measures*

- 165 Best practice measures to minimise the potential impacts of silt, concrete and cement, and oil and chemicals during construction are provided within the Environment Agency Pollution Prevention Guidance documents (GPP5: Works and Maintenance in or near Water and PPG6: Working at Construction and Demolition Sites).

##### *6.3.2.3.1 Silt*

- 166 Silt can cause lasting damage to river life and its build up can cause flooding. Silty water can arise from excavations, exposed ground, stockpiles, plant and wheel washing and site roads. Best practice measures such as those within GPP5: Works and Maintenance in or near Water; Section 2 will therefore implemented. In addition to these best practice measures a Site Specific Water Pollution Prevention Strategy has been developed to prevent silt and other potential pollutants entering any surface water

features located on or near the site. This strategy is set out in Appendix F of this document.

#### 6.3.2.3.2 Concrete and cement

167 Fresh concrete and cement are alkaline and corrosive and can cause serious pollution in watercourses. The use of wet concrete and cement will not take place within 7m of any watercourse.

#### 6.3.2.3.3 Oil and Chemicals

168 Further details of how oils and chemicals will be handled, stored and transported is provided in the tables below which provide a summary of the requirements within the legislation and guidance listed in Section 6.2.

##### 6.3.2.3.3.1 Re-fuelling protocol

169 Oil is the most common water pollutant, with the potential to harm watercourses and groundwater. In addition, certain fuels, such as petrol, are highly flammable and are tightly regulated for safety reasons.

170 The table below summarises the measures which will be taken to minimise environmental risks associated with any re-fuelling activities which take place across the construction site.

**Table 6-4: Measures to be taken to minimise environmental risks associated with re-fuelling**

Aspect	Control Measures
Siting	Only use designated, impermeable, bunded refueling areas, which have an oil separator installed in the surface water drainage system.
	Avoid remote fill points – if these are unavoidable install suitable oil separators to the surface drainage system.
	There shall be no refueling within 10m of any watercourses or drain / sewer.
Spillage prevention	Provide absorbent materials and / or drip trays to prevent spillages.
	Provide an emergency spill kit at each refueling point.
	Where mobile refueling is carried out, each bowser shall carry a spill kit.
	Bowsers will have an automatic cut out. Where the nozzle of the fuel pump cannot be placed into the tank of the machine to be filled, a funnel shall be used.
Supervision	All refueling must be supervised by a competent and suitably trained operator (see below). Refueling valves should not be left unattended.
	All personnel carrying out refueling should be aware of the protocol for refueling and know what actions to take in the event of an emergency.

##### 6.3.2.3.3.2 Delivery of hazardous substances

171 Appropriate delivery and handling procedures for hazardous substances reduces wastage and the risk of spillages that could result in ground or ground water contamination.

172 The table below summarises the measures which will be taken to minimise environmental risks associated with the delivery and handling of hazardous substances.

**Table 6-5: Measures to be taken to minimise environmental risks associated with the delivery and handling of hazardous substances**

Aspect	Control Measures
Siting	Hazardous materials shall be delivered to an appropriate location on site to minimise risk. Where practical specific delivery areas should be designated, marked as such and isolated from the surface water drainage system through the use of ramps, sumps or drainage shut-off valves.
Handling	Use drum carriers, drum taps, funnels and containers with lids (as appropriate) to minimise the risk of spillage during handling and transfer. Transfer chemicals between containers only within a suitably bunded area.
Supervision	Staff trained in the delivery and emergency procedures should supervise all deliveries of hazardous substances - a discussion with the delivery company is advised to agree safe delivery and emergency procedures.
Information	Display a notice giving details of safe delivery procedures and what to do in an emergency at the delivery point.
Emergency	Any damaged container or spillage should be reported immediately for appropriate action to be taken. Make pollution prevention equipment such as a leak-sealing kit and spill kits readily available and train staff in their use.

#### 6.3.2.3.3.3 *Storage of hazardous materials*

173 Above ground fuel storage in containers with a capacity of more than 200 litres on site will comply with the Control of Pollution (Oil Storage) (England) Regulations 2001 despite the regs not applying in Wales. A key requirement of which is the provision of secondary containment such as a bund or a drip tray. Underground fuel storage tanks are covered by the Groundwater Regulations 2009 and accompanying Groundwater Protection Codes.

174 The table below summarises the measures which will be taken to minimise environmental risks associated with the storage of hazardous materials.

**Table 6-6: Measures to be taken to minimise environmental risks associated with the storage of hazardous materials**

Aspect	Control Measures
General	<p>A detailed and up-to-date inventory should be maintained, containing such information as product types, trade names, COSHH data, volumes, and location on site.</p> <p>Quantities of materials stored should be kept to a working minimum.</p> <p>Hazardous materials shall be stored in sealed labelled containers indicating the nature of their contents and any hazard it may pose.</p> <p>Dedicated stores should display the appropriate warning signs at access points.</p> <p>Ensure that only trained workers have access to hazardous materials.</p> <p>Keep apart: solid and liquid products; flammable and non-flammable liquids; acids and alkalis; and wastes.</p> <p>All pipework, valves and trigger guns serving fuel, oil and chemical storage tanks shall be contained within a bunded area and resistant to unauthorised interference and vandalism as far as reasonably practicable, and shall be turned off and securely locked when not in use.</p>
Siting	<p>Where practicable, primary oil containers (whether tanks, intermediate bulk containers, mobile bowlers or drums) shall not be situated within 50m of any boreholes or 10m of any watercourse or drains.</p>
	<p>Hazardous substances shall be stored away from vehicle movements or anywhere they could be knocked or damaged, away from sensitive environmental receptors and fenced off to minimise the risk of vehicle damage.</p>
Primary Container	<p>The primary storage container should be of sufficient strength and integrity to ensure that in normal circumstances it is unlikely to burst or leak.</p> <p>Damaged or unsuitable containers should be repaired or removed from circulation as soon as they are identified.</p> <p>It is recommended that primary containers are stored inside or otherwise protected from the elements.</p>



Aspect	Control Measures
Secondary containment	<p>Fuels, oils and chemicals shall be sited on impervious bases and surrounded by impervious bund walls.</p> <p>The volume of the bunded compound shall be at least 110% of the largest tank or 25% of the compound capacity of all tanks, whichever is greater.</p> <p>The bund wall shall have a minimum height of 150mm to allow for rainfall and fire fighting foam; the bund and base of storage area shall be impermeable to water and oil and must be properly maintained.</p> <p>All filling points, vents, gauges and sight glasses shall be contained within the bund.</p> <p>The drainage system of the bund shall be sealed with no discharge to any watercourse, land or underground strata.</p> <p>Associated pipework shall be located above ground and protected from accidental damage.</p> <p>All filling points and tank overflow pipe outlets shall be detailed to discharge downwards into the bund.</p> <p>Bunds shall be impermeable to the substances that are being stored in the tanks or containers.</p> <p>Air vent pipes shall be positioned so that they can be seen easily and directed so that any discharge (e.g. in the event of a tank being overfilled) is directed into the bund.</p> <p>The bund base and walls must not be penetrated by any valve, pipe or other opening which is used for draining the system, and when a fill pipe or draw off pipe must pass through the bund base or wall, the hole must be carefully sealed to prevent oil escaping.</p>
Chemical storage	<p>Store products containing chemicals such as antifreeze, paints, detergents, degreasers, solvents and hydraulic fluids securely in a cool, dry, dark place capable of keeping in spills e.g. in secured bunded storage cabinets.</p> <p>Store containers so their labels face forwards.</p> <p>Containers for liquid chemicals should be easy to pour from, not dribble nor trap liquid in a rim.</p> <p>The contents of each storage tank shall be clearly marked on the tank and a notice displayed requiring the valves and trigger guns to be locked when not in use.</p>
Storage security	<p>All tanks and drums shall be stored in a secure bunded container or compound that is locked when not in use.</p> <p>All tanks shall display a notice that demands that valves and trigger guns are locked when not in use.</p> <p>All pipework, valves and trigger guns serving fuel, oil and chemical storage tanks shall be resistant to unauthorised interference and vandalism as far as reasonably practicable, and shall be turned off and securely locked when not in use.</p>
Emergency	<p>Where hazardous materials are stored, appropriate absorbent material must be close by to contain and clean up any spillage.</p> <p>Once cleaned up the absorbent material must be bagged and disposed of as Hazardous Waste in accordance with as detailed in Waste Management Plan.</p>

Aspect	Control Measures
<b>Flammable liquids</b>	Flammable liquids shall be stored in steel tanks. The keeping of petrol is regulated under the Petroleum (Consolidation) Act 1928 as amended by the Dangerous Substances and Explosives Atmosphere regulations 2002 (DSEAR).

#### 6.3.2.3.3.4 Disposal

- 175 Once the product is no longer required, the product shall be stored safely until it is needed again. Any disposal of product or empty product containers shall be in accordance with the Spoil and Waste Management Plan (Section 7 of this document).

## 6.4 Monitoring

- 176 All equipment and containment on site shall be inspected frequently and maintained effectively to reduce the risks of leaks. Bunds, tanks and pipework shall be inspected regularly for signs of damage.
- 177 All maintenance and inspection will comply with the requirements detailed in GPP2: Above Ground Oil Storage Tanks and will cover the following:
- container, tank and pipework condition checking for leaks, rust, corrosion, etc.;
  - condition of secondary containment/bunded areas;
  - readiness of emergency response;
  - availability of Personal Protective Equipment;
  - signage is present and legible;
  - refuelling areas are clearly designated and appropriately managed; and
  - drum storage complies with GPP2: Above Ground Oil Storage Tanks recommendations and GPP26: Safe Storage - Drums and Intermediate Bulk Containers

## 6.5 Emergency Response Procedures

- 178 In the event of a leak or spillage or a potentially polluting substance the agreed emergency response procedure should be adhered to as detailed in Appendix C.

## 6.6 Monitoring

- 179 The contractor's appointed Environmental Manager/Site Manager will be responsible for implementing the procedures in this plan and the Site Specific Water Pollution Prevention Strategy and will undertake monitoring to ensure implementation to best practice standards. An indicative Environmental Site Inspection Checklist is provided in Appendix G to facilitate this monitoring.

## 7 Spoil and Waste Management Plan

180 No spoil will be removed from the site and surplus materials, oils and chemicals will be removed from site for use on other development sites over the coming months. Therefore the only anticipated waste will be in the form of general office waste from the site office, packaging materials and building materials which cannot be re-used. This management plan sets out how this waste will be managed and disposed of in accordance with all relevant best practice guidance and legislation.

### 7.1 Legislation and Guidance

181 This section sets out the background of waste legislation, and principles of sustainability which form the basis of the SWMP.

#### 7.1.1 Waste legislation

182 The key pieces of waste legislation and their principal relevant aspects are listed below. All applicable legal requirements have been integrated within the SWMP.

**Table 7-1: Waste Legislation**

Key Legislation
Animal By-products (amendment) Regulations 2009
Clean Neighbourhoods and Environment Act 2005
Controlled Waste (Registration of Carriers and Seizure of Vehicles) Regulations 1991 (as amended)
Environmental Protection (Duty of Care) Regulations 1991 (as amended)
Hazardous Waste (England & Wales) (Amendment) Regulations 2017
Landfill (England & Wales) (Amendment) Regulations 2005
Landfill Tax (Qualifying Material) Order 2011
List of Waste (Wales) Regulations 2005
Waste Management Licensing Regulations 1994 (as amended)
Waste Minimisation Act 1998
Water Industry Act 1991
Water Resources Act 1991

### 7.2 Detailed Control Provisions (Best Practice Measures)

#### 7.2.1 Roles and responsibilities

183 Responsibility for waste management will be assigned to a named individual (the Waste Coordinator), who will oversee the implementation and management of the SWMP.

184 All personnel involved in the project have duties and obligations to comply with the SWMP. The key waste management responsibilities are defined below.

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#### 7.2.1.1 Waste coordinator

185        A Waste Coordinator will be appointed who is responsible for the implementation and management of the SWMP. The Waste Coordinator will have sufficient authority to ensure compliance by others.

186        The Waste Coordinator's responsibilities include:

- ensuring compliance with Duty of Care and regulatory requirements at all times;
- ensuring that appointed waste disposal contractors are licensed and registered;
- coordination of reduction, re-use and recycling initiatives on-site;
- coordination of waste management on-site (e.g. waste characterisation, decision making on disposal routes etc.) in accordance with the SWMP, maintaining efficiency, gathering of data about wastes on site, accurate records on waste movement;
- obtaining and ensuring that relevant consents, exemptions, licences, registrations etc. are held for solid and liquid wastes generated by the scheme. This will include identification, preparation and timely submission of necessary waste related applications (e.g. notification(s) of remises producing hazardous wastes, WML exemptions and notifiable exemptions, Landfill Tax exemptions, discharge consents etc.);
- clarification of responsibilities with respect to Duty of Care and brokerage in relation to subcontractors wastes;
- identification and delivery of necessary training to support effective waste management. This includes review and assessment of subcontractor training to ensure a sufficient level of awareness and competence;
- ensuring that all site personnel are aware of their responsibilities for site waste management;
- responsibility for making sure that all waste storage areas are accurately labelled to show site workers where to deposit specific materials;
- obtaining a list of potential buyers/sellers of used or recycled materials (i.e. subsoil) in the vicinity of the scheme and communication of this information to appropriate colleagues;
- encouragement of site personnel to use their initiative in providing feedback and ideas of how to reduce, re-use and recycle wastes (e.g. using an Idea's board);
- to ensure that wherever possible, waste generated on site are re-used and recycled to keep export of to a minimum;
- retention of all appropriate waste management documentation (i.e. waste transfer and hazardous waste consignment notes, broker/carrier certificates, audit reports etc.);
- undertaking of site waste management audits and waste contractor audits and regular review of SWMP and register of legislation;

### 7.2.1.2 Site operatives

187 All site operatives will have the following responsibilities with respect to waste management and minimisation:

- comply with the CoCP requirements and procedures to avoid illegal and wasteful working practices;
- awareness of waste minimisation initiatives;
- to ask the Waste Co-ordinator for guidance if in doubt;
- know what storage containers are to be used for the different wastes and to obey labelling on containers;
- separate wastes as they are produced;
- make sure that skips are always covered when they leave the site;
- ensure that skips are not overloaded;
- placing wastes in the correct storage area/container first time to reduce double handling;
- ensure the site and in particular material and waste storage areas are kept tidy and free of litter; and
- sharing ideas and/or opportunities to reduce, re-use or recycle wastes generated

### 7.2.2 Spoil and waste management – general

188 The scheme's activities will generate a variety of materials that could potentially be classified as waste. The table below identifies the types of waste likely to arise from the construction of the Solar Park, the generating activities and the likely waste classification (i.e. inert, non hazardous or hazardous) and European Waste Catalogue (EWC) Code. Accurate characterisation and classification of the wastes was determined with reference to the Technical Guidance WM3: Guidance on the Classification and Assessment of Waste.

**Table 7-2: Waste Types**

Waste Type		Generating Activity	Likely Material Classification	EWC
Uncontaminated Spoil	Top Soil	Excavation of landscaped / undeveloped areas prior to construction.	Inert / Non Hazardous	17 05 04
Vegetation	Vegetation	Trimmed from around access point	Non Hazardous	20 02 01
Wastewater	Wash water	Washing of vehicles and plant (e.g. truck wheel wash, ready-mixed concrete trucks etc.).	Not Applicable	See Chapter 19 of

Waste Type		Generating Activity	Likely Material Classification	EWC
	Runoff	Storm water laden with dirt and oils washed off hardstanding during heavy rain.		EWC 2002
Construction & Demolition Activities				
Metal (mixed)		Generated during construction (e.g. off cuts of reinforcing mesh, banding, steel work, cabling etc.)	Non Hazardous	17 04 07
Wood / Timber		Generated during building demolition and construction.	Non Hazardous	15 01 03 or 17 02 01
Bricks, tiles and ceramics		Wastes generated during construction of buildings	Inert / Non Hazardous	10 12 08
Insulation materials			Non Hazardous	17 06 04
Gypsum based materials			Inert / Non Hazardous	17 08 01
Work Site/Office Activities				
Sewage / foul effluents		Effluents from portable toilet facilities.	Non Hazardous	20 03 04
Hydrocarbon contaminated effluents		Rainwater from fuel and drum storage areas and bunds and oil/water separators	Non Hazardous / Hazardous	13 05 07
Waste mineral oils (e.g. hydraulic, lubricating, fuels etc.)		Equipment and plant maintenance, spillages etc.	Hazardous	13 01
Domestic Waste	Paper	Wastes generated from site office/canteen facilities.	Non Hazardous	20 01 01
	Cardboard		Non Hazardous	20 01 01
	Plastic		Non Hazardous	20 01 39
	Glass		Inert	20 01 02
	Cans		Non Hazardous	20 01 40
	Biodegradable food / canteen waste		Non Hazardous	20 01 08
Medical / hygiene		Generated by on-site first aid and female toilet facilities.	Non Hazardous	18 01 04

Waste Type	Generating Activity	Likely Material Classification	EWC
Miscellaneous / Unknown	Litter, illegal deposits of waste (i.e. fly tipping), sharps and needles etc.	Unknown	Use EWC 2002

189 These materials must be stored, treated, re-used or disposed of in accordance with legal requirements. Any materials arising from works that cannot be re-used (either on site or off site) shall be disposed of in accordance with the SWMP.

190 General objectives for waste management during the construction are set out below.

- Maximise the re-use and recycling of materials
- Drive waste management up the waste hierarchy (e.g. recycling materials that were previously disposed of or reusing materials previously sent for recycling or disposal)
- Ensure compliance with all relevant environmental legislation, codes of practice and guidance; and
- Reduce waste generation through continuous improvement in waste minimisation by benchmarking performance against indicative percentage targets for each disposal or waste stream.

191 The activities where these objectives can readily be applied can be broadly divided into the following:

- Appropriate materials and dimensions, prefabrication
- Efficient ordering of materials
- Materials handling and storage
- Contractual arrangements
- Efficient waste management - segregation
- Efficient waste management - auditing

192 The following sections identify specific waste minimisation measures to be applied (where practicable) at project management and site level to meet waste management objectives at key stages in the scheme.

#### **7.2.2.1 Design and tendering**

193 Reduce the likelihood of wasteful design variations later in the project.

194 Specifications that enable the efficient handling of excavated materials, minimising the need for double handling before re-use as backfill.

195 Specifications that allow for and encourage the use of recycled materials and components.

- 196 Liaison with suppliers of construction products to minimise wastage (e.g. supply of non-standard sizes to avoid cutting).
- 197 Contractually oblige subcontractors to manage materials effectively, minimise waste and co-operate in waste minimisation schemes and where practicable make them responsible for the procurement of materials. A system of penalties and bonuses based on pre-agreed allowable wastage percentages will be considered where applicable.
- 198 Agreement and inclusion of on-site re-use and recycling as part of quality management.

#### **7.2.2.2 Construction**

- 199 Make waste minimisation a key site improvements target from the start of the project and set realistic targets.
- 200 Direct contractors to consider the use (where applicable) of products made from recycled materials.
- 201 Liaise with suppliers about packaging waste and possible take-back of product off-cuts. Ensure that all suppliers of materials provide returnable or practicably recyclable packaging.
- 202 Ensure everyone on site is aware and committed to achieving targets for improvement. Engage all site workers with waste minimisation induction courses, toolbox talks to keep waste on the agenda, briefings and poster campaigns to ensure they are briefed on project aims for waste reduction and segregation. Regular workshops will be held where subcontractors will be invited to provide feedback on further activities or improvements to be pursued.
- 203 Ensure that materials are stored in appropriate conditions to minimise damage and wastage.
- 204 Where practicable use "Just-in-time" delivery to reduce damage/loss during storage.
- 205 Return over-ordered materials wherever possible.
- 206 Clearly mark segregated waste skips in an accessible area.
- 207 Compact waste in skips to reduce volumes.

#### **7.2.3 Waste transfer documentation**

- 208 The Duty of Care requirements for the transfer and movement of waste materials shall be complied with at all times.
- 209 Waste Transfer Notes detailing the type of waste will be completed prior to the removal of all inert or non hazardous wastes off-site, whilst Hazardous Waste Consignment Notes will be completed for the removal of all hazardous wastes.
- 210 Where skips are provided for subcontractors, or the collection of waste is arranged on their behalf, the main contractor will act as 'Waste Brokers' as defined



under the Waste Management Licensing Regulations 1994 (as amended). In accordance with the requirements of these regulations an application will have been made to Natural Resources Wales for registration as a 'Waste Broker'.

211 It is the responsibility of the Waste Co-ordinator to ensure that the appropriate premises notification(s) are obtained from the EA for collection of hazardous waste in accordance with the Hazardous Waste (England & Wales) (Amendment) Regulations 2017.

#### **7.2.4 Waste management records**

212 The following waste management records will be maintained on file:

- copies of controlled waste transfer notes for the statutory minimum of at least two years from the date of transfer;
- details of notification(s) of premises to Natural Resources Wales in accordance with the Hazardous Waste (England & Wales) (Amendment) Regulations 2017;
- copies of hazardous waste consignment notes for the statutory minimum of at least three years from date of transfer
- copies of Waste Management Licences, details and notifications of associated exemptions, and waste carrier registrations associated with any waste management activity or contractor;
- copies of all site audit reports and waste contractor surveillance reports;
- copy of any Landfill Tax application form and Exemption Certificate (if applicable) and all necessary records to support the subsequent claim to HM Customs and Excise to recover the tax; and
- training records for site operatives.

### **7.3 Monitoring**

213 The contractor's appointed Environmental Manager/Site Manager will be responsible for implementing the procedures in this plan and will undertake monitoring to ensure implementation to best practice standards. An indicative Environmental Site Inspection Checklist is provided in Appendix G to facilitate this monitoring.

## 8 Noise and Vibration Management Plan

### 8.1 Scope

214 No significant noise and vibration impacts were identified within the Environmental Statement providing best practice measures are implemented. For this reason no site specific mitigation measures are proposed but all current legislation and guidance will be adhered to and a variety of best practice measures will be implemented during construction.

### 8.2 Legislation and Guidance

215 The legislation and guidance associated with the control of noise and vibration during construction is listed below. These documents cannot be obtained from the source indicated below contact the Environmental Co-ordinator:

**Table 8-1: Legislation and guidance associated with the control of noise and vibration during construction**

Legislation/Guidance
BS5228-1: 2009 – Code of Practice for Noise and Vibration Control on Construction and Open Sites - Noise
BS5228-2: 2009 – Code of Practice for Noise and Vibration Control on Construction and Open Sites - Vibration
BS7445-1: 2003 – Description and Measurement of Environmental Noise – Guide to Quantities and Procedures
BS7445-2: 1991 – Description and Measurement of Environmental Noise – Guide to the acquisition of data pertinent to Land Use
BS7445-3: 1991 – Description and Measurement of Environmental Noise – Guide to application to Noise Limits
BS 6841:1987 Guide to Measurement and Evaluation of Human Exposure to Whole-body Mechanical Vibration and Repeated Shock

#### 8.2.1 Best Practice Measures

216 All contractors and sub-contractors working on site have a general duty to take all possible measures to minimise nuisance from noise and vibration that has potential to impact on the local community or environment. To achieve this Best Practicable Means (BPM) (as outlined in Section 79(9)(a) of the Environmental Protection Act 1990) must be employed and the following requirements must be complied with:

- The implementation of the works must comply with BS 6472-1: 2008 - Guide to Evaluation of Human Exposure to Vibration in Buildings – Vibration Sources other than Blasting and BS 6472-2: 2008 - Guide to Evaluation of Human Exposure to Vibration in Buildings – Blast Induced Vibration
- To prevent significant damage to adjacent structures, demolition and construction activities must be carried out in accordance with BS7385-2: 1993 – Evaluation and

Measurement for vibration in Buildings – Guide to damage levels from Groundbourne Vibration.

- Noisy plant or equipment should be sited as far away as is practical from noise sensitive buildings.
- All machines in intermittent use shall be shut down in the intervening periods between works or throttled down to a minimum. Noise emitting equipment which is required to run continuously shall be housed in a suitable acoustic enclosure.
- All items of plant shall be maintained in good working condition
- All vehicles and mechanical plant used for the purpose of the work must be fitted with effective exhaust silencers and shall be maintained in good and efficient working order so that extraneous noises from mechanical vibration, creaking and squeaking are reduced to a minimum
- All compressors shall be “sound reduced” models fitted with properly lined and sealed acoustic covers which shall be kept closed whenever the machines are in use, and all pneumatic percussive tools shall be fitted with mufflers or silencers of the type recommended by the manufacturers.

### 8.3 Monitoring

- 217        The contractor’s appointed Environmental Manager/Site Manager will be responsible for implementing the procedures in this plan and will undertake monitoring to ensure implementation to best practice standards. An indicative Environmental Site Inspection Checklist is provided in Appendix G to facilitate this monitoring.

## 9 Dust and Air Pollution Management Plan

### 9.1 Scope

218 As detailed in the air quality assessment (doc ref BL005) no significant dust or air impacts are anticipated providing best practice measures are implemented. For this reason no site specific mitigation measures are proposed but all current legislation and guidance will be adhered to and a variety of best practice measures will be implemented during construction.

### 9.2 Legislation and Guidance

219 The legislation and guidance associated with the control of air quality is listed below.

**Table 9-1: Legislation and guidance associated with the control of air quality**

Legislation/Guidance	Source (in the event that these documents cannot be obtained from the source indicated below contact the Environmental Co-ordinator)
Under Part III of the Environmental Protection Act (1990)	<a href="http://www.opsi.gov.uk/acts/acts1990">www.opsi.gov.uk/acts/acts1990</a>
Air Quality Standards Regulations 2010, SI 2010/1001	<a href="http://www.legislation.gov.uk/ukxi/2010/1001/contents/made">http://www.legislation.gov.uk/ukxi/2010/1001/contents/made</a>
Air Quality Limit Values Regulations 2003	<a href="http://www.legislation.gov.uk/ukxi/2003/2121/contents/made">http://www.legislation.gov.uk/ukxi/2003/2121/contents/made</a>
Buildings Research Establishment (BRE) (2003) Guidance on the Control of Dust from Construction and Demolition Activities	Contact the Environmental Co-ordinator
The Control of Dust and Emissions from Construction and Demolition: Best Practice Guidance (2006). Greater London Authority and London Council	Contact the Environmental Co-ordinator
PPG6: Working at Construction and Demolition Sites	<a href="https://www.netregs.org.uk/environmental-topics/pollution-prevention-guidelines-ppgs-and-replacement-series/guidance-for-pollution-prevention-gpps-full-list/">https://www.netregs.org.uk/environmental-topics/pollution-prevention-guidelines-ppgs-and-replacement-series/guidance-for-pollution-prevention-gpps-full-list/</a>

### 9.3 Control Provisions for Nuisance Dust

220 Dust, fine particles and vapour generation from construction and demolition activities can be substantially reduced through carefully selected mitigation techniques and effective management. Once particles or vapours are airborne, it is very difficult to prevent them from dispersing into the surrounding area. The most effective technique is therefore to control the potential release at source and prevent it from becoming airborne.

- 221 Providing the measures below are employed and the best practice guidance detailed in the *Buildings Research Establishment (BRE) (2003) Guidance on the Control of Dust from Construction and Demolition Activities* is followed then construction activities are not expected to create nuisance dust.

### 9.3.1 Best Practice Measures

- 222 Material stockpiles will be enclosed whenever reasonably practicable and damping down of dusty materials using water sprays will be carried out during dry weather.
- 223 Heavily used areas will be hard surfaced and will be kept clean by regular brushing and water spraying.
- 224 Plant which may generate dust will be shielded and/or enclosed wherever reasonably practicable.
- 225 No materials will be burned within the construction site.
- 226 Mixing of large quantities of concrete will be carried out in enclosed/shielded areas wherever reasonably practicable.

### 9.3.2 Control Provisions for Nitrogen Dioxide

- 227 Emissions from vehicles associated with construction sites can significantly contribute to local air pollution levels. Therefore best practical means of reducing emissions from vehicles and petrol powered equipment will be adopted throughout construction.

### 9.3.3 Best Practice Measures

- 228 The most detailed best practice guidance for reducing such emissions is provided within *The Control of Dust and Emissions from Construction and Demolition: Best Practice Guidance (2006)* (Greater London Authority and London Council). The relevant measures detailed within this guidance document are summarised below.
- Engines and exhaust systems should be regularly serviced according to manufacturer's recommendations and maintained to meet statutory limits/opacity tests.
  - All vehicles should hold current MOT certificates demonstrating that they comply with UK vehicle emissions standards.
  - Vehicle exhausts should be directed away from the ground and positioned so they are not directed at site entrances.
  - Minimise the number of vehicle movements required.
  - No vehicles or plant will be left idling unnecessarily.

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## 9.4 Monitoring

229        The contractor's appointed Environmental Manager/Site Manager will be responsible for implementing the procedures in this plan and will undertake monitoring to ensure implementation to best practice standards. An indicative Environmental Site Inspection Checklist is provided in Appendix G to facilitate this monitoring.

## **10 Contaminated Land Management Plan**

### **10.1 Scope**

230        No contaminated land has been identified on site. Therefore no site specific mitigation measures are proposed. However, if during development, contamination not previously identified is found to be present at the site then no further development (unless otherwise agreed in writing with the Local Planning Authority) shall be carried out until the developer has submitted, and obtained written approval from the Local Planning Authority for, remediation strategy detailing how this unsuspected contamination shall be dealt with. The development shall be implemented in accordance with the recommendations of the approved strategy.

## **11 Landscape Management Plan**

### **11.1 Scope**

- 231        A Landscape Management Plan will be implemented in accordance with the recommendations made within the Landscape and Visual Impact Assessment ES Volume 1; Chapter 8 (doc ref BL001) and accompanying Landscape Mitigation Plan (included as Appendix A to this document).

### **11.2 Monitoring**

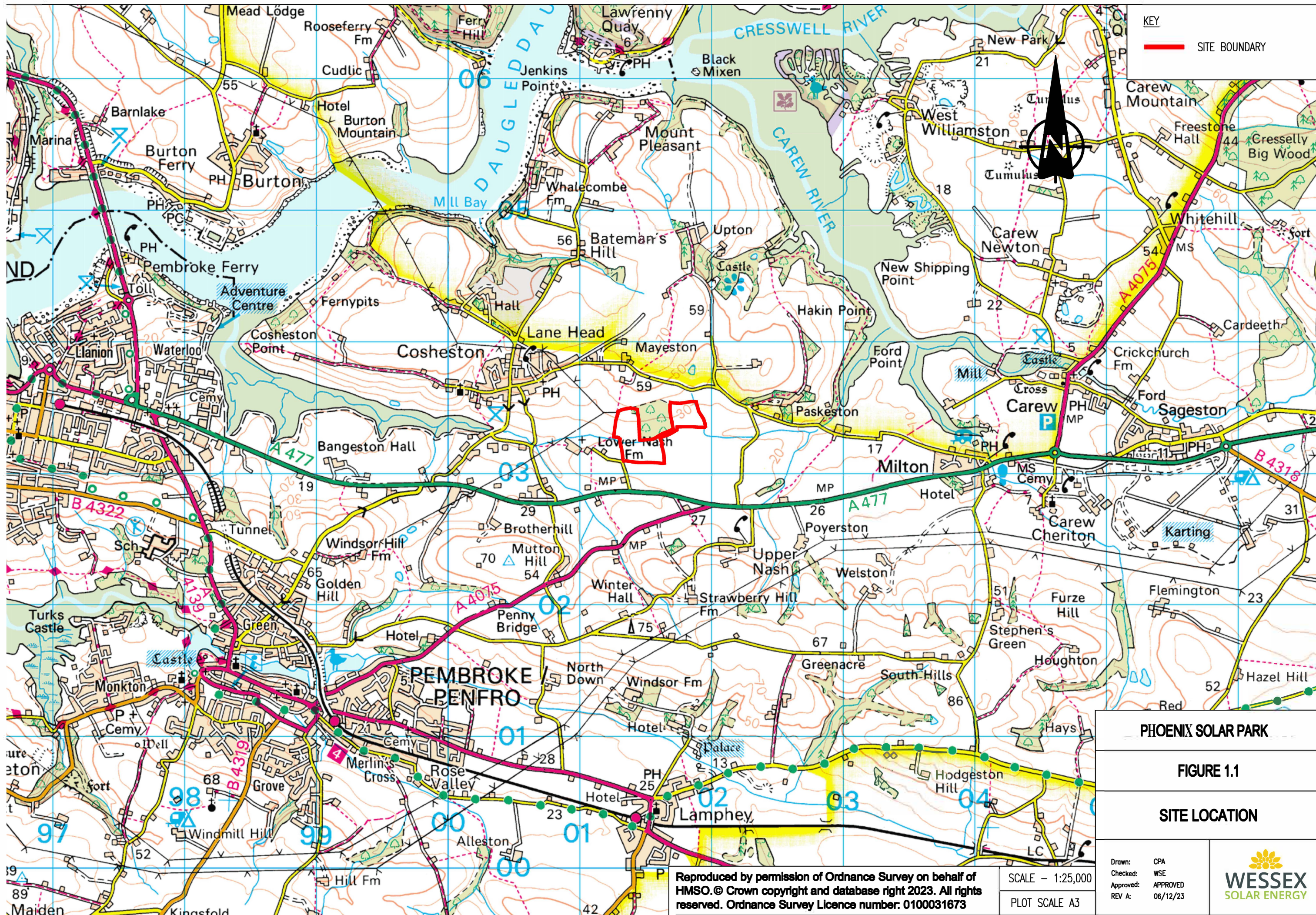
- 232        The contractor's appointed Environmental Manager/Site Manager will be responsible for implementing the procedures in this plan and the Landscape and Ecological Management Plan (ES Volume 2; Appendix A9.4) and will undertake monitoring to ensure implementation to best practice standards. An indicative Environmental Site Inspection Checklist is provided in Appendix G to facilitate this monitoring.





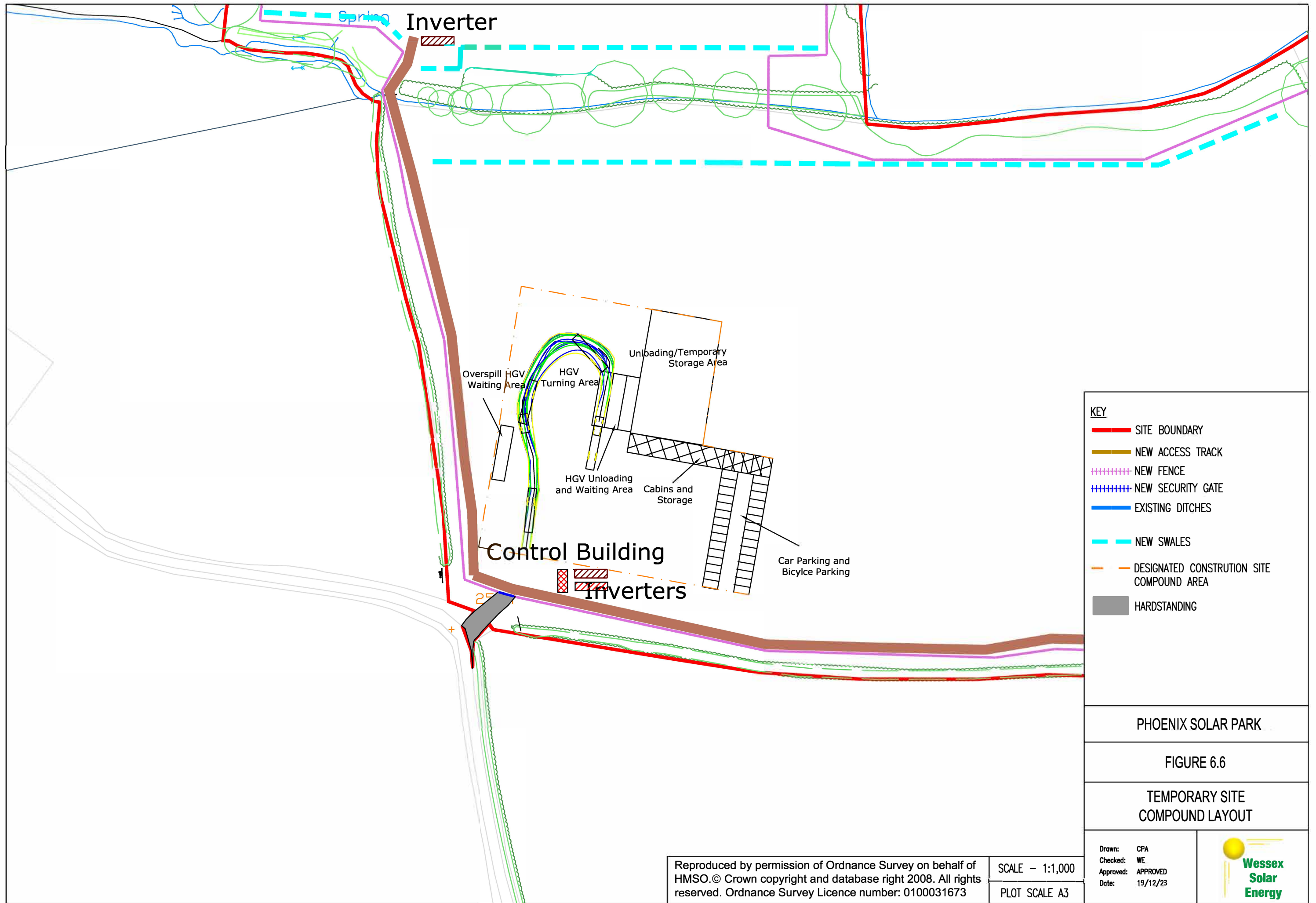
## **FIGURE 1.1: SITE LOCATION PLAN**







## **FIGURE 6.6: SITE COMPOUND**



## **FIGURE 13.1: ACCESS ROUTE DRAWING**





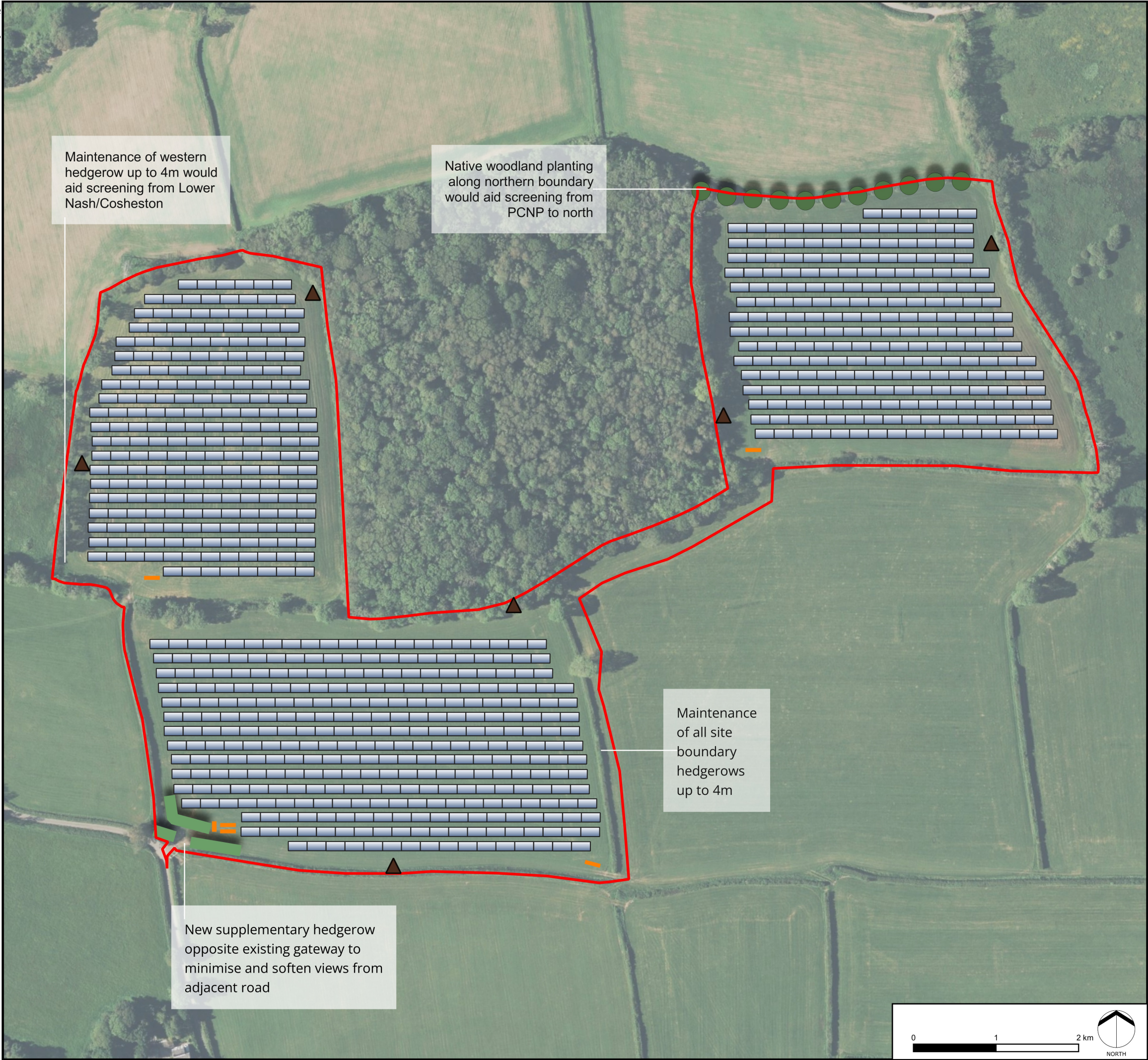


## **APPENDIX A: LANDSCAPE MASTERPLAN**



BLACKBERRY LANE SOLAR FARM

FIGURE 8.6  
Landscape Proposal



KEY

- Site Location
- Distance from site (1km, 3km)
- Inverter cabin
- Proposed solar panels
- Supplementary native hedgerow planting
- Additional native woodland planting
- Proposed hibernacula

All existing hedgerows to be supplementary gap planted as necessary.  
All boundary hedgerows to be maintained at an increased height of 4m.



## **APPENDIX B: CONSTRUCTION PROGRAMME**

[illegible]

## **APPENDIX C: POLLUTION INCIDENT RESPONSE PLAN**

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## POLLUTION INCIDENT RESPONSE AND REPORTING PLAN

Follow the emergency response plan.  
Contain the spill using the spill kit.  
Where necessary contact the  
appropriate emergency services.



Every effort should be made to establish the cause of the issue leading to the incident/spill. Assuming the issue arose from failure of a control system, the issue shall be put right at the earliest opportunity.



### Notifications

- Where the spillage has or is likely to enter controlled waters notify the Natural Resources Wales hotline on 0300 065 3000.
- Notify personnel on site as soon as possible after the incident occurring
- Notify persons or owners and occupiers of property affected by the pollution incident as soon as possible after the incident occurring, including notifications of actions which will be, or are being taken to address the effects of the incident.



### Documentation

Details of the incident should be documented within the 'Environmental spills and incidents record' held on site.

## **EMERGENCY RESPONSE PLAN FOR DEALING WITH A SPILLAGE OF FUEL OIL**

1. Establish that there is not an immediate risk of fire, if there is call the Fire Brigade.
2. Remove possible sources of fire / ignition from the vicinity.
3. Isolate the leak to prevent further escape
4. Contain the spillage by bunding with booms or earth banks and by using absorbent materials
5. Seal any drains using suitable means to prevent further entry of oil
6. Trace drains and attempt to contain any oil within them
7. Place booms across any receiving water courses to absorb surface oil
8. Notify relevant parties in line with the "Environmental Incident Reporting Procedure"
9. Remove all contaminated materials such as absorbents or oil soaked ground for safe disposal
10. Attempt to decontaminate all contaminated surfaces All contaminated earth, absorbent mats etc. arising from the spillage are designated contaminated waste and are to be disposed of via a licensed haulier to a licensed recipient and signed traceable records kept

## **APPENDIX D.1: PROTECTED SPECIES LEGISLATION**

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## **Badgers**

Badgers and their setts are protected under the Protection of Badgers Act (1992), which consolidated and added to previous legislation. It is illegal to wilfully kill or injure a badger or to interfere with a sett, unless a license is granted.

The Protection of Badgers Act 1992 fully protects badgers and their setts. Offences include:

- killing, injuring and taking (or attempting these);
- possession of a dead badger (or derivative);
- cruelly ill-treating a badger;
- damaging a badger sett or any part of it;
- destroying a badger sett;
- obstructing access to / entrance of a badger sett;
- causing a dog to enter a badger sett; and
- disturbing a badger whilst occupying a sett.

Badgers are also listed on Schedule 6 of the Wildlife and Countryside Act 1981, which prohibits certain methods of killing and capture.

## **Bats**

All bats are classed as European Protected Species (EPS) and are protected under Schedule 5 of the Wildlife & Countryside Act (1981, as amended) and are also listed under Section 41 of the Natural Environment and Rural Communities Act 2006 (NERC Act). They are protected by law against all of, but not limited to, the following:

- intentional or reckless killing, injuring, taking;
- damage to, destruction of, obstruction of access to any structure or place used by a scheduled animal for shelter or protection; and
- disturbance of animal occupying such a structure or place.

The Conservation Habitats and Species Regulations 2017 (as amended), provide additional protection for the breeding sites and resting places of bats.

## **Hazel Dormouse**

Hazel dormice are given full protection under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). Protection to the species is also afforded by Schedule 2 of the Conservation of Habitats and Species Regulations 2017, known as the 'Habitats Regulations', making the hazel dormouse a European Protected Species. These two pieces of legislation operate in parallel, although there are some small differences in scope and wording. Under the provisions of Section 9 of the Wildlife & Countryside Act, it is an offence to:



- Intentionally kill, injure or take a dormouse;
- Possess or control and live or dead specimen or anything derived from a dormouse (unless it can be shown to have been legally acquired);
- Intentionally or recklessly damage, destroy or obstruct access to any structure or place used for shelter or protection by a dormouse; and
- Intentionally or recklessly disturb a dormouse while it is occupying a structure or place which it uses for that purpose.

Schedule 2 of the Habitat Regulations, make it an offence to:

- Deliberately capture or kill a dormouse;
- Deliberately disturb a dormouse;
- Damage or destroy a breeding site or resting place of a dormouse; and
- Keep transport, sell or exchange, or offer for sale or exchange a live or dead dormouse or any part of a dormouse.

The dormouse is a Priority Species under the UK Biodiversity Action Plan (UK BAP) and has been adopted as a Species of Principal Importance in England under section 42 of the NERC Act 2006.

### **Great crested newt**

Great crested newt is an European Protected Species (EPS) and their habitats, both aquatic and terrestrial, are protected under Schedule 5 of the Wildlife & Countryside Act 1981 (amended) and under the Conservation of Habitats and Species Regulations 2017, known as the 'Habitats Regulations'. They are also listed as a priority species under the UK Post-2010 Biodiversity Framework. Under the Habitats Regulations, it is an offence if you:

- Deliberately capture, injure or kill any wild animal of an EPS;
- Deliberately disturb wild animals of any such species;
- Deliberately take or destroy the eggs of such an animal; or
- Damage or destroy a breeding site or resting place of such an animal

For any development that affects great crested newts it must be first demonstrated that:

- There are no alternatives;
- There are over-riding reasons of public interest or safety; and
- It will not adversely affect the conservation status of the species.

Natural Resources Wales (NRW) issues licences under Regulation 55 of the Habitats Regulations to allow you to work within the law. We issue them for specific purposes stated in the Regulations, if the following three tests are met:

- The purpose of the work meets one of those listed in the Habitats Regulations;
- That there is no satisfactory alternative; and
- That the action authorised will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status (FCS) in their natural range.

### **Breeding Birds**

Under the Wildlife & Countryside Act 1981 (as amended), a wild bird is defined as any bird of a species that is resident in or is a visitor to the European Territory of any member state in a wild state. Breeding birds are also protected under Conservation of Habitats and Species Regulations 2017, known as the 'Habitats Regulations'.

All birds, their nests and eggs are protected by law and it is an offence, with certain exceptions, to;

- intentionally kill, injure or take any wild bird;
- intentionally take, damage or destroy the nest of any wild bird whilst it is in use or being built;
- intentionally take or destroy the egg of any wild bird;
- have in one's possession or control any wild bird, dead or alive, or any part of a wild bird, which has been taken in contravention of the Act or the Protection of Birds Act 1954;
- have in one's possession or control any egg or part of an egg which has been taken in contravention of the Act or the Protection of Birds Act 1954;
- use traps or similar items to kill, injure or take wild birds;
- have in one's possession or control any bird of a species occurring on Schedule 4 of the Act unless registered, and in most cases ringed, in accordance with the Secretary of State's regulations; and
- intentionally or recklessly disturb any wild bird listed on Schedule 1 while it is nest building, or at a nest containing eggs of young, or disturb the dependent young of such a bird.

Rare species listed in Schedule 1 Part1 are given further protection, including special increased penalties under Subsection 1 (5) as amended by the Countryside and Rights of Way Act 2000. If any person intentionally or recklessly disturbs any wild bird included in Schedule 1 while it is building a nest or is in, or near containing eggs or young.

The British Trust for Ornithology (BTO) has a list of birds that are Species of Conservation Concern. These birds are not legally protected but whether they are found on site, they

should be given planning consideration. The criteria for birds listed as amber (medium conservation concern) include:

- Historical population decline during 1800-1995, but recovering: population has more than doubled over last 25 years;
- Moderate (25-49%) decline in UK breeding population over last 25 years;
- Moderate (25-49%) contraction of UK breeding range over last 25 years;
- Moderate (25-49%) decline in UK non breeding population over last 25 years;
- Species with unfavourable conservation status in Europe (Species of conservation Concern);
- Five year mean of breeding pairs in the UK;
- $\geq 50\%$  of UK breeding population in 10 or fewer sites.
- $\geq 50\%$  of UK non breeding population in 10 or fewer sites;
- $\geq 20\%$  of European breeding population in UK; and
- $\geq 20\%$  of NW European (wildfowl), East Atlantic Flyway (waders) or European (others) non breeding populations in UK.

### **Water vole**

The water vole is a UK Biodiversity Action Plan (BAP) Priority Species and a Species of Principal Importance in Wales under Section 42 of the NERC Act 2006. Water voles are fully protected under Section 9 of the Wildlife and Countryside Act 1981 (as amended) which makes it an offence to:

- Intentionally kill, injure or take a water vole;
- Possess or control live or dead water voles or derivatives;
- Intentionally or recklessly damage, destroy or obstruct access to any structure or place used for shelter or protection;
- Intentionally or recklessly disturb water voles whilst occupying a structure or place used for that purpose;
- Sell water voles or offer or expose for sale or transport for sale; and
- Publish or cause to be published any advertisement which conveys the buying or selling of water voles.

Under 16 (3) of the Wildlife and Countryside Act 1981(as amended) NRW are able to issue licences of relevance to water voles for the following purposes:

1. Scientific or Educational

A licence is required for the purpose of taking or disturbing a water vole or damaging or obstructing access to a breeding or resting place in order to carry out any kind of research or detailed survey

2. Ringing or marking  
To take a water vole for the purpose of ringing or marking. This includes any type of mark, identification method or radio tracking tag
3. Conservation  
Any activity carried out where the primary purpose of that activity is the long term conservation of water vole. This can include management or restoration of water vole sites
4. Protecting any zoological or botanical collection
5. Photography
6. Preserving public health or public safety  
This may for instance be the restoration or maintenance of canals or footpaths beside rivers
7. Preventing serious damage to livestock, foodstuffs for livestock, crops, vegetables, fruit, growing timber or any other form of property or to fisheries. This may relate to damage to the above caused by water voles

It is not possible to issue a licence for “development” under the Wildlife and Countryside Act in a similar way to some of the licences issued under the Habitats Regulations. Licences can be issued for the purpose of ‘preserving public health and public safety’ eg. restoration of a canal bank. However, not all developments fit under this heading.

The Wildlife and Countryside Act provides a defence against the above offences where the action is the incidental result of an otherwise lawful operation and could not reasonably be avoided (10(3)(c)).

### **Otter**

Otters are fully protected by their inclusion in the Conservation of Habitats and Species Regulations 2017, known as the ‘Habitats Regulations’ and a priority species under the UK Post-2010 Biodiversity Framework.. They are also placed in Annex IV of the European Habitats Directive (92/43/EEC) and Schedule 5 of the Wildlife & Countryside Act 1981 (as amended) and it is therefore subject to the provisions of Section 9 and 11, which makes it an offence to:

- intentionally kill, injure or take an otter [Section 9 (1)];
- possess or control any live or dead specimen or anything derived from an otter [Section 9(2)];
- intentionally or recklessly damage, destroy or obstruct access to any structure or place used for shelter or protection by an otter [Section 9(4) (a)];
- intentionally or recklessly disturb an otter while it is occupying a structure or place which it uses for that purpose [Section 9 (4)(b)]; and

- sell, offer for sale, possess or transport for the purpose of sale or publish advertisements to buy or sell an otter.

Natural Resources Wales issue licences under Regulation 55 of the Habitats Regulations to allow you to work within the law. The licence is issued for specific purposes stated in the Regulations, if the following three tests are met:

- The purpose of the work meets one of those listed in the Habitats Regulations;
- That there is no satisfactory alternative; and
- That the action authorised will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status (FCS) in their natural range.

### Reptiles

There are six species of native reptile in the UK. Only two species, smooth snake (*Coronella austriaca*) and sand lizard (*Lacerta agilis*) are fully protected under UK and European Legislation. They are listed on Schedule 5 of the Wildlife & Countryside Act 1981 (as amended) and are:

- Adder, *Vipera berus*
- Grass snake, *Natrix natrix*
- Slow worm, *Anguis fragilis*
- Common lizard, *Lacerta vivipara*

These reptiles are also listed under Schedule 2 of the Conservation of Habitats and Species Regulations 2017, known as the 'Habitats Regulations'. Under these legislations it is unlawful to:

- deliberately or intentionally kill, injure or take (capture) or disturb sand lizards and smooth snakes;
- deliberately take or destroy the eggs of sand lizards;
- damage or destroy a breeding site or resting place, or intentionally damage a place used for shelter and protection;
- intentionally obstruct access to places used for shelter; and
- keep, transport, sell or exchange, or offer for sale or advertising.

## **APPENDIX D.2: LANDSCAPE AND ECOLOGICAL MANAGEMENT PLAN**

# PHOENIX SOLAR PARK



## Landscape and Ecological Management Plan

**December 2023**

**Document Reference BL012**

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Revision	Date Issued	Prepared By	Approved By
ORIGINAL	15/12/23	Wessex Solar Energy	Charlotte E Peacock <i>C.E. Peacock</i>



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## **1 Introduction**

### **1.1 Site Details**

1. The proposed Solar Park site is centred at Ordnance Survey (OS) Grid Reference 201580, 203280. The site comprises 3 fields (arable), covering a total area of approximately 13.84 hectares (ha). The site is flat for the most part, with a north-south slope which is more exaggerated in the northern part of the site.
2. Access to the site is achieved via a private road from the A447 to the site entrance.
3. SK Environmental Solutions Limited undertook an Extended Phase 1 Habitat Survey of the proposed solar park and immediate surroundings in June 2019 and November 2023.

### **1.2 Habitat Summary**

4. The main habitats recorded during the survey area were:
  - Improved grassland;
  - Arable;
  - Semi-natural broadleaved woodland;
  - Tall ruderal vegetation;
  - Trees
  - Hedgerows;
  - Drains and small streams; and
  - Swale.
5. The dominant habitat within the proposed solar park site is improved grassland. Discrete areas of tall ruderal vegetation can be found generally located on and around the site peripheries. The site abuts a square of semi-natural broadleaved woodland to the north, with hedgerows and occasional to frequent individual mature trees located along the field boundaries.
6. Individual and groups of trees are confined in the main to the field boundaries in the northern half of the site. Early mature to mature ash and sycamore dominate, with occasional elm, grey willow and rare overgrown hawthorn and hazel present. Many of the trees show signs of being wind damaged and contain cavities or other features that may be used by roosting bats.
7. Ten hedgerows were recorded on site. There are numerous intact and defunct hedgerows present. They tend to be earth banked and comprise woody species. Many of the hedgerows contain gaps and are not stockproof, with bracken and grasses currently filling the voids. The highest quality hedgerows bound the site and roads to the south and east, these are intact, dense and stockproof.
8. Two seasonally wet drains are located along field boundaries to the north of the site. They are inundated with leaf litter, heavily shaded and holding little water.
9. A spring is located to the west of the site. This is flowing and heavily overgrown.
10. A dry swale is located on the southern site boundary. The swale is well maintained.

### **1.3 Document Structure**

11. This Landscape and Ecological Management Plan is designed to protect, maintain and enhance the ecological and landscape resource and features within and adjacent to the Phoenix Solar Park site. The ecological mitigation and management plan sets out the protected species and general habitat objectives. The Landscape Management Plan provides further details regarding the protection, creation and ongoing maintenance of habitats across the site and describes horticulture operations to ensure successful establishment of the site landscape.

## **2 Ecological Mitigation and Management Plan for Phoenix Solar Park**

### **2.1 Relevant Legislation**

12. The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019.
13. The Wildlife and Countryside Act 1981 (as amended) is the primary legislation which protects animals, plants, and certain habitats in the UK.
14. The Natural Environment and Rural Communities (NERC) Act 2006 contains details of priority species and habitats which need to be given due consideration during the planning process. This act also places an emphasis on developers to not only provide mitigation when there are negative impacts on species and habitats but also to provide enhancements to improve the biodiversity within the site.
15. A number of species and habitats are listed on the UK Biodiversity Action Plan (UKBAP) 1994, which sets out priorities throughout the whole UK. Pembrokeshire also has its own Local Biodiversity Action Plan (LBAP) which is aimed at species and habitats which are a priority within the local area. Both of these Action Plans have been taken into account while compiling this document to ensure that both national and local priorities are reflected.
16. Other relevant legislation, policy and guidance documents used to underpin this management plan include:
  - Habitats and Species Directive (92/43/EEC) 1992;
  - Bern Convention (on the Conservation of European Wildlife & Natural Habitats; and on the Conservation of Migratory Species of Wild Animals) 1979;
  - Countryside and Rights of Way Act 2000;
  - Environment (Wales) Act Section 7 2016;
  - Technical Advice Note 5: Nature Conservation and Planning; and
  - Protection of Badgers Act 1992;

### **2.2 Aims**

17. The aim of this document is to provide mitigation and management measures which can be implemented to maintain and improve the Phoenix Solar Park site for a variety of wildlife. This will be done by setting a number of objectives and then prescriptions which contribute towards these objectives.

#### *Objectives*

18. Below are six objectives which will lead to the enhancement of Phoenix Solar Park.
  - O1 – To ensure protection of designated sites (both statutory and non-statutory);
  - O2 – To ensure that plans are in line with international legislation and priorities (e.g. conservation of European Protected Species)
  - O3 - To ensure that plans are in line with national legislation and priorities such as the Wildlife and Countryside Act 1981 (as amended) and the UKBAP;
  - O4 - To ensure that plans are in line with local priorities such as the PBAP;
  - O5 – To increase biodiversity within the site; and

- O6 - To implement sustainable measures.

## 2.3 Prescriptions

19. Each prescription is designed to achieve at least one of the objectives detailed above. As such the objectives that the prescription contributes towards are listed.

### Prescription 1

20. Solar panels will not be installed within 5m of a hedgerow centreline (apart from where the perimeter fencing passes through existing gateways which are narrower than 5m). No works will be undertaken within the Root Protection Areas (RPAs) of any trees or hedgerows located within and adjacent to the site as per the Arboricultural Impact Assessment Report (AIA) (ES Vol 2: Appendix A9.5). This is to prevent accidental damage to the hedgerows and trees as well as to provide a buffer zone to the hedgerows and trees. Hedgerows and trees are considered to have an intrinsic value as well as potentially providing shelter, foraging opportunities and commuting routes for a number of species. No monitoring is proposed for this prescription. This achieves O1, O3 and O4.

### Prescription 2

21. The use of any pesticides on the site will be stopped. The exception to this will be where a particular pesticide remains the only, or recognised best practice methodology as an effective means of controlling a particular pest detrimental to the health of the landscape and habitats intended to be established and those stated within the Landscape Management Plan as designed to target newly planted vegetation and increase the likelihood of the landscape becoming established. This will increase the number and diversity of invertebrates within the site which will in turn attract other species such as bats. If a pest species becomes a persistent problem then biological control measures will be investigated prior to any pesticides being used. If pesticide is the only option then this will be targeted to specific areas rather than blanketing the whole area. No monitoring is proposed for this prescription. This achieves O5 and O6.

### Prescription 3

22. The use of any fertilisers on the site will be stopped. The exception to this will be those stated within the LVIA and the Landscape Management Plan as these are designed to target newly planted vegetation and increase the likelihood of them becoming established. This will increase the number and diversity of flora species within the site which will in turn attract other species such as invertebrates. No monitoring is proposed for this prescription. This achieves O5 and O6.

### Prescription 4

23. A native species-rich wildflower seed mix will be spread within the buffers between the hedgerows and trees and the development. In order to ensure the maximum increase in diversity the site will be surveyed by an ecologist a year after the seed has been spread and a record made of the species within the sward. If there is a gain of less than half the species sown then additional seed mix will be applied. This will

improve the flora diversity within the site which in turn will attract other species. This achieves O4, O5 and O6.

#### Prescription 5

24. Additional planting will occur along the existing hedgerows with particular attention paid to areas containing gaps. This planting will comprise a variety of native species to try to make the hedgerows more diverse, wider and denser as defined in detail in the Landscape Management Plan. This will provide additional foraging habitat and shelter for a variety of species including bird species. If the hedgerows can be made species-rich then they will also contribute the UKBAP and PBAP. The hedgerows will be surveyed for the first three years and any plants not thriving will be replaced. This will achieve O3, O4 and O5.

#### Prescription 6

25. After year 5, new and existing hedgerows will be cut in rotation to ensure that no more than one third of the hedgerows are flailed in any one year. The exception to this is where there are specific constraints such as maintaining visibility of the highway and near to electrical lines. This will create a more diverse structure within the hedgerows therefore improving them and providing additional habitat for fauna. No monitoring is proposed for this prescription. This will achieve O3, O4, O5 and O6.

#### Prescription 7

26. 5 Schwegler 2F bat boxes will be installed on trees on the boundaries of the site. They will be spread throughout the site but exact locations will be dictated by the availability of suitable trees (i.e. those with a diameter of 30cm or greater at 1.2m in height). This type of box has been selected as it is constructed from woodcrete which will last longer than timber. This will achieve O1, O2, O3, O4 and O5.

#### Prescription 8

27. 5 bird boxes designed for smaller species of bird will be installed within trees on the boundaries of the site. They will be spread throughout the site but exact locations will be dictated by the availability of suitable trees (i.e. those with a diameter of 30cm or greater at 1.2m in height). This will achieve O3, O4 and O5.

#### Prescription 9

28. The perimeter fencing of the site has the potential to prevent larger mammals such as badgers and brown hares accessing the site. For this reason, scrapes, gaps or badger gates to allow these species access to the site will be inserted every 50m as well as on any mammal runs. The size of the scrapes depends upon the topography of the site but will be sufficient to allow at least a 20cm gap between the bottom of

the fencing and the ground. They will also be at least 30cm in width. This will achieve O3, O4 and O6.

## **2.4 Summary**

29. The enhancements listed within this document are intended to maximise biodiversity within the Phoenix Solar Park site while the park is operational which will be approximately 40 years. The measures are designed to reduce the potential impacts to more sustainable habitats and management practises which will contribute towards national and local biodiversity policies.

### **3 Landscape Management Plan**

#### **3.1 Introduction**

30. Without cutting or grazing by sheep, coarse grass and scrub will dominate the grassland areas and will outcompete the flowering species leading eventually to dense scrub.
31. Without management, the hedgerows will become misshaped and develop gaps. The positive management outlined in the objectives below will provide wide biodiversity gains in the long-term resulting from these proposals.

#### **3.2 Objective 1: No dig zones created within RPZs and RPAs of trees within construction site.**

32. The presence of construction vehicles, large volumes of heavy materials and equipment on site throughout the period of construction and decommissioning creates a risk of adversely impacting root protection areas/zones.
  - Prior to commencement of any construction works being undertaken on site exclusion zones shall be clearly marked out around all RPA's within the current redline boundary (identified in the Arboricultural Impact Assessment (AIA) (ES Vol 2: Appendix A9.5). Protective fencing will be constructed to prevent works within the RPAs.
  - All existing hedges will be cut (for management purposes) then perimeter deer fencing will be constructed prior to construction of solar PV tables – this buffer zone shall ensure protection for hedgerows and trees from any construction vehicles on site during construction.
  - There will be no dig construction areas between gaps and openings in hedgerows.
  - Where necessary, as detailed within the AIA, above ground access track construction (Neoweb) will be installed to ensure that roots to hedgerows are not compromised during the construction period.
  - No Swales or Ditches are to be constructed within any of the RPZs.
  - Cabling for CCTV cameras sited adjacent to the perimeter fence will skirt around the RPZ of trees in the vicinity of this fencing.

#### **3.3 Objective 2: Following the period of construction seeding of grasslands and wildflower meadow areas shall take place**

33. Following construction and the presence of construction vehicles on site the ground surface will likely have been turned over to some extent. As such, existing hardy grasses and plants are expected to be reduced in density across the site.
34. The areas between and beneath solar PV tables will be sown with a grass seed mix of Emorsgate seed mix ESG2 broadcast sown @ 20kgs/ha combined with ESF1 @



2kgs/ha during the first available planting season, once the construction of the solar park is complete.

35. Emorsgate ESF2 shall be sown within the buffer zone between existing field hedgerow boundaries and the newly constructed perimeter deer fencing.
36. ESG2 is a fine leaved grass mix, allowing space for wildflowers to establish and thrive year after year.
37. ESF1 is predominantly a nectar rich mix that includes a high proportion of clover, which is not ideal for sheep, so it is suggested for the less accessible grazing locations.
38. ESF2 has a high proportion of meadow wildflowers and tends to persist for the long term. It should suit the damper soils on the site. However individual mixes can be provided to the farmer / site operator to address unique locations.

First year management. (Year 1)

39. In the first year, annual weed seeds are likely to germinate. To prevent these overwhelming the preferred wildflowers, top or mow at least 3 times and rake up and remove arisings or where practical between the panel rows take a hay crop.

Management of Established Grassland. Years 2 to 40.

40. Sheep grazing grass areas located within the perimeter deer fencing is proposed for successful grassland management. Sheep shall be used to graze the grass at a low density. Sheep shall be removed during May and June to allow plants to flower successfully and to improve the diversity of grassland.
  - After the 1st year, cut in July/August with complete removal of arising's (some could be used to form grass piles as habitats for grass snakes), OR in the second year graze in July/August
  - If grazing with sheep, use low stocking density during May and June when grazing on site should be restricted; and
  - No pesticides or fertilisers will be used at any time.
  - The use of spot weedkiller treatment of emerging perennial weeds will be undertaken to prevent them from establishing.
41. Areas within the buffer zone (between the perimeter deer fencing and the existing hedgerow boundary) will feature longer grasses and provide suitable habitats for smaller mammals and suitable hunting habitats for owls and other birds. This will be strimmed once a year to 150mm height in September with arisings raked up. Areas of new hedgerow planting and new trees are to be kept weed free to 1m radius from stems for at least the 1st 5 years as per the LVIA.

### 3.4 Objective 3 and 4; Improve and maintain a network of species rich hedgerows and Provide new tree/hedgerow planting and screening to boundary edges

42. Without effective management hedgerows can become outgrown and will eventually become mature trees with gaps at ground level. Management of hedgerows to encourage dense and bushy growth enables hedgerow shrubs to flower and fruit, providing shelter and a source of food for a diversity of wildlife including invertebrates, birds and small mammals.

#### Plant Supply and Planting

43. All plant material shall be from a local nursery or grown on in a local nursery for at least 12 months prior to planting on site. This is to ensure acclimatization to local weather conditions. Such plant material shall also be to BS3936 Part 1. "Nursery Stock Specification for Trees and Shrubs." All planting and subsequent care shall be to BS 4428 "General Landscape Operations". Hedge plants are to be planted as a staggered row 300mm apart with 450mm between plants with 2 slow release fertiliser tablets 300mm deep per plant and topped with 50mm consolidated depth of mulch across a 1m width centred on the plant in natural ground. Trees planted in natural ground are to have a mulched tree station 1m in radius from the trunk.
44. Table 1: Plant Schedule for new hedges and gapping up existing hedgerows except along the southern boundary.

Native Hedgerows in Open Areas.			
Species		Nursery stock specification	% of mix.
<i>Acer campestre</i>	Field maple	60-80cms bare root	20%
<i>Corylus avellana</i>	Hazel	60-80cms bare root	20%
<i>Crataegus monogyna</i>	Hawthorn	60-80cms bare root	40%
<i>Lonicera periclymenum</i>	Honeysuckle	2 litre pot grown	In gapped up hedges only. 1 / 10 lin m.
<i>Prunus spinosa</i>	Blackthorn	60-80cms bare root	10% used in damp areas
<i>Sambucus nigra</i>	Elder	60-80cms bare root	5%
<i>Ulmus glabra</i>	Wych Elm	60-80cms bare root	5%

Table 2: Species for hedgerow trees in natural ground planted in groups but no closer than at 10m centres in hedgerows.

Native Trees for Hedgerows in Open Areas.				
Species		Nursery Stock Specification	Accessories	% of mix
<i>Acer campestre</i>	Field maple	2.4m – 3.6m feather whips	5 slow release fertiliser tablets. 1 short stake and tie. 1 spiral guard.	25% overall

<i>Alnus glutinosa</i>	Alder	2.4m – 3.6m feather whips	As above	5% in damp places.
<i>Betula pendula</i>	Birch	2.4m – 3.6m feather whips	As above	5% towards east of site
<i>Prunus padus</i>	Gean Cherry	2.4m – 3.6m feather whips	As above	20% overall
<i>Quercus robur</i>	Oak	2.4m – 3.6m feather whips  12 -14 cms standards	As above  9 No slow release fertilizer tablets + stake etc.	40% overall  6 No in off site hedge.
<i>Sorbus aucuparia</i>	Rowan	2.4m – 3.6m feather whips	As above	5% on northeast boundary

Table 3: Species for gapping up the southern site boundary hedge under the shade of the existing tree canopy.

Native Hedging Plants for Gapping Up Hedges in Shady Locations			
Species		Nursery stock specification	% of mix.
<i>Alnus glutinosa</i>	Alder	60-80cms bare root	10% in damp places
<i>Crataegus monogyna</i>	=Hawthorn	60-80cms bare root	35%
<i>Fagus sylvatica</i>	Beech	60-80cms bare root	10%
<i>Ilex aquifolium</i>	Holly	2 litre pot grown	20%
<i>Ilex aquifolium</i>	Holly	60-80cms bare root or 2Ltr PG	5%
<i>Prunus spinosa</i>	Blackthorn	40-60cms bare root	10% in damp places
<i>Quercus robur</i>	Oak	40-60cms bare root	10%
<i>Ulmus glabra</i>	Wych Elm	60-80cms bare root	5%

45. Yew has been omitted as it is poisonous to sheep.

New hedgerow planting and existing hedgerow improvement. Year 1.

**New Ground Level Hedgerow Cultivation.** This is to be undertaken by hand within the rootzone of existing trees.

- In open areas the new hedgeline is to be broken up by a single pass of a tyne or rotovator to break up the ground to 500mm depth.

- A trench should then be dug 500mm deep x 400mm wide or shallower and wider if ground water is encountered.
- Where soil depths allow a 50mm depth of well rotted stable manure is to be placed in the base of the trench, lightly covered with 50mm reserved soil so the roots do not touch the manure, prior to planting. Where soils are shallow, place additional stripped soil over the cultivated ground and plant into the linear mound. Omit the manure but use generous quantities of mulch over the whole surface of the planted mound.
- In the first 5 years new plants will be maintained weed free across a 1m diameter planting station and watered whenever there is prolonged drought.

**New hedging** is to be planted at ground level along the field boundaries indicated within the landscape mitigation plan (ES Vol 3: Figure 8.6, doc ref BL003).

- Excavate the trench to the dimensions above, reserving the topsoil.
- Supply and place 50mm depth of well rotted manure or compost in the base of the trench.
- Cover with a 50mm minimum depth of reserved soil.
- Supply and plant hedging plants as specified in a staggered row 300mm apart with a minimum of 400mm between the plants.
- The plant numbers below have been calculated on the basis of 5 plants per linear meter.
- Place slow release fertiliser tablets in the base of the trench and backfill and firm as the work proceeds.
- Backfill with excavated soil, compost and fertilisers as described above.
- On completion water with a fine spray and place 50mm consolidated mulch over the hedgeline to 0.5m from the centreline of the hedge.
- Loose mulch will be easier to place than cutting a mulch blanket and pinning around the staggered stems.
- Keep the hedgeline free from weeds.
- In the first 5 years new plants should be maintained weed free across a 1m diameter planting station and watered whenever there is prolonged drought.

**Newly Planted Trees and Hedges.** New trees are to be planted at ground level close to or within gaps in the existing hedgerow.

- All newly planted trees and hedging plants will be checked every month during the winter, especially after heavy rain and / or strong wind and firmed as necessary.
- Stakes and ties will be adjusted to avoid chafing with a view to removing these by the end of Year 3. During the remainder of the year all planting stations will be kept free of weed, with mulch topped up in autumn.
- Water at the rate of 15 litres per day, per tree if no rain has fallen in the previous 2 weeks.
- Sufficient fertiliser has been specified for the first three years.

### Trees

- Plant between November and the end of March in any year.

- In each case a square pit will be dug, retaining the excavated topsoil separately from the subsoil. The base of the pit will be broken up to allow free drainage and slightly domed.
- A 100mm depth of organic matter such as well rotted manure or compost will be spread in the base of the pit with a further 75mm of reserved topsoil spread over to ensure the roots do not directly touch the manure.
- The new tree will be set in the centre of the pit and a stake driven in either through the rootball or between the bare roots, as applicable, so as to be as close to the trunk as possible without chafing. As with the hedging plants, in damp soil, cultivate the ground above the water table and increase the quantity of soil by creating a linear mound. Plant into the mound plus the natural ground and drive at least one stake, firmly into the natural ground and secure.

#### Future maintenance. Years 2 to 10.

##### Newly Planted Trees and Hedges

- Stakes and ties will be adjusted to avoid chafing with a view to removing these by the end of Year 3. During the remainder of the year all planting stations will be kept free of weed, with mulch topped up in autumn.
- Sufficient fertiliser has been specified for the first three years. After this time a general fertiliser may be applied. The frequency will depend on the type of fertiliser used but a well balanced slow release with trace elements once in three years should be sufficient in these soils. Fertilising may cease after 7 years when young trees should have established a good root structure, unless foliage and general condition suggests otherwise.
- Litter that may collect in guards and shrub shelters should be removed at each visit. Aim to remove all shelters, guards, stakes and ties by the end of Year 3.
- It is recommended that the tips of the branches of young plants be snipped back, by say 1cm, in June for the first 5 years. This will encourage bushy growth. Each September clip to the required profile, a trapezium shape broader at the base than at the top to allow light to all parts of the hedging plant and avoid a bare base developing.

#### Long-term management. 10 Years +

##### Newly Planted Hedgerow

46. Each September clip to the required profile, a trapezium shape broader at the base than at the top to allow light to all parts of the plant and avoid a bare base developing. Continue until the required height is reached as specified on the landscape mitigation plan (ES Vol 3: Figure 8.6, doc ref BL003) with the trees achieving full canopies above.

### **3.5 Objective 5: Maintain existing trees**

47. The trees along the site boundaries and adjacent woodland have features that provide good habitat for a variety of wildlife including bats and birds.

48. At all times, before during and after construction the root protection area (RPA) should be protected in accordance with BS5837: 2012. The construction of swales will not occur within the root protection areas.
49. A tree constraints survey has identified the RPAs, which have been detailed for all trees within the development area. Please refer to ES Vol 3: Figure 1.2 and ES Vol 2: Appendix A9.5.

#### Construction phase & Year 1

- Ensure no equipment or materials are stored within the root protection zone.
- All trees within the tree constraints plan are to be protected in accordance with BS5837. This protective fencing (deer fencing) will be erected during 'site set up'.
- Ensure that machinery is not driven or materials stored within the root protection zone. If the installation of solar panels or any other form of construction is proposed within the RPZ of any tree, guidance should be sought from the local planning authority's tree officer.
- Where tracks are installed within the root protection areas of tree, above ground access track construction shall be utilised; such as Neoweb. This is only detailed to occur where gravel access tracks cross existing hedge openings.
- Swales should not be dug or constructed within the RPA of root protection zones.

#### Long-term management Years 2 to 40

- Regular (every 10 years,) inspection by qualified arborist to advise on any essential works such as limb reduction, removal or crown reduction.
- Ensure that the root protection areas are not compacted during solar panel maintenance.

### **3.6 Objective 6; Monitor grassland; Years 2 to 40**

50. The grassland should be checked for successful establishment and species diversity.
51. This should be both for the buffer wildflower areas and the main solar park areas. In the long-term the grassland should be monitored for diversity.
  - Survey the grassland in June/July and October for the first 3 years to check establishment.
  - Monitor for diversity in June/July for 3 years using the DAFOR scale (dominant, abundant, frequent, occasional, rare) and compare to species composition in the seed mixes. It is unlikely that all sown species will establish in all areas of the site due to localised site conditions such as damp or dry areas. The results of the above monitoring will be assessed and remedial action taken as required to maximise the biodiversity gains across the site. Such measures may include reseeding of specific species.

- Monitor for diversity in June/July in years 5, 7, 9, 15, 20, 25, 30, and 35 using the DAFOR scale (dominant, abundant, frequent, occasional, rare) and compare to species composition in the seed mixes. Should a significant decrease in species occur, remedial action will be taken as required to maximise the biodiversity gains across the site. Such measures may include reseedling of areas of the site with a different seed mix.

### **3.7 Reinstatement of land following decommissioning of solar park 40 years +**

52. The solar park is to be decommissioned after 40 years and the land restored to its former land use.
53. In this regard all underground cabling will be removed, all above ground cables and modules will be dissembled and recycled, where possible. All trenches will be backfilled and a final layer of 300mm of topsoil will be provided.
54. As part of this process all access tracks and above ground access track construction related to the management and maintenance of the park will be removed.
55. Where possible all gravel chippings will be recycled or reused within local construction projects. All track areas will be reinstated with 300mm of topsoil and seeded as above.
56. All foundations will be removed to a minimum depth of 1m.
57. All perimeter fencing will be removed from the site. All posts will be dug up and holes reinstated with topsoil and seeded.

### **3.9 ADDITIONAL NOTES**

#### **3.9.1 Weedkilling**

58. All areas to be soil stripped e.g. under the Control Room and Inverter housings, will be trimmed or mown to a maximum of 150mm vegetation height. Arisings will be raked up and removed to a green waste recycling facility. After a few days growth when plants such as brambles, nettle, docks etc have leafed out sufficiently to absorb the weedkiller the area will be sprayed with glyphosate. All chemical weedkillers are to be mixed and applied in accordance with the Manufacturer's instructions by trained and certificate holding personnel wearing / using personal protective equipment (PPE). After spraying the vegetation will be left in situ for a minimum of 3 weeks of day time temperatures over 6 degrees C to thoroughly kill the root system. Topsoil will then be stripped from these areas plus any parts of the access route needing reinforcement, to a maximum of 300mm depth and stored in heaps no greater than 2m high, all as defined in BS3882, until needed for horticultural operations.
59. Where gapping up an existing hedge or hedge bank a planting station 1m in diameter may be created by careful glyphosate application, taking care to avoid spray drift or evaporation damage to existing adjacent vegetation.



60. Alternatively, where a non-glyphosate regime is preferred, surface vegetation may be cleared and weeds prevented from re-establishing by pinning a mulch mat, carpet tile or thick black polythene of appropriate dimension over the intended planting station to exclude light for 6 months. When digging the plant station care will be needed to remove all weed roots encountered. Subsequent maintenance will require similar diligence.

### **3.9.2 Topsoil**

61. Topsoil will be stripped from areas of proposed construction and hard surfacing. Stripping and storage will be undertaken in accordance with “BS3882 - Topsoil” of which general purpose grade and occasionally subsoil clauses apply. It is anticipated that new ground level hedges and tree planting will have adequate topsoil in situ. Areas to receive topsoil are therefore repaired hedgerows plus any planting areas found to be lacking in this respect. A minimum of 1 cubic meter is to be available for each new feathered tree and 0.5 cubic metres for each linear metre of new ground level hedgerow.

### **3.9.3 Works Required For Buffer Strips**

#### Introduction

62. The buffer areas will be seeded with varied grasses. (Emorsgate ESF2). ESF2 contains species that have been shown to be particularly important to bumblebees, like red clover and birdsfoot trefoil as well as open flowered plants like wild carrot and oxeye daisy, which are important for other beneficial insect groups such as hoverflies.

#### Ground preparation

63. The newly excavated swales, recently maintained ditches and buffer strips are to be roughly raked or cultivated to 150mm depth where level and sown with a damp meadow wildflower mix to ditches / swales and a shade tolerant hedgerow mix typical of the locality in permanently shady locations.

#### Sowing

64. This seed mix (ESF2) is best sown in the autumn or spring. The seed must be surface sown and can be applied by machine or by hand. To get an even distribution and avoid running out divide the seed into two or more parts and sow in overlapping sections. Do not cover the seed, but firm in with a roll, or by treading, to give good soil/seed contact. Mix ratio is 20kg/ha.

#### First Year Management

65. Most of the sown species are perennial and will be slow to germinate and grow and will not usually flower in the first growing season. There will often be a flush of annual weeds from the soil in the first growing season. This weed growth is easily controlled by mowing or grazing. It is important to cut back any annuals before they die back, this cut will reveal the developing tussock mixture and give it the space it needs to develop.



66. Once established the area shall require minimal maintenance. Any unwanted perennial weeds (docks, thistles) might need to be controlled through the spot application of weedkiller or through hand digging or additional grazing. To control scrub and bramble development, tussocky areas may need cutting every 2-3 years between October and February. For wildlife this cutting is best done on a rotational basis so that no more than half the area is cut in any one year leaving part as an undisturbed refuge.

### **3.9.4 Works Required For Grassland Between Panels**

#### Introduction

67. This larger area of grassland will be seeded with a mixture of ESG2 and ESF1.

#### Ground Preparation

68. The centre of the site is currently ploughed for arable land. On completion of harvesting of the current crop and presuming consent to this proposal, all inorganic fertilising and pesticide control will cease.
69. Plough or dig to bury any remaining surface vegetation, harrow or rake to produce a medium tilth, and roll to produce a firm surface.

#### Sowing

70. Seed is best sown in the autumn or spring but can be sown at other times of the year if there is sufficient warmth and moisture. The seed must be surface sown and can be applied by machine. To get an even distribution and avoid running out divide the seed into two or more parts and sow in overlapping sections. Do not incorporate the seed but firm in with a roll to give good soil/seed contact. Seed should be sown at a rate of 20kg/ha.

#### First Year Management

71. Most of the sown meadow species are perennial and will be slow to germinate and grow and will not usually flower in the first growing season. There will often be a flush of annual weeds from the soil in the first growing season. Topping or mowing or grazing easily controls this weed growth. It is important to cut back any annuals before they die back, set seed and collapse. This cut will reveal the developing meadow mixture and give it the space it needs to develop.

#### Longer Term Management.

72. The meadow grassland should not be cut or grazed from May to June to give the sown species an opportunity to flower. After flowering in July or August take a 'hay cut': cut back with a tractor mower to approx. 40-70mm. Leave the 'hay' to dry and shed seed for 1-7 days then remove from site. Mow or graze the re-growth through to late autumn/winter to approx. 50mm and again in spring if needed.

73. Inspection every three months is advised to check the growth of dominant species and ruderal species. Management of these areas may have to be adapted to allow for less dominant species to predominate.

## **APPENDIX E: SITE ACCESS IMPROVEMENT DETAILS**

## **Blackberry Lane Solar Park - Access Appraisal**

**Site Name:**

Blackberry Lane Solar Park, Pembrokeshire

**Report Date:**

4/11/2013

### **Proposed Access Route:**

**This access appraisal examines the suitability of the proposed access route from Junction 48 of the M4, in successfully accommodating 16.6m Low Loaders associated with the construction of the proposed Blackberry Lane Solar Park, Pembrokeshire.**

**The proposed routes for the Low Loaders from Junction 48 of the M4 to the proposed site access location is as follows:**

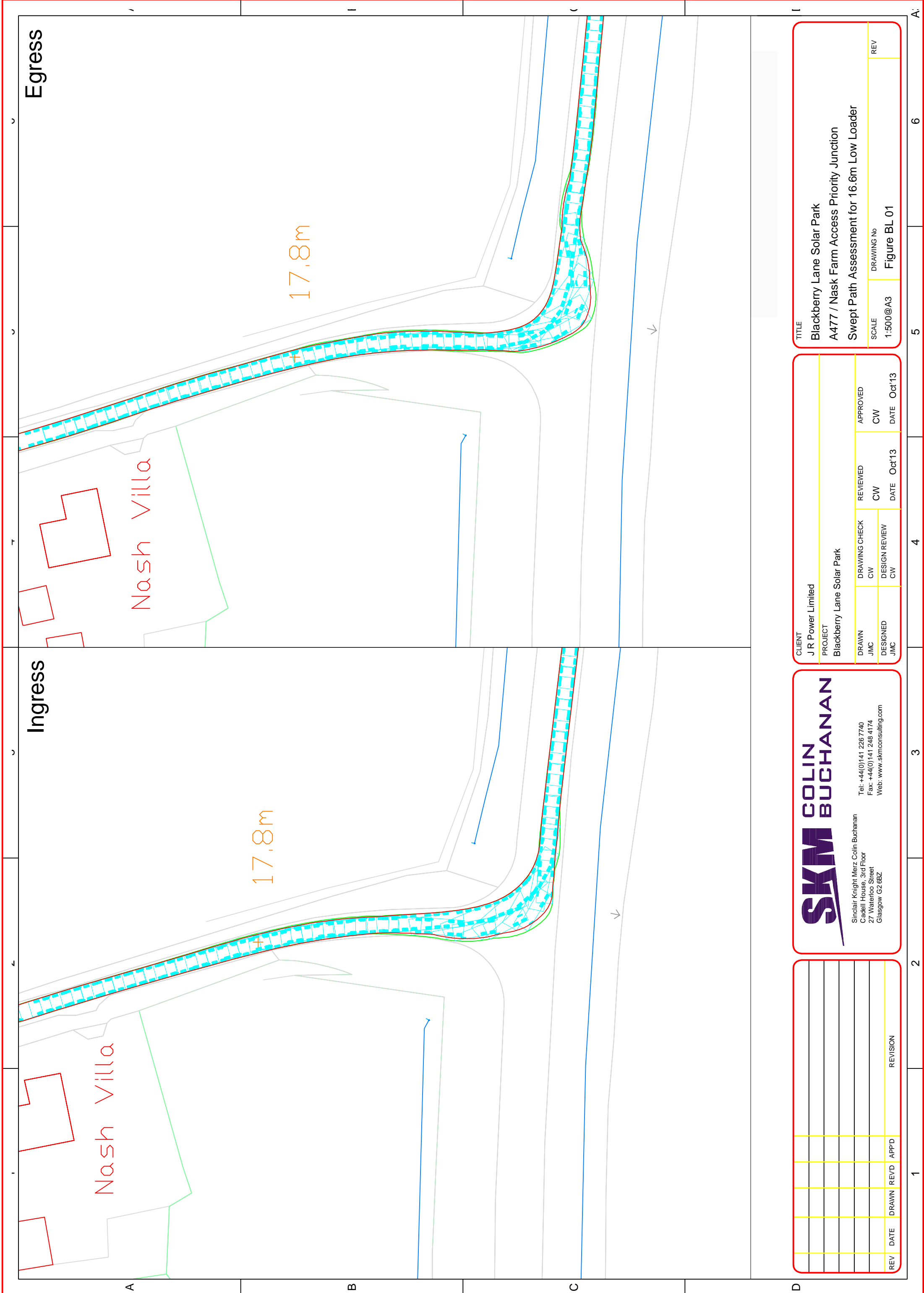
- **Northeast on the A48;**
- **Southwest on the A40;**
- **Southwest on the A447;**
- **North on the Nash Farm access track; and**
- **Turn right into the site using the existing access into the south western most field of the proposed solar park approximately 200m north of the A447 / Nash Farm access track priority junction.**

**A desk-top assessment of the proposed route, between Junction 48 of the M4 and the A447 / Nash Farm access track priority junction, confirms that the Low Loaders can successfully negotiate this section of the proposed route while remaining within the carriageway extents. Swept path assessments (Figure BL01) have been undertaken at the A447 / Nash Farm access track priority junction, which confirm that Low Loaders can successfully negotiate this junction while remaining within the carriageway extents.**

**A desk-top assessment of the proposed route, between the A447 / Nash Farm access track priority junction and the proposed site access, confirms that the Low Loaders can successfully negotiate this section of the proposed route while remaining within the carriageway extents.**

### **Proposed Site Entry:**

**The proposed site access will take the form of an improved junction off the eastern side of the Nash Farm access track, approximately 200m north of the A447 / Nash Farm access track priority junction.**



REV	DATE	DRAWN	REVD	APP'D	REVISION



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Cadeil House, 3rd Floor  
27 Waterloo Street  
Glasgow G2 6BZ

Tel: +44(0)141 226 7740  
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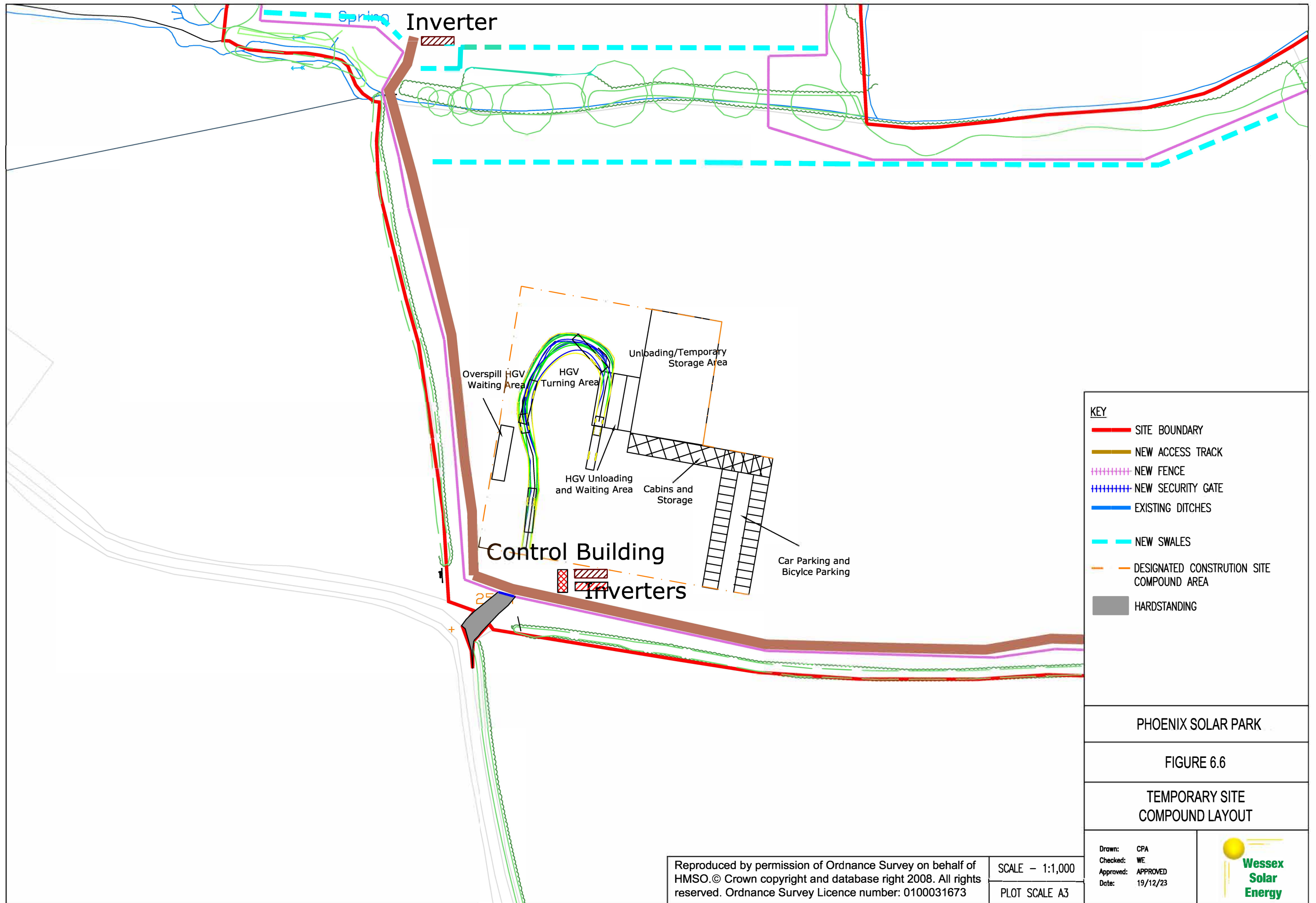
CLIENT J R Power Limited					
PROJECT Blackberry Lane Solar Park					
DRAWN JMC	DRAWING CHECK CW	REVIEWED CW	APPROVED CW	DATE Oct'13	
DESIGNED JMC	DESIGN REVIEW CW	DATE Oct'13	DATE Oct'13	DATE Oct'13	

TITLE  
Blackberry Lane Solar Park  
A477 / Nask Farm Access Priority Junction  
Swept Path Assessment for 16.6m Low Loader

SCALE  
1:500@A3

DRAWING No  
Figure BL 01

REV



## **APPENDIX F: SITE SPECIFIC WATER POLLUTION PREVENTION STRATEGY**

# **PHOENIX SOLAR PARK**

## **Site Specific Water Pollution Prevention Strategy**

### **1.0 Emergency Procedure**

Notwithstanding the below, should a pollution incident occur to any surface water feature on site then the emergency procedure set out in Appendix C of the CEMP should be followed and the NRW hotline (0300 065 3000) should be contacted to discuss how to proceed.

### **2.0 Introduction**

In addition to the best practice measures set out within the CoCP and CEMP, this strategy provides specific details on where specific activities will take place on site and what measures will be put in place to prevent any pollution entering the watercourse on and off site.

The following pollutants have been identified as potentially being present on site as a result of the proposed development.

1. Oils and Chemicals
2. Cement and Concrete
3. Silt

The potential source, pathway and prevention measures for each of these pollutants, is detailed below.

### **2.0 Oils and Chemicals**

#### **2.1 Source**

- Vehicles on site
- Electrical Equipment
- Refuelling Operations
- Fuel storage areas

#### **2.2 Pathway**

- Leakage from poorly maintained vehicles
- Leakage from poorly transported or stored electrical equipment
- Spillage during refuelling
- Leakage from on-site fuel storage containers

#### **2.3 Prevention measures**

##### Vehicles and refuelling

- All vehicles will be maintained in good working condition.
- Any repairs or maintenance activities required on site will be completed within the site compound area which will comprise hardstanding. The location and design of the compound will be as detailed in Section 4 and Figure 3 of the CEMP.
- A spill kit will be available for use in the event that there is a leakage of oils or fuel during any maintenance activity.



- No in-situ maintenance or repair will be undertaken. Any vehicles will be towed back to the site compound area.
- There will be no unnecessary use of vehicles on site with all staff and contractor parking located within the designated site compound area.
- No fuel will be transported across the site.

### Storage

Where possible refuelling will take place off site. Where this is not possible for any reason all oils and fuels will be stored within the designated site compound area in accordance with the best practice measures set out in Section 6.3.2.3 (c) and reiterated below:

Aspect	Control Measures
<b>General</b>	<p>A detailed and up-to-date inventory should be maintained, containing such information as product types, trade names, COSHH data, volumes, and location on site.</p> <p>Quantities of materials stored should be kept to a working minimum.</p> <p>Hazardous materials shall be stored in sealed labelled containers indicating the nature of their contents and any hazard it may pose.</p> <p>Dedicated stores should display the appropriate warning signs at access points.</p> <p>Ensure that only trained workers have access to hazardous materials.</p> <p>Keep apart: solid and liquid products; flammable and non-flammable liquids; acids and alkalis; and wastes.</p> <p>All pipework, valves and trigger guns serving fuel, oil and chemical storage tanks shall be contained within a bunded area and resistant to unauthorised interference and vandalism as far as reasonably practicable, and shall be turned off and securely locked when not in use.</p>
<b>Siting</b>	<p>Where practicable, primary oil containers (whether tanks, intermediate bulk containers, mobile bowsters or drums) shall not be situated within 50m of any boreholes or 10m of any watercourse or drains.</p> <p>Hazardous substances shall be stored away from vehicle movements or anywhere they could be knocked or damaged, away from sensitive environmental receptors and fenced off to minimise the risk of vehicle damage.</p>
<b>Primary Container</b>	<p>The primary storage container should be of sufficient strength and integrity to ensure that in normal circumstances it is unlikely to burst or leak.</p> <p>Damaged or unsuitable containers should be repaired or removed from circulation as soon as they are identified.</p> <p>It is recommended that primary containers are stored inside or otherwise protected from the elements.</p>
<b>Secondary</b>	Fuels, oils and chemicals shall be sited on impervious bases and surrounded by

Aspect	Control Measures
<b>containment</b>	<p>impervious bund walls.</p> <p>The volume of the bunded compound shall be at least 110% of the largest tank or 25% of the compound capacity of all tanks, whichever is greater.</p> <p>The bund wall shall have a minimum height of 150mm to allow for rainfall and fire fighting foam; the bund and base of storage area shall be impermeable to water and oil and must be properly maintained.</p> <p>All filling points, vents, gauges and sight glasses shall be contained within the bund.</p> <p>The drainage system of the bund shall be sealed with no discharge to any watercourse, land or underground strata.</p> <p>Associated pipework shall be located above ground and protected from accidental damage.</p> <p>All filling points and tank overflow pipe outlets shall be detailed to discharge downwards into the bund.</p> <p>Bunds shall be impermeable to the substances that are being stored in the tanks or containers.</p> <p>Air vent pipes shall be positioned so that they can be seen easily and directed so that any discharge (e.g. in the event of a tank being overfilled) is directed into the bund.</p> <p>The bund base and walls must not be penetrated by any valve, pipe or other opening which is used for draining the system, and when a fill pipe or draw off pipe must pass through the bund base or wall, the hole must be carefully sealed to prevent oil escaping.</p>
<b>Chemical storage</b>	<p>Store products containing chemicals such as antifreeze, paints, detergents, degreasers, solvents and hydraulic fluids securely in a cool, dry, dark place capable of keeping in spills e.g. in secured bunded storage cabinets.</p> <p>Store containers so their labels face forwards.</p> <p>Containers for liquid chemicals should be easy to pour from, not dribble nor trap liquid in a rim.</p> <p>The contents of each storage tank shall be clearly marked on the tank and a notice displayed requiring the valves and trigger guns to be locked when not in use.</p>

Aspect	Control Measures
<b>Storage security</b>	<p>All tanks and drums shall be stored in a secure bunded container or compound that is locked when not in use.</p> <p>All tanks shall display a notice that demands that valves and trigger guns are locked when not in use.</p> <p>All pipework, valves and trigger guns serving fuel, oil and chemical storage tanks shall be resistant to unauthorised interference and vandalism as far as reasonably practicable, and shall be turned off and securely locked when not in use.</p>
<b>Emergency</b>	<p>Where hazardous materials are stored, appropriate absorbent material must be close by to contain and clean up any spillage.</p> <p>Once cleaned up the absorbent material must be bagged and disposed of as Hazardous Waste as detailed in Waste Management Plan.</p>
<b>Flammable liquids</b>	<p>Flammable liquids shall be stored in steel tanks.</p> <p>The keeping of petrol is regulated under the Petroleum (Consolidation) Act 1928 as amended by the Dangerous Substances and Explosives Atmosphere regulations 2002 (DSEAR).</p>

### Electrical Equipment

- All electrical equipment will be stored within the designated site compound area until it can be moved to its final location on site.
- Where possible electrical equipment will be stored without containing any oils or fluids.
- Electrical equipment such as inverters and transformers will be transported across the site prior to having any transformer fluid or oils added. This will mean that any oil leaks from the equipment would be contained inside the electrical building.
- Any leak highlighted by the automatic sensors or observed visually by construction staff must be cleaned up as soon as possible using an appropriate spill kit which will be available on site and stored within the designated site compound area.

### **3.0 Cement and Concrete**

#### **3.1 Source**

- Cement Mixers bringing cement onto site for the foundations for the inverter cabins and control building

#### **3.2 Pathway**

- Spillage of cement and concrete during transportation to the building location
- Overfilling of the foundations and subsequent spillage on to the surrounding ground

#### **3.3 Prevention measures**

- No cement or concrete will be mixed or stored on site
- Cement mixers will wait within the designated site compound area until the cement/concrete is required.
- Any transfer of cement into smaller vehicles for transportation across the site will be completed within the designated site compound area and any spillage of the cement/concrete will be cleaned up immediately.
- The movement of cement/concrete across the site via any means including closed top vehicles will be closely monitored and any spillage or leakage will be cleaned up immediately.
- No cement/concrete will be poured within 10m of a watercourse or surface water feature.
- The pouring of foundations will be monitored and any overfilling, spillage or leakage will be cleaned up immediately.
- On site cleaning of concrete vehicles and equipment is not expected to be necessary. However, should the need arise this will take place within a contained area located within the designated site compound area. The contained area will have a means installed of collecting any wash water which will then be disposed of appropriately off site in accordance with the waste management plan.

#### **4.0 Silt**

##### **4.1 Source**

- Material storage areas
- Excavations, spoil heaps and exposed ground
- Site roads

##### **4.2 Pathway**

- Runoff from stockpiles of aggregate
- Runoff from temporary stockpiles of excavated soil
- Runoff from exposed areas of the site
- Watercourse Crossings
- Run-off during the construction of aggregate site roads

##### **4.3 Prevention Measures**

- No works will take place within 7m of any ditch of watercourses except for the existing crossing points.
- No works will be done to any crossing points except for the installation of silt fencing and improvement of the access route via the installation of aggregate to form a stable site track.
- All materials will be stored within the designated site compound area until they are required elsewhere on site.
- Any excavation work will be undertaken when required rather than in advance reducing the length of time that excavated material is stockpiled.
- Any excavated soils, sub-soils or aggregate suitable for reuse will be stockpiled on impermeable liners.
- Any stockpiles will be covered where practical to prevent run-off.

- Speed limits will be applied on site to reduce any potential damage to soft standing areas
- Movement of vehicles across soft standing areas will be kept to a minimum and repeat movement along set routes avoided to prevent damage to existing vegetative ground cover
- Metal sheeting will be laid onto the ground in heavy use areas or along heavily used routes in order to protect the existing vegetative ground cover.
- Vehicle washing will take place within a contained area located within the designated site compound area. The contained area will have a means installed of collecting any wash water which will then be disposed of appropriately off site in accordance with the waste management plan.

## **APPENDIX G: INDICATIVE ENVIRONMENTAL SITE INSPECTION CHECKLIST**

## Environmental Site Inspection Checklist

Site Location:

Inspection Date:

Weather:

Inspected by:

Inspection Items	Implemented		N/A	Comments (i.e. specify location, good practices, problem observed, possible cause of nonconformity and/or proposed corrective/preventative actions)
	Yes	No		
<b>Air Pollution Control</b>				
Are stockpiles of dry materials watered or covered to prevent dust and run-off				
Are all vehicles carrying dusty loads covered/watered over prior to leaving the site?				
Are dusty roads paved and/or sprayed with water?				
Are plant and equipment well maintained? (any black smoke observed, please indicate the plant/equipment and location)				
Are speed control measures applied? (e.g. speed limit sign)				
<b>Water Pollution Control</b>				
Are vehicles and plants cleaned before leaving the site?				
Are wheel washing areas well maintained to prevent				

overflow, flooding, sediment?				
Is sand and silt settled out in wheel washing area and removed?				
Is the public road/area around the site entrance and site hoarding kept clean and free of muddy water?				
Are watercourses visibly free of sediment and other pollutants?				
Are all staff and construction vehicles parked within the site compound area?				
Are all chemicals and oils stored securely within the designated site compound area?				
Is the inventory should be maintained, containing such information as product types, trade names, COSHH data, volumes, and location on site.				
<b>Noise Pollution Control</b>				
Is idle plant/equipment turned off or throttled down?				
<b>Waste Management Control</b>				
Is the site kept clean and tidy? (e.g. litter free, good housekeeping)				
Are separated labelled containers / areas provided for facilitating recycling and waste segregation?				
Are construction wastes / recyclable wastes and general refuse removed off site regularly?				
Are construction wastes collected and disposed of properly by licensed collectors?				
Are chemical wastes, if any,				



collected and disposed of properly by licensed collectors?				
Are oil drums and plants/equipments provided with drip trays?				
Are drip trays free of oil and water?				
Is there any oil spillage? Cleanup the contaminated soil immediately?				
<b>Storage and Chemicals and Oils</b>				
Are chemicals stored and labelled properly?				
Are proper measures to control oil spillage during maintenance or to control other chemicals spillage? (e.g. provide drip trays)				
Are spill kits / sand / saw dust used for absorbing chemical spillage readily accessible?				
<b>Ecological Protection</b>				
Is all fencing in place to prevent damage to existing trees and hedgerows?				
<b>Emergency Preparedness and Response</b>				
Are fire extinguishers / fighting facilities properly maintained and not expired? Escape not blocked / obstructed?				
Are accident and incident reports available, and corrective & preventive actions identified and recorded?				