



Brynrhyd Solar Farm

Design and Access Statement

June 2021 | P20-1336B



Capel Hendre

Tycroes

Pontardulais Road

Ebenezer Road

A483

A48

Application Site

Llanedi

M4

Llanedi Road



First Floor, South Wing,
Equinox North, Great Park Road,
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Prepared on behalf of Island Green Power
June 2021 | project code P20-1336B

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1.0 Introduction



This Design and Access Statement has been managed and coordinated by Pegasus Group, on behalf of Brynrhyd Solar Farm Limited [the applicant and developer] and forms part of a suite of documents supporting a planning application for development of national significance for the construction, operation, management and subsequent decommissioning of a solar farm at Bryn-Y-Rhyd Farm, near Llanedi, Pontarddulais, Swansea SA4 0FD.

1.1 The main element of the scheme is the installation of ground mounted solar panels. There will also be electrical connection infrastructure and the point of connection into the local electricity grid is located to the north of the site at Western Power Distribution Ammanford Primary substation which is located to the south of Ty Croes. By virtue of its potential export capacity, which stands at 30MW, this project constitutes a Development of National Significance. Therefore, instead of applying to the Local Planning Authority for Planning Permission, the application must be made to the Welsh Government for determination.

1.2 This document has been prepared in line with the Planning (Wales) Act 2015 which set out the requirements regarding the contents of a Design and Access Statement and reflect the objectives of good design as set out in Planning Policy Wales (PPW) and Technical Advice Note 12: Design (TAN 12).

1.3 This Design and Access statement should be read in conjunction with the other documents supporting the application submission. Notwithstanding the above, this Design and Access Statement is designed to be read as a standalone document if required.

2.0 Regulatory Background



By virtue of its potential generating export capacity, which stands at 30MW, this project constitutes a Development of National Significance [“DNS”]. Therefore, instead of applying to the Local Planning Authority for Planning Permission, the application must be made to the Welsh Government for determination.

2.1 Part 5 of the Planning (Wales) Act 2015 established a new category of development named DNS. Provision in the Act came into force in March 2016 which requires the Welsh Minister to determine DNS projects, with applications being made directly to them. The process for applying for a Development of National Significance is set out by the Development of National Significance (Procedure) (Wales) Order 2016 and subsequent Regulations.

2.2 The DNS application process is managed by Planning Inspectorate Wales on behalf of the Welsh Government. Decisions are made in the context of the Welsh Government's national planning policy, including Future Wales and Planning Policy Wales, and the Carmarthenshire's Local Development Plan will be a material consideration. The purpose of the DNS process is to ensure timely decisions are made on development proposals that are of the greatest significance to Wales because of their potential benefits and impacts. Prior to submitting the application to PINS Wales, the applicant must publicise and consult on the proposed application for a period of at least six weeks. The applicant carried out the pre-application consultation from 19 March 2021 to 30 April 2021.

2.3 Following the formal pre-application consultation, the application was refined and then submitted to the Planning Inspectorate Wales for consideration by an appointed Planning Inspector. The appointed Inspector will then consider evidence from the applicant, local communities, the local planning authority and other statutory consultees and interested parties, submitted both in writing and, if required, at targeted hearing or inquiry sessions, which are held in public. Following their consideration of the evidence, the Inspector will write a report to the Welsh Ministers, setting out their conclusions and making a recommendation as to whether or not the application should be granted planning permission. The Welsh Minister will then decide the application.

3.0 Site Assessment



The development site is centrally located on land at Bryn-y-Rhyd Farm, Llanedi, Pontarddulais. The site is positioned within undulating pastoral farmland in the surroundings of Bryn-y-rhyd Farm, Bryn Awel Farm, Tirgwaid and Gelli Organ Farm on the western slopes of the Lluchwr/Loughor valley between the settlements of Tycroes and Llaendi. The cable route for the development travels along with the local road network to the northeast and connects to a point of connection on the southern edge of Tycroes within the existing DNO substation.

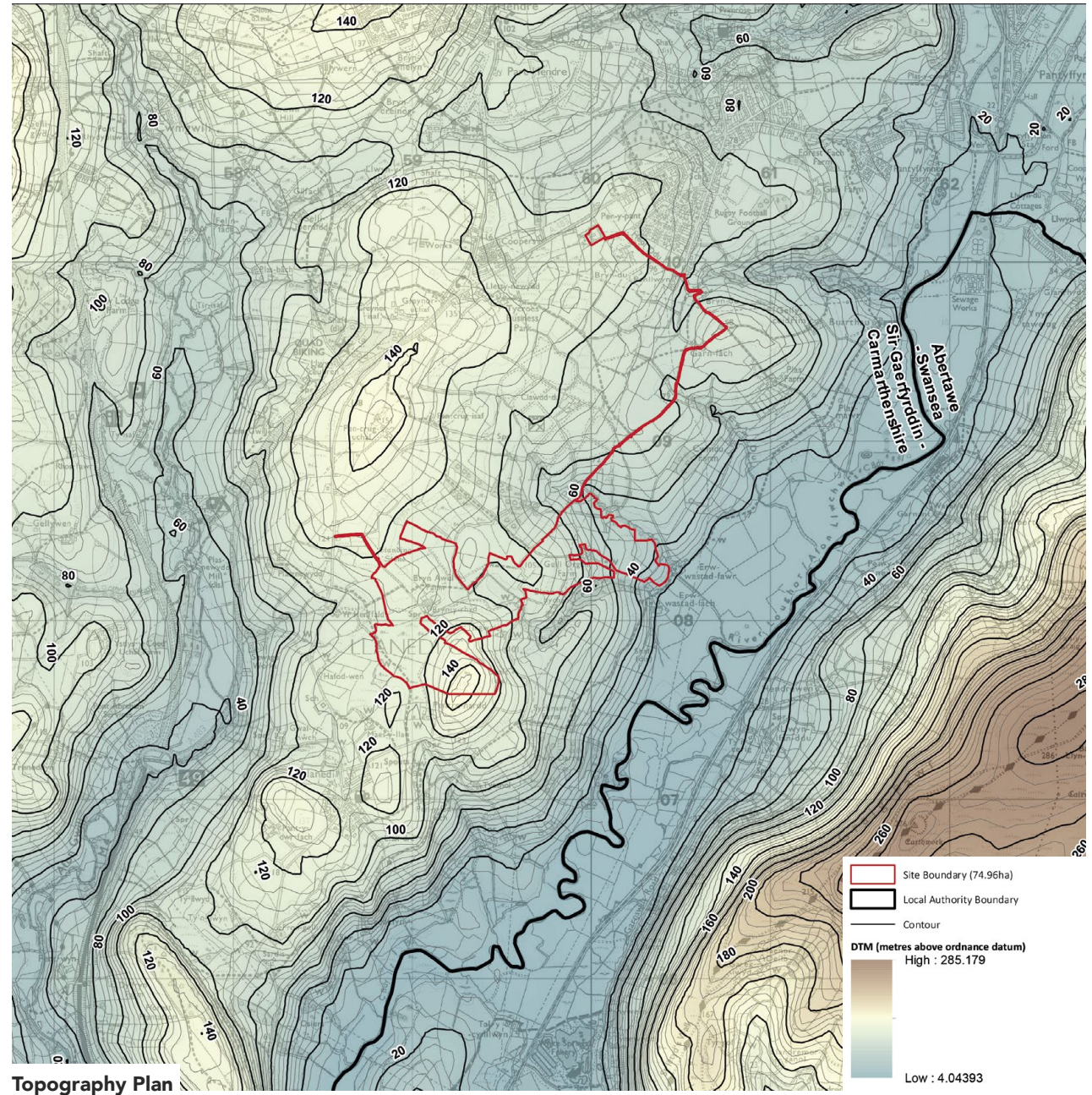


Site Location Plan

3.1 The development site is divided by a rural lane, Heol Troeon Bach, which extends between Tycroes and Llaendi on the middle slopes of the valley between the existing Clawdd-du Solar Farm, Penrhiw Cottage, the Old School Yard, Gelli Organ Farm, Sychnant Farm, Pentre-Hardd and Llanedi. The site to the east of the rural lane extends downslope towards Erw-wastad-fawr Farm in the lower valley.

3.2 Field boundaries within the site are formed of well-established hedgerow vegetation which frequently includes hedgerow trees. The eastern boundary of the near Erw-wastad-fawr Farm is contained by a dense meandering tree belt, which continues around the periphery of the site as is it passes by the farm. Beyond the southern boundary of the site, a length of Ancient Woodland stretches between Erw-wastad-fawr Farm, past Blaen-Cwn-Bychan finishing near Tirgwald.

3.3 Clawdd du Farm, an operational solar development is located approximately 0.18km to the northeast of the Application Site at its closest point. Llŵchwr Valley Special Landscape Area (SLA) covers part of the site.



3.4 The site is located within the surroundings of the following residential properties:

- Brn-y-rhyd Farm and Bryn Awel Farm towards the centre of the Application Site;
- Dyffryn Fach and Penrhiw Cottage on the rural lane to the north;
- Gelli Organ Farm and Ere-wasted-fawr to the east;
- Tirgwaid towards the centre;
- Pentre-Hardd to the south;
- Maes-y-Llan to the southwest;
- Ebenezer House, Yr Henffald and Pant y Blodau to the west; and
- Forge Villa and Pen-cwg-uchaf to the northwest of the site.

3.5 The site is located within the surroundings of the following highways:

- B4297 Ebenezer Road to the west of the site between the A483 and Pontarddulais;
- The rural lane extending between Tycroes, the existing Clawdd-du solar development and Llanedi;
- The Garnswllt Road extending between Pentrebach and Garnswllt on the eastern slopes of the Llchwyr/Loughor valley;
- Public footpath 34/24 between the B4297 Ebenezer Road, Yr Henffald and Pentre-Hardd;
- Public footpath 34/25 extending between Yr Henffald, Brn-y-rhyd Farm, Ben Awel and the rural lane dividing the Application Site;
- Public footpath 34/26 between the A483, Pen-crug-isag and the woodland to the north of the Application Site;
- Public footpath 34/29 within the lower valley to the east; and
- The St Illtyds Walk long-distance recreational trail on the higher ground at Graig Fawr to the southeast of the Application Site.

Environmental Designations

International Statutorily Designated Sites Within 10km:

- Caeau Mynydd Mawr Special Area of Conservation (SAC);
- Carmarthen Bay and Estuaries SAC; and
- Cerydd Carmel SAC.

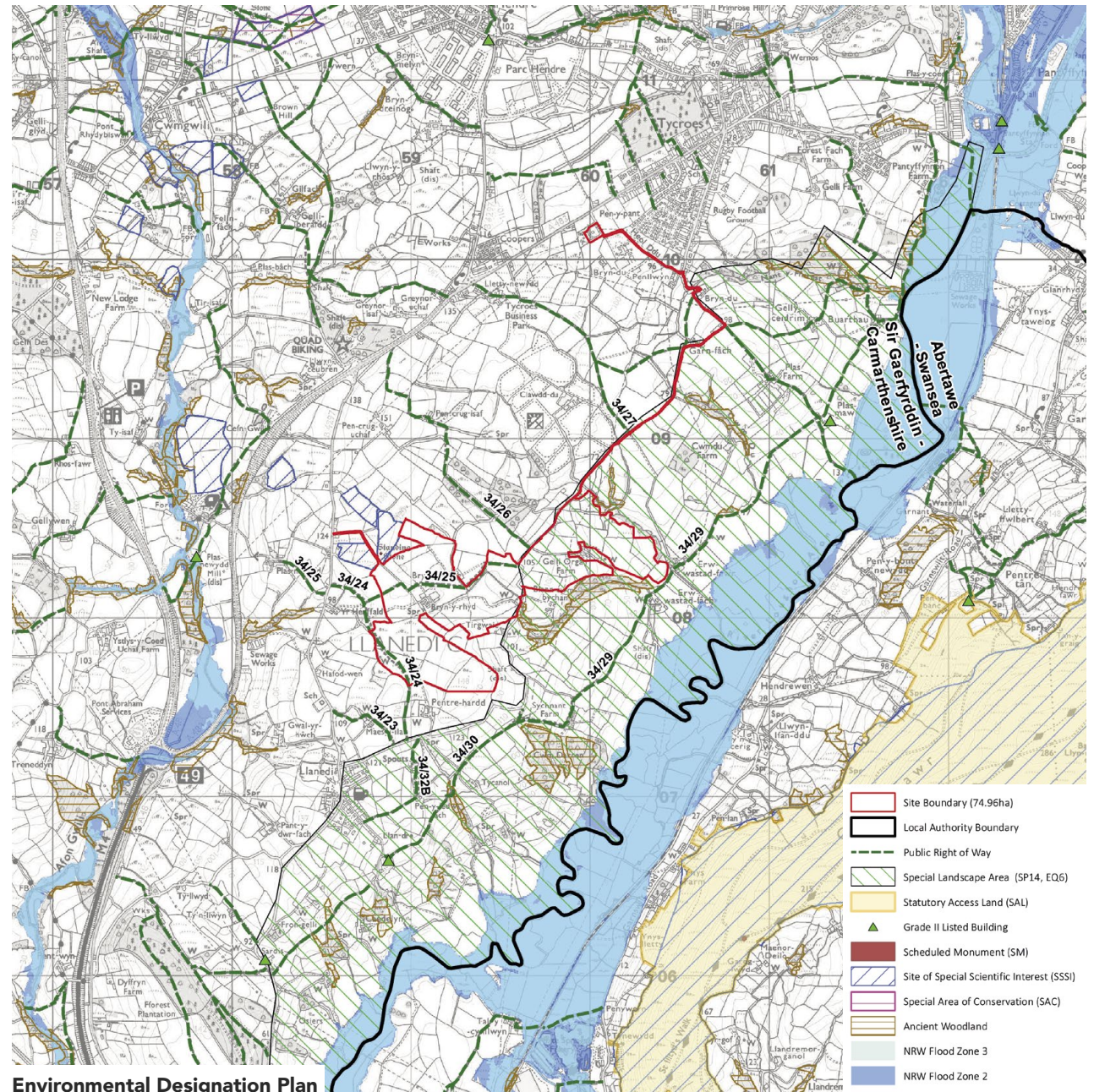
National Statutorily Designated Sites Within 5km

3.6 Nine Sites of Special Scientific Interest (SSSIs) are located within 5km of the Site, and are described below:

- Caeau Afon Gwili SSSI;
- Graig Fawr, Pontarddulais SSSI;
- Felinfach Meadows, Cwmgwili SSSI;
- Broad Oak and Thornhill Meadows SSSI, Caeau Ffos Fach SSSI and Caeau Lotwen SSSI;
- Caeau Capel Hendre SSSI;
- Cae Gwynfryn SSSI; and
- Caeau Blaenau-Mawr SSSI.

Non-statutorily designated sites within 1km

- River Loughor SINC;
- Ynys Marshes and Slopes SINC; and
- Banc Darren Fawr SINC.



Environmental Designation Plan

Non-statutorily designated sites within 2km

3.7 51 parcels of Ancient Woodland are present within 2km of the Site boundary. Of these, two are within 100m of the Site, the closest being adjacent to the Site, lining the valley of Cwm Bychan close to the landholding of Gelli Organ farm in the north east of the Site. Additionally, three sites of Restored Ancient Woodland are located adjacent to or within 20m of the Site. Two of these are associated with the Cwm Bychan wooded valley where it lies adjacent to the eastern edge of Brynrhyd farm, while the third is situated along the northern edge of the Gelli Organ farm landholding.

Historical Assets

Designated historical assets located within the immediate surrounds of the site are:

Scheduled Monuments:

- Bryn-y-Rhyd Standing Stone;
- Ring Cairn on Craig Fawr;
- Cairn 250m SW of Banc Llyn-Mawr;
- Earthwork on Graig Fawr; and
- Two Burial Chambers on Graig Fawr.

Listed Buildings:

- Circular Pigsty at Bryngelli (grade II);
- Pantyffynnon Signal Box (grade II);
- Church of Saint Edi (grade II);
- Plas-Newydd Mill (grade II);
- Plas Mawr (formerly known as Cwrt y Ceidrim) (grade II);
- Capel Hendre and Vestry (grade II); and
- Circular pigsty at Craig Y Fawr farm.

Flood Risk

3.8 According to the National Resource Wales DAM the site is shown to be entirely in Flood Zone A. This is described as 'at little or no risk of fluvial or tidal/coastal flooding' according to Figure 1 of TAN15.

Surface Water Risk

3.9 The National Resource Wales Surface Water Flooding Map shows the majority of the site to be at low risk of surface water flooding. Localised areas of streaming areis shown to occur along valley lines within the site.

Agricultural Land

3.10 The Welsh Government has developed a web-based Predictive Agricultural Land Classification (ALC) map for Wales. The predictive ALC map shows that the quality of agricultural land across the Study Area is Subgrade 3b. The route of the grid connection to the substation near Tycroes to the north is along the verges of a public highway (Heol Troeon Bach road), which is classified as non-agricultural for ALC purposes.

4.0

Design Parameters and Design Solution



Planning permission will be sought for a renewable led energy scheme comprising ground mounted solar arrays that will provide renewable and low carbon energy to the local electricity grid. It will contribute towards the security and quality of electricity supply across the transmission system (National Grid).

The Proposed Development and Design Principles

4.1 The design of the application proposal has been developed primarily from six sources, these are:

- (i) The physical opportunities and constraints the site provides.
- (ii) The physical needs of the development itself;.
- (iii) The policy context which surrounds the development.
- (iv) Technical and design comments provided by statutory consultees.
- (v) Representations put forward by the local community.
- (vi) Advice put forward by the applicant and their Consultant team.

Development Constraints

- Appropriate design and siting required to take account of established built form and other
- physical constraints within the farmstead (including overhead electricity cables, disused coal mining shafts, underground gas pipes and Public Right of Way);
- Appropriate design required to take account of established field boundaries, ditches and site specific ecological sensitivities;
- Appropriate design and positioning required to respect and respond to nearby visual receptors; and
- Appropriate design and siting to respect wider landscape and potential for cumulative development.

Development Opportunities

- Proximity to point of grid connection;
- Land take requirement – the site is an appropriate size for the development proposal;
- Application site is served by appropriate agricultural vehicular access;
- The areas proposed for solar arrays is not subject to any environmental designations;
- Biodiversity gains – The proposal would introduce biodiversity enhancement measures which will provide significant benefits for a diverse array of native wildlife for a 40 years period such as invertebrates; small mammals; larger mammals; and birds;
- Sunlight intensity levels – the site is well located geographically for solar gain and is relatively flat and is free of any buildings or landscape features that could cause overshadowing;
- Contribute to the provision of renewables and low carbon energy; and
- Contribute towards achieving Carmarthenshire’s Climate Change Declaration of becoming a net zero carbon local authority by 2030.

Design Solution

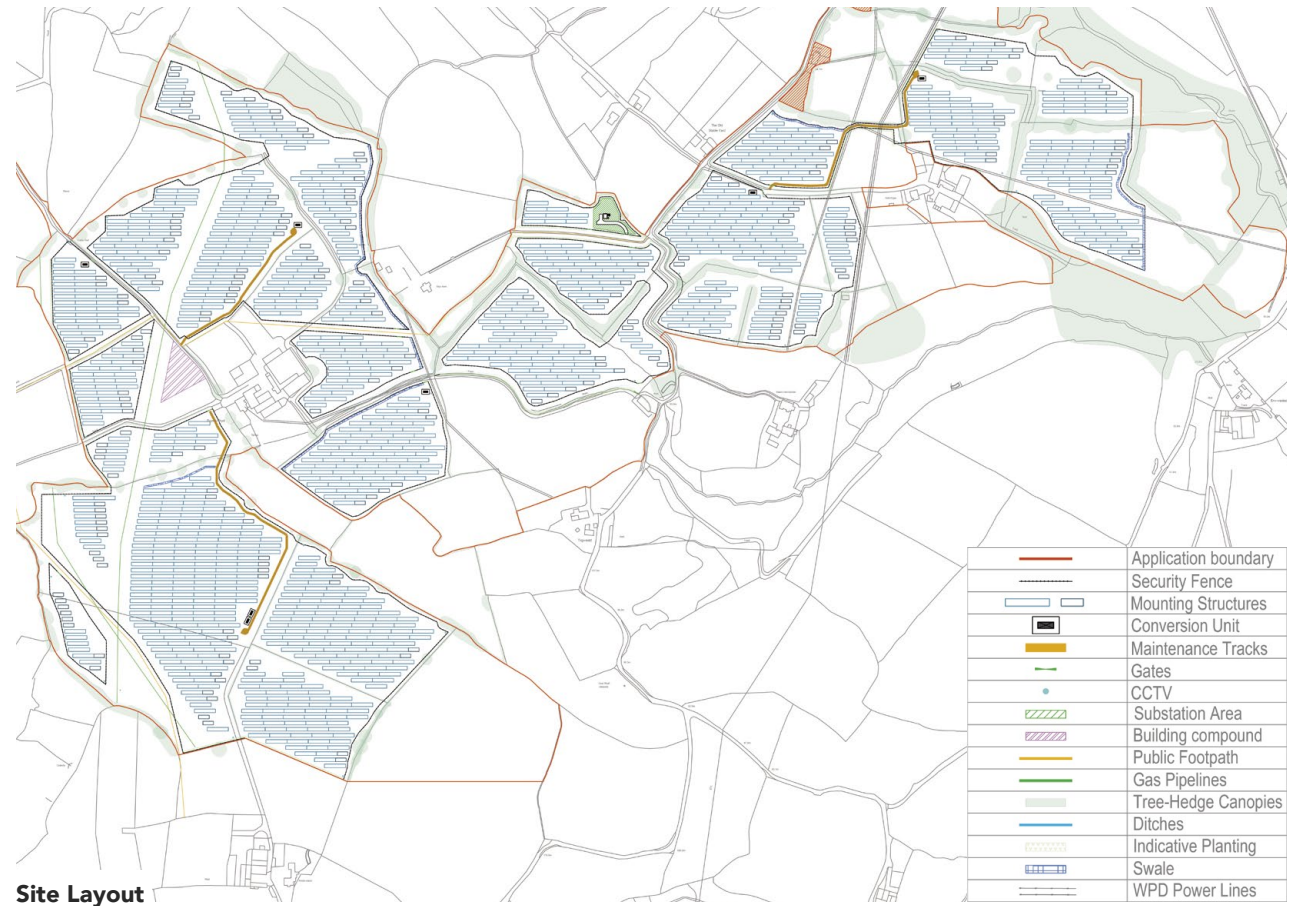
4.2 The development proposal can be split into four key components, these are:

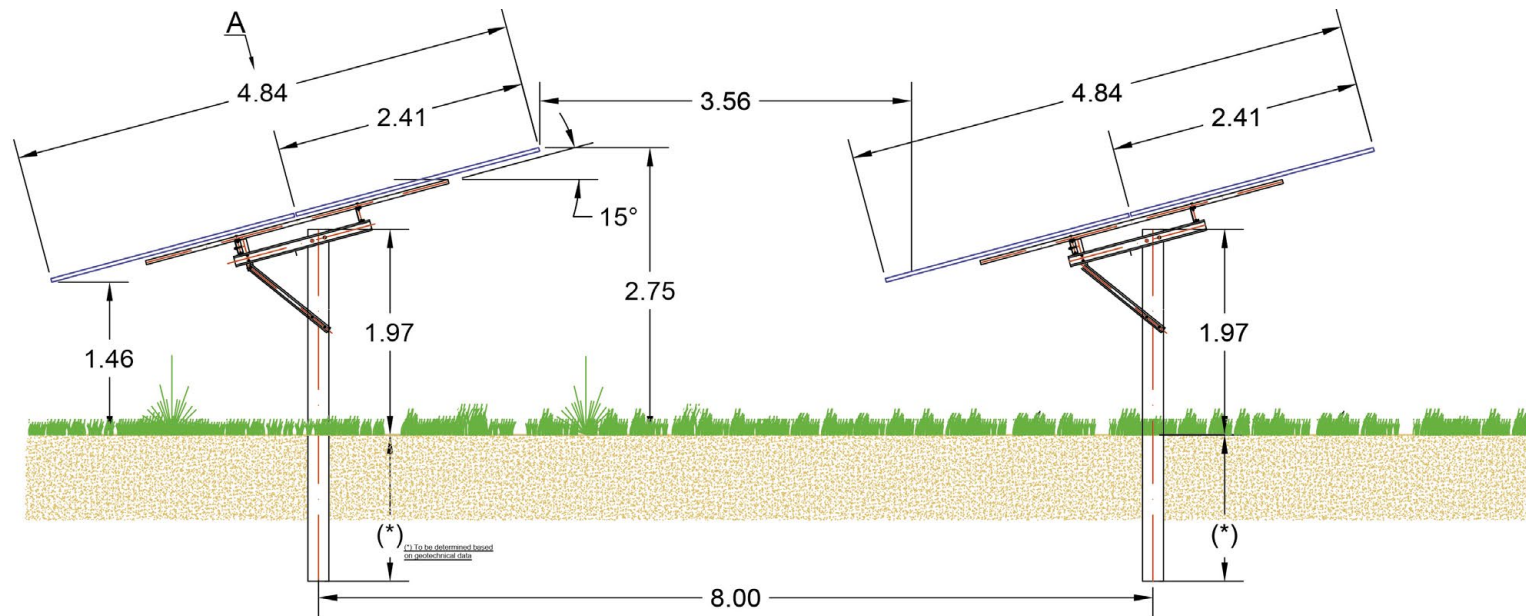
- Ground mounted solar photovoltaic arrays;
- Ecological and Biodiversity Management Strategy;
- Substation Compound and Cable Route;
- Temporary Construction Compound.

Ground Mounted Solar Photovoltaic Arrays

4.3 The design principles of the candidate solar modules are:

- The maximum top height of the solar panels fixed onto the framework would be 2.75.
- The minimum height of the lowest part of the framework, as shown on the candidate design, is 1.4m.
- All modules will be south facing.
- PV modules would be dark blue, grey or black in colour.
- PV module frame would be constructed of anodized aluminium alloy.
- Indicative slope of solar PV from horizontal would be 15 degrees.
- Internal access track of permeable construction.
- Typical minimum distance between edge of panels and the 2m high perimeter stock fencing would be circa 3m.
- A galvanised steel post mounting system will support the PV module frame which in turn supports the PV modules.
- Biodiversity would be promoted around and under the arrays.
- CCTV positioned along the perimeter of the solar arrays on 3m high poles.

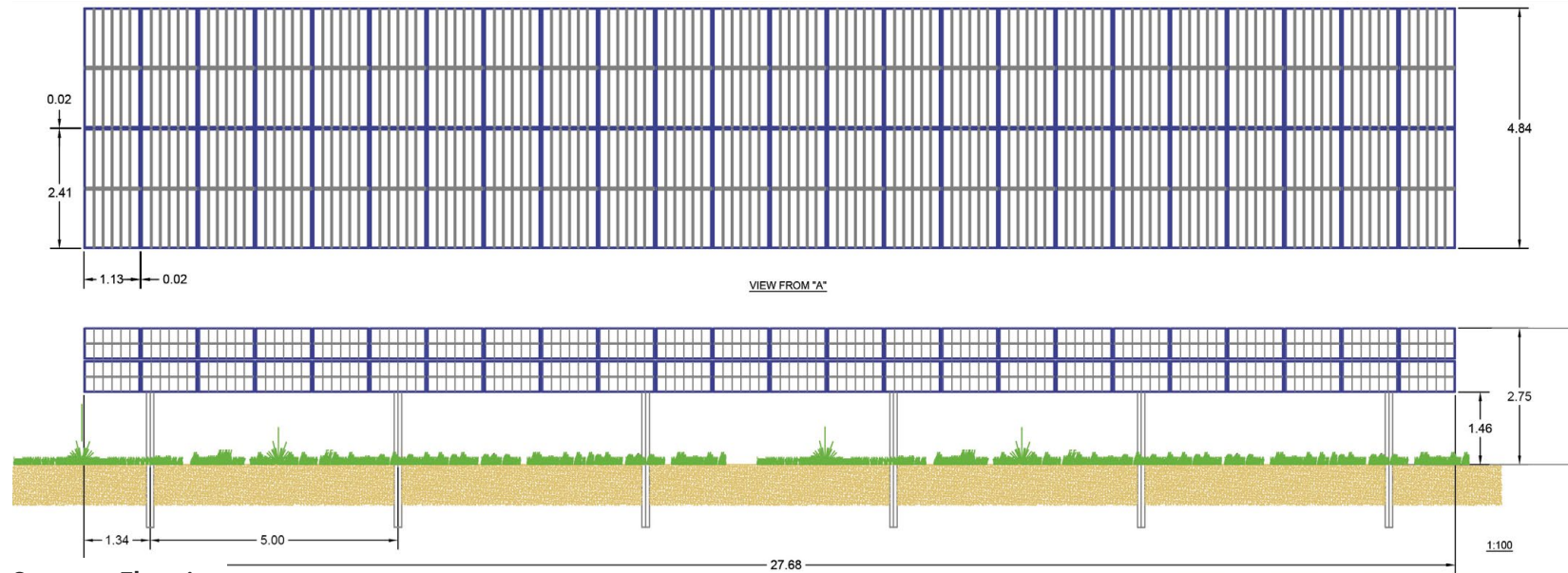




Structure Elevation

4.4 The solar PV modules would convert solar irradiance into direct current (DC) electricity. A solar PV module consists of a layer of silicon cells, an anodised aluminium frame, a glass casing, and various wiring to allow current to flow from the silicon cells. Silicon is a non-metal with conductive properties that allow it to absorb and convert sunlight into electricity. When light interacts with a silicon cell, it causes electrons to be set into motion, which initiates a flow of electric current. The photovoltaic modules would be mounted on south facing aluminium metal racks. The racks will be laid out in multiple parallel rows running east to west across the various field enclosures. The framework and arrays would be static. The distance between the arrays would respond to topography but would typically be around 3.56m. Land between and beneath the panels would be used for biodiversity enhancements and seasonal sheep grazing.

4.5 The top north edges of the panels would be 2.75m above ground level. In places, due to changing topography, the maximum height of the panels would be 3m. The lower edges of the panels would be approximately 1.40m above ground level. The indicative slope of the solar PV modules from horizontal would be c. 15 degrees.



4.6 The mounting system will be supported at intervals by single mounted posts set approximately 5m apart. The posts will be driven into the ground with a small plant rig by impaction to depths between 1m to 2m and this will be guided by localised ground conditions.

4.7 The insulated DC cables from the solar modules will be routed in channels fixed on the underside of the framework. The DC string cables will run along the entire underside of each row. The electrical cabling from each array will be concealed through shallow trenches linking the modules to the inverters and transformers and then to the substation. The inverters would be placed at appropriate location throughout the site. The cable trench will typically be between 0.5m to 1.1m in depth and around 0.5m wide. The cable trench may also carry earthing and communications cables and will be backfilled with fine sands and excavated materials to the original ground level.

4.8 The conversion units and associated switch gear are required to convert the DC energy produced by the arrays into AC energy, these will be evenly distributed across the various field enclosures holding the arrays.

4.9 The arrays would be set within perimeter fencing up to 2m in height with wooden supporting posts placed at intervals of c. 3.5m. The minimum distance between the edge of the arrays and the perimeter fence would be 2m. CCTV system mounted on poles would be positioned at intervals along the inside face edge of the perimeter fencing (between the fence and the arrays).

4.10 The existing public right of ways running through the site will be retained.

Ecological and Biodiversity Strategy

4.11 The development proposal is an example of a development which presents considerable opportunity for landscape and biodiversity mitigation and enhancement. The Landscape and Biodiversity proposal are discussed in detail in the supporting Outline Landscape and Ecological Management Plan. The objectives are:

- To create new grassland habitats through seeding existing arable land with of locally appropriate native species;
- Hedgerow planting;
- To manage the grassland to establish a diverse sward beneath the solar panel arrays;
- To manage grassland outside the array for wildlife;
- To manage areas to provide suitable conditions for arable flora;
- To manage hedgerows to provide habitat for a range of species and ensure visual screening of the site from the footpath;
- To manage aquatic habitats as necessary
- To provide sheltering features around the site for nearby populations of bats, birds and other notable faunal species;
- To assess the need and implement any additional planting required along the outer edge of the development resulting from any significant felling of woodland located outside the boundary of the site;
- To monitor the site and assess the success of management and adherence to the prescribed management.

Site Access

4.12 It is proposed that the main vehicular access to the site will be via the existing junction served from the B4297 Ebenezer Road, which is located to the northwest of the site. The junction serves access to an access track which routes into the site. A secondary access to the eastern portion of the site is proposed off Heol Troeon Bach via an existing farm access.

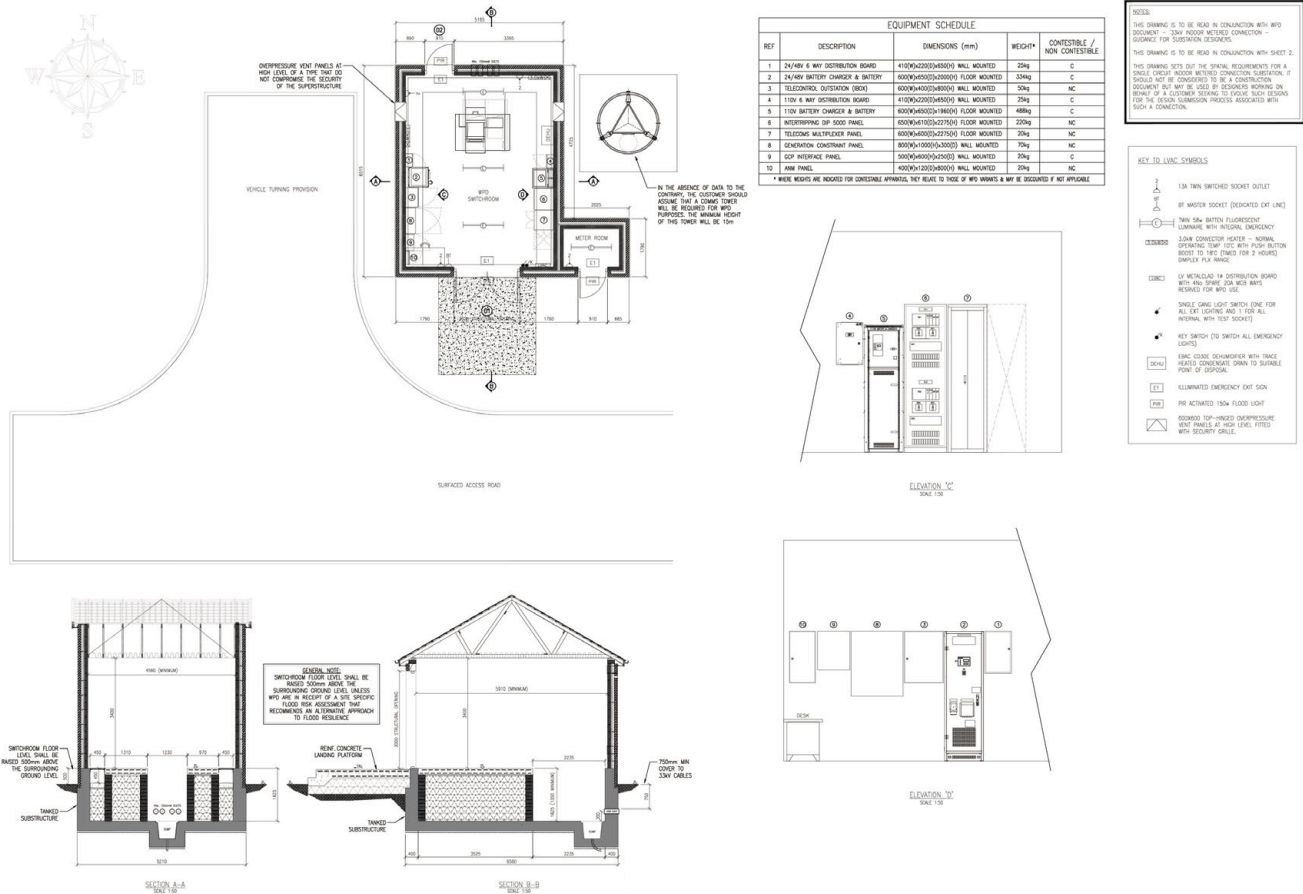
4.13 The existing junction currently provides access to Bryn-y-Rhyd Farm for large agricultural vehicles. It is therefore considered to be appropriate to be used on a temporary basis by HGVs associated with the construction of the solar farm.

4.14 Access to the eastern portion of the site is proposed through the western portion of the solar farm, exiting on Heol Troeon Bach via an upgraded gated farm access in the north-eastern corner of the western portion of the site. Construction vehicles would travel along Heol Troeon Bach for circa 115m, turning right into the existing farm access junction which serves Gelli Organ Farm. The existing junction currently provides access to Gelli Organ Farm for large agricultural vehicles. It is therefore considered to be appropriate to be used on a temporary basis by HGVs associated with the construction of the solar farm. In order to accommodate the largest construction vehicles associated with the proposed development, improvements will be required to alter the existing access junction.

Substation Compound

4.15 A substation compound will be required for the development and this will be constructed at the start of the development. The function of the substation will be to take power from the solar arrays and then run this along an underground cable into the Ammanford substation, which is located along Heol Ddu, south of Ty Croes. The cable trench would be dug entirely along and within the local roads that connect the site to Ammanford substation.

The substation yard would comprise a gated compound with a WPD switchroom, a meter room and a 15m high communications tower. Under normal conditions the development would be unmanned. Visual checks will be undertaken on a monthly inspection visit to the development. Whilst external lighting will be installed at the substation for emergency work during hours of darkness, the substation will not normally be lit.



Substation

Operational Lifespan

4.16 Once constructed and energised, the development would export renewable energy to the grid for 40 years. During the operational phase, the activities on site would amount to servicing and maintenance of plant and equipment and vegetation management as detailed in the Outline LEMP.

Statutory Undertakers

4.17 The layout will provide an appropriate easement for the existing underground gas mains that traverse the site. No arrays will be erected within the easements and thus unrestricted access will be available to the statutory undertakers at all times.

Renewable Energy and Carbon Displacement

4.18 The proposal would provide a decentralised clean, renewable and sustainable form of electricity generation. It would make a valuable contribution to the generation of electricity at a local level. The scheme would add to the Council's progress in meeting its renewable energy target. It would also assist in meeting Welsh Assembly Government targets.

4.19 In addition, the proposal would make a valuable contribution to cutting greenhouse gas emissions and help tackle climate change.

4.20 The solar park would generate clean renewable energy for the equivalent of over 10,600 homes a year. The anticipated CO₂ displacement is 15,000 tonnes per annum.*

Decommissioning

4.21 Following a 40 year generation period, the development would then enter a decommissioning stage. Within six months of cessation a decommission strategy would be submitted to the local planning authority for approval which build upon the Outline Decommissioning Strategy appended to the accompanying Environmental Statement. The decommissioning strategy would detail how plant and machinery located within the application site would be removed.

Accidents or Disasters

4.22 The development is not considered likely to cause a significant accident or disaster risk during either the construction, operation or decommissioning phases.

* For every 5MW installed, a solar farm will power over 1,500 homes annually (based on an average annual consumption of 3,300 kWh of electricity for a house) and save 2,150 tonnes of CO₂, source the Solar Trade Association: www.solar-trade.org.uk/solar-farms/

Construction and Decommissioning

4.23 The risk both to construction workers and the general public is low and not significant during the construction and decommissioning phases. This would be regulated by the Health and Safety Regulations and the construction (Design and Management) Regulations 2015. The construction of the Development would be managed in accordance with the Health and Safety at Work Act 1974 and would comply with all other relevant Health and Safety Regulations, including the Construction (Health, Safety and Welfare) Regulations 1996 and Electricity Safety, Quality and Continuity Regulations 2002.

Operational Phase

4.24 When operational, the majority of the development comprises solar PV modules which are inert. Electrical infrastructure will be located across the Development, in the form of inverters, transformers and cabling, all of which will be subject to routine maintenance such that it is not considered to pose a significant risk to creating an accident or disaster.

4.25 The substation compound will have a concentration of electrical infrastructure which will include the substation and transformers all of which will be adopted by the DNO and subject to their routine maintenance regime. Accordingly, it is not considered to pose a significant risk of creating an accident or disaster.

4.26 Overall, no potential has been identified for the development proposal to lead to increased risk of a major accident or disaster in isolation or in combination with cumulative developments.

Climate Change

4.27 With regards to vulnerability to climate change, the solar modules are designed to capture the sun's energy and therefore built to withstand extreme climatic conditions and are purposefully located in open locations. The site is not located within a coastal location and as such is not at risk to any changes to the sea level. The framework holding the modules are driven into the ground at an appropriate depth which responds to site specific ground conditions and are designed to accommodate the predicted relatively small change in wind speed during the lifespan of the development.

4.28 Turning to the proposal effects on climate change, the UK Government has set ambitious targets for reducing greenhouse gas emissions by 2050. The Development, in conjunction with other renewable energy developments, will contribute to the UK's aims to reduce carbon emissions and achieve its ambitious greenhouse gas emissions reduction targets. When operational, the Development will generate electricity from a renewable source and export this to the National Grid.

4.29 The proposal would provide a clean, renewable and sustainable form of electricity. It would make a valuable contribution to the generation of electricity at a local level. The scheme would add to the Council's progress in meeting its renewable energy target. It would also assist in meeting national targets. The generation of electricity from the Development will displace the generation of electricity from other conventional power sources, typically coal, oil or gas-fired electricity production as these are more often being decommissioned.

Site Selection

4.30 The remaining section of this chapter summarises the site selection process undertaken to identify the development area.

4.31 One of the biggest constraints which has to be considered when developing renewable led energy scheme is gaining a viable point of access to the utilities network. Gaining grid connection is very difficult and problematic and for energy proposals sourcing a site with viable grid connection is a reasonable constraint to take into account. Increasingly, electrical connections are being forced back to substations and Bulk Supply Points as the amount of renewable generation connected within the electrical lines has grown. The proposed development will be served by an electrical connection to the existing Western Power Distribution's Ammanford Substation located to the north of the main site. The developer has accepted the grid offer from Western Power Distribution and secured the 30MW export capacity required for a project of this size. The grid offer accepted can only be used for the Brynrhyd development and cannot be transferred to any other site, as this would be deemed by the District Network Operator as a significant alteration to the original application. Accordingly, all energy scheme searches start with grid proximity and capacity availability with the incumbent, as this determines where a development can connect to the electricity grid.

4.32 Having established the point of connection, the development site itself was selected through an extensive site sieving exercise based on a range of technical, environmental, economic and planning policy factors. Whilst each issue is important on its own merits, for nationally significant infrastructure projects each factor must be weighted and measured against other sustainability considerations. Turning to planning policy, the site is located in a Priority Area for Solar Energy Development, identified by Arup on behalf of the Welsh Government (Priority Area 13), as part of the development of Future Wales. Whilst not carried over to the published version of Future Wales, the study provides a review of the environmental constraints to determine the most appropriate locations for solar PV development.

- Solar irradiation levels & shading – An important consideration is selecting a site of suitable shape, orientation and size that can accommodate the proposed development. Large open fields without vegetated boundaries reduce the impact that small fields can have on the layout design. Typically, buffers are left around field edges to vegetation due to shading, tree root protection zones and other constraints such as ditches which have an impact on the installed capacity of a PV array. So significantly less capacity can be sited within a group of smaller fields compared to fewer larger fields. The site at Brynrhyd provides the correct configuration to achieve a 30MW scheme;

- Topography - The preference is for a site with a southerly aspect; however; northerly aspect sites cannot be dismissed. However, the outcome of selecting a site with a northerly aspect would be a need to increase the overall development footprint of the scheme (operational need to increase the distance between the arrays in order to avoid overshadowing of modules). The Brynrhyd site, in terms of land parcels holding the arrays, is undulating;
- Proximity to sensitive human receptors – This criterion requires an assessment of how the proposed development would relate to potentially sensitive human receptors on the site and in relation to neighbouring land uses including proximity to populated areas and or local villages. The site is located within the surroundings of a number of residential properties and the effects of the development upon private properties are assessed in the Residential Amenity Assessment appended to the Environmental Statement;
- Site access during construction - In order to construct a large scale renewable led energy scheme, an appropriate access for construction vehicles must be available. For Brynrhyd, the main site access is provided off the B4297 Ebenezer Road, which provides access to the Bryn-y-Rhyd Farm access lane which routes through the site. This access has been deemed acceptable by the highway authority at Carmarthenshire County Council;

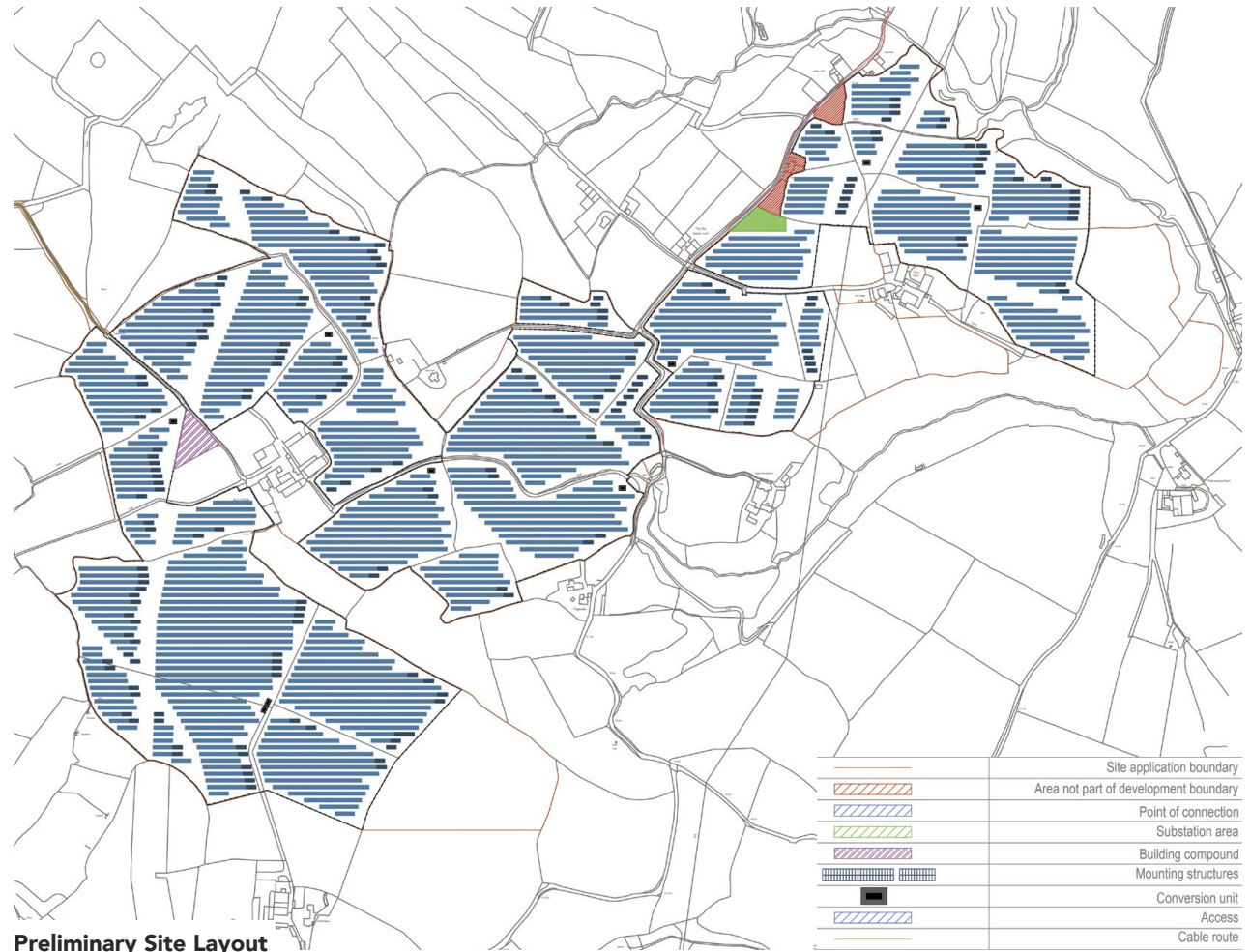
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- Flood risk - Inappropriate development in areas at risk of flooding should be avoided by directing development away from areas at highest risk, but where development is necessary, making it safe without increasing flood risk elsewhere. According to the NRW DAM the Brynrhyd site is shown to be entirely in Flood Zone A. This is described as 'at little or no risk of fluvial or tidal/coastal flooding';
 - Landscape considerations - The landscape and visual effects of energy projects will vary on a case by case basis according to the type of development, its location and the landscape setting of the proposed development. For example, the landscape setting may be industrial in nature with a predominance of vertical features, or it may be dominated by individual developments of lesser scale;
 - Agricultural land - Ground mounted solar parks are temporary structures and as such they do not lead to the sterilisation of agricultural land. Accordingly, unlike residential development they do not constitute permanent development resulting in the permanent loss of agricultural land. For ground mounted solar parks, national policy seeks to minimise impact on best and most versatile agricultural land except where this would be inconsistent with other sustainability considerations;
 - Heritage - Historic environment - It is preferable for solar PV development sites to have low levels of archaeological interest and a lack of designated sites, such as scheduled monuments, listed buildings and conservation areas within or adjacent to the site. Assets within or adjacent to a development site could have an impact on the location and design of an array. Proposals should demonstrate that no substantial harm is caused to heritage assets; where there is an impact on heritage assets relevant mitigation measures should be considered to lessen impact;
 - Biodiversity and geological conservation - When assessing a potential solar PV site, national and international nature conservation designations such as Sites of Special Scientific Interest (SSSI), Special Areas of Conservation (SAC), Special Protection Areas (SPA), Ramsar wetland sites and nature reserves are generally avoided as site locations. Areas adjacent to such designations may have potential for development depending on the nature of the designation and of the land potentially subject to development;
 - Commercial Agreement with the Landowner(s) - In order to implement a solar PV development, the agreement of the landowner(s) is required. In the case of an DNS development it could be possible to proceed without this, however for this development, commercial terms have been agreed with the landowner(s) for the construction, operation, management and decommissioning of a solar PV scheme on the land.

Design Evolution

4.33 Over the course of the design process, the project team have continuously refined the scheme's design to encompass Carmarthenshire County Council, statutory consultee and local stakeholders' feedback received during and after the formal pre-application consultation phase.

Preliminary Design A

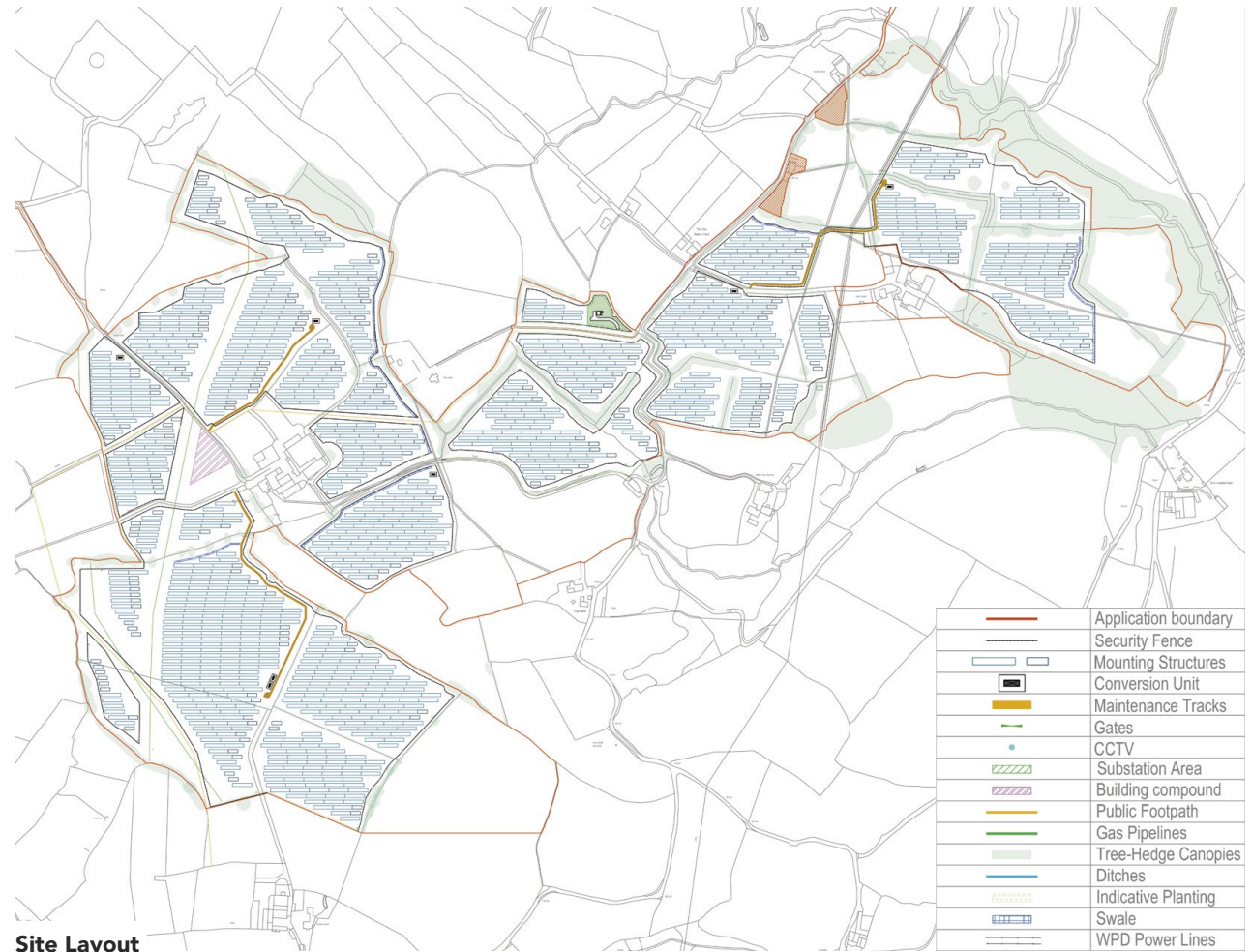
4.34 The preliminary design was influenced by solar irradiation and the physical attributes of the site itself and preliminary feedback from the consultant team as part of their baseline review of the site. The preliminary design was used for the purpose of the formal consultation.



Final Design

4.35 For the final design, the applicant modified the layout to take account of comments received by the local community and statutory consultees, the modification included:

- (i) Relocating the onsite substation from the eastern to the western side of Heol Troeon Bach in order to reduce potential adverse effects with regard to visual impact from nearby residential receptors.
- (ii) Introduction of appropriate easement to the underground gas mains at the request of Cadent.
- (iii) Removal and set back of solar arrays within field enclosure to the north of Tirgwaidd Farm. Hedgerow and tree planting also introduced along edge of the arrays to mitigate the effects of visual impact from the remainder of the arrays contained in this field enclosure.
- (iv) Removal of solar arrays within field enclosures to the immediate west of Dyffryn Fach.
- (v) Provision of additional land for grassland restoration to increase the wildlife benefits associated with the development.
- vi) Significant increased and bolstered the mitigation planting for the development.



5.0 Construction



Construction Routing

Heavy Goods Vehicles will access the site from the B4297 Ebenezer Road. The designated route for all traffic associated with construction of the solar farm is via the M4/A48 Junction 49/ A482 gyratory roundabout west of the site, the A48 B4297 Ebenezer Road and the access track. Vehicles exiting the site will route north from the site access, routing along the B4297 Ebenezer Road and utilising the left turn westbound slip road onto the A483, where the vehicles will be routed back to the M4/A48 Junction 49/ A482 gyratory roundabout.

5.1 This route ensures, as far as practicable, that heavy construction vehicles associated with the site will not pass through the centre of any villages or small towns. There are no signed weight or height restrictions on the route, and no road closures will be required. Drivers will be informed of the route prior to departing for the site.

Construction Period

5.2 Construction of Brynrhyd Solar farm is expected to be carried out in a single phase of development. The construction period would be approximately 6 months and around 722 vehicle movements would be required to deliver the necessary plant and machinery to site. For a 6 month construction period this would equate to circa 5 deliveries per day by the largest vehicle, a 15.4 meter articulated.

5.3 Construction activities will be carried out Monday to Friday 07:00-20:00 and between 08:00 and 13:30 on Saturdays. Deliveries to the construction compound will be outside of the traditional weekday peak hours at all accesses. Deliveries will be made between 10:00-16:00 and 18:00-20:00 Monday to Friday, with Saturday deliveries between 10:00-13:00.

5.4 During the construction phase one main construction compound will serve the development and this will be located off the main site entrance, thus reducing the distance delivery vehicles will need to travel after reaching the site's entrance.

5.5 The temporary construction / decommissioning compound would comprise:

- Temporary portacabins providing office and welfare facilities for construction operatives;
- Parking area for construction and workers vehicles;
- Secure compound for storage;
- Temporary hardstanding;
- Wheel washing facilities;
- Temporary gated compound; and
- Storage bins for recyclables and other waste.

5.6 All construction vehicles will exit through the wheel wash area in order to reduce the spread of mud and dirt onto the local highway network. Temporary roadways may be utilised to access parts of the development site and this would be guided by weather conditions at time of construction. Temporary matting may be utilised to avoid excessive soil disturbance or compaction.

5.0 Crime and Impact Assessment



This section of the Design and Access Statement deals with the issue of crime. The Crime Impact Assessment process involves identifying, evaluating and mitigating the crime and disorder effects of a development proposal early in the design process.

6.1 The goal is to reduce the developments vulnerability to crime by taking into account the analysis of the development context and the crime issues in the area.

6.2 The www.police.uk website provides data on street-level crime and anti-social behaviour. The location of crime in the locality is focused on Ty Croes, Capel Hendre and Ammanford. No crime has been recorded within the demise of the application site over the last 12 months.

General Risk Assessment

6.3 The typical security issues for a development of this nature are:

- Acts of criminal damage during the construction period;
- Theft of components during the construction phase;
- Criminal damage during operational phase;
- Theft of components during the operational phase; and
- Theft of components during site restoration.

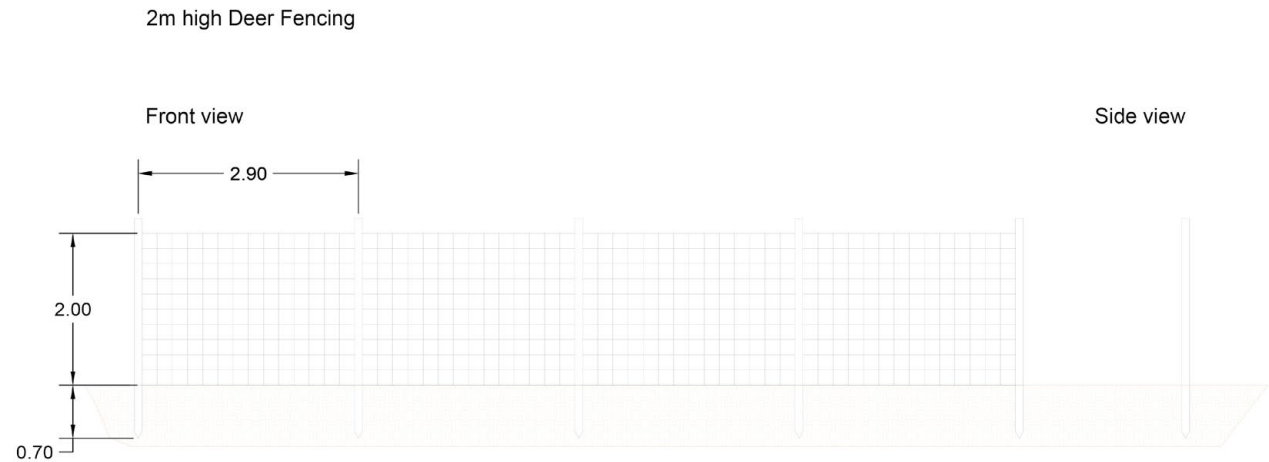
Construction Site Risk Assessment

6.4 A secure temporary compound will be used to store materials and ancillary welfare facilities during the construction period. The build out is quick thus reducing the risk for acts of criminal damage during the construction period. A night guard may also be employed to watch the construction compound.

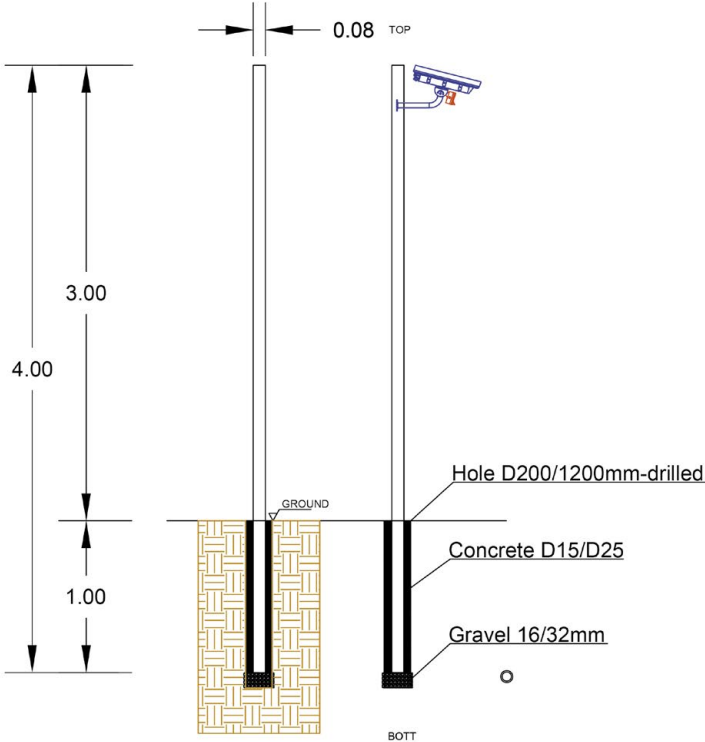
Design, Layout and Security Requirements

6.5 Taking into account the low level of recorded crime for the locality, the following security measures are considered to be appropriate to combat potential criminal activity and unauthorised access into the arrays:

- A 2.0 m high stock fence will encompass the fields containing the solar panels; and
- Cameras with external perimeter intruder detection (PID) may be fitted on top of extended poles at appropriate intervals along the stock fence.



Security Fence Details



Operational Phase

6.6 Following the completion of the construction phase the client advises that there will be a low number of trips generated by the Site is predominantly operated remotely. It is forecast that on average there would be 1 visit to site per month. This is a nonmaterial increase in traffic and is not considered to be an intensification of use.

CCTV System Details

6.0 Conclusions



Matters pertaining to design, access and crime for Brynrhyd Solar Farm have been assessed. The site is deemed to be appropriate in that it can accommodate the proposed solar scheme with an export capacity of 30MW.

7.1 Moreover, the application proposal is considered to be acceptable within the open countryside as it represents a diversification of use of a proportion of land within multiple agricultural holdings.

7.2 The benefits of the development are multiple: (i) it would provide a valuable contribution with regards to provision of decentralized renewable energy; (ii) it would contribute towards the viability of the existing farmsteads through diversification of income; (iii) it would deliver biodiversity improvements; (iv) economic benefits would be secured in terms of construction and less so operational management of the application proposal. The application proposal will provide employment and business opportunities for component suppliers / installers and those involved in grid connection, transport and logistics. Where possible, local businesses will be contracted for relevant parts of the scope of works over the period of construction, operation and maintenance. There will be additional induced impacts during the construction period with any incoming construction workers (engineers, project managers etc) spending their wages at a local level (restaurants, retail stores etc) and using local accommodation.

7.3 The temporary and reversible nature of the development, together with the measures that are to be taken to enhance and encourage the ecological diversity of the site, will ensure that in the long term the site can not only be restored to its current use, but will also have been improved. The wider environmental benefits and sustainability credentials associated with the increased production of energy from renewable sources represents a significant case in favour of the development proposals.



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