

# Parc Solar Caenewydd, Swansea

## Landscape and Visual Impact Assessment

Development of National Significance in the Renewable Energy Sector  
Application Submission





## Document Management.

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# 1. Introduction

- 1.1. Pegasus Group has been appointed by Taiyo Power & Storage Ltd (herein referred to as “the Applicant”) to undertake a Landscape and Visual Impact Assessment for a proposed Non-EIA utility-scale solar and battery storage facility on land fronting the A484 and Swansea Road (B4560) at Gowerton, Swansea (the Site). The proposed development will deliver a host of landscape, biodiversity, soil, and hydrological enhancements, including measures to strengthen habitat connectivity through this part of the valley, the creation of green buffer zones and public right of ways improvements. The development is called ‘Parc Solar Caenewydd’ (**Figure 1: Site Location Plan**).
- 1.2. This Landscape and Visual Impact Assessment is being published to accompany pre-application publicity and consultation carried out under Articles 8 and 9 of the Development of National Significance (Procedure) (Wales) Order 2016.
- 1.3. The proposed development comprises 62.1% Green Infrastructure (GI) with the remaining 37.9% comprising construction, operation, management, decommissioning of a ground mounted solar power with associated development including battery storage facility, cable trench and connection infrastructure. Responding to ER5 Landscape Protection Policy (Swansea Local Development Plan 2010–2025), the 51.54ha of proposed GI enhancements have been designed to retain and enhance the local landscape character and openness, providing a framework within which the individual parcels of PV arrays and ancillary equipment are located. The operational lifespan of the proposed development would be 40 years (following which the Site will be reinstated).
- 1.4. This report has been informed by a desktop study to review a range of published information concerning the Site, including a review of: OS Maps, aerial photography, published landscape character assessment and guidance, landscape designations and planning policy of relevance to landscape and visual matters, as well as three site visits carried out in December 2021, March 2022, October 2022, and November 2022.
- 1.5. The main objectives of the LVIA are as follows:
  - To identify, evaluate and describe the current landscape character of the Site and its surroundings, and any notable individual landscape elements and features within the Site and their sensitivity to the type of development proposed.
  - To identify potential visual receptors (i.e. people who would be able to see the development) and evaluate their sensitivity to the type of development proposed.
  - To identify and describe any effects of the proposed development in so far as they affect the landscape and/or views of it and to evaluate the magnitude of change due to these effects.
  - To determine the degree of both landscape and visual effects.
- 1.6. The Site is located within the ‘Penllergaer/ Kingsbridge and Gowerton/ Waunarlwydd/ Fforestfach’ Green Wedge and ‘Garngoch and Lower Afon Llan Valley’ Special Landscape Area. The report, therefore, also reviews the potential effects of the proposed development in relation to Green Wedge Policy ER3 (Swansea Local Development Plan 2010–2025), including the SLA at Section 10.



## Methodology

- 1.7. This LVIA has been undertaken with regards to best practice, as outlined within the following publications:
- Guidelines for Landscape and Visual Impact Assessment (3rd Edition, 2013) – Landscape Institute / Institute of Environmental Management and Assessment (GLVIA3).
  - Visual Representation of Development Proposals (17 September 2019) – Landscape Institute Technical Guidance Note O6/19.
  - An Approach to Landscape Character Assessment (October 2014) – Natural England.
  - An Approach to Landscape Sensitivity Assessment – To Inform Spatial Planning and Land Management (June 2019) – Natural England.
- 1.8. In accordance with the published guidance, landscape (elements and character) and visual effects are assessed separately. The detailed methodology is outlined in **Appendix 1**.
- 1.9. GLVIA3 states in paragraph 1.1 that ***"Landscape and Visual Impact Assessment (LVIA) is a tool used to identify and assess the significance of and the effects of change resulting from development on both the landscape as an environmental resource in its own right and on people's views and visual amenity."***
- 1.10. GLVIA3 also states in paragraph 1.17 that when identifying landscape and visual effects there is a ***"need for an approach that is in proportion to the scale of the project that is being assessed and the nature of the likely effects. Judgement needs to be exercised at all stages in terms of the scale of investigation that is appropriate and proportional."***
- 1.11. GLVIA3 also recognises in paragraph 2.23 that ***"professional judgement is a very important part of LVIA. While there is some scope for quantitative measurement of some relatively objective matters much of the assessment must rely on qualitative judgements."***
- 1.12. GLVIA3 includes an entry that states ***"effects can be described as positive or negative (or in some cases neutral) in their consequences for views and visual amenity."*** GLVIA3 does not, however, state how negative or positive effects should be assessed, and this therefore becomes a matter of professional judgement supported by site specific justification within the LVIA.

## Study Area

- 1.13. A preliminary study area was defined as 5km radii from the Site boundary to include the Gower Area of Outstanding Natural Beauty (AONB, soon to be renamed as a National Landscape). Following the desktop studies including a Screened Zone of Theoretical Visibility (SZTV) (**Figure 2: SZTV**) and site visits, it transpired that a more focused approach was required with the visual assessment concentrating on the immediate areas around the Site, up to 1km to the north and east, 2km to the south to include high ground residential receptors at Waunarlwydd and up to 1.5km to the west to include Wales Coast Path users. This reflects



the presence of vegetative screening, visual barriers such as highways and associated tree cover, and visual context.

## Consultation

- 1.14. Preliminary viewpoints based on an initial desktop survey were sent to the Local Planning Authority's (LPA) Landscape Officer in November 2021. Subsequently a site visit was carried out by the author in December 2021 to record potential viewpoints. A selection of 12 viewpoints was then sent to the Landscape Officer in January 2022 for final confirmation, further to which the LPA requested additional views from the A484/Swansea Road roundabout. These were recorded in a site visit carried out in March 2022 and are included within this assessment. Additional views were also recorded further west of the Site to include the Wales Coast Path and along the B4560 at the request of the Applicant. The resulting 22 viewpoints are provided at **Appendix 2**.
- 1.15. A field walk was also undertaken on 6 October 2022 with the Applicant and Swansea Council's Landscape Officer and Public Right of Way (PRoW) Officer, whereby common ground was reached on the strategy for screening offsets alongside the PRoW. The agreed strategy has been incorporated in the landscape planting plan at **Appendix 3**.
- 1.16. In June 2022 Viewpoints 4, 6, 19, 13/14/15, and 20 were suggested to the LPA for photomontage and confirmed as acceptable. In October 2022 a further two Viewpoints (1 and 5) and the selection of Viewpoint 13, 14 and 15 (all from the roundabout) were suggested and confirmed as acceptable by the LPA. The LPA has also requested that winter views be provided which would represent a 'worst case' scenario. Viewpoint photography was carried out in December 2021, March 2022 and November 2022. The following comments were also made and have been incorporated into the Landscape Strategy Plan (**Appendix 3**):
- "...some planting to the West of the footpath with wide margins around the footpath to avoid a tunnel effect and retain open views to the countryside to the east..."***
- 1.17. This has been incorporated in the design and represented at Photomontage Viewpoint 1 (**Appendix 4**).
- ...All or any trees propose to be pruned should be identified and those, if any, proposed to be removed should be shown in a broken line and by colour that clearly stands out and by reference to a key on the final plans.***
- 1.18. Tree and hedgerow removal is illustrated on the Landscape Strategy.
- I have also previously made comments that we need clarity on the location, colour and size of buildings / 'shipping containers' the location of which should be identified and unless covered by those viewpoints selected to date may require additional images. We also need clarity on location(s), height, colour, size of CCTV installations and whether there is to be any other above ground transmission/apparatus..."***
- 1.19. Solar panels will be dark blue, grey or black in colour. A preference of Olive-green colour fencing, and containers was expressed by the Landscape Officer in November 2022 and has been used for the proposals. Construction compounds will be located at the farmyard, the substation field, and the PoC tower, these and the location of the other built elements are





shown on at **Appendix 3 Landscape Strategy Plan**. The heights of the built elements are shown at Appendix 2 and 4 of the Planning Statement.

1.20. Following the statutory pre-application consultations carried out between 8<sup>th</sup> June– 3<sup>rd</sup> August 2023 and 10<sup>th</sup> October–22<sup>nd</sup> November amendments have been made to the layout and proposed mitigation measures. The key changes include: –

- All solar arrays were removed from the fields located to the south of the Afon Llan. This is due to ecology stepwise considerations and flood risk. These fields will therefore be retained for full continued agricultural use. These proposed modifications have reduced the development areas within the planning application boundary. By removing the arrays to the south of Afon Llan, the Applicant has also taken out the need for any associated directional drilling works under Afon Llan. Solar arrays have also been removed from a further two fields located due south of Glasfryn Terrace due to ecological stepwise considerations (SINC considerations).
- Following the exclusion of five land parcels (as described above), the Applicant has sought to relocate some of the PV modules within the retained fields, thus achieving a more efficient use of the retained fields.
- The proposals presented during the first round of statutory consultation showed three cable routing options, all of which traverse the agricultural fields to the south of the river Afon Llan. However, following further technical and land option considerations, alternative cabling route were progressed proposed. To this end, the applicant introduced a design change by rerouting the cable trench along the existing local highway (namely Swansea Road, Carmarthen Road, Ystrad Road and Denver Road). In addition, a second point of connection option is being introduced to the scheme and this is located to the north off Carmarthen Road. The planning application boundary was amended and extended to accommodate these changes.

1.21. As a result of the above, changes have been made to the Landscape Strategy Plan (**Appendix 3**) including the reconfiguration of proposed areas of trees and hedgerows, changes to reptile habitat areas, and areas of woodland.

## 2. Site Description

- 2.1. The Site is located predominantly to the south of the B4560 and A484 (**Figure 1**), with a smaller area north of the A484, south of Swansea Road. The fields within the Site vary in scale and form. The north-eastern part is characterised by geometric and strongly rectilinear field, medium to large scale. Some of the fields, in the southern part along the Afon Llan, are slightly elongated with their boundaries more sinuous. Internally, the field boundaries are formed of a mix of post and wire fencing and hedgerows of varying quality. Hedgerow cover and pattern has been eroded over time with the removal of sections and with more intensive modern management practices. Other vegetation located within the Site includes standalone trees and broadleaved woodland and riparian vegetation along the Afon Llan. The southern boundary of the Site is formed of the Afon Llan to the west and predominantly hedgerows to the east. Pen-y-fodau-fawr is located within the northwest part of the Site and is not included within the Site boundary. There is little screening provided by existing vegetation.

### Designations

- 2.2. As stated within the Planning Policy Section of this report, the Site is covered by Green Wedge and Special Landscape Area policies (**Figure 3: Environmental Designations Plan**).
- 2.3. The Gower Area of Outstanding Natural Beauty (AONB) is approx. 3.5km to the southwest of the Site at its closest point. There are no Registered Parks and Gardens and/or Registered Historic Landscapes located within or immediately surrounding the Site.
- 2.4. There are two small remnant areas of Ancient Woodland (AW), one within the main part of the Site and a smaller area to the north between the A484 and Swansea Road. As a consequence, panels would be offset from these areas by a 15m buffer with appropriate mitigation provided as recommended by Arboricultural British Standard (BS 5837:2012) as the maximum root protection area.
- 2.5. Stafford Common, an area of Statutory Access Land (SAL), is adjacent to the northern parcel of the Site. To the north of Swansea Road there is a large area of SAL Penllergaer Common, which expands up to the industrial area. Within this area there is also a Scheduled Monument.
- 2.6. Two Public Rights of Way (PRoW) cross the Site and link to the wider area, namely LC26 which runs south from Swansea Road (B4560), west of Days Motors to the Afon Llan, and LC71 which runs south from Swansea Road (B4560), east of Days Motors to PRoW LC101 along the Afon Llan.

### Topography and Watercourses

- 2.7. The height of the land across the undulating Site ranges from c.55–9.5m Above Ordnance Datum (AOD) and is considered typical of the landscape of the surrounding valley landscape. The Site falls north of the Afon Llan which runs east to west south of the Site. To the south of the Site the land continues to rise, reaching c.170m AOD around West Cefncoed. The land gradually falls to the west to the Afon Llchwyr (River Loughor).

### Vegetation and Land Use

- 2.8. The Site is crossed by several hedgerows, creating a medium sized field pattern of mixed grazing pasture and arable land. Hedgerow cover and pattern has been eroded over time



with the removal of sections and with more intensive modern management practices. The existing hedgerows are generally managed at a relatively low height (typical of the area) in the northern part of the Site with some exceptions. The condition of the hedgerows across the western fields appears gappy and would be bolstered in places. A small block of woodland (Ancient Woodland) is present within the eastern part of the Site, where the fields also have dense mature lines of trees around some of their boundaries, notably bordering the Swansea Road.

- 2.9. The topography being flatter around the Afon Llan corridor to the south gives the appearance of a more vegetated landscape within views, whereas the higher slopes of the Site appear more open due in part to loss of hedgerows over time.
- 2.10. A tree survey (07/01/2022) and Arboricultural Impact Assessment (December 2023) have been carried out by Barton Hyett Associates to inform the LVIA and proposed mitigation measures. The key arboricultural features are stated as follows:

***“The most significant features within the site are the groups G1, G2, G33, G35, G46 (offsite), G52 and G67. The latter 2 groups, along with T28, have been recorded as category A with the other groups being category B.***

***The moderate quality category B group G47 flanks the northern bank of the Gors-fawr Brook water course and is protected by a Tree Preservation Order (TPO), order No: 206. The TPO is a legal mechanism used to preserve trees for amenity value or environmental reasons. The group is at the edge of the site extents and it is highly likely that retention and protection of this feature as part of a proposal is possible.***

***One high quality category A group, G106 and two moderate quality category B groups, G43 and G105, are listed as designated Ancient Semi-Natural Woodland (ASNW) on the ‘2021 Ancient Woodland Inventory’ hosted by Natural Resources Wales (NRW). Two moderate quality category B groups, G33 and G35 and one low quality category C group (G34) are listed as Restored Ancient Woodland (RAW), on the ‘2017 National Forestry Inventory’, again hosted by NRW.***

***The majority of features internal to the site are hedgerows which are either maintained by flail or outgrown.”***

## **Settlement**

- 2.11. The Site is located at the southeast residential edge of Kingsbridge and Gorseinon which extends west to the estuary. Gowerton and Waunarlwydd are to the south of the Site, contained in the main by the railway line, with a small residential area of Gowerton and Westfield Industrial Park encroaching north. Fforestfach and large Industrial Estate are to the east. The North of Waunarlwydd/Fforestfach Strategic Development Area, Policy SDH of the Local Development Plan area sits to the northeast, east and south of the Site and will include circa 716 homes, primary school, employment, and pitches and public realm proposed predominantly along the Afon Llan, retaining openness and separation along the open valley and offset from Fforestfach.
- 2.12. Near to the Site there are isolated properties along the B4560 (Swansea Road) which abut the Site. Penyfodau Fawr Farm is located within the Site, outside of the redline boundary of the proposed development.



### **Detracting Features**

- 2.13. Detracting features within the landscape include large electricity pylons crossing the Site, adjacent sewage works (to the west), Days Motors which occupies a prominent location on high ground to the north of the Site, and the large buildings at Westfield Industrial Park to the south of the Site beyond the Afon Llan.

### 3. Policy Context

#### Planning Policy Wales, Edition 11 (February 2021)

- 3.1. National Policy is set out within the Welsh Government's Planning Policy Wales, Edition 11 (PPW11).
- 3.2. Development within the countryside is addressed at paragraph 3.60 of the PPW11 which states that:
- 3.3. ***"Development in the countryside should be located within and adjoining those settlements where it can best be accommodated in terms of infrastructure, access, habitat and landscape conservation..."***
- 3.4. The proposed development has been located at the edge of Gorseinon, adjacent to the settlement edge.
- 3.5. Green Wedges addressed at paragraph 3.69 of PPW11, states that:
- "The general policies controlling development in the countryside apply in a Green Belt and a green wedge but there is, in addition, a general presumption against development which is inappropriate in relation to the purposes of the designation. Green wedges can have other beneficial effects including the provision of access to the countryside and sport and recreation opportunities."***
- 3.6. The main purpose of the Green Wedge is to retain openness. The Green Wedge and potential effects on openness are explored in more detail at Section 10. The accompanying Planning Statement addressed the principle of development within the green wedge.
- "The general policies controlling development in the countryside apply in a Green Belt and a green wedge but there is, in addition, a general presumption against development which is inappropriate in relation to the purposes of the designation. Green Belts and green wedges can have other beneficial effects including the provision of access to the countryside and sport and recreation opportunities. However, the extent to which the use of land fulfils these objectives is not a material factor in determining whether land should be included within a Green Belt or green wedge."***
- 3.7. Landscape is addressed within Chapter 6 Distinctive and Natural Places of PPW11 which covers environmental and cultural components of placemaking.
- 3.8. PPW11 Paragraph 6.3.2 acknowledges varied and iconic Welsh landscapes, the character, and special qualities of which form designated AONBs. The Gower AONB is located approx. 3.5km from the Site and is a material consideration (**Figure 3: Environmental Designations Plan**). Following the Site visits and Screened Zone of Theoretical Visibility (**Figure 2: SZTV**) which shows no potential areas of visibility, it is assessed that there are no likely effects on visual receptors within the Gower AONB looking towards the Site or likely effects on the landscape character of the Gower AONB and its setting due to its distance from the Site.
- 3.9. PPW11 Paragraph 6.3.3 states that ***"all the landscape of Wales are valued for their intrinsic contribution to a sense of place, and local authorities should protect and enhance their***



***special characteristics, whilst paying due regard to the social, economic and cultural benefits they provide, and to their role in creating valued places."***

- 3.10. PPW11 Paragraph 6.3.12 states that ***"planning authorities should provide for the conservation and, where appropriate, enhancement of local landscapes... LANDMAP and any associated landscape character assessments (including the register of historic landscapes in Wales) should be used to inform local landscape policies and SPG and help to help identify or revise SLAs."***
- 3.11. The LVIA provides a review and assessment of LANDMAP aspect areas relevant to the Site at Section 4.
- 3.12. PPW11 Paragraph 6.3.20 states that ***"LANDMAP is an important information resource, methodology, and monitoring baseline for the landscapes of Wales, which can help inform planning for the sustainable management of natural resources in an area. LANDMAP describes and evaluates the physical, ecological, visual, cultural and historic aspects of Wales, and provides the basis of consistent, quality assured approach to landscape assessment."***
- 3.13. The LVIA provides a review and assessment of LANDMAP aspect areas relevant to the Site at Section 4.

## **Future Wales: The National Plan 2040 (February 2021)**

- 3.14. Policy 17 Renewable and Low Carbon Energy and Associated Infrastructure states that:
- 3.15. ***"The Welsh Government strongly supports the principle of developing renewable and low carbon energy from all technologies and at all scales to meet our future energy needs."***
- 3.16. ***In determining planning applications for renewable and low carbon energy development, decision-makers must give significant weight to the need to meet Wales' international commitments and our target to generate 70% of consumed electricity by renewable means by 2030 in order to combat the climate emergency."***
- 3.17. Policy 18, Renewable and Low Carbon Energy Developments of National Significance (DNS) provides that proposals for renewable and low carbon energy projects qualifying as DNS will be permitted subject to Policy 17 and the following criteria:
- 1. Outside of the Pre Assessed Areas for wind developments and everywhere for all other technologies, the proposal does not have an unacceptable adverse impact on the surrounding landscape (particularly on the setting of National Parks and Areas of Outstanding Natural Beauty);***
  - 2. There are no unacceptable adverse visual impacts on nearby communities and individual dwellings;***
  - 3. There are no adverse effects on the integrity of Internationally designated sites (including National Site Network sites and Ramsar sites) and the features for which they have been designated (unless there are no alternative solutions, Imperative Reasons of Overriding Public Interest (IROPI) and appropriate compensatory measures have been secured;***



**4. There are no unacceptable adverse impacts on national statutory designated sites for nature conservation (and the features for which they have been designated), protected habitats and species;**

**5. The proposal includes biodiversity enhancement measures to provide a net benefit for biodiversity;**

**6. There are no unacceptable adverse impacts on statutorily protected built heritage assets;**

**7. There are no unacceptable adverse impacts by way of shadow flicker, noise, reflected light, air quality or electromagnetic disturbance;**

**8. There are no unacceptable impacts on the operations of defence facilities and operations (including aviation and radar) or the Mid Wales Low Flying Tactical Training Area (TTA 7T);**

**9. There are no unacceptable adverse impacts on the transport network through the transportation of components or source fuels during its construction and/or ongoing operation;**

**10. The proposal includes consideration of the materials needed or generated by the development to ensure the sustainable use and management of resources;**

**11. There are acceptable provisions relating to the decommissioning of the development at the end of its lifetime, including the removal of infrastructure and effective restoration.**

***The cumulative impacts of existing and consented renewable energy schemes should also be considered.***

- 3.18. The Site is not within an AONB (soon to be National Landscapes) or National Park designation or other nationally or internationally recognised statutory designation. The Gower AONB is 3.5km from the Site. However, the SZTV illustrates that views from the Gower AONB are not available. The LVIA provides a review and assessment of potential visual impacts including impacts on residents within the study area. Biodiversity net gain, heritage impacts, glint and glare, transport impacts and sustainability are covered elsewhere within the application documents.

## **Swansea Local Development Plan 2010–2025 (2019)**

- 3.19. Of relevance to the LVIA are policies ER2 Strategic Green Infrastructure Network, ER3 Green Wedges, ER4 Gower AONB, ER5 Landscape Protection, ER11 Trees, hedgerows, and Development and CV2 Development in the countryside. In addition, ER6 Designated Sites of Ecological Importance, ER8 Habitats and Species, and ER9 Ecological Networks and Features of Importance for Biodiversity are covered within the Ecological Appraisal and are not repeated here.

### **ER2 Strategic Green Infrastructure**

- 3.20. The policy states that:

- 3.21. ***"Development will be required to take opportunities to maintain and enhance the extent, quality and connectivity of the County's multi-functional Green Infrastructure network, and where appropriate:***
- 3.22. ***i. Create new interconnected areas of Green Infrastructure between the proposed site and the existing strategic network;***
- 3.23. ***ii. Fill gaps in the existing network to improve connectivity; and***
- 3.24. ***iii. In instances where loss of Green Infrastructure is unavoidable, provide mitigation and compensation for the lost assets."***
- 3.25. The proposed development provides a Landscape Strategy Plan (**Appendix 3**) which provides landscape proposals across the Site. The proposed retention, enhancement and planting proposals will provide a joined up green network throughout the Site. The green infrastructure measures account for 62.1% of the proposed development. Habitat conservation, creation and enhancement measures are proposed across the entire Site in order to increase the extent and quality of habitat along key corridors within and through the Site, notably complete exclusion from the proposed development of the most sensitive Rhos grassland SiNC habitat field in the centre of the Site.

### **ER3 Green Wedges**

- 3.26. The Site is within 'Penllergaer/ Kingsbridge and Gowerton/ Waunarlwydd/ Fforestfach' Green Wedge (GW) (see **Figure 3: Environmental Designations Plan**) within which development will only be permitted if it maintains the ***"openness and character of the land, unless the development is for acceptable purposes..."***
- "Green Wedge designations are identified only on those parts of the countryside that are considered to act as buffers between settlements to prevent settlement coalescence, in areas under pressure for development..."***
- 3.27. The Site sits at the southeast residential edge of Gorseinon. The south of the Site is offset from the edge of Gowerton and Waunarlwydd by woodland and vegetation along the railway line, Afon Llan and Westfield Industrial Park. The edge of Swansea is to the east, beyond intervening fields, woodland blocks, and vegetation along the Afon Llan. The type of development proposed would not cause the coalescence of surrounding residential areas. Substantial mitigation proposals would aim to retain and enhance the existing landscape elements which presently prevent coalescence.
- "When located in the Green Wedge, elements of many renewable energy projects will compromise the openness of the land and will be regarded as inappropriate. In order for renewable energy projects to be acceptable in the Green Wedge designated areas developers will need to demonstrate very special circumstances, such as greater benefits associated with increased energy from renewable sources..."***
- 3.28. As solar arrays are low level structures, they would not cause the loss of openness in comparison with other types of development, for example residential or commercial buildings. Substantial mitigation proposals would aim to retain, replace, and enhance the existing landscape elements which presently provide a sense of openness.





***"In recognition of the additional benefits afforded by the Green Belt and Green Wedge designated areas, biodiversity, landscape, climate change mitigation and informal recreation enhancement measures will be encouraged as appropriate."***

3.29. As well as landscape and ecological enhancement proposals the proposed development would retain access via the two PRoW through the Site, providing enhancement to adjacent hedgerows and vegetation where present such. Fence lines would be offset more than 6m from PRoW route LC26 crossing the Site. Very Special Circumstances are discussed in the Planning Statement. As stated within the Planning Statement, habitat retention, creation and enhancement measures are designed to increase the extent and quality of habitat on key corridors within and through the site. These measures will strengthen habitat connectivity through the site, including creation of buffer zones. This will include native wildflower seeding/green hay from a donor site (likely to be from retained habitat to the south) and alteration of grassland management to extend and enhance priority habitat providing environmental gains.

3.30. The Green Wedge policy is reviewed in more detail at Section 10 of this report.

#### **ER4 Gower AONB**

3.31. The policy states that the proposed development must:

3.32. ***"Not have a significant adverse impact on the natural assets of the AONB or the resources and ecosystem services on which the local economy and well-being of the area depends"***

3.33. The Gower AONB is 3.5km of the Site however, the SZTV (**Figure 2**) illustrates that views from the Gower AONB are not available.

#### **ER5 Landscape Protection**

3.34. The Site falls within 'Garngoch and Lower Afon Llan Valley' Special Landscape Area (SLA) (see **Figure 3**). The policy aims to ensure that the character and quality of the County's landscapes is protected from inappropriate development.

***"Development will not be permitted that would have a significant adverse effect on the character and quality of the landscape and setting of the County. Priority will be given to protecting enhancing and managing the character and quality of the following Special Landscape Areas (SLAs)."***

***"In exceptional circumstances, where development is necessary and could result in a significant landscape impact, a landscaping scheme will also be required, and appropriate mitigation and enhancement measures should be provided."***

***"The development should aim to protect and enhance the features for which the SLA has been designated."***

***"In order to be acceptable, wherever possible, development within an SLA should retain and enhance the positive attributes of its landscape and seek to remove or mitigate any negative influences. In order to achieve this the design, scale and location of development should respect the special landscape context."***

***"For most development to integrate successfully into its surroundings implementation of a landscaping scheme will be required."***

- 3.35. As set out in this LVIA, the proposed development is not expected to have a significant effect (in LVIA terms) on the character and quality of the landscape and its setting. The proposed development will retain and enhance the positive attributes of the SLA including the existing field pattern and hedgerow vegetation, vegetation associated with the Afon Llan and ancient woodland. A detailed mitigation plan of landscape and ecological enhancement measures can be found at **Appendix 3: Landscape Strategy Plan**. Landscape measures include retention of the Rhos grassland, enhancement and offsets from existing boundary trees and hedgerows (managed to approx. 3m height where appropriate), wooded areas (areas of ancient woodland), and riparian vegetation along the Afon Llan. Proposals for additional hedgerows include 3km of hedgerow, and circa 1.9ha acres tree planting, alongside open areas of species-rich grassland, both to re-establish wildlife corridors whilst ensuring minimal 'massing' of arrays. The deliberately designed disparate parcels of proposed PV arrays negate any perception of massing at scale and fields north of the Afon Llan have been retained as pasture to enable the sense of openness across the valley to be maintained.

#### **ER11 Trees Hedgerows, and Development**

- 3.36. The policy states that:

***"Ancient Woodland, Ancient Woodland Sites, Ancient and Veteran Trees merit specific protection and development will not normally be permitted that would result in:***

- i. Fragmentation or loss of Ancient Woodland;***
- ii. The loss of an Ancient or Veteran Tree;***
- iii. Ground damage, loss of understorey or ground disturbance to an area of Ancient Woodland or Ancient or Veteran Tree's root protection area;***
- iv. A reduction in the area of other semi natural habitats adjoining Ancient Woodland;***
- v. Significant alteration to the land use adjoining the Ancient Woodland;***
- vi. An increase in the likely exposure of Ancient Woodland, Ancient or Veteran Tree to air, water or light pollution from the surrounding area;***
- vii. Alteration of the hydrology in a way that might impact on Ancient Woodland, Ancient or Veteran Trees;***
- viii. Destruction of important connecting habitats relating to Ancient Woodland;***
- ix. Destruction of Plantations on Ancient Woodland Sites (PAWS); and/or***
- x. Development in close proximity to Ancient Woodland and Ancient and Veteran Trees."***

- 3.37. The proposed development would seek to minimise any loss of existing woodland, hedgerows or mature trees during the construction stages. A limited number of gateway



widening and very minor hedgerow breaches would be required to allow for the implementation of the access tracks and security fencing.

- 3.38. There are two small remnant areas of Ancient Woodland (AW), one within the main part of the Site and a smaller area to the north between the A484 and Swansea Road. As a consequence, panels would be offset from these areas by a 15m buffer with appropriate mitigation provided as recommended by Arboricultural British Standard (BS 5837:2012) as the maximum root protection area.

#### **CV2 Development in the Countryside**

- 3.39. The policy states that:

***"Outside defined settlement boundaries development will be required to ensure that the integrity of the countryside is conserved and enhanced."***

- 3.40. The proposed development and Landscape Strategy Plan (**Appendix 3**) sets out various measures including circa 3km of hedgerow, and circa 1.9ha tree planting, which will strengthen the countryside assets of the Site, such as hedgerows, trees, and woodland.

## 4. Published Landscape Character Assessments

### National Landscape Character Areas

- 4.1. National Landscape Character Areas (NLCA) form the broadest scale of landscape character assessment in Wales. The Site is covered by NLCA 38: Swansea Bay, key characteristics that are relevant to the Site and its setting include:

***"Narrow Coastal Plain – a long lowland area, of limited width in its middle section, between uplands and the sea, and opening out into wider lowland areas at either end.***

***"Character is urban and suburban with large housing and industrial estates. Heavy industries and settlement have made use of these strategically important locations, between coalfield and sea, and major ports around Swansea and the Steel Works at Port Talbot are landmark features."***

***"Tightly fitted between the steeply rising uplands to the north and the sweeping bay to the south, this often busy, noisy, at times messy, urban, transport artery also extends over the broad neck of Gower to include the neighbouring, estuary-set town of Llanelli."***

- 4.2. Due to the broad nature of the NLCA the 'Swansea Bay' character area is not assessed within this report. LANDMAP provides a more detailed approach to character assessment and is therefore used to form the baseline for the character assessment.

### LANDMAP

- 4.3. The LANDMAP landscape character assessment approach is descriptive and seeks to identify and define distinct characteristics and qualities of landscapes that make up the country. The landscape character is defined collectively by five layers/aspects of information; cultural, geological, historical, habitat and visual and sensory. This GIS based landscape resource is organised in a hierarchical system that separates different aspects of landscape into geology, biodiversity, visual and sensory, history and archaeology and culture. The assessment describes the landscape at different levels of accuracy. All quotations in the following section are from the LANDMAP website.

- 4.4. Geological Landscape ***"Identifies those landscape qualities which are linked to the control or influence exerted by bedrock, surface processes, landforms and hydrology"***.

- 4.5. Landscape Habitats ***"Focuses on recording habitat features, characteristics and their spatial relationships within the context of the wider landscape"***.

- 4.6. Visual & Sensory ***"Maps landscape characteristics and qualities as perceived through our senses, primarily visually (...) The physical attributes of landform and land cover, their visible patterns and their interrelationship"***.

- 4.7. Historic Landscape identifies ***"Landscape characteristics that depend on key historic land uses, patterns and features. Identifies only those classes of historic land uses, patterns and features that are prominent and contribute to the overall historic character of the present landscape"***.



- 4.8. Cultural Landscape Services "***Describes the links between landscape and people, from the way in which cultural, or human activity shapes the landscape, to the way in which culture shapes the way we respond to landscape.***"
- 4.9. LANDMAP also includes evaluation scores which are defined as follows:
- Outstanding evaluation – nationally important.
  - High evaluation – regional or county importance.
  - Moderate evaluation – local importance.
  - Low evaluation – little or no importance.
- 4.10. The description of each landscape is used as a basis for evaluation to make judgements to guide, for example, development or landscape management. **Figures 4–8** illustrate the extent of aspect areas covering the Site.
- 4.11. Regarding the study area, the LANDMAP Aspect Areas for all five layers have been mapped as separate plans (**Figures 4–8**) and reviewed in order to establish those that are relevant and may be subject to potentially adverse effects. The guidance available on Natural Resources Wales’ website does not specifically advise on how to assess solar energy scheme in the context of LANDMAP aspect areas. Those assessed cover most or part of the Site.

#### **Geological Landscape**

- 4.12. The majority of fields in the Site north of the Afon Llan are within ‘Penllergaer’ (SWNSGLO33) (**Figure 4**). The overall evaluation is outstanding due to its ***“railway cutting SSSI for Upper Carboniferous, Grovesend Formation Stratigraphy”***. The Site is not within the railway cutting SSSI. Long term guidelines are to ***“Ensure that no further key features of geological or geomorphological significance are lost/damaged due to development, forestry etc.”***
- 4.13. A small area of the southwest part of the Site, north of the Afon Llan fall within ‘Loughor, Lliw’ (SWNSGLO31) which is a large area stretching east and west along the river valley. The overall evaluation is moderate due to its ***“River-flood plain systems significantly affected by development. Estuarine systems less affected and include part of the Bury Inlet and Loughor Estuary SSSI which includes features of coastal geomorphological importance.”***

#### **Landscape Habitats**

- 4.14. The most eastern fields of the Site fall within Mynydd Garn Coch (SWNSLH221) aspect area (**Figure 5**). The area covers the common land north of Swansea Road and around Hospital Road. It is described as ***“an area dominated by marshy grassland. Patches of bracken and broadleaved woodland are also present, as is some improved and semi-improved grassland”***. This is broadly representative of this part of the Site. Opportunities to improve biodiversity are identified as ***“converting semi-improved grassland into unimproved, type grassland. Recommendations also include conservation of marshy grassland.”*** The significance of this area is moderate due to it being a relatively small area with a significant amount of improved grassland present.
- 4.15. The rest of the Site falls between ‘Gorseinon and Gowerton’ (SWNSLH779) aspect area. The area is summarised as ***‘improved grassland’*** which dominates the Site. Opportunities to

***“improve biodiversity are identified as converting semi-improved grassland into unimproved type grassland and encourage farmers to leave set aside around the edges of fields and encourage more ecologically friendly farming practices”.*** The significance of this area is moderate due to its improved grassland habitat.

#### **Historic Landscape**

- 4.16. The Site falls entirely within ‘Lower Loughor and Lliw Valleys’ (SWNSHL571-H22) aspect area (Figure 6) and includes the area between Gorseinon, Gowerton and Waunarlwyd. The area is described as ***“...agricultural with an irregular fieldscape formed by successive enclosures of open ground...”*** which is demonstrated on Site. The description also highlights the ***“significant industrial component”*** which has largely disappeared leaving the current settlement form and distribution, predominantly ribbon development.

#### **Cultural Landscape**

- 4.17. The area of the Site south of A484 and Swansea Road east of the roundabout falls within the ‘Afon Llan and surrounds’ (SWNSCLS085) aspect area (Figure 7). The sense of place and local distinctiveness is described as weak. The visual and sensory landscape, scenic quality and character value is assessed as low. The rest of the Site north of the A4848 is within ‘Gorseinon’ (SWNSCLS086) aspect area. Its sense of place and local distinctiveness is also described as weak. The visual and sensory landscape, scenic quality and character value is assessed as low.

#### **Visual and Sensory**

- 4.18. There are a few aspect areas associated with the Visual & Sensory Layer and located in relatively proximity to the proposed development, that are covered by large areas of theoretical visibility. These include SWNSVS153 Mynydd Carn Coch and surrounds and SWNSVS003 Swansea West. The review of the published detailed assessment, and the ground assessment of views each concluded that views are contained and often medium to short range. It is unlikely that there would be adverse direct and indirect effects on these areas, and they have been excluded from further assessment.
- 4.19. Most of the Site is within Aspect Area, ‘Afon Llan and surrounds’ (SWNSVS700) (Figure 8). The area is described as:

***“Valley floor with Afon Llan flowing through it, urban areas surround it some being immediately adjacent. Pylons cross the area as do a number of roads with the A484 forming part of the northern boundary. Visual detractors within include a sewage works, roads, pylons. Factories and urban areas border it in places. Some hedgerow field boundaries but has a distinct urban edge character....”***

- 4.20. Scenic quality, integrity, character, and rarity have all been assessed as low. Its value is described as low due to the degraded agricultural valley caused by urban spread. It specifies that agricultural elements should be conserved and enhanced including hedges, urban encroachment should be restricted.
- 4.21. The parcel of Site north of A484 is within ‘Gorseinon’ (SWNSVS726) aspect area which covers predominantly the whole of the urban area stretching northwest. The area is described as:

***“Urban area than encompasses the settlements of Goseinon, Gowerton and Grovesend. The area is largely residential with some retail and small areas of industry. Views out are largely on to farmland with some views to the south east edge onto saltmarsh and Loughor estuary. Northeast part of this area includes much open country...”***

4.22. Scenic quality, integrity, character, and rarity have all been assessed as low. Attractive views are out to Loughor estuary with detractive views in and out of the area. Sensory qualities are described as noisy with a weak sense of place/local distinctiveness.

4.23. **Table 1** lists all LANDMAP Layers, relevant aspect areas and their overall evaluation, that cover the Site.

**Table 1: LANDMAP Aspect Areas covering the Site**

LANDMAP Aspect Layer	LANDMAP Description	LANDMAP Evaluation
Geological Landscape: Penllergaer SWNSGLO33	Lowland hills and valleys (level 1)/Lowland scarp and dip-slope dominated terrain (level 2)/ Lowland Escarpment (Level 3)  Overall Evaluation:  Includes Penllergaer railway cutting SSSI for Upper Carboniferous, Grovesend Formation Stratigraphy.	Value: Outstanding Condition: Fair Trend: Constant  Overall Evaluation: Outstanding
Geological Landscape: Loughor, Lliw SWNSGLO31	Lowland hills and valleys (level 1)/Lowland River and drainage systems (Level 2)/ Active lowland river flood plain system (level 3)/ Flood plain (Level 4)  Overall Evaluation:  River-flood plain systems significantly affected by development. Estuarine systems less affected and include part of the Bury Inlet and Loughor Estuary SSSI which includes features of coastal geomorphological importance.	Value: Moderate Condition: Fair Trend: Constant  Overall Evaluation: Moderate
Landscape Habitats: Mynydd Garn Coch SWNSLH221	Dry (relatively) terrestrial habitats (Level 1)/ Grassland and marsh (level 2)/ marsh and marshy grassland (level 3)  Overall Evaluation:	Value: Moderate Condition: Unassessed Trend: Constant  Overall Evaluation: Moderate

	Small area but containing some BAP habitat. There are possibilities to enhance the area ecologically as well.	
Landscape Habitats: Between Gorseinon and Gowerton SWNSLH779	Coastal and marine habitats (level 1)/ Mosaic (Levels 2 and 3)	Value: Moderate Condition: Unassessed Trend: Constant
	Overall Evaluation: Common low ecological value habitat with some areas of higher value habitat, possibility of a few commoner BAP species.	Overall Evaluation: Moderate
Historic Landscape: Lower Loughor and Lliw Valleys SWNSHL571-H22	Rural environment (Level 1)/ Agricultural (Level 2)/ Irregular Fieldscapes (Level 3)	Value: Unassessed Condition: Unassessed Trend: Constant
	Overall Evaluation: Insufficient information available.	Overall Evaluation: Unassessed
Cultural Landscape: Afon Llan and surrounds SWNSCLS085	Lowland (level 1)/ Lowland valleys (level 2)/ Mosaic lowland valleys (level 3)	Sense of place: weak Visual and sensory landscape evaluation: low Scenic quality: Low Character: Low
Cultural Landscape: Gorseinon SWNSCLS086	Development (level 1)/ Built land (level 2)/ Urban (level 3)	Sense of place: weak Visual and sensory landscape evaluation: low Scenic quality: Low Character: Low
Visual and Sensory: Afon Llan and surrounds SWNSVS700	Lowland (level 1)/ Lowland valleys (level 2)/ Mosaic lowland valleys (level 3)	Scenic quality: Low Integrity: Low Character: Low Rarity: Low
	Summary Description: Valley floor with Afon Llan flowing through it, urban areas surround it some being immediately	Overall Evaluation: Low



	adjacent. Pylons cross the area as do a number of roads with the A484 forming part of the northern boundary. Visual detractors within include a sewage works, roads, pylons. Factories and urban areas border it in places. Some hedgerow field boundaries but has a distinct urban edge character. Change detection 2014: Expansion of Swansea edge into this area.	
Visual and Sensory: Gorseinon SWNSVS726	Development (level 1)/ Built Land (level 2)/ Urban (level 3)	Scenic quality: Low Integrity: Low Character: Low Rarity: Low
	Summary Description: Urban area than encompasses the settlements of Gorseinon, Gowerton and Grovesend. The area is largely residential with some retail and small areas of industry. Views out are largely on to farmland with some views to the south east edge onto saltmarsh and Loughor estuary. Northeast part of this area includes much open country. Change detection 2014: Expansion of Swansea in east and of Grovesend in north.	Overall Evaluation: Low

## 5. Visual Context

### Zone of Theoretical Visibility

- 5.1. To assist with understanding the potential visibility of the proposed development from the surrounding landscape, a digital Screened Zone of Theoretical Visibility (SZTV) model has been created shown at **Figure 2**. The SZTV provides a starting point for visual investigation to illustrate the geographical area within which views of the proposed development would be theoretically possible. The model is based on an 'screened' scenario whereby the existing screening effect of substantive areas of existing vegetation or built features in the landscape are considered (assuming a height of 15m for woodland and 8m for buildings).
- 5.2. The SZTV has been produced using ArcGIS and generated using OS Terrain 5 data combined with OS Open Map Local data. This uses terrain data and considers the screening effects of woodlands, groups of trees and buildings in the landscape. It does not include smaller hedgerows and individual trees or other vertical elements within the landscape. It presents an estimate in terms of theoretical visibility and the actual extent of the area from which the proposed solar farm would be visible is likely to be much smaller.
- 5.3. The ZTV is modelled at a 'worst case' maximum panel height of 3m above current ground levels based on the full landholdings shown in each parcel of land whereas the actual land take required for the solar modules will be proportionately smaller. The 3m modelled height is appropriate as the limited areas of elevated arrays are within the floodplain fields which, due to topography are mainly 'secluded' within the valley bottom with views confined to those from short stretches of the adjacent PRoW.
- 5.4. It is acknowledged that ancillary structures such as battery storage units, substation, and microwave mast in the eastern field exceed 3m. However, such structures would be relatively minor elements in the context of the overall scheme. Visibility of these structures from PRoW would be limited due to topography and treebelts and would be a minor addition to the existing electrical infrastructure and industrial buildings in the valley if visible from longer distances.
- 5.5. The SZTV illustrates that views from the Gower AONB are not available.

### Consultation

- 5.6. Preliminary viewpoints based on an initial desktop survey and SZTV were sent to the Swansea CC Landscape Officer in November 2021.
- 5.7. The viewpoints represent a selection of views experienced by a range of receptor groups e.g. walkers on public footpaths, users of open access land, and road users, located at varying distances and orientations to the Site. The selection of viewpoints is based on the following criteria:
  - The requirement to provide an even spread of representative viewpoints within the visual envelope.
  - The requirement to provide representative viewpoints that consider a human's normal field of vision (i.e. panoramic views).



- From locations which represent a range of near (local views), middle, and long-distance views.
- Whilst private views are relevant, public viewpoints, i.e. from roads and public rights of way and other areas of open public access, are selected since they tend to have a higher incidence of receptors affected.
- Views from sensitive receptors within designated landscapes.

5.8. A Site visit was carried out in December 2021 to record potential viewpoints. A selection of ten viewpoints were sent to the Landscape Officer in January 2022 for their approval. In February the LPA requested additional views "Days roundabout (A484 / Swansea Road) direction of travel of cars". An additional twelve viewpoints have been recorded including additional views along Gower Way and Wales Coast Path, totalling 22 (found at **Figure 9: Viewpoint Location Plan** and **Appendix 2: Viewpoints 1-22**). A Site visit was carried out in March 2022 to record additional views. Winter views recorded provide a worst-case baseline view when vegetation is out of leaf and illustrate maximum visibility.

5.9. A field walk was also undertaken on 6 October 2022 with the Applicant and Swansea Council's Landscape Officer and PRoW Officer, whereby common ground was reached on the strategy for screening offsets alongside the PRoW. The strategy has been incorporated in the landscape planting plan.

5.10. In June 2022 Viewpoints 4, 6, 19, 13/14/15, and 20 were suggested to the LPA for photomontage and confirmed as acceptable. In October 2022 a further two Viewpoints (1 and 5) and the selection of Viewpoint 13 over 14 and 15 (all from the roundabout) were suggested and confirmed by the LPA and winter photomontage views were recorded in November 2022.

## Viewpoints

5.11. The viewpoints have been provided at **Appendix 2** and follow Visual Representation of Development Proposals (2019) – Landscape Institute Technical Guidance Note O6/19. The assessment will use best practice guidance Guidelines for Landscape and Visual Impact Assessment (3rd Edition, 2013) – Landscape Institute / Institute of Environmental Visibility.

5.12. The proposed development is likely to be visible from some residential areas, roads, and PRoW within proximity to the Site. The following medium and high sensitivity receptors and areas have been considered:

- Swansea Road (B4620), A484 and Titanium Road.
- Residential areas of Gorseinon, Gowerton and Waunarlwydd.
- Properties adjacent to the Site (including Penyfodau Fawr Farm).
- PRoW within and close to the Site (LC101, LC26, LC71, LC72 and CO600).
- Statutory Access land north and west of the Site.
- Long distance footpath users (Wales Coast Path and the Gower Way)



5.13. Viewpoints from PRoW within the proposed development layout boundary have been included within the selection of views, however, it is assumed that generally there would be a direct major effect on PRoW receptors along some sections of these routes with such a direct view within the Site.

5.14. The following describes baseline (existing) views.

#### **Swansea Road (B4620), A484 and Titanium Road**

5.15. The Site is located within an area of sloping, undulating agricultural and industrial, valley landscape, crossed by a network of A and B roads linking the surrounding towns and edge of Swansea city. These views are represented by Viewpoints 13–17 which provide sequential views. These viewpoints are assessed in the round and simultaneously due to their, proximity, direction of view, and context. In general, there is a well-established belt of trees located along route of the A484 and B4560 where they pass the Site, curtailing views.

5.16. Road users immediately pass the Site east–west along the A484 and B4560 from which there are oblique proximity views. Views from these roads are generally filtered by roadside vegetation which includes hedgerows, hedgerow trees and garden vegetation. However, views can be experienced through gateways, where there has been a loss of vegetation, and from more elevated short sections of road.

5.17. Road users approach the roundabout from four points, two of which face towards the northern edge of the Site (approaching from the northwest along Swansea Road and northeast along the A484 from which there are direct proximity views towards the edge of the Site. The visibility of the Site is largely limited to the areas located in the northern fields, between Pen–y–fodau–fawr and Days Motors. The rest of the Site sits on the sloping landform beyond and development within most fields is unlikely to be visible. The sloping topography dropping down from Days Motors towards the farm combined with low managed hedgerows and gateway entrance to the farm provide a view of this part of the Site. However proposed mitigation measures (addition of new hedgerows and hedgerow management at 3m) would enhance enclosure.

5.18. To the south there are partial glimpsed views of the higher, northern fields of the Site from Titanium Road which provides access to Westfield Industrial Park (Viewpoint 19 **Appendix 2**).

#### **Residential areas of Gorseinon, Gowerton and Waunarlwydd**

5.19. Viewpoint 20 illustrates the glimpsed views of the higher, northern fields of the Site from the residential streets of Heol Will George and Sardis Close. The proposed development would sit low within the fields against the residential edge of Gorseinon and at a lower profile than Days Motors. Generally, the Site is experienced as glimpsed views from roads with some fixed views from properties with a north facing aspect. The proposals would form a very small part of these wide–ranging views. In general views of the Site from residential areas including Gorseinon and Gowerton are not available due to a range of factors including distance, aspect, intervening topography, vegetation and built form.

#### **Properties adjacent to the Site (including Penyfodau Fawr Farm)**

5.20. At viewpoint 12 there are clear views across the immediate fields surrounding the farm from the access road, with a combination of hedgerow vegetation and topography screening the fields of the Site beyond. There is a partial view of Days Motors along the northern edge of



the site and Westfield Industrial Park to the south, with high ground rising beyond. The farmhouse is positioned between an agricultural barn to the rear and the farmyard outside the front of the home and the principal windows. The proposed PV arrays have been set back to provide requested extra car parking for the farm shop.

- 5.21. The four terraced residences and detached homes along Swansea Road, adjacent to the eastern fields are mainly screened by dense tree belts. The field immediately South of the rear gardens are excluded from the development area as is the Rhos grassland also in view from the gardens of the four homes.

#### **PRoW within and close to the Site (LC101, LC26, LC71, LC72 and CO600)**

- 5.22. There are open, long ranging views from PRoW LC26 within the north of the Site (Viewpoint 1) looking south towards high ground across the valley. Existing hedgerows and undulating landform, provide a good level of screening to the southeast. Looking towards the Afon Llan, Westfield Industrial Park stands out as a detracting feature along with towers, poles, and electrical wires. Residential Waunarlyydd and Gowerton sit against the higher ground beyond.
- 5.23. Viewpoint 2 is located along PRoW LC71 near the proposed development. The view is open south to north across the lower valley towards Westfield Industrial Park with the upper parts of Waunarlyydd and Gowerton visible in the distance beyond. A hedgerow runs along the eastern edge of the route restricting views north to south. Most of the Site is screened from view by intervening hedgerows to the west and the sloping topography. A small part of a southeastern field is visible in the foreground of the Industrial Park.
- 5.24. Due to the sloping nature of the Site views from within the valley floor are limited from LC101 and LC72 (viewpoints 3 and 4). From footpath LC101 available views are north up the hill. Most of the Site is not visible due to the landform rising in the foreground and intervening hedgerows along the southern edges of the Site, restricting views of individual fields. A small part of the southern field is clearly visible in the immediate view. Mature vegetation along the southern edge of the Site provides a level of screening.
- 5.25. From PRoW CO600 (Viewpoints 5 and 6) there is a glimpsed view of the southern fields of the Site. Mature vegetation along the Afon Llan provides screening towards the east and north-eastern parts of the Site.

#### **Statutory Access land north and west of the Site**

- 5.26. There is a glimpsed view of the northwestern field (Viewpoint 11) of the Site from the A484 and edge of Stafford Common (SAL). Viewpoint 18 illustrates the restricted views experienced by high sensitivity receptors from within Penllergaer Common (SAL) and PRoW LC28 which runs through it.

#### **Long Distance Footpath Users (Wales Coast Path and the Gower Way)**

- 5.27. The Gower Way footpath (Viewpoints 7-10) runs broadly north to south to the west of the Site, through Stafford Common along a disused railway line. Views along its length towards the Site are restricted by vegetation and sewage works.
- 5.28. The Wales Coast Path (Viewpoint 22) passes around the estuary, over 1km at its nearest point to the west of the site. Views towards the Site are obscured by intervening vegetation, railway line and housing.



**Table 2: Summary of Assessment Viewpoints 1-22**

<b>Viewpoint number</b>	<b>Name</b>
Viewpoint 1	Public Footpath LC26 near Pen-y-fawr Farm
Viewpoint 2	Public Footpath LC71 near Cae-newydd
Viewpoint 3	Public Footpath LC72 near Caer'r-bont
Viewpoint 4	Public Footpath LC101 near the electricity sub station
Viewpoint 5	Public Footpath CO600 near Afon Llan
Viewpoint 6	Public Footpath CO600 near Fairwood Terrace, Gowerton
Viewpoint 7	Gower Way footpath Fairwood Terrace
Viewpoint 8	Gower Way footpath
Viewpoint 9	Gower Way footpath, south of Stafford Common
Viewpoint 10	Gower Way footpath, north of Stafford Common
Viewpoint 11	A484, near Safford Common
Viewpoint 12	Access Road to Penyfodau Fawr Farm
Viewpoint 13	Roundabout, Swansea Road/A484
Viewpoint 14	Roundabout, Swansea Road/A484
Viewpoint 15	Roundabout, Swansea Road/A484
Viewpoint 16	Swansea Road
Viewpoint 17	Swansea Road
Viewpoint 18	Public Footpath LC28 near Bryn-Dafydd within Penllergaer Common
Viewpoint 19	Titanium Road, Waunarlwydd
Viewpoint 20	Junction of Heol Will George and Sardis Close
Viewpoint 21	Public Footpath LC48, off Pont y Cob Road
Viewpoint 22	Wales Coast Path



## 6. Proposed Development and Landscape Mitigation

- 6.1. The solar power facility will include a battery storage facility. An operational lifespan of 40 years is sought after which the proposed development will be decommissioned, and the Site returned to full agricultural use.
- 6.2. The proposed development prioritises conforming with the landscape and nature conservation designations by including designs for 51.54 hectares of green infrastructure and wildlife habitat improvements across 62.1% of the fields; with the PV arrays, substation and battery compound only occupying 37.9% (around 31.46 hectares) of the Site. The landscape enhancements would remain beyond the 40 year lifespan, providing established vegetation and associated habitats.
- 6.3. The c.51.54 hectares of green infrastructure and wildlife habitat improvements include
- 1.9ha of new tree planting
  - 3km of new hedgerows
  - Re-establishment of the 6.8ha Rhos grassland habitats
  - Enhanced 5.51ha of floodplain habitats along the Afon Llan
  - Creation of 6.24ha of lowland meadow
  - 3.56ha of targeted habitats for reptiles, invertebrates and farmland birds.

### General Description

- 6.4. The solar panels are connected in series and set out on south facing arrays. The arrays will be laid out in multiple parallel rows running east to west across the various field enclosures. The mounting structure and solar panels will be static. The distance between the arrays would respond to topography but would typically be between 3 metres to 5.2 metres apart. The maximum height of the arrays above ground level would generally be 3.0m. The candidate array design incorporates rows of three panels in portrait format. The mounting structure will be supported at intervals by double mounted posts set approximately 3.75m apart.
- 6.5. The posts will be pushed into the ground with a small plant rig to depths between 1m to 1.5m and this will be guided by localised ground conditions. Indicative slope of the solar panels from horizontal would be c. 15 degrees.
- 6.6. The insulated direct current (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 array. The electrical cabling from the inverters, mounted on the end of the arrays, will be concealed through shallow trenches linking the inverters to the transformers and then to the developer's substation. The cable trench will typically be between 0.9m to 1.2 in depth and around 0.85m wide. The 33KV cable trench would typically be between 1.0m to 1.5m in depth and 0.85m wide. The 132kv cable trench will typically be between 1m to 2m



in depth and 0.85m wide. All trenches would be backfilled with fine sands and excavated materials to the original ground level. A separate cable trench may also be required for the CCTV system.

- 6.7. To secure the proposed development, stock proof perimeter fencing (mesh with metal posts) is proposed around the parcels of arrays within the various field enclosures. The fencing will be installed at a height of approximately 2m mainly around the perimeter of the array fields, yet also to segregate farm shop visitors from the power station.
- 6.8. The distance between the proposed fencing and the existing field boundaries would vary across the Site depending upon the root protection zones of nearby trees. This would be a maximum of 15m as recommended by Arboricultural British Standard (BS 5837:2012). The buffer areas would be used for ecological enhancement measures and, where required, swales.
- 6.9. In addition to fencing, it is proposed that pole mounted CCTV security cameras would be mounted on poles with a maximum height of 2.7m in height and positioned at intervals along the fencing and facing into the development only to protect privacy.
- 6.10. Badger friendly/small mammal access points will be prescribed at various locations along any fencing to allow the passage of badgers across the Site.
- 6.11. 4m to 6m wide gates will be installed at various maintenance access points to the arrays within the field enclosures. The design of the proposed gates will be of a similar appearance and colour as the fencing and be chosen to complement the agricultural setting.
- 6.12. A new substation compound will be required for the proposed development, and this will be constructed in the easternmost field of the Site. The function of the substation will be to take power from the solar arrays and then run this along a proposed underground cable, to the south-east into the overhead pylon located off Ystrad Road, Forestfach. The substation would be made secure with 2.4m high palisade fencing. The battery energy storage system compound would be located next to the substation. Cut and fill will be required to provide a level platform. Any surplus material would be retained on site and formed into a bund around the compound. The compound would contain 42 No. battery units, each measuring 7.81m in length, 2.65m in width and 3.05m in height.

## Landscape Mitigation Proposals

- 6.13. The planning application is accompanied by a Landscape Strategy Plan (**Appendix 3**), an Outline Landscape and Ecological Management Plan (LEMP), and Outline Construction and Environmental Management Plan (CEMP). These documents detail the proposed landscape mitigation and green infrastructure enhancement measures including 3km of hedgerow, and circa 1.9ha tree planting, that would be delivered through the proposed solar PV development including the following general proposals (see **Appendix 3** for locations and detailed proposals):
  - Existing hedgerows would be managed on a three-year rotational cutting cycle to encourage a vertical height of +3 metres (where appropriate) above ground level to promote visual screening and biodiversity value. To the west a section of hedgerow will be maintained at its current height (approx. 1m) to create ideal conditions for arable





bird migration area. Hedgerows will be cut outside of the bird nesting season (March to August inclusive);

- Proposed hedgerow reinforcement planting within the proposed development, along PRow (replacing historic hedgerow lines), to mitigate views of the solar arrays along the Afon Llan Valley in distant views from Waunarlwydd to the south (Viewpoint 20);
- Proposed hedgerow reinforcement planting to the north of the Site to mitigate potential views of the solar arrays from A484 and Swansea Road (Viewpoints 13-15);
- Fields margins would generally be managed to create a diverse grassland habitat, which will benefit a wide range of wildlife;
- Coarse, tussocky grassland will be created between the security fencing and the field boundary hedgerows;
- Woodland creation adjacent to existing woodland and tree belts, to enhance biodiversity and along the northern edge of the Site to provide visual screening from the A484 and Swansea Road roundabout.
- PRow enhancements (hedgerow and tree planting along western edge) to provide a new north-south wildlife corridor and control views from PRow.

## Green Infrastructure

- 6.14. The green infrastructure measures account for 62.1% of the proposed development. Habitat conservation, creation and enhancement measures are proposed across the entire Site to increase the extent and quality of habitat along key corridors within and through the Site, notably complete exclusion from the proposed development of the most sensitive Rhos grassland SiNC habitat field in the centre of the Site.
- 6.15. Various measures including circa 3km of hedgerow, and circa 1.9ha tree planting, will strengthen habitat connectivity through the Site, including creation of buffer zones. This will include native wildflower seeding/green hay from a donor site (likely to be from retained habitat to the south) and alteration of grassland management to extend and enhance priority habitat. Planting of native hedge and scrub species, and creation of wild bird cover plots will aim to extend the habitat mosaic and enhance habitat value for a range of species including bats and farmland bird species. The river corridor and adjacent SiNC are considered to be a key component of the mitigation approach; a continuous wide corridor of habitat creation and enhancement will be created along the river corridor, extending and linking valuable habitats as an ecological network.
- 6.16. Open riparian habitats will be retained as part of the mosaic, but with a wider buffer zone than at present. Treatment and removal of extensive Japanese Knotweed will also provide habitat enhancement. It is anticipated that net biodiversity gain can be achieved at the Site, particularly with regards to the uplifting condition of priority habitats, and habitat connectivity along the river corridor.
- 6.17. Recreational benefits would also be incorporated in the ecological design strategy, and these may include a permissible informal recreation area fronting Afon Llan and maybe a permissive



walkway to increase connectivity from the farm shop to the wider network of public footpaths within the locality.

## 7. Potential Effects on Landscape Character

- 7.1. The assessment of potential landscape character effects includes the outlined mitigation proposals.
- 7.2. Landscape character is defined within GLVIA3 as the “*distinct, recognisable and consistent pattern of elements in the landscape that makes one landscape different from another, rather than better or worse.*”<sup>1</sup>
- 7.3. The effects on landscape character considers how the introduction of new landscape elements physically alters the landform, landcover, landscape pattern and perceptual attributes of the Site or how visibility of the proposed development changes the way in which landscape character is perceived.
- 7.4. The sensitivity of the LANDMAP aspect areas within the study area are, as a reflection of the overall evaluations, assessed as low within the LANDMAP data sheets summarised in **Table 1**.
- 7.5. The landscape elements that constitute the landscape character of the LANDMAP geological, habitats, historic or cultural aspect areas within the Site would remain largely unaffected by the proposed development in physical terms. Site topography, field pattern and enclosure, woodland, hedgerows and trees would largely remain unaltered with the solar arrays in place. There would be some change to the field structure which would be enhanced with additional planting of new and infill hedgerow.
- 7.6. Geological Landscape aspect areas Penllergaer SWNSGLO33 and Loughor, Lliw SWNSGLO31 would remain unchanged. Landscape Habitats aspect areas Mynydd Garn Coch SWNSLH221 and Between Gorseinon and Gowerton SWNSLH779 would remain largely the same with some change caused by the addition of hedgerow, copse and tree planting. Historic Landscape Lower Loughor and Lliw Valleys SWNSHL571-H22 is ‘unassessed’. There would be a low magnitude of change to Cultural Landscape aspect areas Afon Llan and surrounds SWNSCLS085 and Gorseinon SWNSCLS086 due to a low level change in landscape structure.
- 7.7. The effects on landscape character would therefore primarily result from the visual influence of the new c.4.75 acres of copse and 3km of hedgerow planting and solar arrays on the LANDMAP visual and sensory aspect areas covering the Site including the Afon Llan and surrounds SWNSVS700 and to a lesser extent Gorseinon SWNSVS726 as illustrated at **Figure 8**.
- 7.8. The LANDMAP **Figures 4 to 8**, together with the representative viewpoints 1-6 (**Appendix 2**), demonstrate that a relatively small geographical area of the Afon Llan and surrounds SWNSVS700 aspect area would be intervisible with the proposed development. This is due to the key characteristics of the aspects including the ***‘Visual detractors within include a sewage works, roads, pylons. Factories and urban areas border it in places. Some hedgerow field boundaries but has a distinct urban edge character.’*** The magnitude of change is considered to be high within the Site, however, the magnitude of change rapidly

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<sup>1</sup> Glossary, Page 157, GLVIA 3<sup>rd</sup> Edition

diminishes to low or negligible beyond the Site boundaries due to the visual screening provided by landform, woodland and hedgerows.

7.9. With a low sensitivity and a high magnitude of change, the proposed development would result in moderate effects in the Afon Llan and surrounds SWNSVS700 and to a lesser extent Gorseinon SWNSVS726. The green infrastructure enhancements (accounting for 67% of the Site area) including circa 3km of hedgerow, and circa 1.9ha tree planting, would on balance provide beneficial changes. The effect on landscape character would rapidly reduce to minor or negligible beyond the site boundaries due to the physical and visual containment provided by landform, woodland, and hedgerows containing the solar PV development.

7.10. The effect on landscape character within Site would be reversible on decommissioning of the proposed development.

7.11. The summary of effects on landscape character in overall terms are shown in **Table 3**.

**Table 3: Summary of potential effects on LANDMAP Aspect Areas**

Aspect Layer	Value	Susceptibility	Sensitivity	Magnitude of change	Likely Effects
Geological Landscape: Penllergaer SWNSGLO33	High	High	High	Negligible	Negligible
Geological Landscape: Loughor, Lliw SWNSGLO31	Medium	Medium	Medium	Negligible	Negligible
Landscape Habitats: Mynydd Garn Coch SWNSLH221	Medium	Medium	Medium	Low	Minor
Landscape Habitats: Between Gorseinon and Gowerton SWNSLH779	Medium	Medium	Medium	Low	Minor
Historic Landscape:	Unassessed	Unassessed	Unassessed	Negligible	Negligible

Lower Loughor and Lliw Valleys SWNSHL571-H22					
Cultural Landscape: Afon Llan and surrounds SWNSCLS085	Low	Low	Low	Low	Minor
Cultural Landscape: Gorseinon SWNSCLS086	Low	Low	Low	Low	Minor
Visual and Sensory: Afon Llan and surrounds SWNSVS700	Low	Low	Low	High	Moderate
Visual and Sensory: Gorseinon SWNSVS726	Low	Low	Low	High	Moderate



## 8. Potential Effects on Landscape Elements

- 8.1. The effects on landscape elements are limited to within the boundaries of the Site and include the direct physical change to the fabric of the land such as the removal of site topography, woodland, hedgerows, trees, or pastoral grassland to allow for access tracks, underground cabling, grid connections, sub stations, solar arrays, or security (deer) fencing, CCTV or camera equipment as outlined within the previous construction section. Green infrastructure proposals account for 62.1% of the proposed development and provide beneficial enhancement to the vegetation, field structure and land use.

### Site Topography

- 8.2. The prevailing contours within Site reflect the sloping, undulating and flat topography of the Afon Llan. The varying topography of the Afon Llan Valley is of high value and susceptibility due to the contribution this landscape element makes to the character of the LANDMAP aspect areas. The overall sensitivity of the Site topography is high.
- 8.3. The prevailing contours of the Site would remain largely unchanged by the proposed development except at the local level required for the provision of access tracks, sub stations and grid connection trenching. The access tracks would mostly follow the prevailing contours of the Site to avoid any unnecessary ground engineering or 'cut and fill'. Localised trenching would be required for the grid connections and cabling routes. The underground cabling routes will generally follow the edges of existing and proposed access tracks and pass through farm gate openings although a small number of hedgerow breaches would be required. The trenches would be backfilled to ground level and any hedgerow loss would be made good at the limited number of crossing points. On balance, the magnitude of change is low. With a high sensitivity and low magnitude of change, the proposed development would result in a moderate adverse effect on site topography.

### Woodlands, Hedgerows and Trees

- 8.4. New tree planting across 1.9ha and 3km of new hedgerows are proposed.
- 8.5. The proposed development would seek to minimise any loss of existing woodland, hedgerows, or mature trees during the construction stages. A limited number of gateway widening and very minor hedgerow breaches would be required to allow for the implementation of the access tracks and security fencing. The proposed security fencing, solar panels, substation, and grid connection route have generally been located away from woodland, hedgerows and trees as far as possible to ensure their retention within the Site as shown in **Appendix 3**.
- 8.6. Woodlands, hedgerows, and trees within the Site are generally considered to be of high value, susceptibility, and overall sensitivity due to the contribution these landscape elements make to the character of the LANDMAP aspect areas. The proposed development would require the limited removal of hedgerows to allow for the access tracks and security. This hedgerow removal is limited in comparison to the retained hedgerow resource and proposed 3km of new hedgerow (including replacing the historic hedgerow line along PRow LC26) within the Site. The green infrastructure proposals include 1.9ha of new tree planting to extend wooded areas.



- 8.7. The Arboricultural Impact Assessment (Barton Hyett, December 2023) (AIA) states that ***“The proposed solar farm development will not require the complete removal of any significant trees, groups or hedgerows.”*** Details of vegetation removal can be found within the AIA and is not repeated in this report. The AIA concludes ***“The proposed new tree planting will enhance the existing tree stock and help further improve the habitat value of the site.”***
- 8.8. The Landscape Strategy Plan at **Appendix 3** shows that extensive green infrastructure accounting for 62.1% of the Site area would on balance provide beneficial changes. The effect on landscape character would rapidly reduce to minor or negligible beyond the Site boundaries due to the physical and visual containment provided by landform, woodland, and hedgerows containing the solar PV development.
- 8.9. Planting to reconnect hedgerow corridors and habitats, would be introduced to limit any potential views of the solar panels. The proposed hedgerow reinforcements are intended to compensate for any unavoidable losses and to enhance the visual screening of the proposed development. These would result in an overall net gain of the Site’s hedgerow resource (proposed hedgerow circa 3km, tree planting circa 1.9ha). The existing hedgerows would be managed to improve the visual screening and to enhance species diversity, age structure, health and long-term contribution to the character of the Site as detailed at **Appendix 3** Landscape Strategy Plan. On balance of the net losses and gains, the magnitude of change would be low.
- 8.10. With a high sensitivity and low magnitude of change, the proposed development results in a moderate beneficial effect on the woodland, hedgerows, and trees within the Site.

#### **Pastoral Grassland**

- 8.11. The Site is currently pastoral farmland generally used for cattle grazing. Pastoral farmland is of low susceptibility and of medium value due to the commonality of this landscape element within the LANDMAP aspect area. The overall sensitivity of the pastoral grassland is therefore considered to be medium.
- 8.12. The proposed development would change the perception of the primary land use from pastoral grassland to a solar farm within the Site. However, the pastoral grassland would not be removed, and the agricultural land use would be retained through sheep grazing beneath the solar arrays. The magnitude of change is considered to be medium due to the perceived change in land use albeit with sheep grazing retained beneath the solar panels.
- 8.13. With a medium sensitivity and medium magnitude of change, the proposed development would result in a moderate beneficial effect on pastoral grassland and the perceived primary agricultural land use within the Site. Following the decommissioning of the proposed development, the effect on the pastoral farmland and agricultural land use would be reversible.
- 8.14. The summary of effects on landscape elements within the Site are shown in Table 4.



**Table 4: Summary of potential effects on Landscape Elements**

<b>Landscape Elements</b>	<b>Value</b>	<b>Suscept- ibility</b>	<b>Sensitivity</b>	<b>Magnitude of change</b>	<b>Likely Effects</b>
Site Topography	High	High	High	Low	Moderate adverse
Woodland, Hedgerows and Trees	High	High	High	Low	Moderate beneficial
Pastoral Grassland	Medium	Low	Medium	Medium	Moderate beneficial



## 9. Potential Effects on Visual Receptors

9.1. The Site visits established that the landscape framework that surrounds the Site screens and controls views. It also confirmed that the proposed development would not be visible from most of the visual receptors associated with the local landscape. A set of 22 Viewpoints (**Appendix 2**) have been selected to inform this LVIA and are based on the earlier consultation and resulting work prepared as part of the Screening Direction. Photomontage (**Appendix 4**) have been produced for Viewpoints 1, 4, 5, 6, 13, 19, and 20 illustrating winter views as agreed during pre-app discussions.

### Visual Assessment

**Table 5: Assessment of likely effects on visual receptors**

Receptor / Viewpoint	Comments	Magnitude of change	Likely Effects
PRow users LC26 Within the Site (Viewpoint and Photomontage 1) <b>Sensitivity: High</b>	The solar panels and fencing would have a defining influence on the immediate openness of views from LC26 particularly to the east. The setting back of panels from the footpath, providing a wide space to pass along the route would help to retain long distance views south towards high ground as illustrated by the photomontage.  At year 15 with hedgerow mitigation measures proposed along the route along the western side (replacing a historic hedgerow line) screening the fencing and between blocks of panels to break up the potential perception of massing of panels, the effects would be reduced to the west.  The magnitude and resulting effects would be higher along the path in the north of the Site, where the elevation is higher, and views are wider ranging.	Year 1  High-medium	Year 1  Major
		Year 15  Medium-low	Year 15  Major to moderate
PRow users LC71 Within the Site (Viewpoint 2) <b>Sensitivity: High</b>	There would be some change to views along LC71. Exclusion of panels within the immediate field retains the open views southwest. Existing vegetation between the path and proposed panels to the west would provide a good level of screening, particularly during summer months. The existing hedgerow along the eastern side of the path provides dense screening in the immediate view.	Year 1  Low	Year 1  Moderate
		Year 15  Low-negligible	Year 15  Moderate-Negligible

	At year 15 with enhanced hedgerow planting and allowing to mature to 3m+ will provide further screening where there are gaps.		
PRow users LC72 Close to the Site (Viewpoint 3) <b>Sensitivity: High</b>	There may be some change to views along LC72. Panels would be offset from the Site boundary and would sit beyond the skyline. Only a small part (southern edge) of the proposed development would be visible. Receptors moving broadly east-west along the path at a lower elevation would experience an oblique view.  The proposed hedgerow planting along the southern edge of the Site would reduce any available views at year 15.	Year 1 Low	Year 1 Moderate
		Year 15 Low-negligible	Year 15 Moderate-Negligible
PRow users LC101 Close to the Site (Viewpoint and Photomontage 4) <b>Sensitivity: High</b>	Solar panels within the southern field would be clearly visible due to there being no existing hedgerow along the Site boundary within this field. The panels at close range would have a defining influence on the overall view at year 1 despite the presence of existing pylons.  At year 15 a proposed hedgerow boundary would provide a good level of screening reducing the effects to the northwest, however due to the slope, the very tops of the panels may still be visible.	Year 1 High	Year 1 Major
		Year 15 Low	Year 15 Moderate
PRow users CO600 Viewpoints 5 and 6 (Viewpoints and Photomontage 5 and 6) <b>Sensitivity: High</b>	When moving east along PRow CO600 views will remain open across the river valley floor. There would be glimpsed views between hedgerows and hedgerow trees of the solar panels on the sloping fields of the Site.  At year 15 proposed hedgerow boundaries will mature to provide a good level of screening reducing the effects slightly. The view would remain open	Year 1 Medium	Year 1 Major
		Year 15 Low	Year 15 Moderate
Gower Way footpath (Viewpoints 7-10) <b>Sensitivity: High</b>	The Site is not visible. There would be no change to the view.	Year 1 No change	Year 1 No effect
		Year 15	Year 15

		No change	No effect
A484, near Safford Common (Viewpoint 11)  <b>Sensitivity:</b> Medium	There may be some change which is appreciable. The glimpsed, partial, and transient view would be experienced by traffic moving northeast at speed. The setting back of panels from properties along Swansea Road, provides a visual buffer to properties, containing the panels to the south. Existing vegetation along the A484 provides mature screening of this parcel of the Site save the gap illustrated in the viewpoint.  At year 15 the enhanced boundary vegetation will continue the existing vegetation around the southeast edge of the Site, further screening any available view.	Year 1  Low	Year 1  Minor
		Year 15  Low-negligible	Year 15  Minor-Negligible
Access Road to Penyfodau Fawr (Viewpoint 12)  <b>Sensitivity:</b> High	The solar panels and fencing would have a defining influence on the view from the access track and farm. The setting back of panels from the track, providing a wide space to pass along the route would help to retain views south towards high ground.  At year 15 with tree planting around the entrance and hedgerow proposed along the route, screening the fencing, the effects would be reduced.	Year 1  High	Year 1  Major
		Year 15  Medium-low	Year 15  Major-Moderate
Swansea Road/A484 (Viewpoints 13-17, Photomontage 13)  <b>Sensitivity:</b> Medium	There would be some change to views experienced by motorists passing the proposed development moving along Swansea Road, the A484 and around the adjoining roundabout.  The magnitude of change to the sequential views along these roads would vary at year 1 depending on the level of existing boundary vegetation which provides a good level of screening in places.  Proposed woodland at the farm entrance, and enhanced boundary planting and management of existing hedgerows at a reasonable height would aim provide screening along the boundary by year 15 reducing the magnitude of change.	Year 1  Medium-low	Year 1  Moderate-Minor
		Year 15  Low-negligible	Year 15  Minor-negligible
Public Footpath LC28 near Bryn-Dafydd within	The Site is not visible. There would be no change to the view.	Year 1  No change	Year 1  No effect

<p>Penllergaer Common</p> <p>(Viewpoint 18)</p> <p><b>Sensitivity:</b> High</p>		<p>Year 15</p> <p>No change</p>	<p>Year 15</p> <p>No effect</p>
<p>Titanium Road, Waunarlwydd</p> <p>(Viewpoint and Photomontage 19)</p> <p><b>Sensitivity:</b> Medium</p>	<p>From this elevation lower than the proposed development the intervening vegetation along the valley floor will provide a good level of screening for most of the Site, particularly in summer months. There would be a change in the view that is clearly visible and forms an important but not defining element.</p> <p>By year 15 there would be little change in the view that is appreciable with few visual receptors affected.</p>	<p>Year 1</p> <p>Medium</p>	<p>Year 1</p> <p>Moderate</p>
<p>Junction of Heol Will George and Sardis Close</p> <p>(Viewpoint and Photomontage 20)</p> <p><b>Sensitivity:</b> High</p>	<p>There would be a change in the view in the distance beyond the immediate housing. The proposed development would not be a defining element in the view. From this elevation the proposed development would cover the partial view of fields sitting low in the surrounding landscape which rises beyond the Site and is a mix of housing and light industrial units, and Days Motors which sits prominently on the hill in white. The colour of the panels would be dark and recessive in the landscape.</p> <p>Views of most of the proposed development would be screened or considerably restricted by housing, the topography and existing vegetation.</p> <p>The availability of views of the Site would vary from properties along Will George and Sardis Close and other similar roads and limited to properties with a north facing aspect.</p> <p>By year 15 there would be little change in the view that is appreciable with few visual receptors affected.</p>	<p>Year 1</p> <p>Medium</p>	<p>Year 1</p> <p>Major</p>
<p>Public Footpath LC48, off Pont y Cob Road</p> <p>(Viewpoint 21)</p>	<p>The Site is not visible. There would be no change to the view.</p>	<p>Year 1</p> <p>No change</p>	<p>Year 1</p> <p>No effect</p>
		<p>Year 15</p>	<p>Year 15</p>

<b>Sensitivity: High</b>		No change	No effect
Wales Coast Path (Viewpoint 22) <b>Sensitivity: High</b>	The Site is not visible. There would be no change to the view.	Year 1	Year 1
		No change	No effect
		Year 15	Year 15
		No change	No effect

## Summary

### Swansea Road (B4620), A484 and Titanium Road.

- 9.2. The visibility of the proposed development from Swansea Road/A484 would be largely limited to the areas located in the northern fields, between Pen-y-fodau-fawr and Days Motors. The rest of the Site sits on the sloping landform beyond and development within most fields is unlikely to be visible. The sloping topography dropping down from Days Motors towards the farm combined with low managed hedgerows and the gateway entrance to the farm provide a view of this part of the Site. The tree belt proposed to be planted within the field parallel to the Swansea Road would screen views from passing vehicles towards the proposed arrays. From Titanium Road at an elevation lower than the proposed development, the intervening vegetation along the valley floor will provide a good level of screening for most of the Site, particularly in summer months. Although some parts of the proposed development would be visible it is important to reiterate that at such distance, fencing, and other ancillary infrastructure, would form a very small and inconspicuous element in these composite views. The effects on road users would be moderate at most.

### Residential areas of Gorseinon, Gowerton and Waunarlwydd.

- 9.3. There would be limited to no effects on most residential receptors due to factors such as orientation, intervening landform, built form and vegetation. There are likely major effects at year 1 and 15 on residential receptors on high ground Waunarlwydd (Viewpoint 20, Junction of Heol Will George and Sardis Close).

### Properties adjacent to the Site (including Penyfodau Fawr Farm).

- 9.4. Access to private properties was not gained, as part of the on-site assessment. Opportunities to view the Site from properties close to the Site are generally limited. Based on the location of some of the properties, however, their orientation, number of storeys, and the nature and character of their curtilage, it is predicted that major visual effects may occur at Pen-y-fodau-fawr Farm, and properties along Swansea Road (B4560) overlooking the eastern corner of the proposed development. Once the proposed mitigation measures have matured, it is predicted that the proposed hedgerow and tree planting would help to mitigate against these effects, reducing them by year 15.

### PRoW within and close to the Site (LC101, LC26, LC71, LC72 and CO600).

- 9.5. Considering the intervening boundary vegetation and low-lying profile of the Proposed Development it is assessed that views from the surrounding network of PRoW would be



considerably screened and visual effects would not be adverse. Views from small sections of the PRow footpaths which cross or are close to the Site including LC26 (Viewpoint 1) which runs south from Swansea Road (B4560), west of Days Motors to the Afon Llan would be subject to adverse visual effects due to the proposed developments proximity causing a high magnitude of change to existing views at year 1.

#### **Statutory Access land north and west of the Site**

- 9.6. The glimpsed, partial, and transient view would be experienced by traffic moving northeast at speed through Stafford Common. The setting back of panels from properties along Swansea Road, provides a visual buffer to properties, containing the panels to the south. Existing vegetation along the A484 provides mature screening of this parcel. Effects would be moderate at most.

#### **Long distance footpath users (Wales Coast Path and the Gower Way)**

- 9.7. There would be no adverse effects on long distance footpath users (Wales Coast Path and the Gower Way) due to a combination of distance and intervening vegetation and built form.

## 10. Review of the Green Wedge

- 10.1. The following provides a review of the Green Wedge Policy ER3 and PPW11 Green Wedge policies in relation to the proposed development and potential effects on the perception of openness and settlement separation.
- 10.2. In relation to PPW11 Green Wedge (paragraph 3.77), renewable and low carbon energy generation may be appropriate in the green belt or green wedge if it preserves its openness and does not conflict with the purpose of the designation.

### Policy ER 3: Green Wedges

- 10.3. Swansea Local Development Plan 2010–2025 (SLDP) states:

***Green Wedges are allocated between the following settlements:***

- i. Birchgrove and Glais***
- ii. Bishopston and Newton***
- iii. Dunvant and Three Crosses***
- iv. Gowerton/Waunarlwydd and Dunvant v. Penclawdd and Blue Anchor***
- vi. Penllergaer and Pontlliw***
- vii. Penllergaer/Kingsbridge and Gowerton/Waunarlwydd/ Fforestfach***
- viii. Penyrheol and Grovesend***

***Within the designated Green Wedge areas development will only be permitted if it maintains the openness and character of the land, unless the development is for acceptable purposes, as outlined in national policy relating to Green Wedge designations.***

- 10.4. The Site is within 'Penllergaer/ Kingsbridge and Gowerton/ Waunarlwydd/ Fforestfach' Green Wedge (GW) (see **Figure 3: Environmental Designations Plan**). Paragraph 2.2.5 of the SLDP states that (underlined text is author's emphasis):

***“Green Wedges are designated on those parts of the countryside that are considered to act as buffers between settlements and prevent settlement coalescence in areas that are under pressure for development. Within these areas safeguarding the openness of the land is essential to maintain distinct settlements and safeguard their separate identities. Whilst there are additional Plan policies which seek to control development in the countryside, it is important to give extra protection to vulnerable areas of countryside between settlements and protect their openness. The settlement boundaries and Green Wedges will work in conjunction to strategically manage future built form and settlement edges. They will assist in safeguarding the countryside from encroachment, protect the setting for the urban area and help facilitate urban regeneration by encouraging the re-use of derelict and other urban land.”***

- 10.5. The VSC are explained in detail within the Planning Statement. As stated within the Planning Statement, habitat retention, creation and enhancement measures are designed to increase the extent and quality of habitat on key corridors within and through the site. These measures will strengthen habitat connectivity through the site, including creation of buffer zones. This will include native wildflower seeding/green hay from a donor site (likely to be from retained habitat to the south) and alteration of grassland management to extend and enhance priority habitat providing environmental gains.
- 10.6. From the edge of nearby settlements such as Gorseinon to the northwest of the GW, the Site is not visible when looking southeast towards it due to a combination of intervening roads, roundabout and intervening vegetation, and topography which falls towards the Afon Llan. The proposals would, therefore, not have any bearing on the perception of openness of the GW or coalescence of settlements. Views from surrounding residential areas are reviewed in more detail in Table 6.
- 10.7. The GW provides a sense of separation between the surrounding settlements. The proposed development has a low visual profile in terms of built form and is low key in visual terms. With the proposals including the design of disparate parcels of PV arrays distributed amongst the 62.1% of the site's green infrastructure proposed elements in place the sense of openness will remain; the scheme having no bearing on the sense of separation provided by valley landscape within the GW. The sense of openness and separation between Gorseinon, Gowerton, Waunarlwydd and Swansea and surrounding settlements would prevail.
- 10.8. Paragraph 2.9.17 of SLDP states that:
- “Whilst there are other policies in the Plan to control development in the countryside, it is considered important to give extra protection to the Green Wedge designated areas to safeguard the openness of the land. Openness is an absence of built form, regardless of how inconspicuous or well screened a development is in the countryside. Protecting openness will ensure that the Green Wedge areas remain effective at preventing settlement coalescence.”***
- 10.9. In terms of harm to the openness of the GW, the following is noted. Openness relates to the lack of development being present. Technically any built development including even hard surfaces such as a road impinges on openness and technically harms openness as it is built development which was not there previously. However, recent case law such as the ‘R v North Yorkshire County Council (February 2020)’ has recognised that there is a visual dimension associated with openness as the sense of openness is most readily appreciated by people’s visual senses, i.e., visibility. If something is not visible, it cannot be readily appreciated nor perceived to be having any affect upon the sense of openness, i.e., the undeveloped land that characterises the GW.
- 10.10. In this instance, the proposed development would have a low visual profile given the topography, vegetation and built form which surrounds it and the proposed 62.1% GI. Therefore, as it is not readily visible, the perception that countryside remains free of built form would remain and prevail, even with the scheme in place. As such, the proposed scheme would not cause substantial harm to the openness of the GW.
- 10.11. Another example of recent case law is R (on the application of Liverpool Open and Green Spaces Community Interest Co) v Liverpool City Council 2020EWCA Civ 861 considered local green wedge policy. Giving guidance for the future, a CoA judge said: *“What is required*





*is a realistic assessment of the impact that this development, on this site, and in its own surroundings, will have on the predominantly open character of the green wedge."*

10.12. Paragraph 2.9.18 of SLDP states that:

***"Planning Policy Wales<sup>45</sup> provides specific guidance on the consideration of planning applications within Green Wedge designated areas. It emphasises the importance of maintaining the openness of the land, provides a presumption against development inappropriate to the purposes of the Green Wedge designation and outlines the very exceptional circumstances when development could be acceptable. These include development for the following purposes:***

- ***Justified rural enterprise needs;***
- ***Essential facilities for outdoor sport and outdoor recreation, cemeteries, and other uses of land which maintain the openness of the Green Wedge and which do not conflict with the purpose of including land within it;***
- ***Limited extension, alteration or replacement of existing dwellings;***
- ***Small scale diversification within farm complexes where this is run as part of the farm business. In order to be acceptable, extension to or replacement of an existing dwelling in a Green Wedge should be of an appropriate scale, so as not to have a significant adverse effect on the openness of the land.***

***'Other uses of land and forms of development' that may be acceptable may include mineral extraction, engineering operations or local transport infrastructure."***

10.13. Paragraph 2.9.19 of SLDP states that:

***"When located in the Green Wedge, elements of many renewable energy projects will compromise the openness of the land and will be regarded as inappropriate. In order for renewable energy projects to be acceptable in the Green Wedge designated areas developers will need to demonstrate very special circumstances, such as greater benefits associated with increased energy from renewable sources. In order to be acceptable, these must outweigh the importance of maintaining the openness of the Green Wedge designated land and justify why such projects cannot be located in a less sensitive location. The reversible nature of some forms of renewable energy does not affect the impact of the proposal on the openness of the land whilst it is in place. The permanence of a renewable energy scheme will have no bearing on the inappropriateness or otherwise of the proposed development."***

10.14. The findings of this report provide an appraisal of the perceived openness. It is not believed that the openness of the GW will be compromised by the proposed development and therefore other beneficial aspects of the scheme would not need to outweigh the importance of openness which would prevail. Very Special Circumstances are discussed in the Planning Statement. More than half of the Site (62.1%) benefiting from the GI enhancements will help to retain the open landscape and the PV arrays will be separated by open meadows, new hedges, new tree planting as shown at **Appendix 3** Landscape Strategy Plan.

10.15. With regard to green infrastructure, paragraph 2.9.20 relates specifically to the GW within which the Site sits, and states that:

*“The Green Wedge designated areas are strategically important elements of the County’s Green Infrastructure network. In addition to the crucial role they play in preventing settlement coalescence these areas are multifunctional and provide wide ranging ecosystem services. In particular, the Green Wedge designated between Penllergaer/Kingsbridge and Gowerton/Waunarlwydd/Fforestfach is recognised as supporting locally rare and distinctive lowland landscape, that has the desired effect of separating the surrounding settlements. On this basis the land has also been designated a Special Landscape Area (SLA), a designation that will protect and enhance the landscape character of the area and complement its corresponding role as a Green Wedge. This area is also a vital link in the strategic ecological corridor that connects Gower to the wider countryside. In recognition of the additional benefits afforded by the Green Wedge designated areas, biodiversity, landscape, climate change mitigation and informal recreation enhancement measures will be encouraged as appropriate.”*

10.16. It is noted that within the SLA, the Council would seek to allow development where there is no significant adverse impact, including cumulative impact, on the character and quality of the landscape. The development should aim to protect and enhance the features for which the SLA has been designated. The reasoned justification Policy ER 5, at paragraph 2.9.37 of the Local Development Plan, identifies how one SLA area overlaps a strategic search area for wind. The development plan goes on to state how the requirements to meet national targets for renewable energy provision outweighs the importance of safeguarding the landscape of local significance. The same should therefore apply to his application proposal. As acknowledged by the development plan, the SLA designation will also serve to protect the landscape from potentially damaging permanent development to enable the full reinstatement of the special landscape quality, following the decommissioning of any energy generation development.

10.17. The proposals have been carefully designed to deliver a high-quality green infrastructure (measuring 51.54 hectares) including substantial areas of biodiversity enhancement, proposed planting around and retention of existing landscape elements. **As a result, the proposed development would cause no to minor material harm to landscape elements and character of the area and would not conflict with this aspect of the policy.**

**Table 6: Potential effects on the Green Wedge designation**

Viewpoint	Location in relation to the Green Wedge (GW)	Potential effects on perception of GW openness on completion
Viewpoint and Photomontage 1  Public Footpath LC26 near Pen-y-forau faw r Farm	Within the GW, looking south across the Afon Llan valley, beyond the GW. Views are open.	The solar panels and associated fencing would have a defining influence on the immediate openness of views from PRow LC26. The setting back of panels from the footpath, providing a wide space to pass along the route will retain the open, long-distance view south

		towards high ground and settlement (Gowerton and Waunarlwydd). There would be no change to perception of settlement separation.
Viewpoint 2 Public Footpath LC71 near Cae-newydd	Within the GW, looking south to west across the Afon Llan valley, beyond the GW. Views are open.	Existing vegetation will screen the proposed solar arrays whilst the conserved Rhos grassland would remain open in views. There would be no change to perception of openness of the land or settlement separation.
Viewpoint 3 Public Footpath LC72 near Caer'r-bont	Within the GW, north of the Afon Llan, looking north across the GW. Views are restricted by the slope.	No change to perception of openness of the land or settlement separation.
Viewpoint and Photomontage 4 Public Footpath LC101 near the electricity sub station	Within the GW, north of the Afon Llan, looking north across the GW. Views are restricted by the slope.	No change to perception of openness of the land or settlement separation.
Viewpoint and Photomontage 5 Public Footpath CO600 near Afon Llan	Within the GW, south of the Afon Llan, looking northwest across the GW. Vegetation prevents an open view.	No change to perception of openness of the land or settlement separation.
Viewpoint and Photomontage 6 Public Footpath CO600 near Fairwood Terrace, Gowerton	Within the GW, north of the Afon Llan, looking northwest across the GW.	The solar panels and associated fencing would not have a defining influence on the immediate openness of views from PRow CO600. The setting back of panels to the sloping land of the Site from the footpath which runs along the valley floor will retain the open, long-distance view east towards high ground and Fforestfach.  No change to perception of settlement separation.

Viewpoint 7 Gower Way footpath Fairwood Terrace	Within the GW looking southeast, views enclosed by vegetation along the footpath.	No change to perception of openness of the land or settlement separation.
Viewpoint 8 Gower Way footpath	Within the GW looking southeast, views enclosed by vegetation along the footpath.	No change to perception of openness of the land or settlement separation.
Viewpoint 9 Gower Way footpath, south of Stafford Common	Within the GW looking southeast, views enclosed by vegetation along the footpath.	No change to perception of openness of the land or settlement separation.
Viewpoint 10 Gower Way footpath, north of Stafford Common	Within the GW looking southeast, views enclosed by vegetation along the footpath.	No change to perception of openness of the land or settlement separation.
Viewpoint 11 A484, near Safford Common	Within the GW looking northeast across the A484. Open views across the GW are curtailed by traffic, vegetation, and built form beyond.	No change to perception of openness of the land or settlement separation.
Viewpoint 12 Access Road to Penyfodau Fawr Farm	Within the GW looking south. Topography drops away into the Afon Llan valley which is not visible. Waunarlwydd on high ground beyond the GW visible. The view of the GW is not open across it.	There would be an immediate view of the proposed development. There is a restricted view beyond the GW to high ground around Days Motors which would be replaced by the panels.  No change to perception of settlement separation.
Viewpoint and Photomontage 13 Roundabout, Swansea Road/A484	On the edge of the GW looking south towards the Afon Llan Valley, open views are curtailed by traffic, roadside vegetation, and the topography beyond.	No change to perception of openness of the land or settlement separation.
Viewpoint 14 Roundabout, Swansea Road/A484	On the edge of the GW looking south towards the Afon Llan Valley, open views are curtailed	No change to perception of openness of the land or settlement separation.

	by traffic, roadside vegetation, and the topography beyond.	
Viewpoint 15 Roundabout, Swansea Road/A484	On the edge of the GW looking south towards the Afon Llan Valley, open views are curtailed by traffic, roadside vegetation, and the topography beyond.	No change to perception of openness of the land or settlement separation.
Viewpoint 16 Swansea Road	Within the GW, looking south across Swansea Road, views across the Afon Llan valley are partially curtailed by intervening hedgerow and built form. There is no perception of the openness of the GW. The settlement of Waunarlwydd is visible beyond the Site.	The proposed development would not be visible, there would be no change to perception of openness of the land or settlement separation.
Viewpoint 17 Swansea Road	Falls outside to the east of the GW, looking south across Swansea Road. Views are curtailed by roadside vegetation.	No change to perception of openness of the land or settlement separation.
Viewpoint 18 Public Footpath LC28 near Bryn-Dafydd within Penllergaer Common	Within the GW, looking south across Penllergaer Common.	No change to perception of openness of the land or settlement separation.
Viewpoint and Photomontage 19 Titanium Road, Waunarlwydd	Falls outside to the south of the GW, looking north across the Afon Llan valley and open landscape to the west. Views of the wider wedge are obscured by landform and vegetation.	No change to perception of openness of the land or settlement separation from the open edge of Fforestfach to the west.
Viewpoint and Photomontage 20 Junction of Heol Will George and Sardis Close	Falls outside to the south of the GW. The view north across the GW is restricted by intervening houses. Settlement is visible in the distance.	The view is restricted by housing towards the GW, therefore the openness of the view would not be altered.  The nature of the development, sitting low in the landscape, would not cause a perception of coalescence between Waunarlwydd and settlement in the distance.

Viewpoint 21 Public Footpath LC48, off Pont y Cob Road	Falls outside to the west of the GW. Looking east views are obscured towards the GW by built form.	No change to perception of openness of the land or settlement separation.
Viewpoint 22 Wales Coast Path	Falls outside to the west of the GW. Looking east views are obscured towards the GW by vegetation.	No change to perception of openness of the land or settlement separation.

- 10.18. The current perception of the GW and its intervisibility with surrounding settlements is not devoid of detractors such as built form, main roads, pylons, and industry. The proposed development would have a low visual profile given the topography, vegetation and built form which surrounds it. Therefore, as it is not readily visible, the perception of the countryside would remain and prevail, even with the proposed development in place.
- 10.19. Of the viewpoints assessed the majority of receptors would experience no change to the perception of openness of the land or settlement separation. A change to perceived openness of the GW would be experienced from small sections of PRow LC26 within the Site and access road to Penyfodau Fawr.
- 10.20. Views out from PRow LC26 within the Site (Viewpoint 1) are open, long ranging looking south towards high ground across the valley landscape. Existing hedgerows and undulating landform, provide a good level of screening to the southeast. Views across the Afon Llan include detractors such as pylons and Westfield Industrial Park. Settlement at Waunarlywydd and Gowerton sit against the higher ground beyond the open views.
- 10.21. The solar panels and associated fencing and structures would have a defining influence on the immediate openness of views from PRow LC26 (Viewpoint 1) which runs north to south through the centre of the Site, however the setting back of panels from the footpath, providing a wide space to pass along the route will help to retain long distance views south towards high ground.
- 10.22. From the access road to Penyfodau Fawr Farm there would be an immediate view of the proposed development. There is a restricted view beyond the GW to high ground which would be replaced by the panels. The proposed development would alter the immediate openness of the GW from the access track, experienced by a limited number of receptors.

#### **ER5 Landscape Protection**

- 10.23. The Site falls within 'Garngoch and Lower Afon Llan Valley' Special Landscape Area (SLA) (see **Figure 3**). The policy aims to ensure that the character and quality of the County's landscapes is protected from inappropriate development.

***"Development will not be permitted that would have a significant adverse effect on the character and quality of the landscape and setting of the County. Priority will be given to protecting enhancing and managing the character and quality of the following Special Landscape Areas (SLAs)."***

*"In exceptional circumstances, where development is necessary and could result in a significant landscape impact, a landscaping scheme will also be required, and appropriate mitigation and enhancement measures should be provided."*

*"The development should aim to protect and enhance the features for which the SLA has been designated."*

*"In order to be acceptable, wherever possible, development within an SLA should retain and enhance the positive attributes of its landscape and seek to remove or mitigate any negative influences. In order to achieve this the design, scale and location of development should respect the special landscape context."*

*"For most development to integrate successfully into its surroundings implementation of a landscaping scheme will be required."*

- 10.24. As set out in this LVIA, the proposed development is not expected to have a significant effect (in LVIA terms) on the character and quality of the landscape and its setting. A detailed mitigation plan of landscape and ecological enhancement measures can be found at **Appendix 3: Landscape Strategy Plan**. Landscape measures include retention of the Rhos grassland, enhancement and offsets from existing boundary trees and hedgerows (managed to approx. 3m height where appropriate), wooded areas (areas of ancient woodland), and riparian vegetation along the Afon Llan. Proposals for additional hedgerows include 3km of hedgerow, and circa 1.9ha tree planting, alongside open areas of species-rich grassland, both to re-establish wildlife corridors whilst ensuring minimal 'massing' of arrays.

## **Potential Effects on Perception of Openness and Settlement Separation**

- 10.25. The Site lies within the Afon Llan Valley, an area of agricultural fields with hedgerow field boundaries but has a distinct urban edge character with visual detractors including a sewage works, roads, pylons factories and urban areas.
- 10.26. Table 6 takes into account the perception of openness of the GW and potential coalescence of surrounding settlements from the various receptors previously identified within this report, based on Viewpoints found at **Appendix 2**.

## **Summary**

- 10.27. More than half of the proposed development (62.1%) 51.54 hectares will form the green infrastructure across the Site. There are several public rights of way in the locality including within the Site. Where these exist, their lengths tend to be flanked by mature hedgerows and tree cover and as such, the opportunity to observe views across the surrounding valley landscape and proposed development is limited. Few PRow users would be visually affected by the proposed development due to the screening effect of landform in combination with hedgerow cover and woodland located in the Site and intervening landscape.
- 10.28. There are several public highways in the locality of the Site. However, in general there would be virtually no opportunity to observe the proposed development from local public highways including Swansea Road and A484.



- 10.29. Recent case law such as the 'R v North Yorkshire County Council (February 2020)' has recognised that there is a visual dimension associated with openness as the sense of openness is most readily appreciated by people's visual senses, i.e., visibility. If something is not visible, it cannot be readily appreciated nor perceived to be having any affect upon the sense of openness, i.e., the undeveloped land that characterises the GW. In this instance, the proposed development would have a low visual profile given the topography, vegetation and built form which surrounds it. The general perception of the gap and its openness would remain when experienced passing between surrounding settlements such as Gorseinon, Gowerton, Waunarlwydd, Fforestfach and Swansea. ***There is a strong sense of physical separation and perceived visual separation between these settlements which would continue to prevail with the proposed development and landscape framework in place.***
- 10.30. The proposals are appropriately sited and designed to minimise potential impacts on the openness of the land of the GW. The LEMP (which accompanies the application) and Landscape Strategy Plan (**Appendix 3**), illustrate and detail the benefits of the 51.54 hectares of open GI. ***This report concludes that in landscape and visual terms the proposed development is considered appropriate within the surrounding landscape and would not materially change the separation between settlements and would be in accordance with the local policy designation.***
- 10.31. In conclusion, from a landscape and visual perspective, the Site is in a sustainable location contiguous with the surrounding valley landscape. The Site exhibits slopes and hedgerows across much of the area which provide the opportunity for interest and screening to the arrangement of panels but does not present a material constraint to the proposed development. Furthermore, the Site benefits from physical and visual containment particularly to the north, east and west due to its topography and existing vegetation.
- 10.32. The current perception of the GW and its intervisibility with surrounding settlements is not devoid of detractors such as built form, main roads, pylons, and industry. The proposed development would have a low visual profile given the topography, vegetation and built form which surrounds it. Therefore, as it is not readily visible, the perception of the countryside would remain and prevail, even with the proposed development in place.
- 10.33. The sense of openness associated with the wider landscape as it forms the GW would remain unchanged with the proposed development in place and would have no bearing on the potential coalescence of settlements.
- 10.34. The proposed development prioritises conforming with the landscape and nature conservation designations by including designs for over 51.54 hectares of green infrastructure and wildlife habitat improvements across 62.1% of the fields; with the PV arrays, substation and battery compound only occupying 37.9% (around 31.46 hectares) of the Site. The landscape enhancements would remain beyond the 40 year lifespan, providing established vegetation and associated habitats. There would be no substantial harm to these defining attributes of the GW and SLA designations covering the Site.



## 11. Summary and Conclusion

- 11.1. The Landscape and Visual Impact Assessment (LVIA) assessed the effects of the proposed Green Infrastructure and PV facility on landscape elements, landscape character, and visual amenity on land fronting the A484 and Swansea Road (B4560) at Gowerton, Swansea known as Parc Solar Caenewydd.

### **Potential Effects on Landscape Character**

- 11.2. The landscape elements that constitute the character of the LANDMAP geological, habitats, historic or cultural aspect areas within the Site would generally remain physically unaffected by the proposed development. The effects on landscape character would therefore result from the visual influence of the solar arrays on the LANDMAP visual and sensory aspects including the Afon Llan and surrounds SWNSVS700 and to a lesser extent Gorseinon SWNSVS726 for both of which the magnitude of change rapidly diminishes beyond the Site boundaries due to the visual screening provided by landform, woodland and hedgerows containing the solar PV development.
- 11.3. The green infrastructure enhancements (accounting for 63% of the Site area) including circa 3km of hedgerow, and circa 4.75 acres tree planting, would on balance provide beneficial changes. Due to the limited visibility of the Site within the study area, the landscape character of the LANDMAP aspect areas would generally prevail with the proposed development in place.

### **Potential Effects on Landscape Elements**

- 11.4. The landscape elements that constitute the landscape character of the Site would remain largely unaffected by the proposed development. Site topography, field pattern and enclosure, woodlands, hedgerows, and trees would generally remain physically intact with the solar arrays and supporting infrastructure in place. Enhancements to landscape elements would be made in terms of the maintenance and infilling of hedgerows to enhance visual screening, species diversity, age structure, health, and the long-term contribution to the character of the Site.
- 11.5. New hedgerows are proposed to provide an overall net gain of the Site's hedgerow resource (proposed hedgerow circa 3km, tree planting circa 1.9ha). The existing hedgerows would be managed to improve the visual screening of the solar panels and security fencing, and to enhance the landscape character and biodiversity of the Site. Owing to the ease of removal of all the above ground structures, ground fixings and associated infrastructure, any effects upon landscape elements resulting from the proposed development are reversible with the land being returned to agricultural land use on decommissioning.

### **Potential Effects on Visual Amenity**

- 11.6. As described in the LANDMAP Aspect Area, the valley floor has Afon Llan flowing through it, with urban areas surrounding it, some being immediately adjacent. Pylons cross the area as do a number of roads with the A484 forming part of the northern boundary. Visual detractors within include a sewage works, roads, pylons. Factories and urban areas border it in places. There are some hedgerow field boundaries but the area has a distinct urban edge character. Change was in evidence in 2014 as expansion of Swansea edged into this area.

- 11.7. The ZTV for the Site reflects the undulating topography and tree cover and theoretical visibility which is generally contained by built form within 5km of the Site. The 'actual' visibility of the Site is less than illustrated in the ZTV mapping as demonstrated by the representative viewpoints. The reduced extent and pattern of visibility of the proposed development is due to the visual containment provided by the steeply rising topography and tree cover within the Afon Llan Valley and surrounding settlement. The entire Site is not intervisible with itself, and it is therefore not possible to view the entirety of it within a single field of view thus reducing the perceived scale of the proposed development in the wider landscape.
- 11.8. There would be limited to no effects on the majority of residential receptors due to factors such as orientation, intervening landform, built form and vegetation. There are likely major effects at year 1 on residential receptors on high ground Waunarlwydd (Viewpoint 20, Junction of Heol Will George and Sardis Close). Mitigation measures in place, such as new 3km of hedgerows and 1.9ha of tree planting to break up the series of panels along the visible slopes of the Site, would all help to reduce potential effects at year 15. to an acceptable level
- 11.9. Based on the location of some of the properties close to the Site, their orientation, number of storeys, and nature and character of their curtilage it is predicted that major visual effects may occur at Pen-y-fodau-fawr Farm (Viewpoint 12), and properties along Swansea Road (B4560) overlooking the eastern corner of the proposed development. Boundary mitigation measures have been proposed to help mitigate against these effects, reducing them by year 15.
- 11.10. Considering the intervening boundary vegetation and low-lying profile of the proposed development it is assessed that views from the surrounding network of PRoW would be considerably screened and visual effects would not be adverse. Views from small sections of the PRoW footpaths which cross the Site including LC26 (Viewpoint 1) which runs south from Swansea Road (B4560), west of Days Motors to the Afon Llan, would be subject to adverse visual effects due to the proposed developments proximity causing a high magnitude of change to existing views at year 1.
- 11.11. There would be no major effects on road users along Swansea Road/A484, Titanium Road, Statutory Access land users north and west of the Site, or long distance footpath users (Wales Coast Path and the Gower Way).

### **Policy Summary (Assessment of the Green Wedge Policy ER3)**

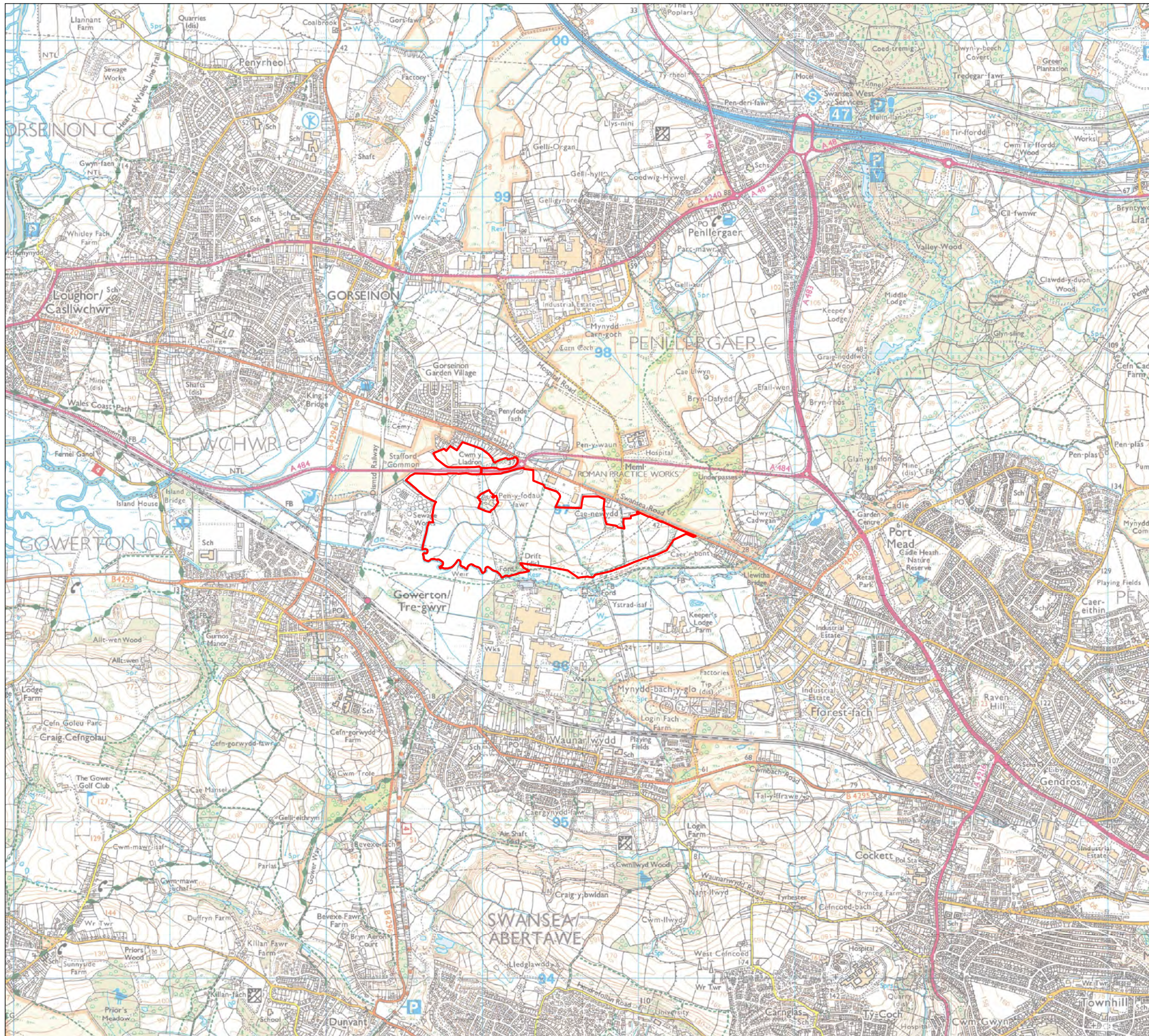
- 11.12. In relation to National Policy is set out within the Welsh Government's Planning Policy Wales, Edition 11 (PPW11), Paragraph 6.3.2 acknowledges varied and iconic Welsh landscapes, the character, and special qualities of which form designated AONBs. The Gower AONB (soon to be a National Landscape) is located approx. 3.4km from the Site and is a material consideration (**Figure 3: Environmental Designations Plan**). Following the Site visits and Screened Zone of Theoretical Visibility (**Figure 2: SZTV**) which shows no potential areas of visibility, it is assessed that there are no likely effects on visual receptors within the Gower AONB looking towards the Site or likely effects on the landscape character of the Gower AONB and its setting due to its distance from the Site.
- 11.13. In relation to PPW11 Green Wedge (paragraph 3.77), renewable and low carbon energy generation may be appropriate in the green belt or green wedge if it preserves its openness and does not conflict with the purpose of the designation.



- 11.14. The LVIA provides a review and assessment of LANDMAP aspect areas relevant to the Site at Section 4.
- 11.15. In relation to Future Wales Policy 18, Renewable and Low Carbon Energy Developments of National Significance, the Site is not within an AONB or National Park designation or other nationally or internationally recognised statutory designation. The LVIA provides a review and assessment of potential visual impacts including residents. Biodiversity net gain, heritage impacts, glint and glare, transport impacts and sustainability are covered elsewhere within the application.
- 11.16. With regard to Swansea LDP Policy ER5 a detailed mitigation plan of landscape and ecological enhancement measures can be found at **Appendix 3: Landscape Strategy Plan**. Landscape measures include retention of the Rhos grassland, enhancement and offsets from existing boundary trees and hedgerows (managed to approx. 3m height where appropriate), wooded areas (areas of ancient woodland), and riparian vegetation along the Afon Llan. Proposals for additional hedgerows includes 3km of hedgerow, and circa 1.9ha tree planting, alongside open areas of species-rich grassland, both to re-establish wildlife corridors whilst ensuring minimal 'massing' of arrays.
- 11.17. The Green Wedge performs in providing both physical and perceived visual separation due to the landscape context and disposition of settlements. With the proposed development in place, ***there would be no material change regarding this, its current position would maintain distinct settlements and safeguard their separate identities.*** The proposals would sit low in the landscape and retain the current landscape structure and would always be seen and appreciated in the context of a settlement fringe environment. The physical and visual separation would continue to remain and prevail with the proposed development in place (as shown at **Appendix 3 Landscape Strategy Plan**). ***Openness of the countryside would be protected within the landscape framework. The proposed development would act as a buffer between settlements and prevents potential settlement coalescence which housing development for example clearly does.***
- 11.18. More than half of the proposed development (62.1%) 51.54 hectares will form the green infrastructure across the Site. The proposed solar PV development would result in a degree of harm to the landscape character and visual amenity of the Site fronting the A484 and Swansea Road (B4560), yet pylons cross the area and visual detractors already include the sewage works and bordering factories and urban areas. However, the landscape and visual effects would be localised owing to the sloping landform of the Afon Llan valley, the surrounding built form, woodland and high sided hedgerows. The proposed development prioritises conforming with the landscape and nature conservation designations by including designs for over 51.54 hectares of green infrastructure and wildlife habitat improvements across 62.1% of the fields; with the PV arrays, substation and battery compound only occupying c.37.9% (around 31.46 hectares) of the Site. The landscape enhancements would remain beyond the 40 year lifespan (the proposal is temporary and reversible), providing established vegetation and associated habitats. For these reasons, the proposed development is not considered to materially conflict with planning policies set out within this report.



## Figure 1: Site Location Plan



**KEY**  
 Site Boundary

- Revisions:  
 First Issue- 27/10/2021 AD  
 A- 12/01/2022 AD Revised boundary  
 B- 11/03/2022 CR Revised project information  
 C- 27/04/2022 CR Revised boundary  
 D- 01/12/2022 NC Revised boundary  
 E- 14/03/2023 NC Revised boundary  
 F- 06/12/2023 EH Revised boundary

**Site Location Plan**

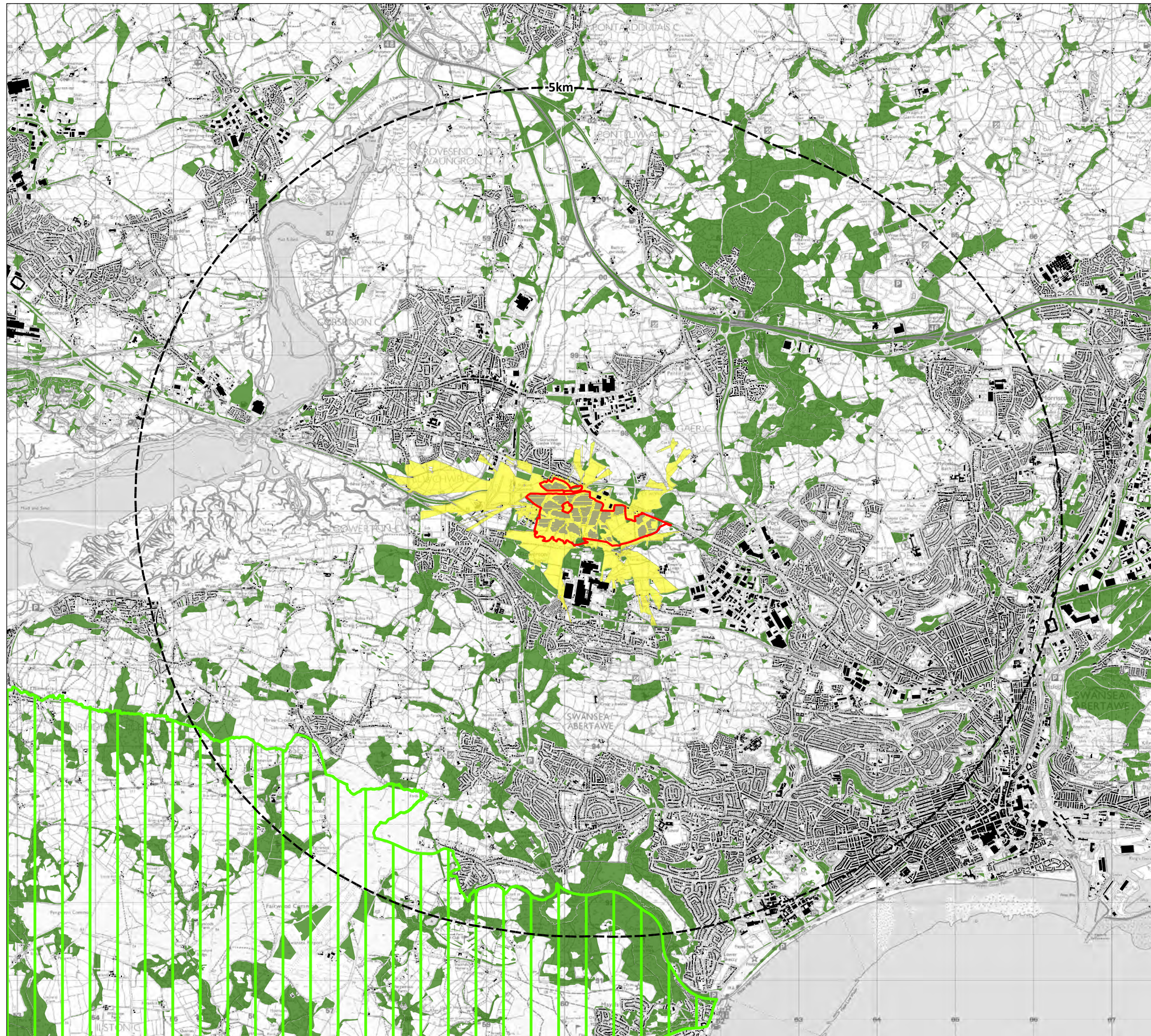
**Parc Solar Caenewydd**

Client: Taiyo Power and Storage Ltd  
 DRWG No: **P21-2998\_01** Sheet No: - REV: **F**  
 Drawn by: EH Approved by: KB  
 Date: 06/12/2023  
 Scale: 1:25,000 @ A3





## Figure 2: Screened Zone of Theoretical Visibility



- KEY**
- Site Boundary
  - PV Modules
  - Area of Outstanding Natural Beauty (AONB)
  - OS Open Map Local Buildings
  - OS Open Map Local Woodland
  - Screened Zone of Theoretical Visibility (3.5m Development Height)

Screened ZTV Production Information-

- DTM data used in calculations is OS Terrain 5 that has been combined with OS Open Map Local data for woodland and buildings to create a Digital Surface Model (DSM).
- Indicative woodland and building heights are modelled at 15m and 8m respectively.
- Viewer height set at 1.7m (in accordance with para 6.11 of GLVIA Third Edition)
- Calculations include earth curvature and light refraction

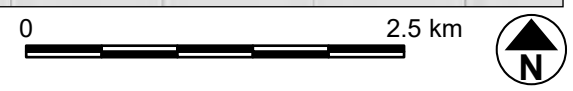
N.B. This Zone of Theoretical Visibility (ZTV) image illustrates the theoretical extent of where the development may be visible from, assuming 100% atmospheric visibility, and includes the screening effect from vegetation and buildings, based on the assumptions stated above.

- Revisions:
- First Issue- 27/10/2021 AD
  - A- 15/12/2021 AD Red line updated and re-run
  - B- 11/03/2022 CR Revised project information
  - C- 27/04/2022 CR Revised boundary
  - D- 01/12/2022 NC Revised boundary
  - E- 14/03/2023 NC Revised boundary
  - F- 06/12/2023 EH Revised boundary, SZTV re-ran using final layout

### Screened Zone of Theoretical Visibility

#### Parc Solar Caenewydd

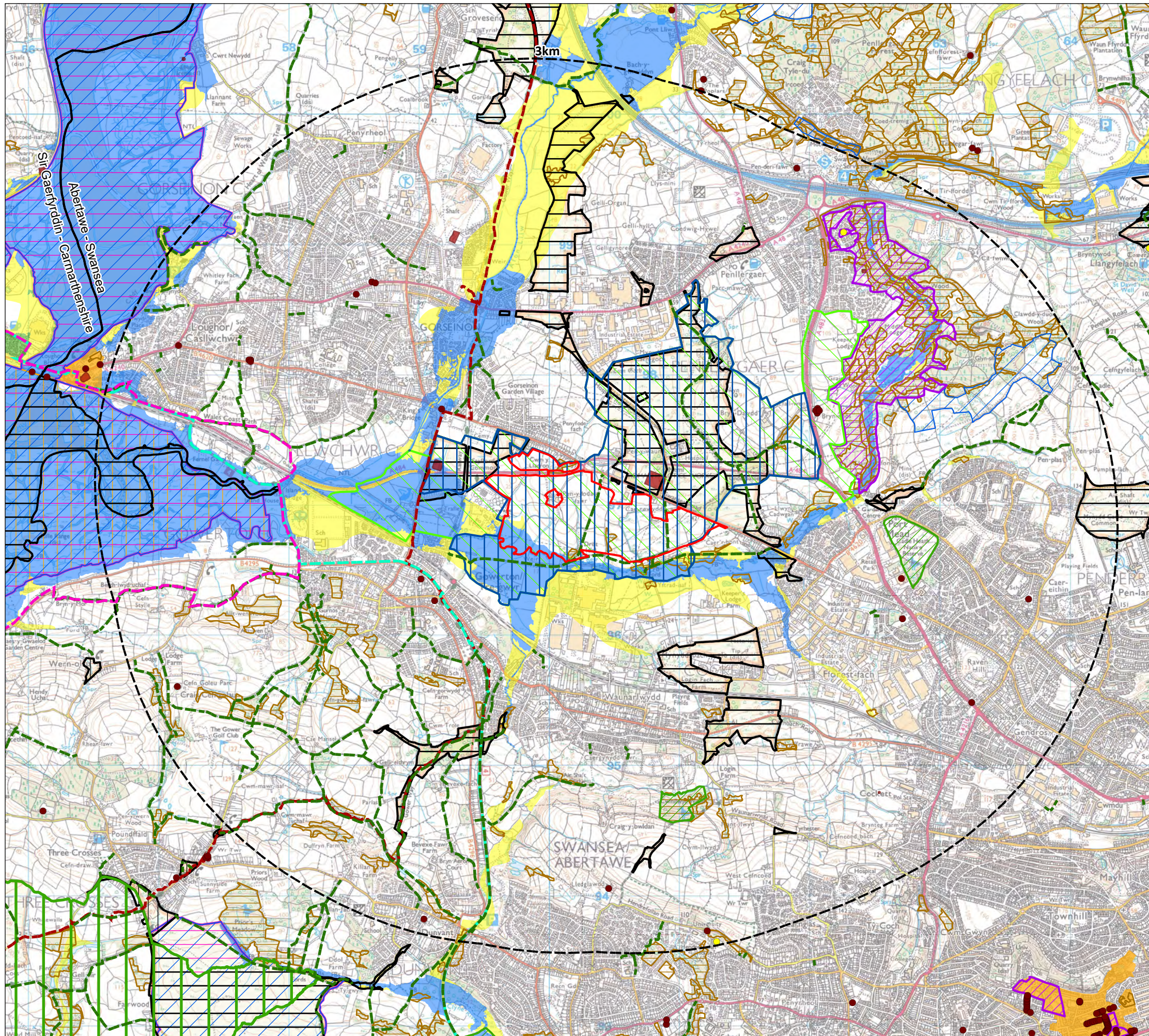
Client: Taiyo Power and Storage Ltd  
 DRWG No: **P21-2998\_03** Sheet No: - REV: **F**  
 Drawn by: EH Approved by: KB  
 Date: 06/12/2023  
 Scale: 1:50,000 @ A3





## Figure 3: Environmental Designations Plan





- KEY**
- Site Boundary
  - District Boundary
  - Grade II\* Listed Building
  - Grade II Listed Building
  - Wales Coast Path
  - Public Right of Way
  - Sustrans National Route
  - Gower Way Long Distance Route
  - Landscape Protection – Policy ER5  
Swansea LDP 2010 – 2025
  - Green Wedge – Policy ER3  
Swansea LDP 2010 – 2025
  - Area of Outstanding Natural Beauty (AONB)
  - Registered Common Land (RCL)
  - Statutory Access Land (SAL)
  - Scheduled Monument (SM)
  - Registered Park / Garden (RPG)
  - Site of Special Scientific Interest (SSSI)
  - Special Area of Conservation (SAC)
  - Special Protection Area (SPA)
  - Local Nature Reserve (LNR)
  - Ancient Woodland
  - Conservation Area
  - NRW Development Advice Map Zone B
  - NRW Development Advice Map Zone C1
  - NRW Development Advice Map Zone C2

Revisions:  
 First Issue- 27/10/2021 AD  
 A- 12/01/2022 AD Revised boundary  
 B- 11/03/2022 CR Revised project information  
 C- 27/04/2022 CR Revised boundary  
 D- 28/04/2022 CR Add Long Distance Route  
 E- 01/12/2022 NC Revised boundary  
 F- 14/03/2023 NC Revised boundary  
 G- 06/12/2023 EH Revised boundary

### Environmental Designations Plan

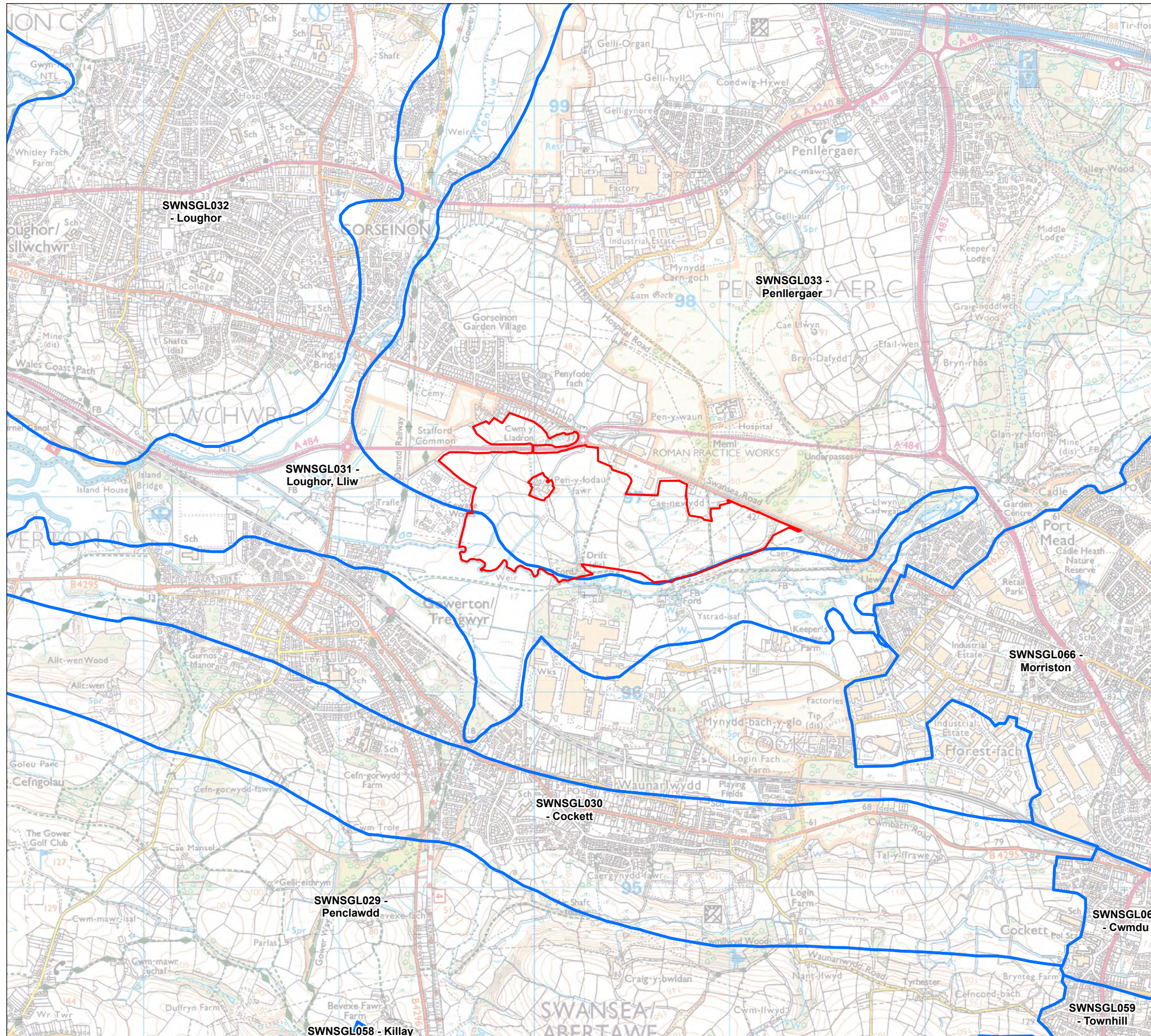
#### Parc Solar Caenewydd

Client: Taiyo Power and Storage Ltd  
 DRWG No: **P21-2998\_02** Sheet No: - REV: **G**  
 Drawn by: EH Approved by: KB  
 Date: 06/12/2023  
 Scale: 1:30,000 @ A3





## Figure 4: Geological Landscape



**KEY**

- Site Boundary
- Geological Landscape Aspect Areas

Revisions:  
 First Issue- 12/01/2022 AD  
 A- 11/03/2022 CR Revised project information  
 B- 27/04/2022 CR Revised boundary  
 C- 01/12/2022 NC Revised boundary  
 D- 14/03/2023 NC Revised boundary  
 E- 06/12/2023 EH Revised boundary

**LANDMAP - Geological Landscape**

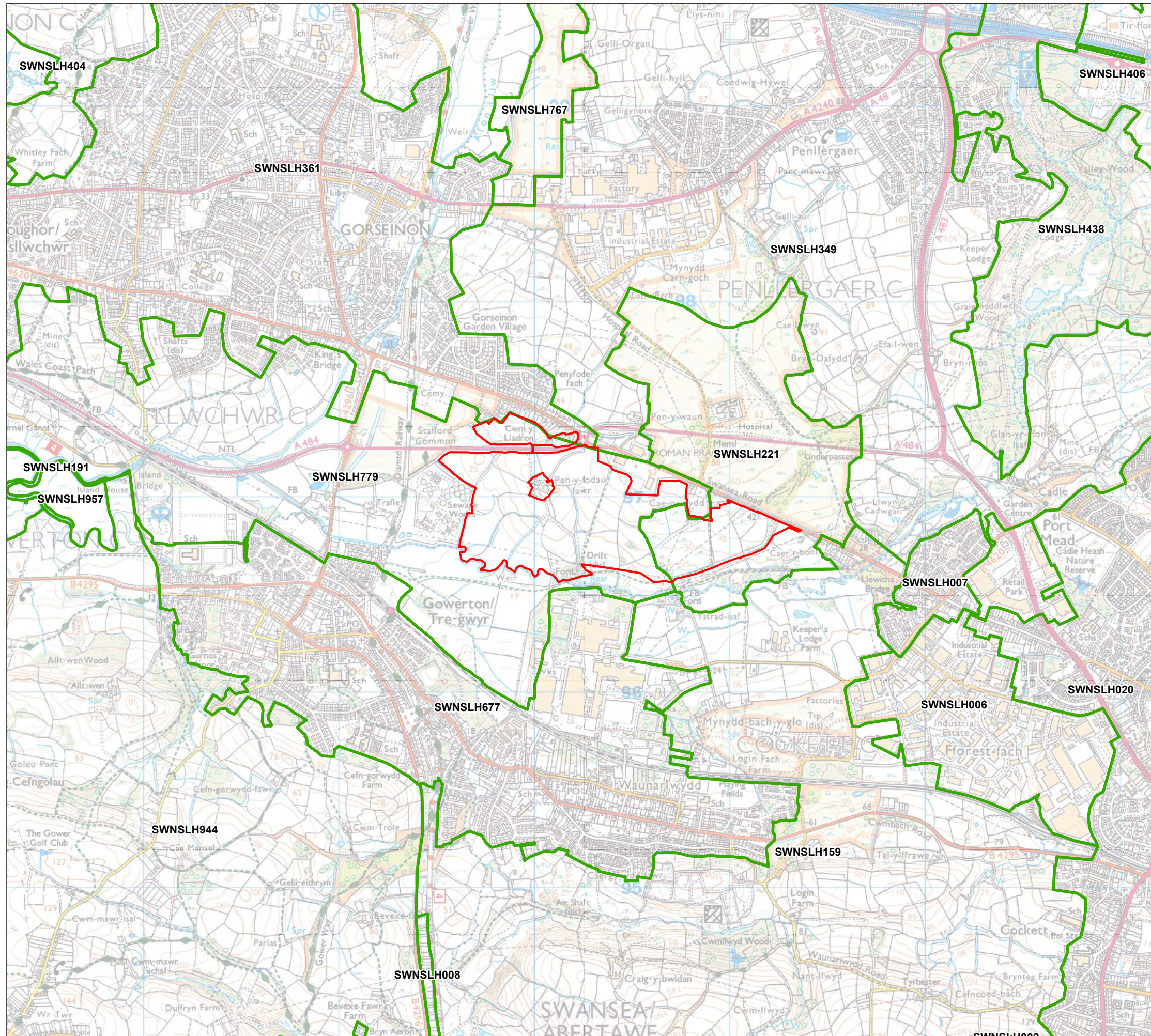
**Parc Solar Caenewydd**

Client: Taiyo Power and Storage Ltd  
 DRWG No: **P21-2998\_10** Sheet No: - REV: E  
 Drawn by: EH Approved by: KB  
 Date: 06/12/2023  
 Scale: 1:20,000 @ A3





## Figure 5: Landscape Habitats



**KEY**

- Site Boundary
- Landscape Habitat Aspect Areas

Revisions:  
 First Issue- 12/01/2022 AD  
 A- 11/03/2022 CR Revised project information  
 B- 27/04/2022 CR Revised boundary  
 C- 01/12/2022 NC Revised boundary  
 D- 14/03/2023 NC Revised boundary  
 E- 06/12/2023 EH Revised boundary

**LANDMAP - Landscape Habitat**

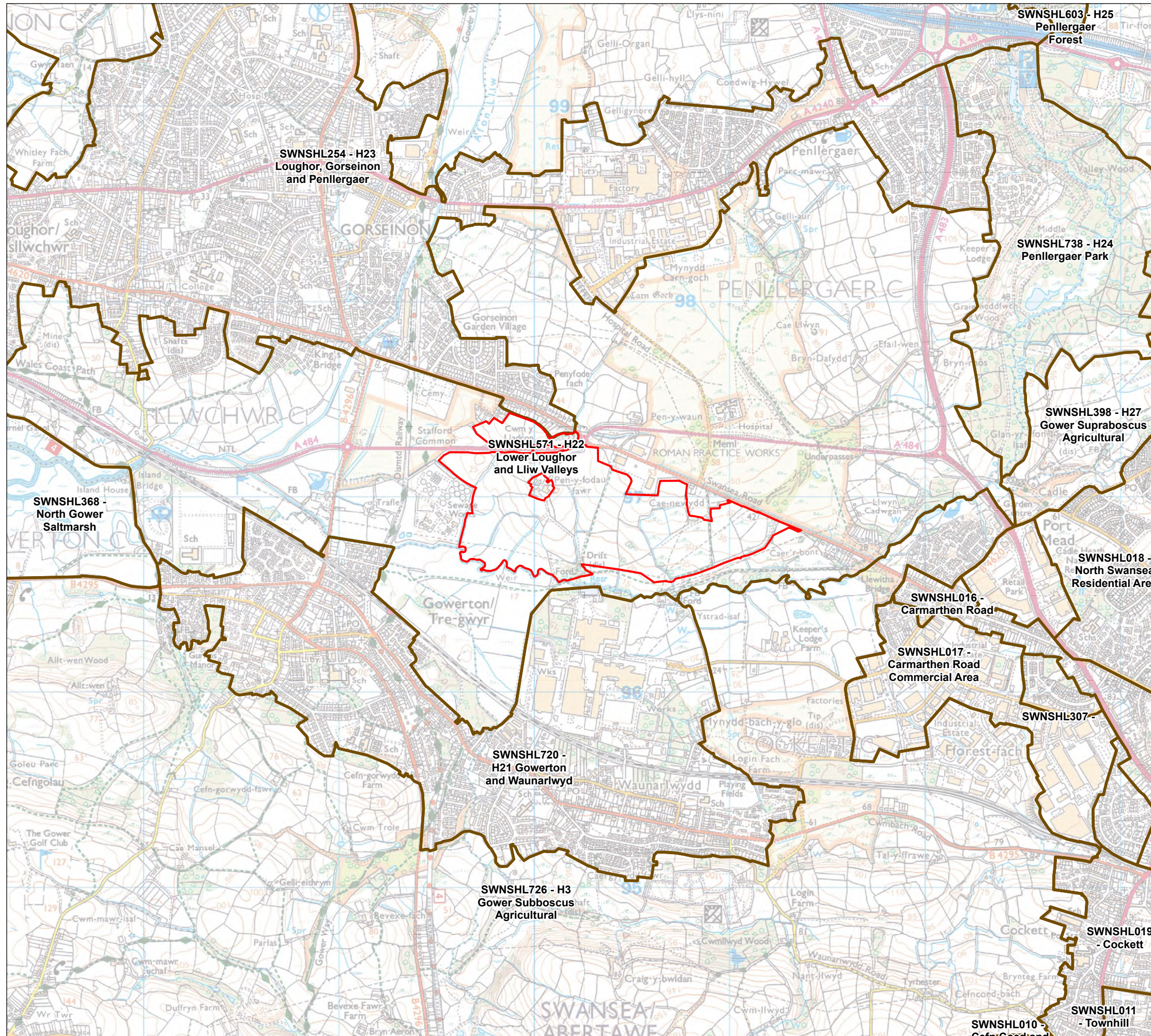
**Parc Solar Caenewydd**

Client: Taiyo Power and Storage Ltd  
 DRWG No: **P21-2998\_09** Sheet No: - REV: E  
 Drawn by: EH Approved by: KB  
 Date: 06/12/2023  
 Scale: 1:20,000 @ A3





## Figure 6: Historic Landscape



**KEY**

- Site Boundary
- Historic Landscape Aspect Areas

Revisions:  
 First Issue- 12/01/2022 AD  
 A- 11/03/2022 CR Revised project information  
 B- 27/04/2022 CR Revised boundary  
 C- 01/12/2022 NC Revised boundary  
 D- 14/03/2023 NC Revised boundary  
 E- 06/12/2023 EH Revised boundary

**LANDMAP - Historic Landscape**

**Parc Solar Caenewydd**

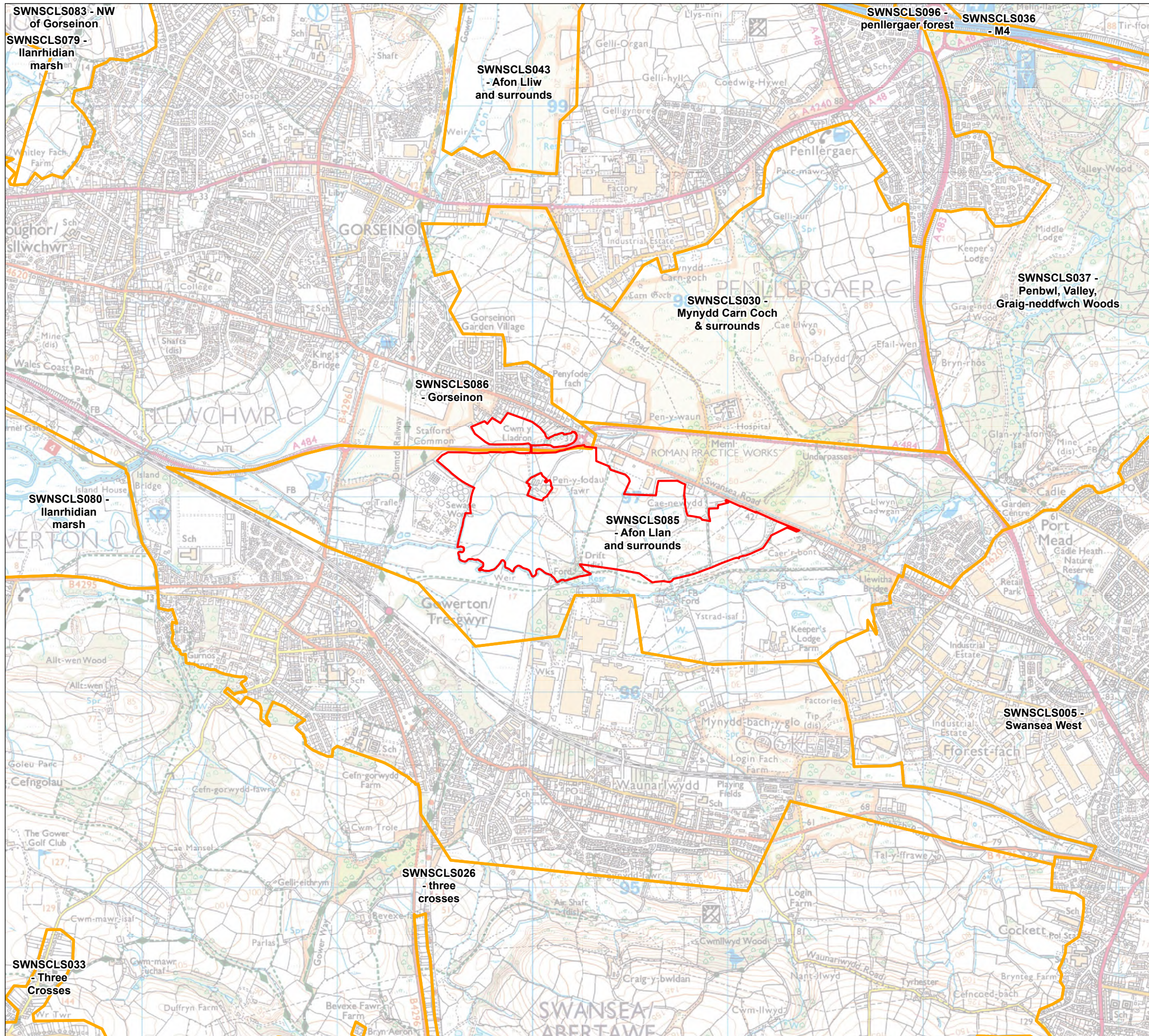
Client: Taiyo Power and Storage Ltd  
 DRWG No: **P21-2998\_08** Sheet No: - REV: E  
 Drawn by: EH Approved by: KB  
 Date: 06/12/2023  
 Scale: 1:20,000 @ A3





## Figure 7: Cultural Landscape





**KEY**

- Site Boundary
- Cultural Landscape Aspect Areas

Revisions:  
 First Issue- 12/01/2022 AD  
 A- 11/03/2022 CR Revised project information  
 B- 27/04/2022 CR Revised boundary  
 C- 01/12/2022 NC Revised boundary  
 D- 14/03/2023 NC Revised boundary  
 E- 06/12/2023 EH Revised boundary

**LANDMAP - Cultural Landscape**

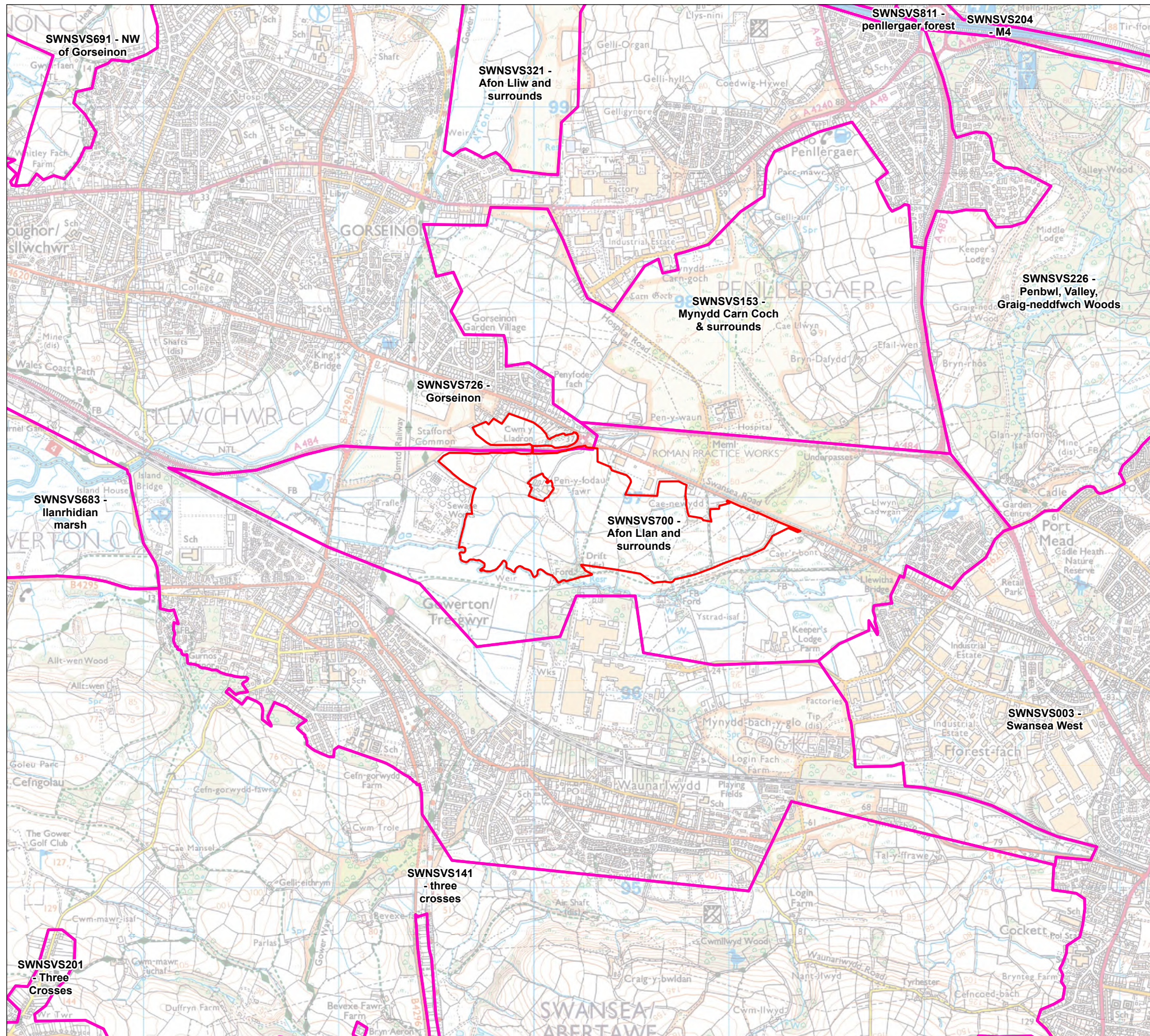
**Parc Solar Caenewydd**

Client: Taiyo Power and Storage Ltd  
 DRWG No: **P21-2998\_07** Sheet No: - REV: E  
 Drawn by: EH Approved by: KB  
 Date: 06/12/2023  
 Scale: 1:20,000 @ A3





## Figure 8: Visual and Sensory



**KEY**

- Site Boundary
- Visual and Sensory Aspect Areas

Revisions:  
 First Issue- 12/01/2022 AD  
 A- 11/03/2022 CR Revised project information  
 B- 27/04/2022 CR Revised boundary  
 C- 01/12/2022 NC Revised boundary  
 D- 14/03/2023 NC Revised boundary  
 E- 06/12/2023 EH Revised boundary

**LANDMAP - Visual & Sensory**

**Parc Solar Caenewydd**

Client: Taiyo Power and Storage Ltd  
 DRWG No: **P21-2998\_11** Sheet No: - REV: E  
 Drawn by: EH Approved by: KB  
 Date: 06/12/2023  
 Scale: 1:20,000 @ A3





## Figure 9: Viewpoint Location Plan



- KEY**
- Site Boundary
  - Viewpoint Location

- Revisions:
- A- 11/03/2022 CR Revised project information
  - B- 30/03/2022 CR Revised viewpoints
  - C- 27/04/2022 CR Revised boundary
  - D- 01/12/2022 NC Revised boundary
  - E- 14/03/2023 NC Revised boundary
  - F- 06/12/2023 EH Revised boundary

### Viewpoint Location Plan

#### Parc Solar Caenewydd

Client: Taiyo Power and Storage Ltd  
 DRWG No: **P21-2998\_06** Sheet No: - REV: F  
 Drawn by: EH Approved by: KB  
 Date: 06/12/2023  
 Scale: 1:25,000 @ A3





## Appendix 1: Methodology

## **1. LANDSCAPE AND VISUAL IMPACT ASSESSMENT METHODOLOGY STANDARD TEMPLATE THAT IS USED FOR PROJECTS**

- 1.1 The Analysis is based on this methodology which has been undertaken with regards to best practice as outlined within the following publications:
- Guidelines for Landscape and Visual Impact Assessment (3rd Edition, 2013) - Landscape Institute / Institute of Environmental Management and Assessment;
  - Visual Representation of Development Proposals (2019) - Landscape Institute Technical Guidance Note 06/19;
  - An Approach to Landscape Character Assessment (2014) - Natural England;
  - An Approach to Landscape Sensitivity Assessment - To Inform Spatial Planning and Land Management (2019) - Natural England.
  - Reviewing Landscape Visual Impact Assessments (LVIAs and Landscape and Visual appraisals (LVAs) Technical Guidance Note 1/20 Landscape Institute.
- 1.2 GLVIA3 states within paragraph 1.1 that "Landscape and Visual Impact Assessment (LVIA) is a tool used to identify and assess the significance of and the effects of change resulting from development on both the landscape as an environmental resource in its own right and on people's views and visual amenity."<sup>1</sup>
- 1.3 GLVIA3 also states within paragraph 1.17 that when identifying landscape and visual effects there is a "need for an approach that is in proportion to the scale of the project that is being assessed and the nature of the likely effects. Judgement needs to be exercised at all stages in terms of the scale of investigation that is appropriate and proportional."<sup>2</sup>
- 1.4 GLVIA3 recognises within paragraph 2.23 that "professional judgement is a very important part of LVIA. While there is some scope for quantitative measurement of some relatively objective matters much of the assessment must rely on qualitative judgements"<sup>3</sup> undertaken by a landscape consultant or a Chartered Member of the Landscape Institute (CMLI).
- 1.5 GLVIA3 notes in paragraph 1.3 that "LVIA may be carried out either formally, as part of an Environmental Impact Assessment (EIA), or informally, as a contribution to the 'appraisal' of development proposals and planning applications."<sup>4</sup> Although the proposed development is not subject to an EIA requiring an assessment of the

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<sup>1</sup> Para 1.1, Page 4, GLVIA, 3<sup>rd</sup> Edition

<sup>2</sup> Para 1.17, Page 9, GLVIA, 3<sup>rd</sup> Edition

<sup>3</sup> Para 2.23, Page 21, GLVIA, 3<sup>rd</sup> Edition

<sup>4</sup> Para 1.3, Page 4, GLVIA, 3<sup>rd</sup> Edition

likely significance of effects, this assessment is also titled as an LVIA rather than an 'appraisal' in the interests of common understanding with other planning consultants.

1.6 The effects on cultural heritage and ecology are not considered within this LVIA.

Study Area

1.7 The study area for this LVIA covers a 3km radius from the site. However, the main focus of the assessment was taken as a radius of 1km from the site as it is considered that even with clear visibility the proposals would not be perceptible in the landscape beyond this distance.

Effects Assessed

1.8 Landscape and visual effects are assessed through professional judgements on the sensitivity of landscape elements, character and visual receptors combined with the predicted magnitude of change arising from the proposals. The landscape and visual effects have been assessed in the following sections:

- Effects on landscape elements;
- Effects on landscape character; and
- Effects on visual amenity.

1.9 Sensitivity is defined in GLVIA3 as "a term applied to specific receptors, combining judgments of susceptibility of the receptor to a specific type of change or development proposed and the value related to that receptor."<sup>5</sup> Various factors in relation to the value and susceptibility of landscape elements, character, visual receptors or representative viewpoints are considered below and cross referenced to determine the overall sensitivity as shown in Table 1:

<b>Table 1, Overall sensitivity of landscape and visual receptors</b>				
		<b>VALUE</b>		
<b>SUSCEPTIBILITY</b>		<b>HIGH</b>	<b>MEDIUM</b>	<b>LOW</b>
	<b>HIGH</b>	High	High	Medium
	<b>MEDIUM</b>	High	Medium	Medium
	<b>LOW</b>	Medium	Medium	Low

<sup>5</sup> Glossary, Page 158, GLVIA, 3<sup>rd</sup> Edition



1.10 Magnitude of change is defined in GLVIA3 as “a term that combines judgements about the size and scale of the effect, the extent over which it occurs, whether it is reversible or irreversible and whether it is short or long term in duration.”<sup>6</sup> Various factors contribute to the magnitude of change on landscape elements, character, visual receptors and representative viewpoints.

1.11 The sensitivity of the landscape and visual receptor and the magnitude of change arising from the proposals are cross referenced in Table 11 to determine the overall degree of landscape and visual effects.

**2. EFFECTS ON LANDSCAPE ELEMENTS**

2.1 The effects on landscape elements includes the direct physical change to the fabric of the land, such as the removal of woodland, hedgerows or grassland to allow for the proposals.

Sensitivity of Landscape Elements

2.2 Sensitivity is determined by a combination of the value that is attached to a landscape element and the susceptibility of the landscape element to changes that would arise as a result of the proposals – see pages 88-90 of GLVIA3. Both value and susceptibility are assessed on a scale of high, medium or low.

2.3 The criteria for assessing the value of landscape elements and landscape character is shown in Table 2:

<b>Table 2, Criteria for assessing the value of landscape elements and landscape character</b>	
<b>HIGH</b>	<p>Designated landscape including but not limited to World Heritage Sites, National Parks, Areas of Outstanding Natural Beauty considered to be an important component of the country's character or non-designated landscape of a similar character and quality.</p> <p>Landscape condition is good and components are generally maintained to a high standard.</p> <p>In terms of seclusion, enclosure by land use, traffic and movement, light pollution and absence of major built infrastructure, the landscape has an elevated level of tranquillity.</p> <p>Rare or distinctive landscape elements and features are key components that contribute to the landscape character of the area.</p>

<sup>6</sup> Glossary, Page 158, GLVIA, 3<sup>rd</sup> Edition

<b>MEDIUM</b>	<p>Undesignated landscape including urban fringe and rural countryside considered to be a distinctive component of the national or local landscape character.</p> <p>Landscape condition is fair and components are generally well maintained.</p> <p>In terms of seclusion, enclosure by land use, traffic and movement, light pollution and some major built infrastructure, the landscape has a moderate level of tranquillity.</p> <p>Rare or distinctive landscape elements and features are notable components that contribute to the character of the area.</p>
<b>LOW</b>	<p>Undesignated landscape including urban fringe and rural countryside considered to be of unremarkable character. Landscape condition may be poor and components poorly maintained or damaged.</p> <p>In terms of seclusion, enclosure by land use, traffic and movement, light pollution and significant major built infrastructure, the landscape has limited levels of tranquillity.</p> <p>Rare or distinctive elements and features are not notable components that contribute to the landscape character of the area.</p>

2.4 The criteria for assessing the susceptibility of landscape elements and landscape character is shown in Table 3:

<b>Table 3, Criteria for assessing landscape susceptibility</b>	
<b>HIGH</b>	<p>Scale of enclosure – landscapes with a low capacity to accommodate the type of development being proposed owing to the interactions of topography, vegetation cover, built form, etc.</p> <p>Nature of land use – landscapes with no or little existing reference or context to the type of development being proposed.</p> <p>Nature of existing elements – landscapes with components that are not easily replaced or substituted (e.g. ancient woodland, mature trees, historic parkland, etc).</p> <p>Nature of existing features – landscapes where detracting features, major infrastructure or industry is not present or where present has a limited influence on landscape character.</p>
<b>MEDIUM</b>	<p>Scale of enclosure – landscapes with a medium capacity to accommodate the type of development being proposed owing to the interactions of topography, vegetation cover, built form, etc.</p> <p>Nature of land use – landscapes with some existing reference or context to the type of development being proposed.</p>

	<p>Nature of existing elements – landscapes with components that are easily replaced or substituted.</p> <p>Nature of existing features – landscapes where detracting features, major infrastructure or industry is present and has a noticeable influence on landscape character.</p>
<b>LOW</b>	<p>Scale of enclosure – landscapes with a high capacity to accommodate the type of development being proposed owing to the interactions of topography, vegetation cover, built form, etc.</p> <p>Nature of land use – landscapes with extensive existing reference or context to the type of development being proposed.</p> <p>Nature of existing features – landscapes where detracting features or major infrastructure is present and has a dominating influence on the landscape.</p>

2.5 Various factors in relation to the value and susceptibility of landscape elements are assessed and cross referenced to determine the overall sensitivity as shown in Table 1.

2.6 Sensitivity is defined in GLVIA3 as “a term applied to specific receptors, combining judgments of susceptibility of the receptor to a specific type of change or development proposed and the value related to that receptor.”<sup>7</sup> The definitions for high, medium, low landscape sensitivity are shown in Table 4:

<b>Table 4, Criteria for assessing landscape sensitivity</b>	
<b>HIGH</b>	<p>Landscape element or character area defined as being of high value combined with a high or medium susceptibility to change.</p> <p>Landscape element or character area defined as being of medium value combined with a high susceptibility to change.</p>
<b>MEDIUM</b>	<p>Landscape element or character area defined as being of high value combined with a low susceptibility to change.</p> <p>Landscape element or character area defined as being of medium value combined with a medium or low susceptibility to change.</p> <p>Landscape element or character area defined as being of low value combined with a high or medium susceptibility to change.</p>

<sup>7</sup> Glossary, Page 158, GLVIA, 3<sup>rd</sup> Edition

<b>LOW</b>	Landscape element or character area defined as being of low value combined with a low susceptibility to change.
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Magnitude of Change on Landscape Elements

2.7 Professional judgement has been used to determine the magnitude of change on individual landscape elements within the site as shown in Table 5:

<b>Table 5, Criteria for assessing magnitude of change for landscape elements</b>	
<b>HIGH</b>	Substantial loss/gain of a landscape element.
<b>MEDIUM</b>	Partial loss/gain or alteration to part of a landscape element.
<b>LOW</b>	Minor loss/gain or alteration to part of a landscape element.
<b>NEGLIGIBLE</b>	No loss/gain or very limited alteration to part of a landscape element.

**3. EFFECTS ON LANDSCAPE CHARACTER**

3.1 Landscape character is defined as the “distinct, recognisable and consistent pattern of elements in the landscape that makes one landscape different from another, rather than better or worse.”<sup>8</sup>

3.2 The assessment of effects on landscape character considers how the introduction of new landscape elements physically alters the landform, landcover, landscape pattern and perceptual attributes of the site or how visibility of the proposals changes the way in which the landscape character is perceived.

Sensitivity of Landscape Character

3.3 Sensitivity is determined by a combination of the value that is attached to a landscape and the susceptibility of the landscape to changes that would arise as a result of the proposals – see pages 88-90 of GLVIA3. Both value and susceptibility are assessed on a scale of high, medium or low.

3.4 The criteria for assessing the value of landscape character is shown in Table 2.

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<sup>8</sup> Glossary, Page 157, GLVIA, 3<sup>rd</sup> Edition

3.5 The criteria for assessing the susceptibility of landscape character is shown in Table 3.

3.6 The overall sensitivity is determined through cross referencing the value and susceptibility of landscape character as shown in Table 1.

Magnitude of Change on Landscape Character

3.7 Professional judgement has been used to determine the magnitude of change on landscape character as shown in Table 6:

<b>HIGH</b>	Introduction of major new elements into the landscape or some major change to the scale, landform, landcover or pattern of the landscape.
<b>MEDIUM</b>	Introduction of some notable new elements into the landscape or some notable change to the scale, landform, landcover or pattern of the landscape.
<b>LOW</b>	Introduction of minor new elements into the landscape or some minor change to the scale, landform, landcover or pattern of the landscape.
<b>NEGLIGIBLE</b>	No notable or appreciable introduction of new elements into the landscape or change to the scale, landform, landcover or pattern of the landscape.

#### **4. EFFECTS ON VISUAL AMENITY**

4.1 Visual amenity is defined within GLVIA3 as the “overall pleasantness of the views people enjoy of their surroundings, which provides an attractive visual setting or backdrop for the enjoyment of activities of the people living, working, recreating, visiting or travelling through an area.”<sup>9</sup>

4.2 The effects on visual amenity considers the changes in views arising from the proposals in relation to visual receptors including settlements, residential properties, transport routes, recreational facilities and attractions; and

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<sup>9</sup> Page 158, Glossary, GLVIA3

representative viewpoints or specific locations within the study area as agreed with the Local Planning Authority.

Sensitivity of Visual Receptors

4.3 Sensitivity is determined by a combination of the value that is attached to a view and the susceptibility of the visual receptor to changes in that view that would arise as a result of the proposals – see pages 113-114 of GLVIA3. Both value and susceptibility are assessed on a scale of high, medium or low.

4.4 The criteria for assessing the value of views are shown in Table 7:

<b>Table 7, Criteria for assessing the value of views</b>	
<b>HIGH</b>	Views with high scenic value within designated landscapes including but not limited to World Heritage Sites, National Parks, Areas of Outstanding Natural Beauty, etc. Likely to include key viewpoints on OS maps or reference within guidebooks, provision of facilities, presence of interpretation boards, etc.
<b>MEDIUM</b>	Views with moderate scenic value within undesignated landscape including urban fringe and rural countryside.
<b>LOW</b>	Views with unremarkable scenic value within undesignated landscape with partly degraded visual quality and detractors.

4.5 The criteria for assessing the susceptibility of views are shown in Table 8:

<b>Table 8, Criteria for assessing visual susceptibility</b>	
<b>HIGH</b>	Includes occupiers of residential properties and people engaged in recreational activities in the countryside using public rights of way (PROW).
<b>MEDIUM</b>	Includes people engaged in outdoor sporting activities and people travelling through the landscape on minor roads and trains.
<b>LOW</b>	Includes people at places of work e.g. industrial and commercial premises and people travelling through the landscape on major roads and motorways.

4.6 Sensitivity is defined in GLVIA3 as “a term applied to specific receptors, combining judgments of susceptibility of the receptor to a specific type of change or development proposed and the value related to that receptor.”<sup>10</sup> The definitions for high, medium, low visual sensitivity are shown in Table 9:

<b>Table 9, Criteria for assessing visual sensitivity</b>	
<b>HIGH</b>	Visual receptor defined as being of high value combined with a high or medium susceptibility to change.
	Visual receptor defined as being of medium value combined with a high susceptibility to change.
<b>MEDIUM</b>	Visual receptor defined as being of high value combined with a low susceptibility to change.
	Visual receptor defined as being of medium value combined with a medium or low susceptibility to change.
	Visual receptor defined as being of low value combined with a high or medium susceptibility to change.
<b>LOW</b>	Visual receptor defined as being of low value combined with a low susceptibility to change.

Magnitude of Change on Visual Receptors

4.7 Professional judgement has been used to determine the magnitude of change on visual receptors as shown in Table 10:

<b>Table 10, Criteria for assessing magnitude of change for visual receptors</b>	
<b>HIGH</b>	Major change in the view that has a substantial influence on the overall view.
<b>MEDIUM</b>	Some change in the view that is clearly visible and forms an important but not defining element in the view.
<b>LOW</b>	Some change in the view that is appreciable with few visual receptors affected.
<b>NEGLIGIBLE</b>	No notable change in the view.

<sup>10</sup> Glossary, Page 158, GLVIA, 3<sup>rd</sup> Edition

**5. SIGNIFICANCE OF LANDSCAPE AND VISUAL EFFECTS**

- 5.1 The likely significance of effects is dependent on all of the factors considered in the sensitivity and the magnitude of change upon the relevant landscape and visual receptors. These factors are assimilated to assess whether or not the proposed development will have a likely significant or not significant effect. The variables considered in the evaluation of the sensitivity and the magnitude of change is reviewed holistically to inform the professional judgement of significance.
- 5.2 A likely **significant** effect will occur where the combination of the variables results in the proposed development having a definitive effect on the view. A **not significant** effect will occur where the appearance of the proposed development is not definitive, and the effect continues to be defined principally by its baseline condition.
- 5.3 Within Table 11 below, the major effects highlighted in grey are considered to be significant in terms of the EIA Regulations. It should be noted that whilst an individual effect may be significant, it does not necessarily follow that the proposed development would be unacceptable in the planning balance. The cross referencing of the sensitivity and magnitude of change on the landscape and visual receptor determines the significance of effect as shown in Table 11:

<b>Table 11, Significance of landscape and visual effects</b>				
		<b>Sensitivity</b>		
		<b>HIGH</b>	<b>MEDIUM</b>	<b>LOW</b>
<b>Magnitude of Change</b>	<b>HIGH</b>	Major	Major	Moderate
	<b>MEDIUM</b>	Major	Moderate	Minor
	<b>LOW</b>	Moderate	Minor	Minor
	<b>NEGLIGIBLE</b>	Negligible	Negligible	Negligible



## 6. TYPICAL DESCRIPTORS OF LANDSCAPE EFFECTS

6.1 The typical descriptors of the landscape effects are detailed within Table 12:

<b>Table 12, Typical Descriptors of Landscape Effects</b>	
<b>MAJOR BENEFICIAL</b>	<p>Substantially:</p> <ul style="list-style-type: none"> <li>- enhance the character (including value) of the landscape;</li> <li>- enhance the restoration of characteristic features and elements lost as a result of changes from inappropriate management or development;</li> <li>- enable a sense of place to be enhanced.</li> </ul>
<b>MODERATE BENEFICIAL</b>	<p>Moderately:</p> <ul style="list-style-type: none"> <li>- enhance the character (including value) of the landscape;</li> <li>- enable the restoration of characteristic features and elements partially lost or diminished as a result of changes from inappropriate management or development;</li> <li>- enable a sense of place to be restored.</li> </ul>
<b>MINOR BENEFICIAL</b>	<p>Slightly:</p> <ul style="list-style-type: none"> <li>- complement the character (including value) of the landscape;</li> <li>- maintain or enhance characteristic features or elements;</li> <li>- enable some sense of place to be restored.</li> </ul>
<b>NEGLIGIBLE</b>	<p>The proposed changes would (on balance) maintain the character (including value) of the landscape and would:</p> <ul style="list-style-type: none"> <li>- be in keeping with landscape character and blend in with characteristic features and elements;</li> <li>- Enable a sense of place to be maintained.</li> </ul>
<b>NO CHANGE</b>	<p>The proposed changes would not be visible and there would be no change to landscape character.</p>
<b>MINOR ADVERSE</b>	<p>Slightly:</p> <ul style="list-style-type: none"> <li>- not quite fit the character (including value) of the landscape;</li> <li>- be a variance with characteristic features and elements;</li> <li>- detract from sense of place.</li> </ul>
<b>MODERATE ADVERSE</b>	<p>Moderately:</p> <ul style="list-style-type: none"> <li>- conflict with the character (including value) of the landscape;</li> <li>- have an adverse effect on characteristic features or elements;</li> <li>- diminish a sense of place.</li> </ul>
<b>MAJOR ADVERSE</b>	<p>Substantially:</p> <ul style="list-style-type: none"> <li>- be at variance with the character (including value) of the landscape;</li> <li>- degrade or diminish the integrity of a range of characteristic features and elements or cause them to be lost;</li> <li>- change a sense of place.</li> </ul>

## 7. TYPICAL DESCRIPTORS OF VISUAL EFFECTS

7.1 The typical descriptors of the visual effects are detailed within Table 13:

<b>Table 13, Typical Descriptors of Visual Effects</b>	
<b>MAJOR BENEFICIAL</b>	Proposals would result in a major improvement in the view.
<b>MODERATE BENEFICIAL</b>	Proposals would result in a clear improvement in the view.
<b>MINOR BENEFICIAL</b>	Proposals would result in a slight improvement in the view.
<b>NEGLIGIBLE</b>	The proposed changes would be in keeping with, and would maintain, the existing view or where (on balance) the proposed changes would maintain the general appearance of the view (which may include adverse effects which are offset by beneficial effects for the same receptor) or due to distance from the receptor, the proposed change would be barely perceptible to the naked eye.
<b>NO CHANGE</b>	The proposed changes would not be visible and there would be no change to the view.
<b>MINOR ADVERSE</b>	Proposals would result in a slight deterioration in the view.
<b>MODERATE ADVERSE</b>	Proposals would result in a clear deterioration in the view.
<b>MAJOR ADVERSE</b>	Proposals would result in a major deterioration in the view.

## 8. NATURE OF EFFECTS

8.1 GLVIA3 includes an entry that states *"effects can be described as positive or negative (or in some cases neutral) in their consequences for views and visual amenity."*<sup>11</sup> GLVIA3 does not, however, state how negative or positive effects should be assessed, and this therefore becomes a matter of professional judgement supported by site specific justification within the LVIA.

<sup>11</sup> Para 6.29, Page 113, GLVIA 3<sup>rd</sup> Edition



## Appendix 2: Viewpoints 1-22

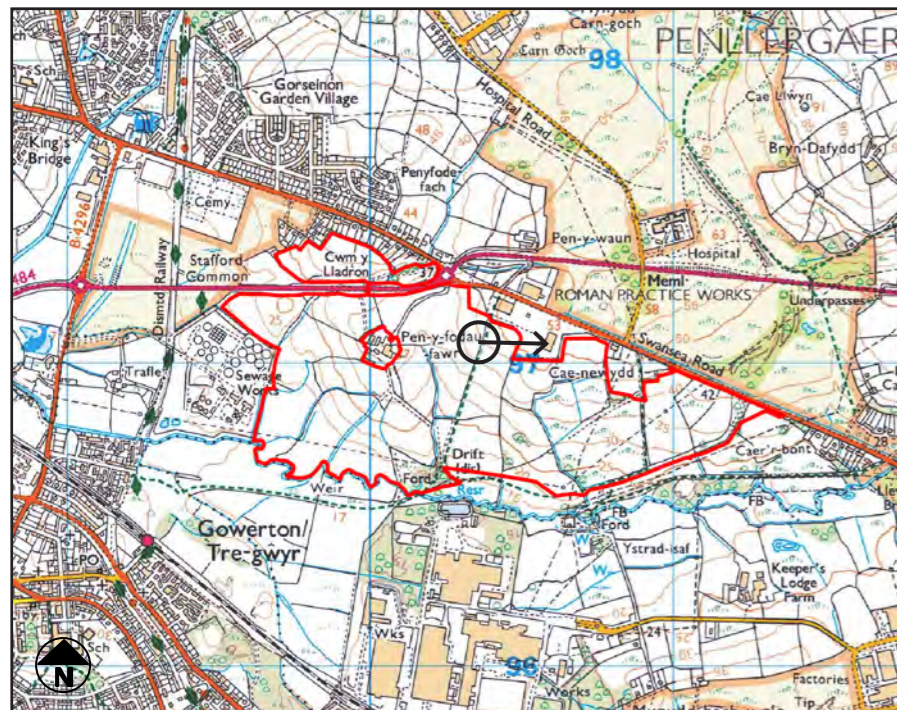
Approximate extent of site  
(extends beyond photo)



Days Motors

### CONTEXT BASELINE VIEWPOINT 1A (EAST)

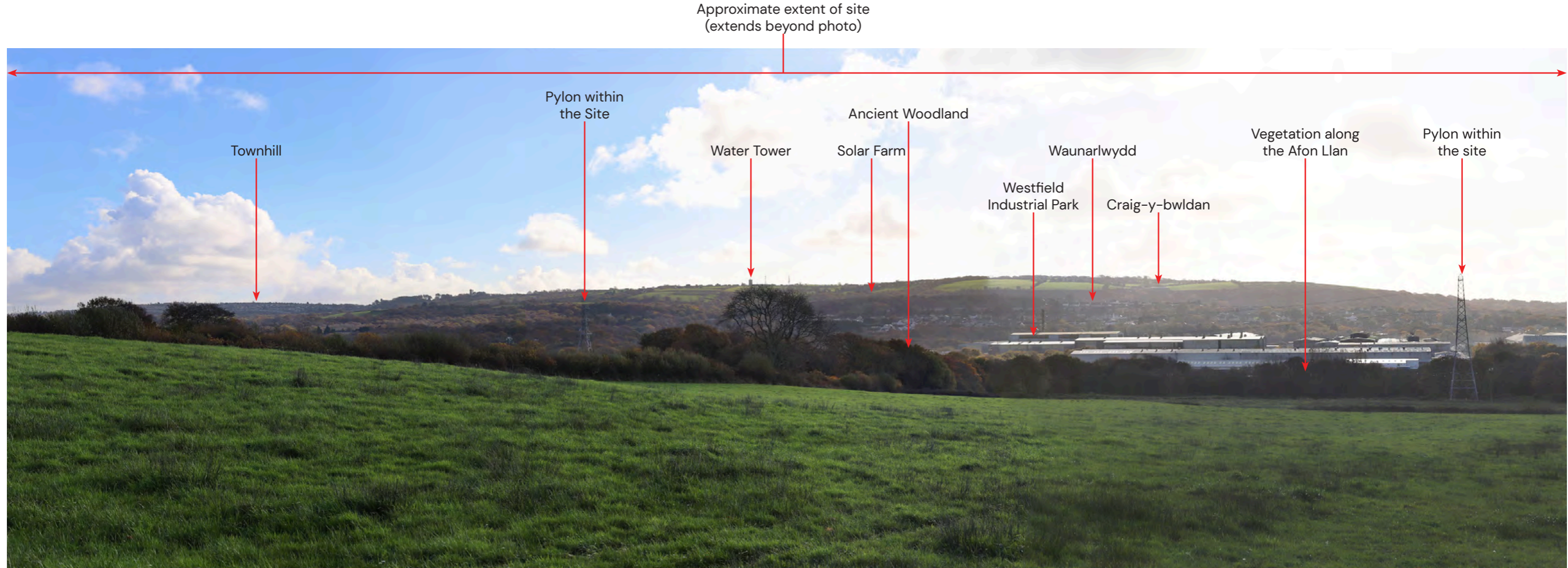
Public Footpath LC26 near Pen-y-forau faw r Farm



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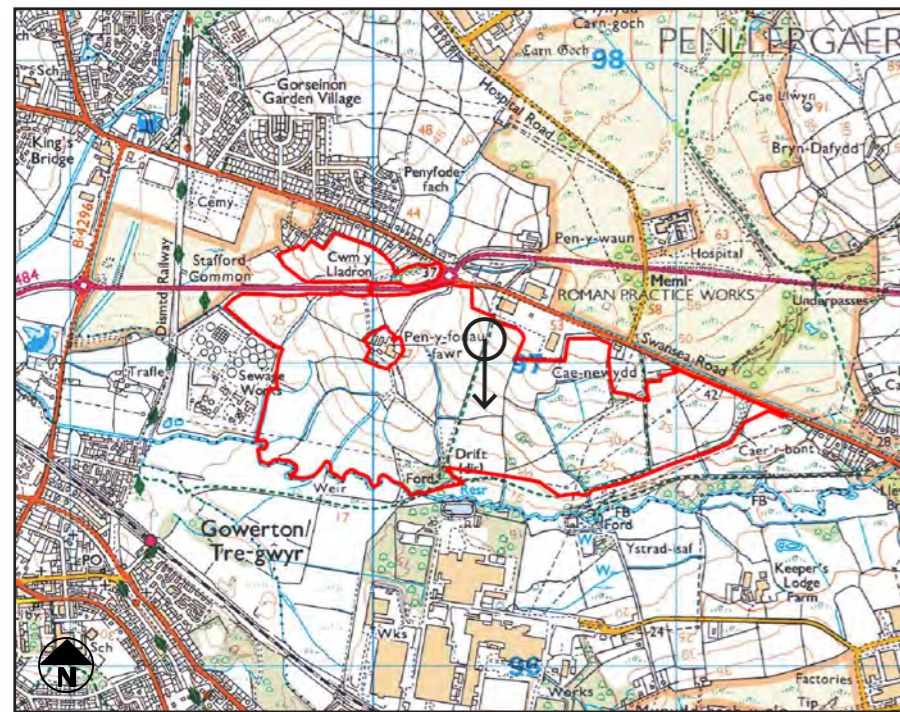
Camera make & model - Canon EOS 6D, FFS    Viewpoint height (AOD) - 46m  
 Date & time of photograph - 18/11/2022 @ 13:24    Distance from site - 0m  
 OS grid reference - 260373, 197069





### CONTEXT BASELINE VIEWPOINT 1B (SOUTH)

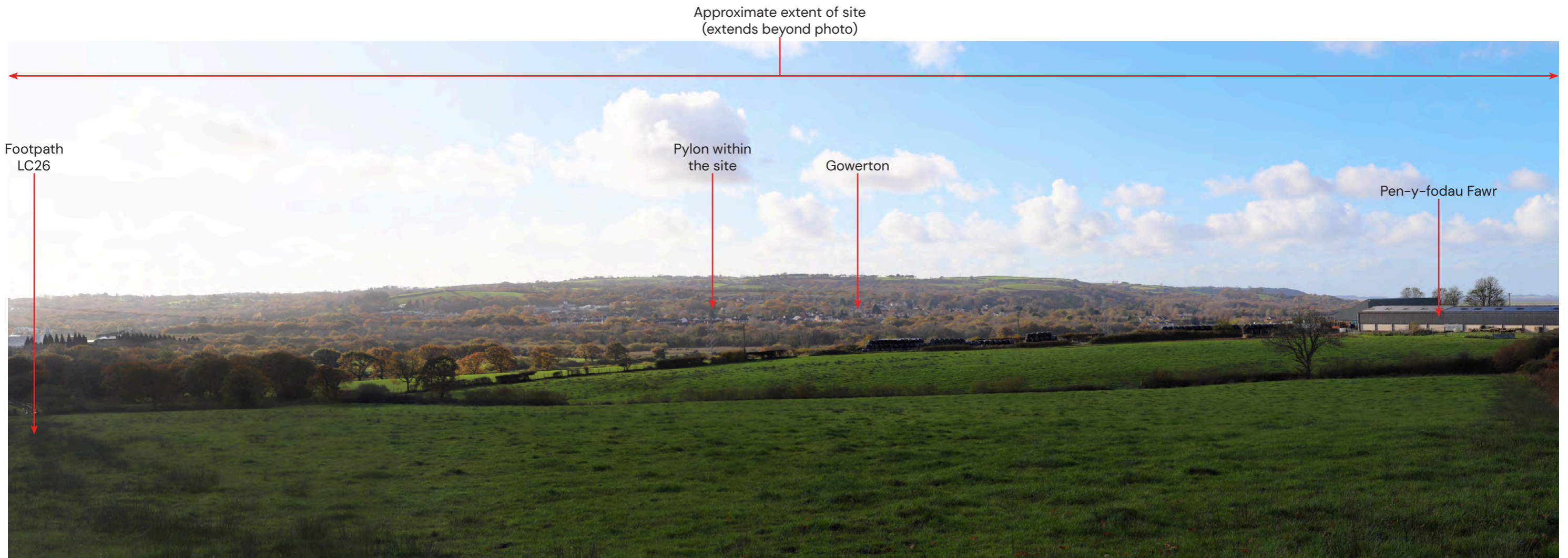
Public Footpath LC26 near Pen-y-forau faw r Farm



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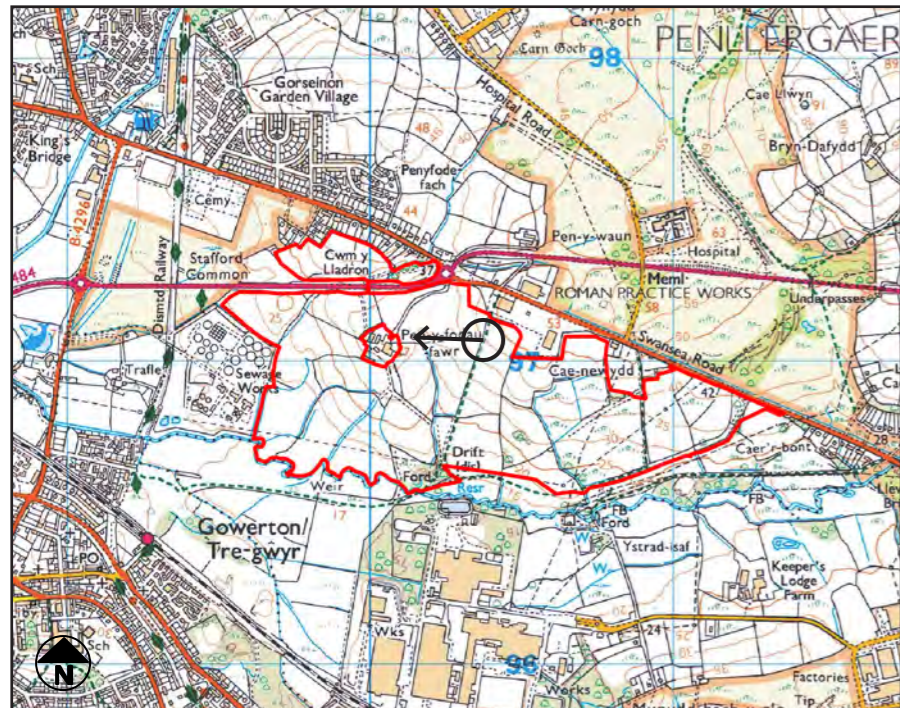
Camera make & model - Canon EOS 6D, FFS    Viewpoint height (AOD) - 46m  
 Date & time of photograph - 18/11/2022 @ 13:24    Distance from site - 0m  
 OS grid reference - 260373, 197069





### CONTEXT BASELINE VIEWPOINT 1C (WEST)

Public Footpath LC26 near Pen-y-forau faw r Farm

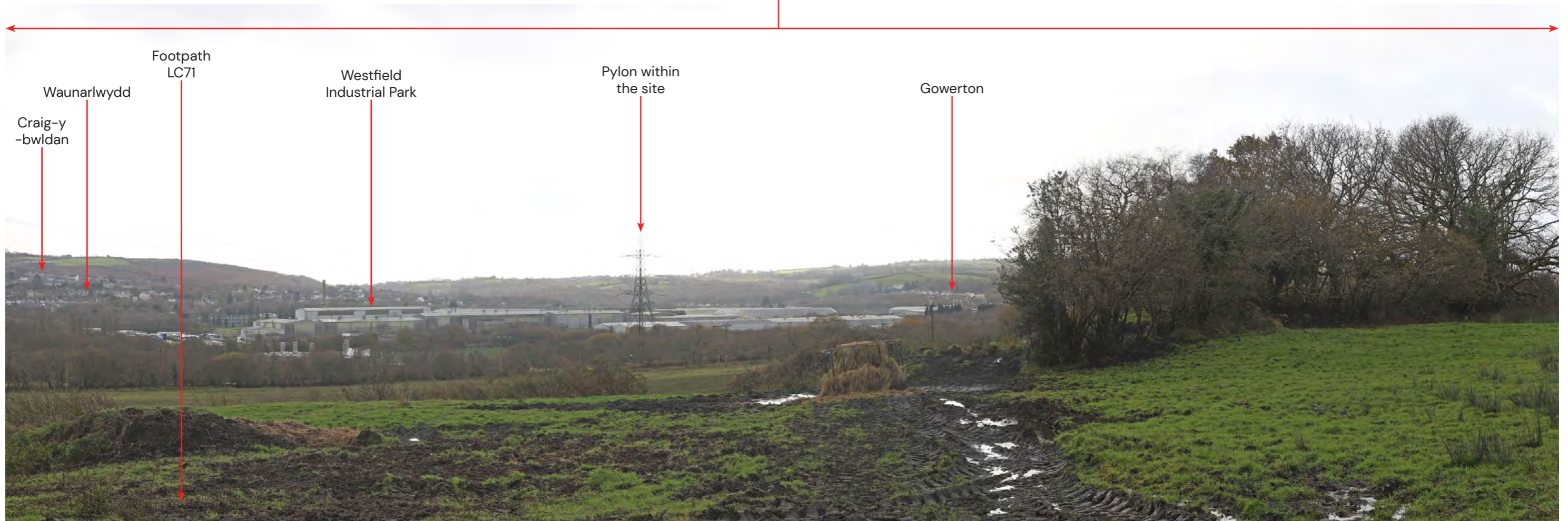


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Camera make & model - Canon EOS 6D, FFS    Viewpoint height (AOD) - 46m  
 Date & time of photograph - 18/11/2022 @ 13:24    Distance from site - 0m  
 OS grid reference - 260373, 197069

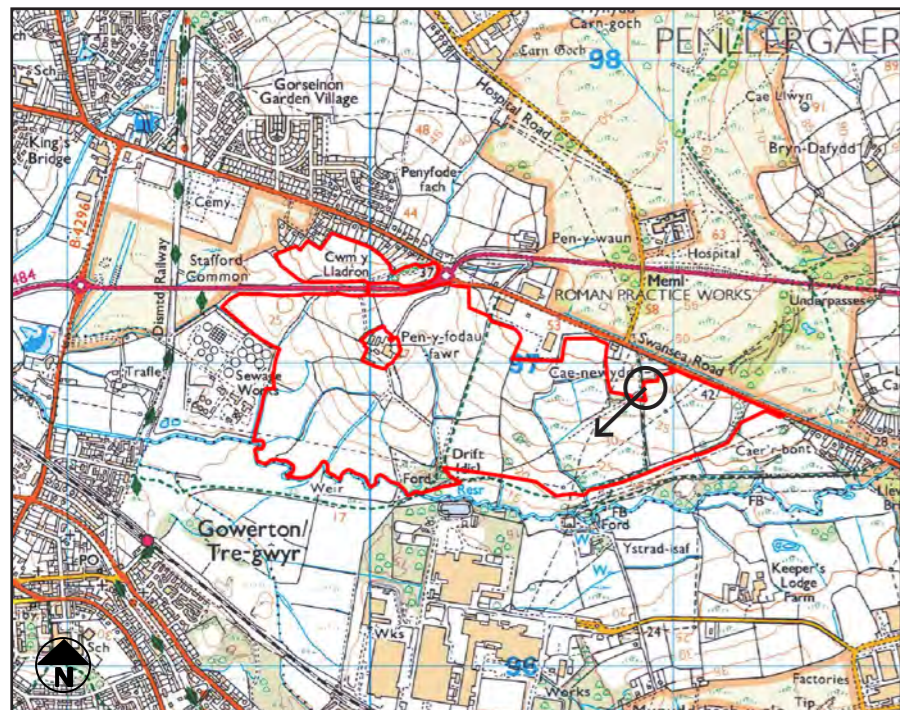


Approximate extent of site  
(extends beyond photo)



## CONTEXT BASELINE VIEWPOINT 2A (SOUTH WEST)

Public Footpath LC71 near Cae-newydd



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Camera make & model - Canon EOS 5D, FFS  
 Date & time of photograph - 01/12/2021 @ 12:04  
 OS grid reference - 260901, 196912  
 Viewpoint height (AOD) - 44m  
 Distance from site - 1m





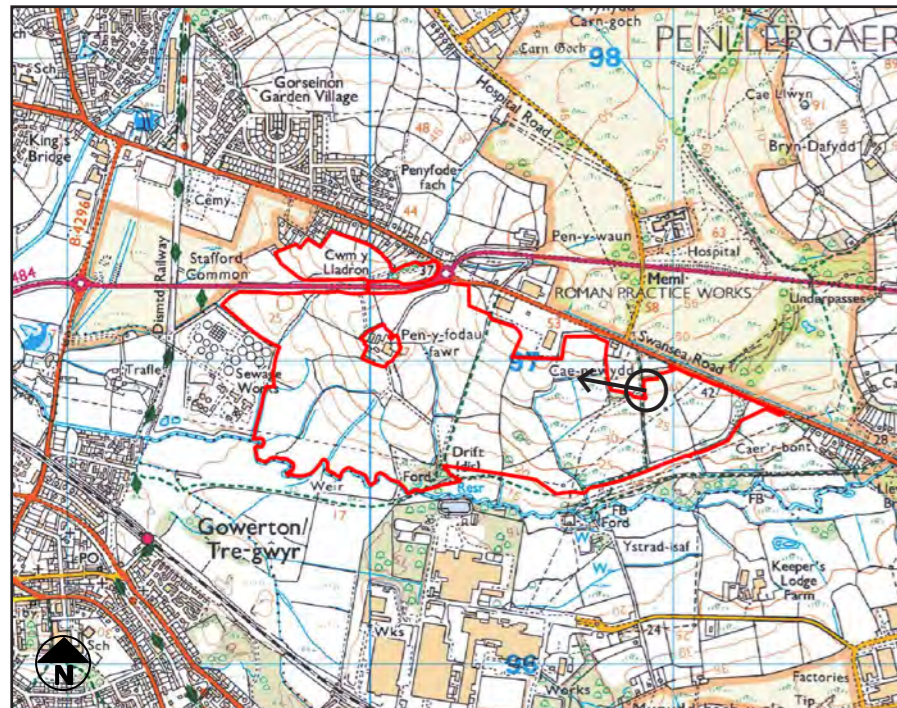
Approximate extent of site  
(extends beyond photo)



Days Motors

### CONTEXT BASELINE VIEWPOINT 2B (NORTH WEST)

Public Footpath LC71 near Cae-newydd



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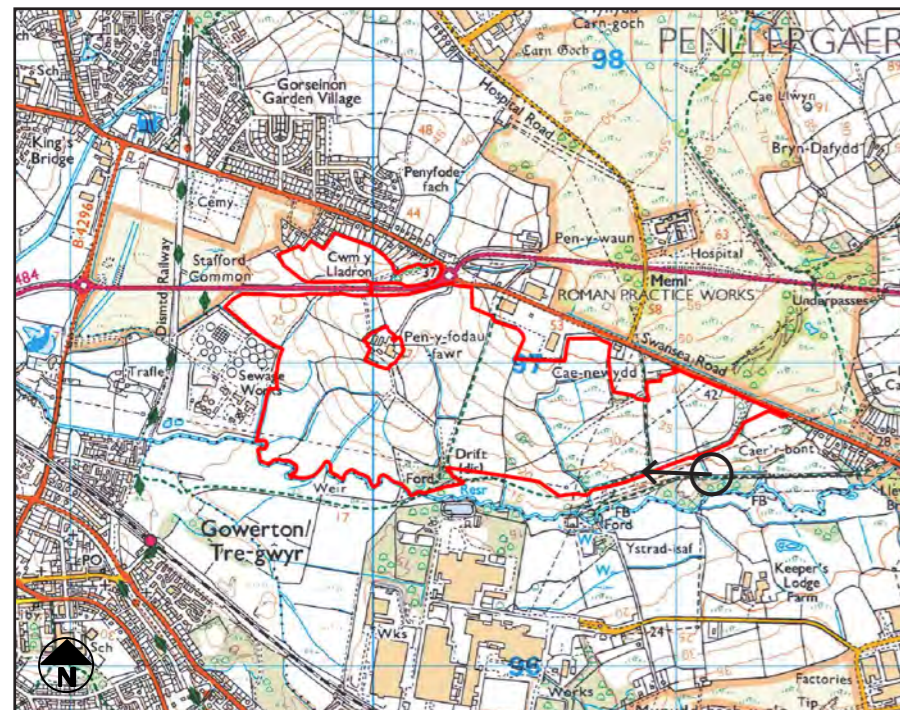
Camera make & model - Canon EOS 5D, FFS    Viewpoint height (AOD) - 44m  
 Date & time of photograph - 01/12/2021 @ 12:04    Distance from site - 1m  
 OS grid reference - 260901, 196912





### CONTEXT BASELINE VIEWPOINT 3A (WEST)

Public Footpath LC72 near Caer'r-bont



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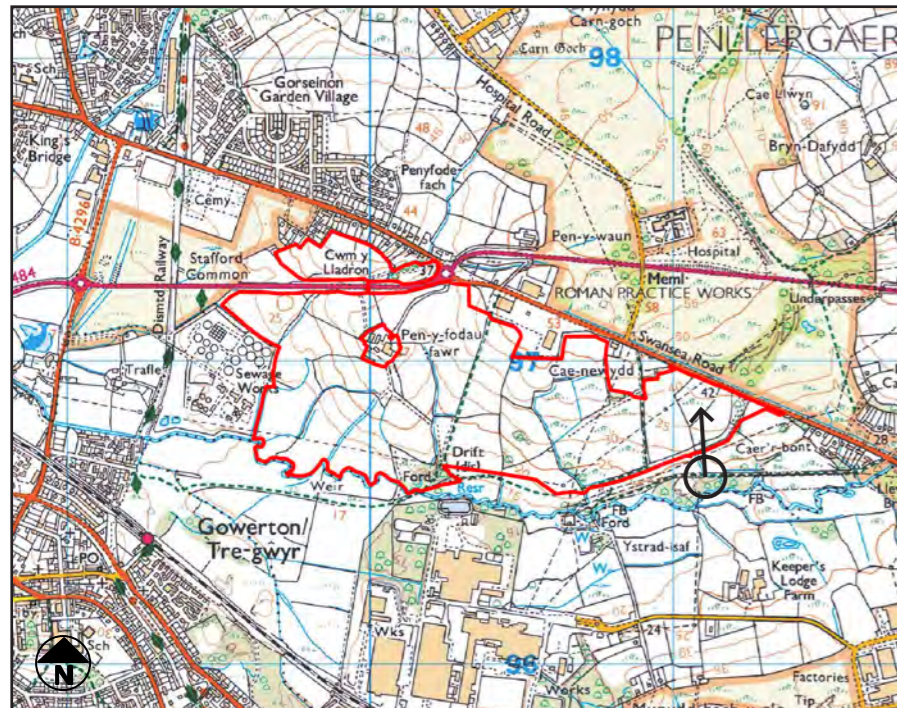
Camera make & model - Canon EOS 5D, FFS    Viewpoint height (AOD) - 22m  
 Date & time of photograph - 18/11/2022 @ 11:54    Distance from site - 75m  
 OS grid reference - 261096, 196621

Approximate extent of site  
(extends beyond photo)



### CONTEXT BASELINE VIEWPOINT 3B (NORTH)

Public Footpath LC72 near Caer'r-bont



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Camera make & model - Canon EOS 5D, FFS    Viewpoint height (AOD) - 22m  
Date & time of photograph - 18/11/2022 @ 11:54    Distance from site - 75m  
OS grid reference - 261096, 196621



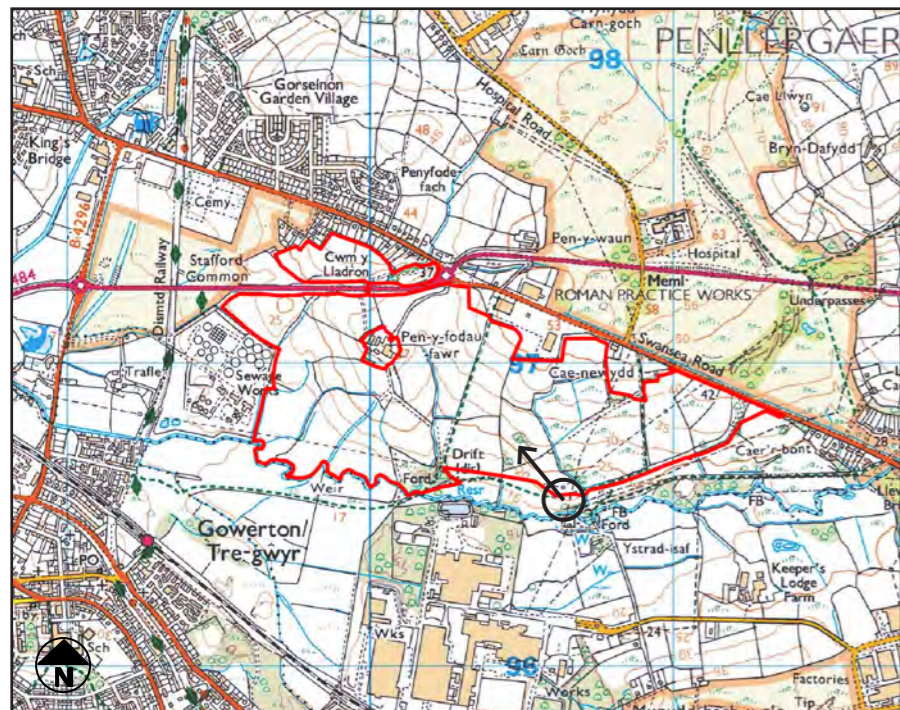


Approximate extent of site  
(extends beyond photo)



### CONTEXT BASELINE VIEWPOINT 4A (NORTH WEST)

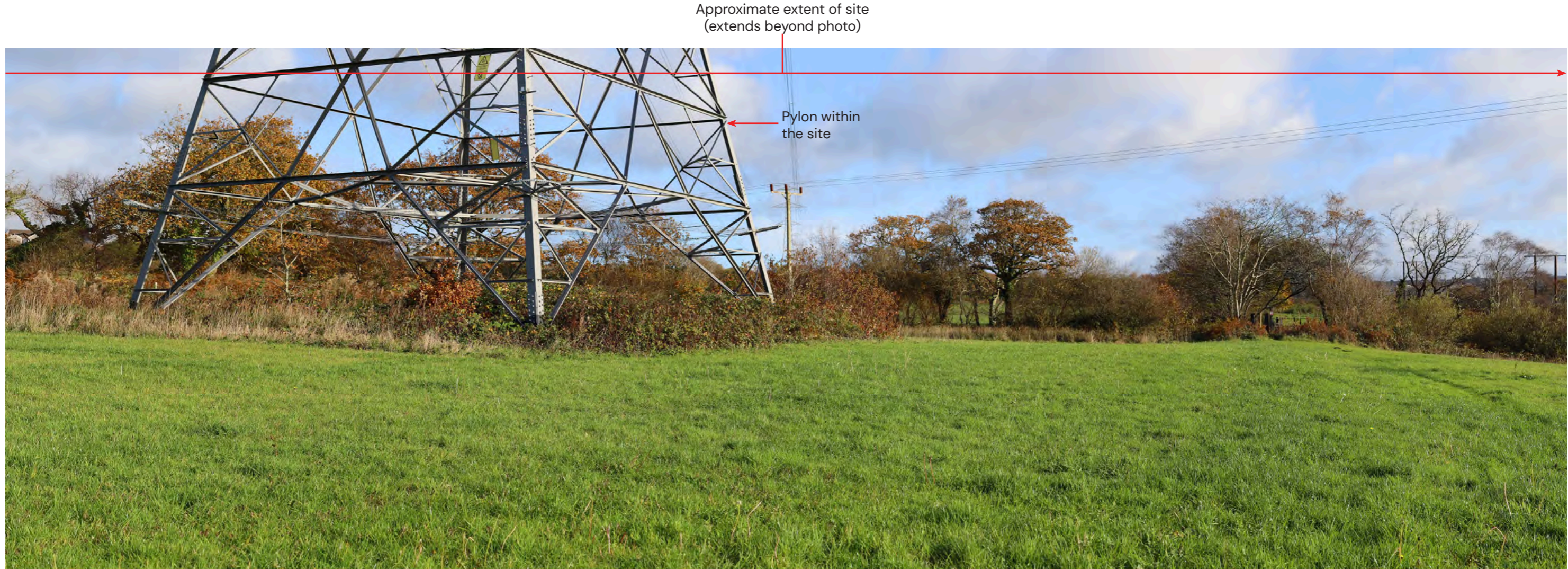
Public Footpath LC101 near the electricity sub station



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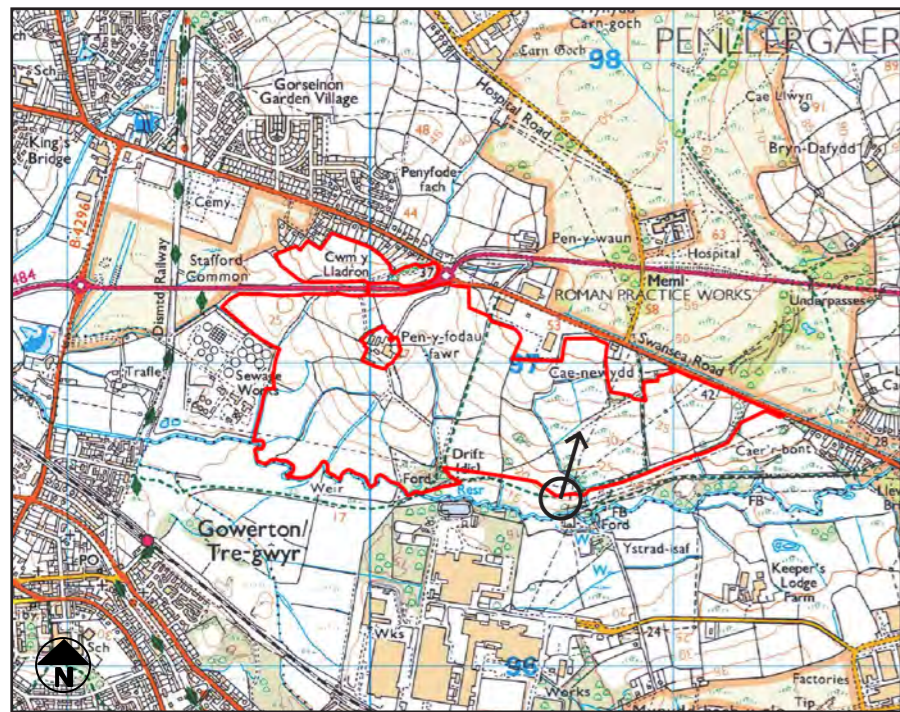
Camera make & model - Canon EOS 6D, FFS    Viewpoint height (AOD) - 23m  
 Date & time of photograph - 18/11/2022@ 11:43    Distance from site - 5m  
 OS grid reference - 260623 , 196562





### CONTEXT BASELINE VIEWPOINT 4B (NORTH EAST)

Public Footpath LC101 near the electricity sub station



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Camera make & model - Canon EOS 6D, FFS    Viewpoint height (AOD) - 23m  
 Date & time of photograph - 18/11/2022@ 11:43    Distance from site - 5m  
 OS grid reference - 260623, 196562









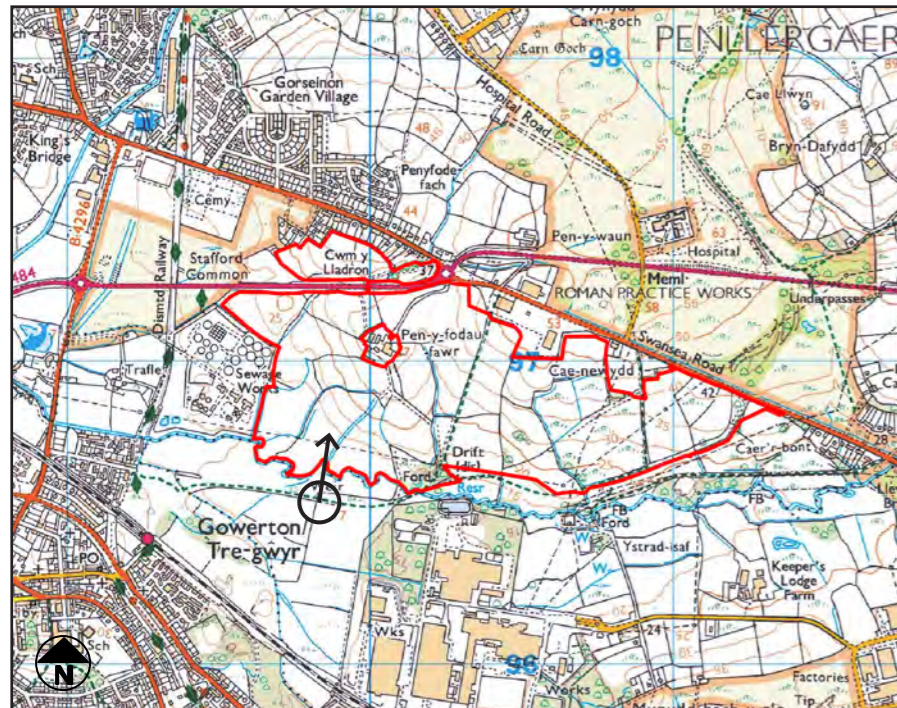
Approximate extent of site  
(extends beyond photo)



Pen-y-fodau Fawr

### CONTEXT BASELINE VIEWPOINT 5B (NORTH)

Public Footpath C0600 near Afon Llan



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Camera make & model - Canon EOS 6D, FFS      Viewpoint height (AOD) - 14m  
Date & time of photograph - 18/11/2022 @ 11:20      Distance from site - 85m  
OS grid reference - 259823 , 196553



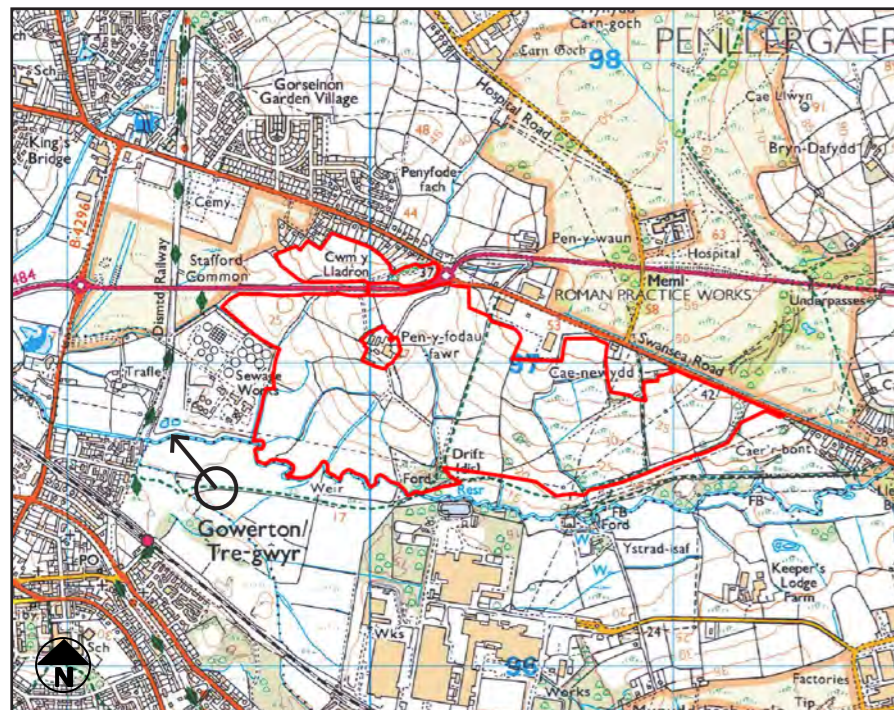


Approximate extent of site  
(extends beyond photo)



### CONTEXT BASELINE VIEWPOINT 6A (NORTH WEST)

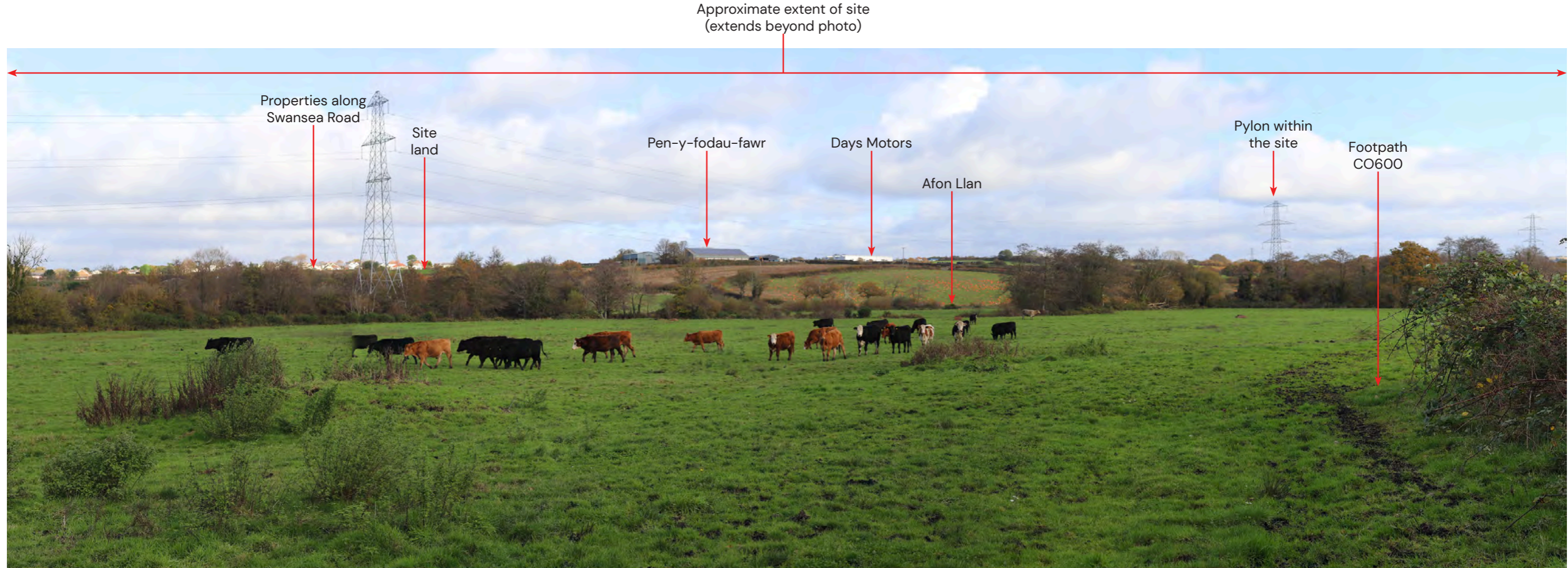
Public Footpath C0600 near Fairwood Terrace, Gowerton



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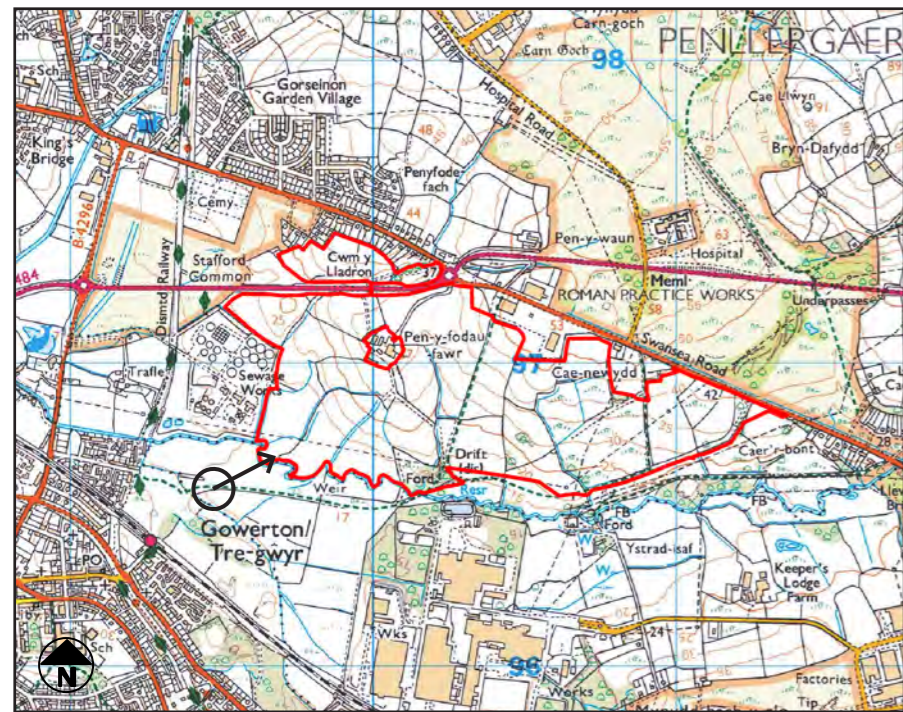
Camera make & model - Canon EOS 6D, FFS    Viewpoint height (AOD) - 11m  
Date & time of photograph - 18/11/2022 @ 12:41    Distance from site - 170m  
OS grid reference - 259496 , 196594





**CONTEXT BASELINE VIEWPOINT 6B (NORTH EAST)**

Public Footpath CO600 near Fairwood Terrace, Gowerton



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Camera make & model - Canon EOS 6D, FFS  
 Date & time of photograph - 18/11/2022 @ 12:41  
 OS grid reference - 259496 , 196594  
 Viewpoint height (AOD) - 11m  
 Distance from site - 170m



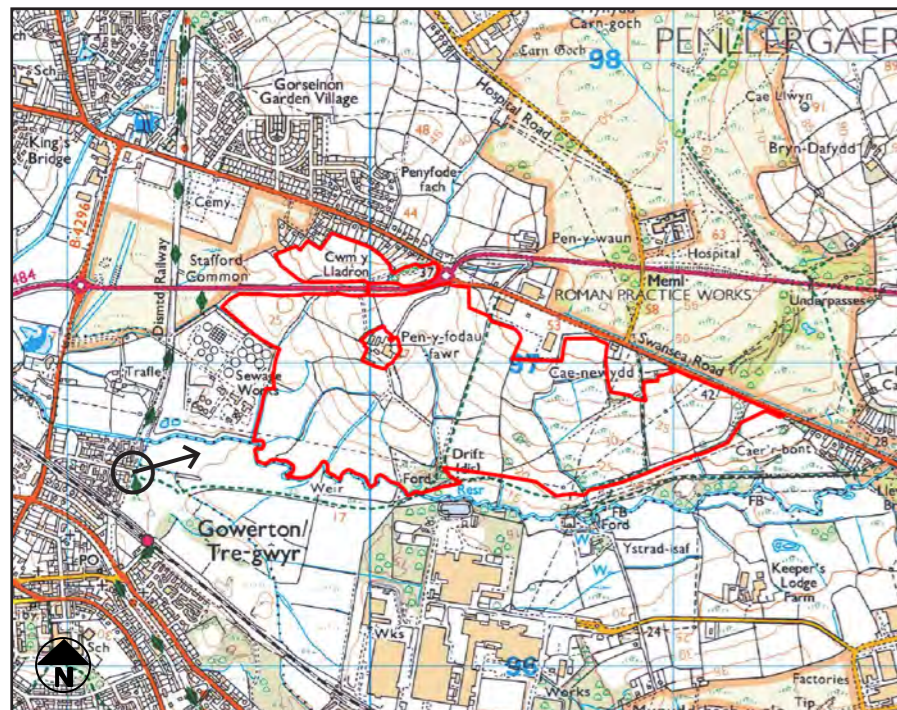


Approximate extent of site  
(extends beyond photo)



### CONTEXT BASELINE VIEWPOINT 7

Gower Way footpath, Fairwood Terrace



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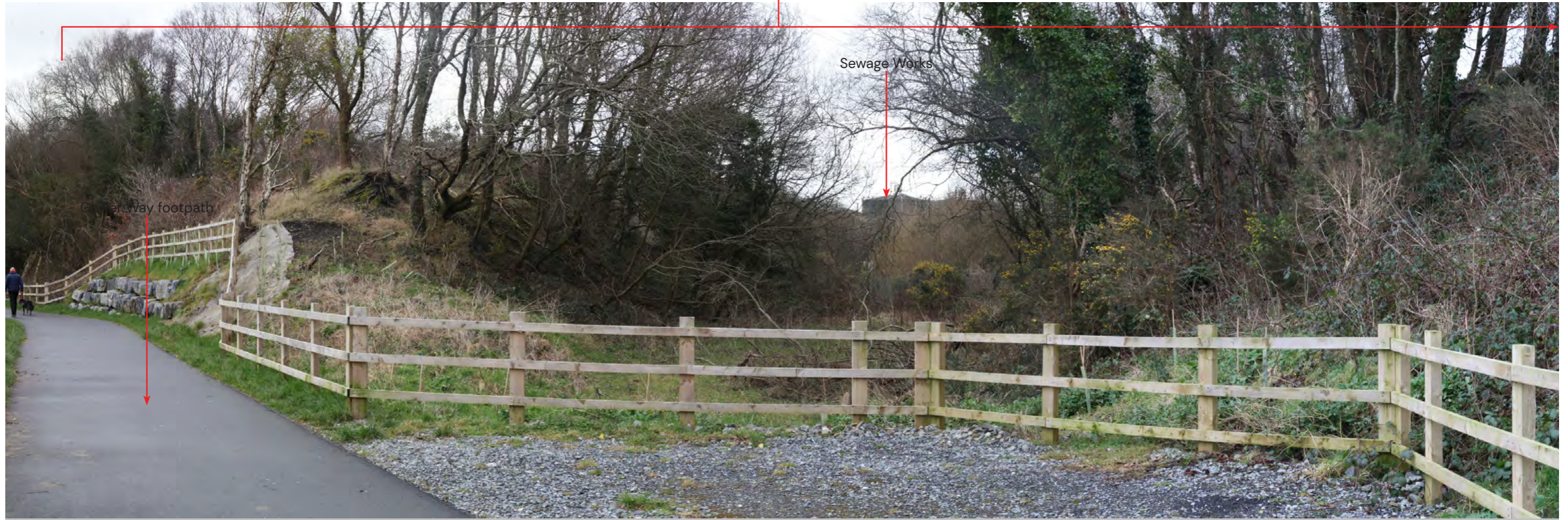
Camera make & model - Canon EOS 5D, FFS Viewpoint height (AOD) - 11m  
Date & time of photograph - 09/03/2022 @ 11:16 Distance from site - 400m  
OS grid reference - 259226, 196642





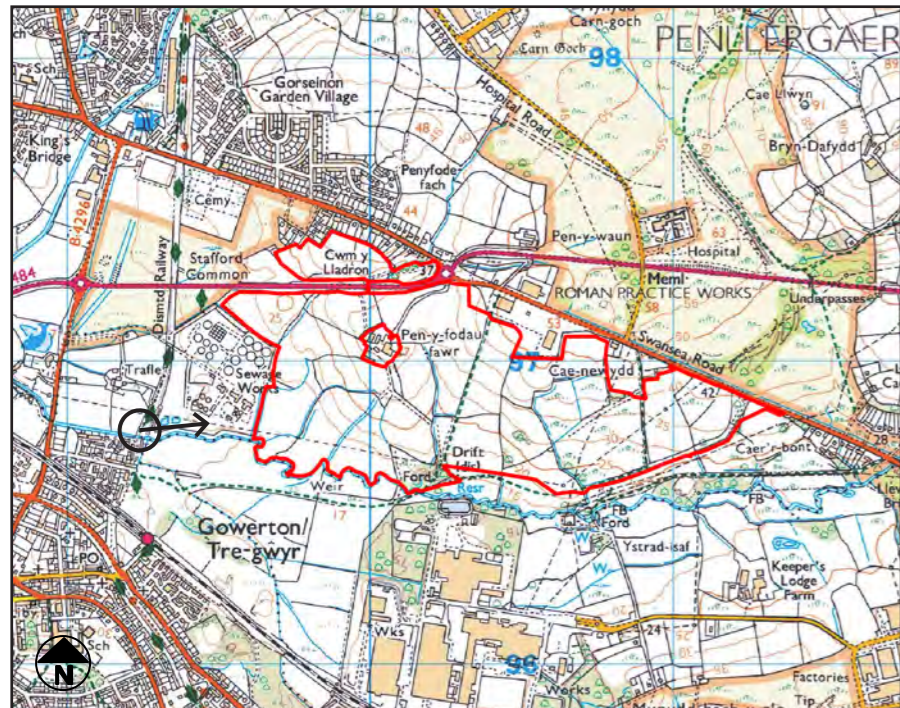


Approximate extent of site  
(extends beyond photo)



### CONTEXT BASELINE VIEWPOINT 8

Gower Way footpath



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Camera make & model - Canon EOS 5D, FFS    Viewpoint height (AOD) - 9m  
 Date & time of photograph - 09/03/2022 @ 11:16    Distance from site - 375m  
 OS grid reference - 259242, 196778



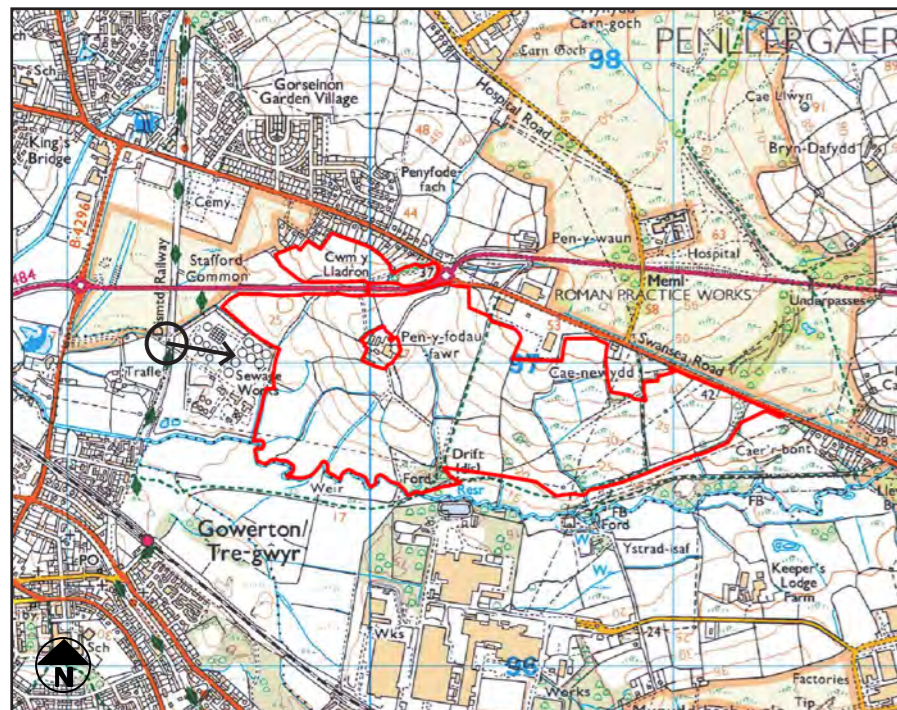


Approximate extent of site  
(extends beyond photo)



### CONTEXT BASELINE VIEWPOINT 9A (EAST)

Way footpath, south of Stafford Common



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Camera make & model - Canon EOS 5D, FFS  
Date & time of photograph - 09/03/2022 @ 11:16  
OS grid reference - 259333, 197065  
Viewpoint height (AOD) - 9m  
Distance from site - 215m

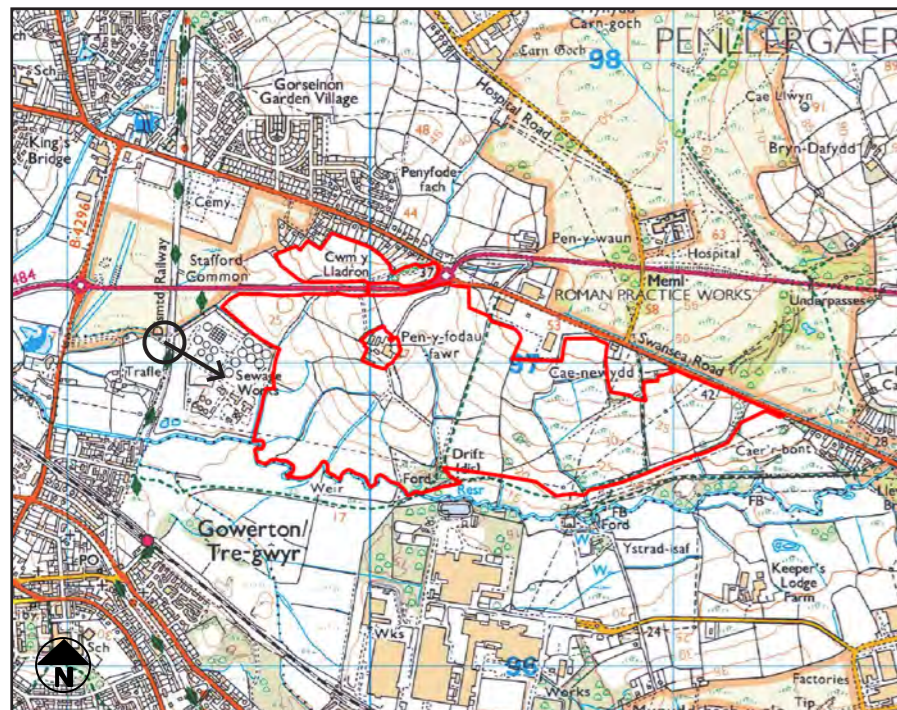


Approximate extent of site  
(extends beyond photo)



### CONTEXT BASELINE VIEWPOINT 9B (SOUTH EAST)

Way footpath, south of Stafford Common



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Camera make & model - Canon EOS 5D, FFS  
 Date & time of photograph - 09/03/2022 @ 11:16  
 OS grid reference - 259333, 197065  
 Viewpoint height (AOD) - 9m  
 Distance from site - 215m

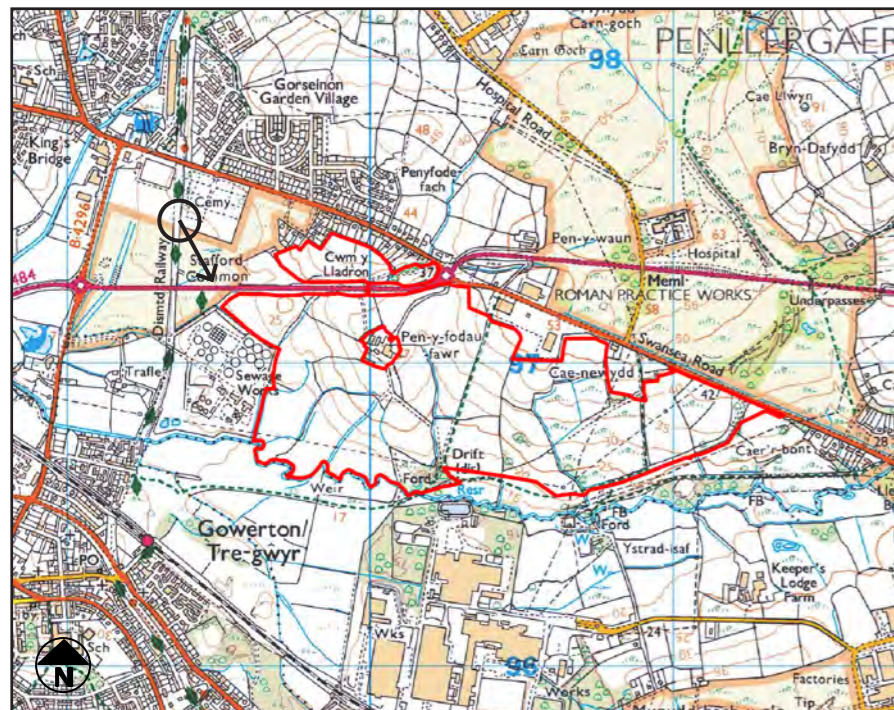




Approximate extent of site  
(extends beyond photo)



### CONTEXT BASELINE VIEWPOINT 10 Gower Way footpath, north of Stafford Common



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Camera make & model - Canon EOS 5D, FFS      Viewpoint height (AOD) - 14m  
Date & time of photograph - 09/03/2022 @ 11:16      Distance from site - 305m  
OS grid reference - 259371, 197468

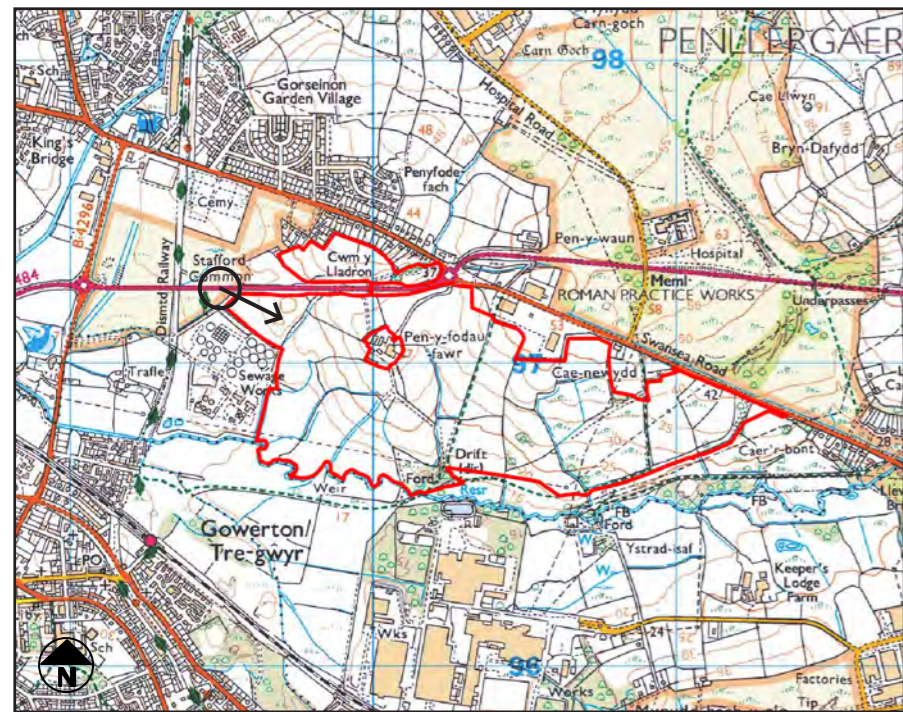






### CONTEXT BASELINE VIEWPOINT 11

Roundabout, Swansea Road/A484



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Camera make & model - Canon EOS 5D, FFS    Viewpoint height (AOD) - 16m  
 Date & time of photograph - 01/12/2021 @ 13:09    Distance from site - 45m  
 OS grid reference - 259500, 197241





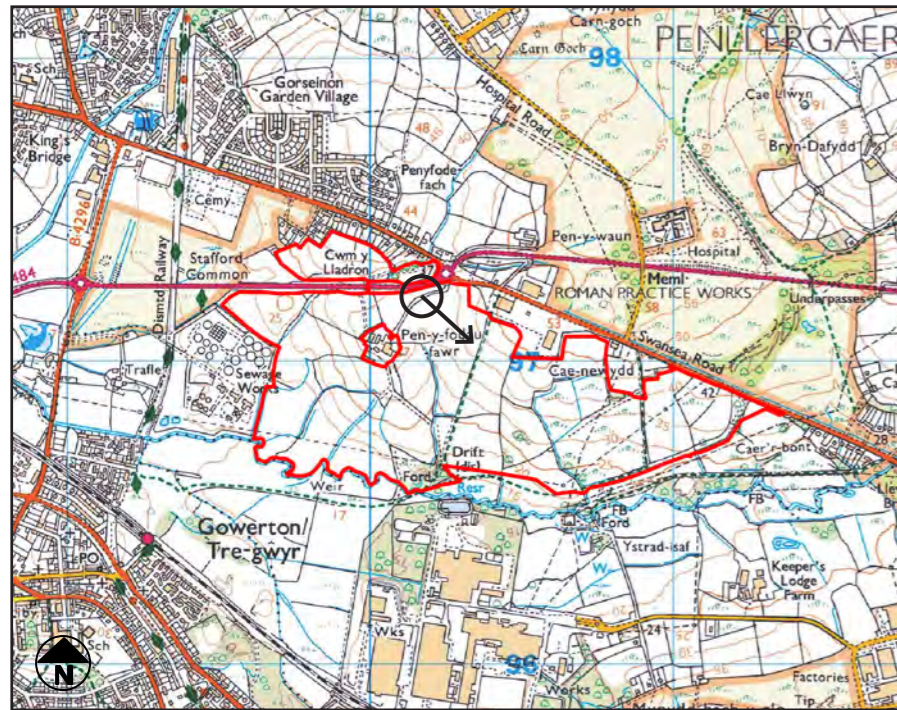


Approximate extent of site  
(extends beyond photo)



### CONTEXT BASELINE VIEWPOINT 12A (SOUTH EAST)

Access Road to Penyfodau Fawr Farm



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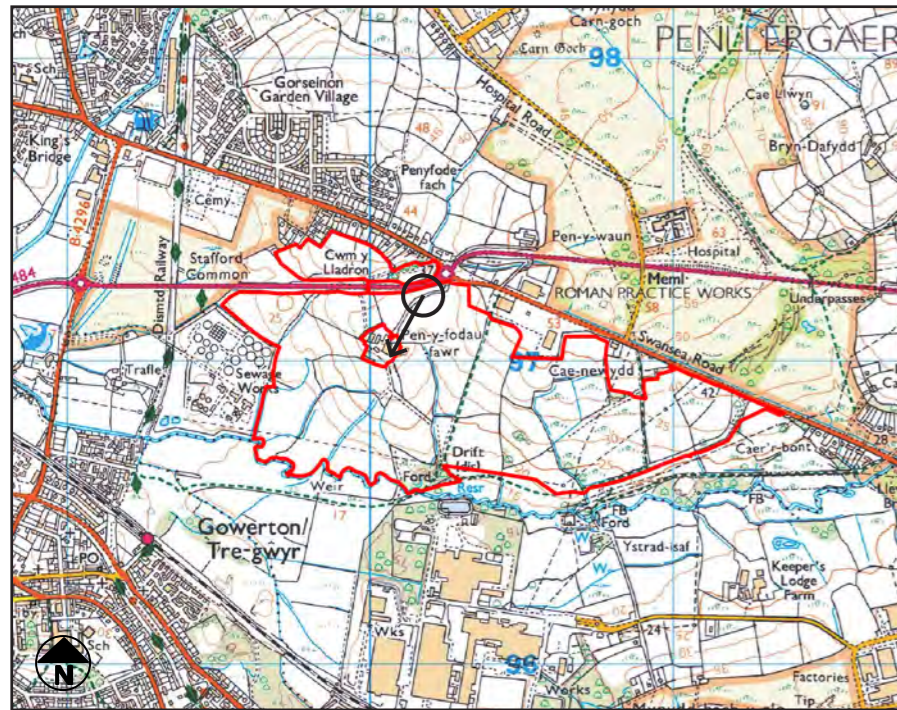
Camera make & model - Canon EOS 5D, FFS    Viewpoint height (AOD) - 39m  
 Date & time of photograph - 01/12/2021 @ 12:32    Distance from site - 0m  
 OS grid reference - 260167, 197210

Approximate extent of site  
(extends beyond photo)



### CONTEXT BASELINE VIEWPOINT 12B (SOUTH WEST)

Access Road to Penyfodau Fawr Farm



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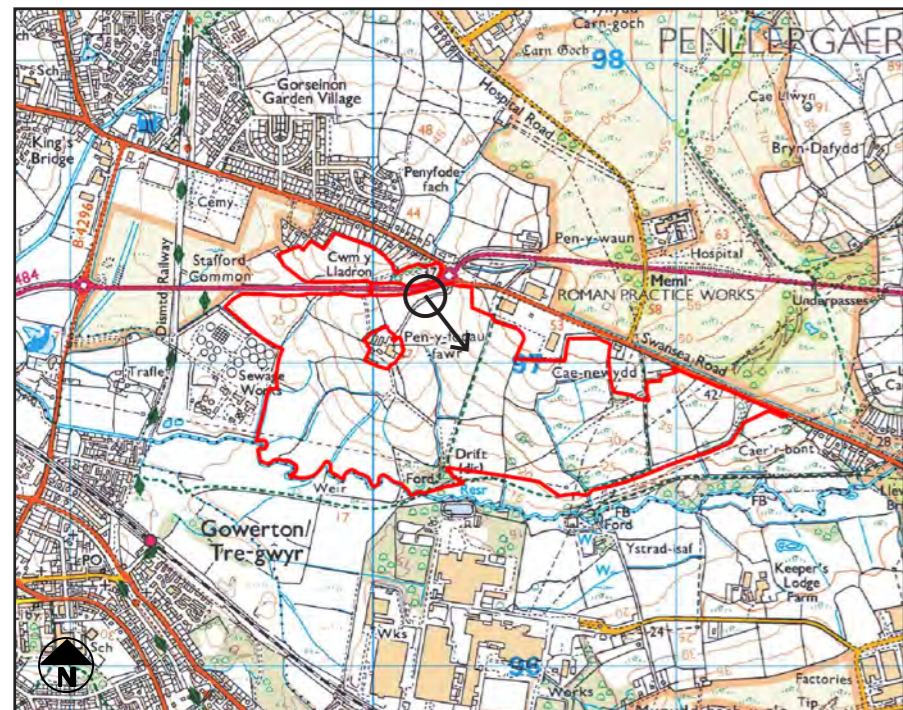
Camera make & model - Canon EOS 5D, FFS      Viewpoint height (AOD) - 39m  
 Date & time of photograph - 01/12/2021 @ 12:32      Distance from site - 0m  
 OS grid reference - 260167, 197210





### CONTEXT BASELINE VIEWPOINT 13

Roundabout, Swansea Road/A484



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Camera make & model - Canon EOS 6D, FFS    Viewpoint height (AOD) - 39m  
 Date & time of photograph - 18/11/2022@ 13:43    Distance from site - 5m  
 OS grid reference - 260221, 197282



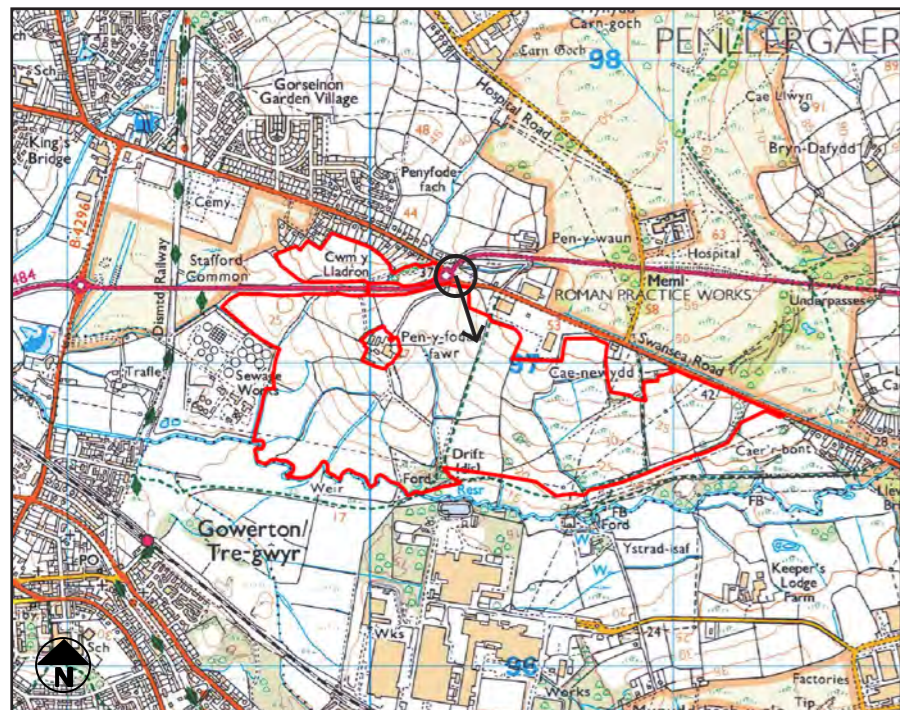


Approximate extent of site  
(extends beyond photo)



### CONTEXT BASELINE VIEWPOINT 14A (SOUTH EAST)

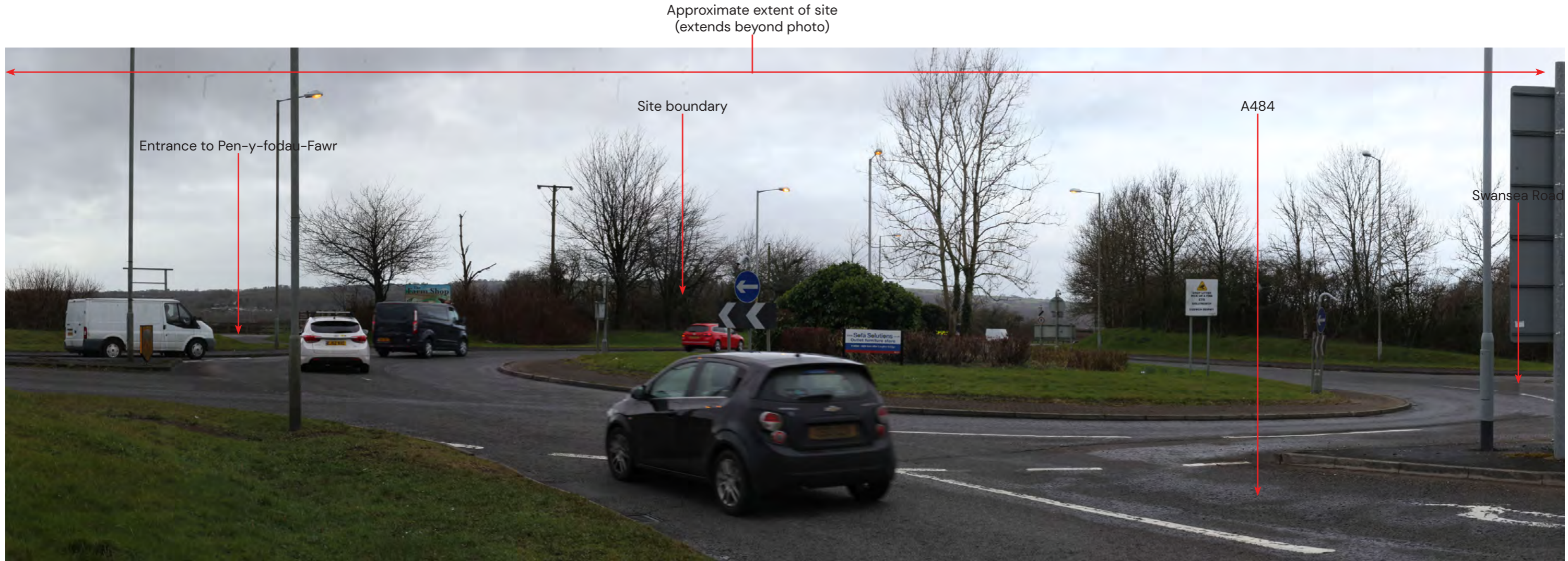
Roundabout, Swansea Road/A484



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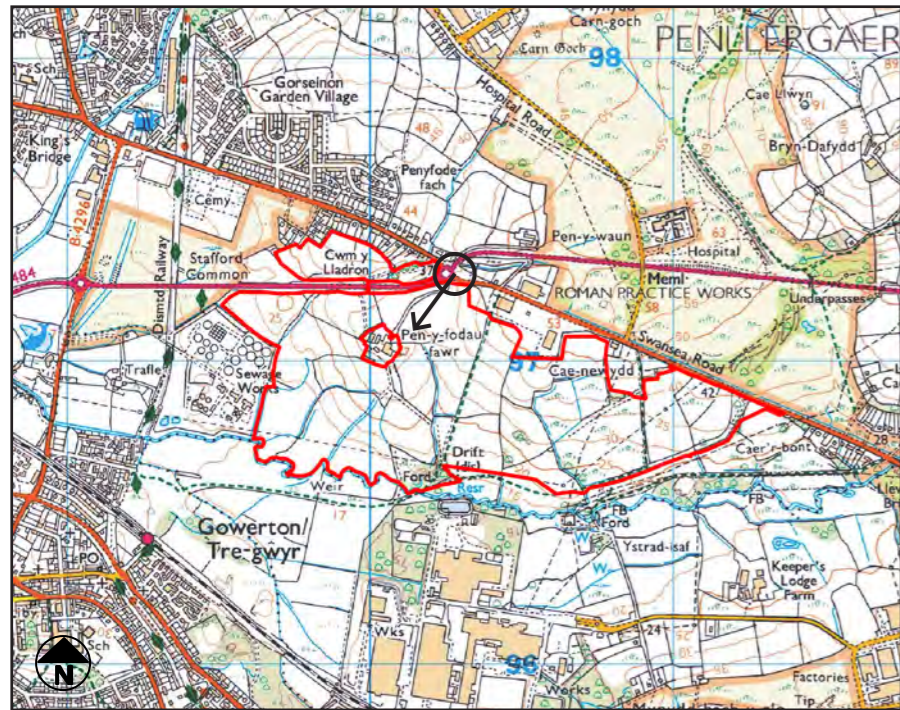
Camera make & model - Canon EOS 5D, FFS Viewpoint height (AOD) - 40m  
 Date & time of photograph - 09/03/2022 @ 9:40 Distance from site - 40m  
 OS grid reference - 260284, 197301





**CONTEXT BASELINE VIEWPOINT 14B (SOUTH WEST)**

Roundabout, Swansea Road/A484



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Camera make & model - Canon EOS 5D, FFS Viewpoint height (AOD) - 40m  
 Date & time of photograph - 09/03/2022 @ 9:40 Distance from site - 40m  
 OS grid reference - 260284, 197301

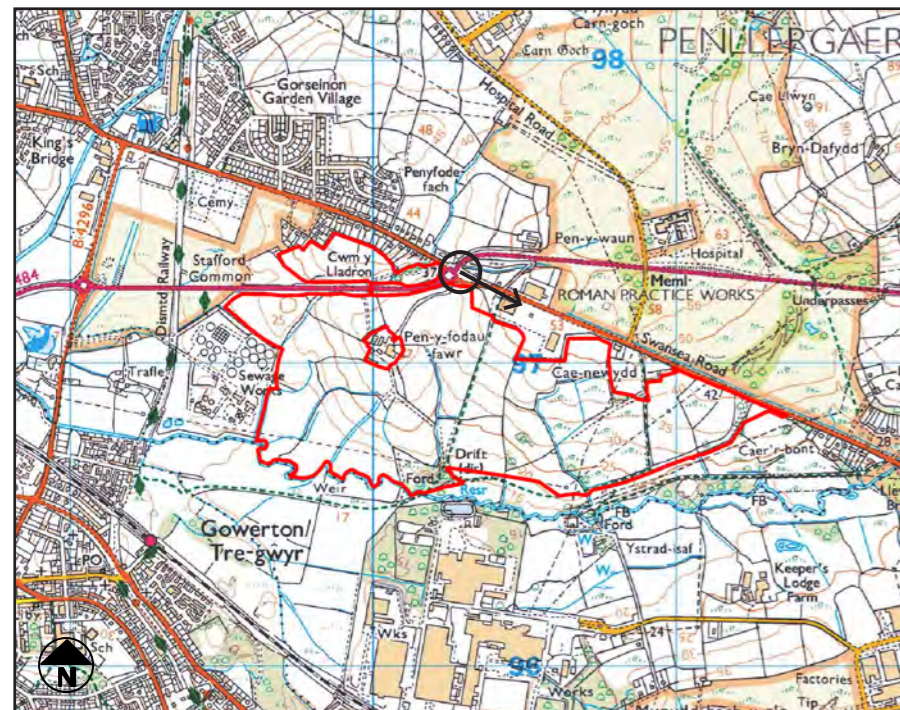






**CONTEXT BASELINE VIEWPOINT 15A (SOUTH EAST)**

Roundabout, Swansea Road/A484



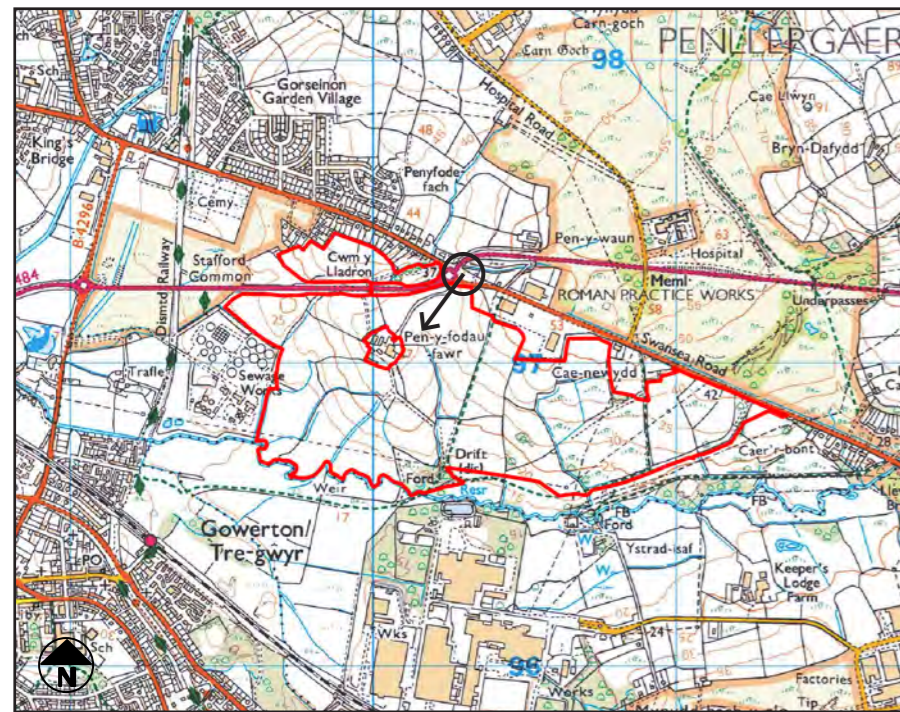
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Camera make & model - Canon EOS 5D, FFS Viewpoint height (AOD) - 40m  
 Date & time of photograph - 09/03/2022 @ 9:48 Distance from site - 25m  
 OS grid reference - 260281, 197283



**CONTEXT BASELINE VIEWPOINT 15B (SOUTH WEST)**

Roundabout, Swansea Road/A484



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Camera make & model - Canon EOS 5D, FFS Viewpoint height (AOD) - 40m  
 Date & time of photograph - 09/03/2022 @ 9:48 Distance from site - 25m  
 OS grid reference - 260281, 197283



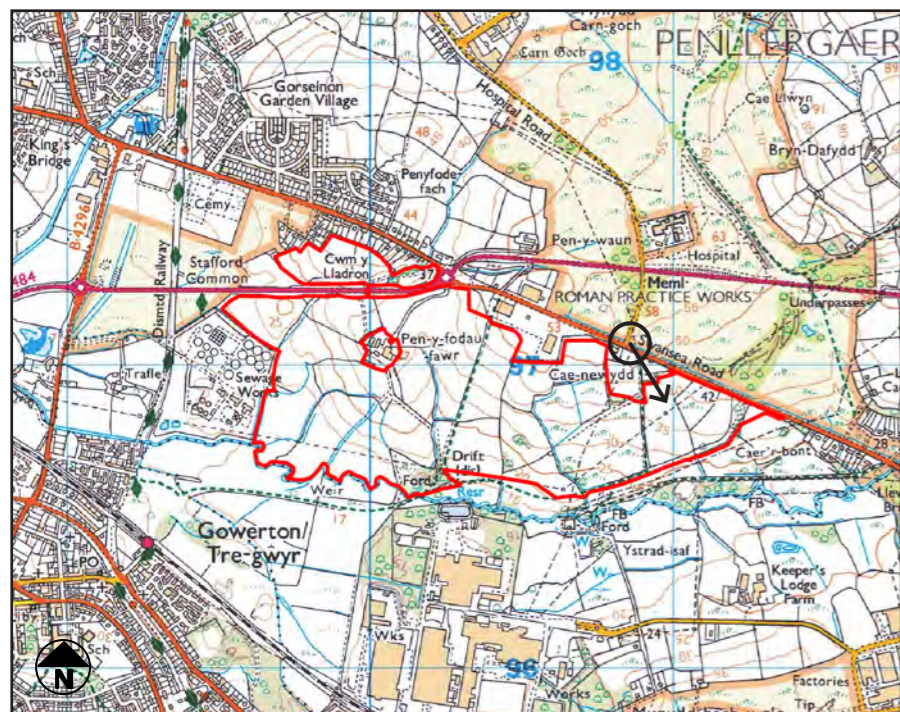


Approximate extent of site  
(extends beyond photo)



### CONTEXT BASELINE VIEWPOINT 16A (SOUTH EAST)

Swansea Road



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Camera make & model - Canon EOS 5D, FFS Viewpoint height (AOD) - 53m  
 Date & time of photograph - 09/03/2022 @ 10:09 Distance from site - 90m  
 OS grid reference - 260869, 197053

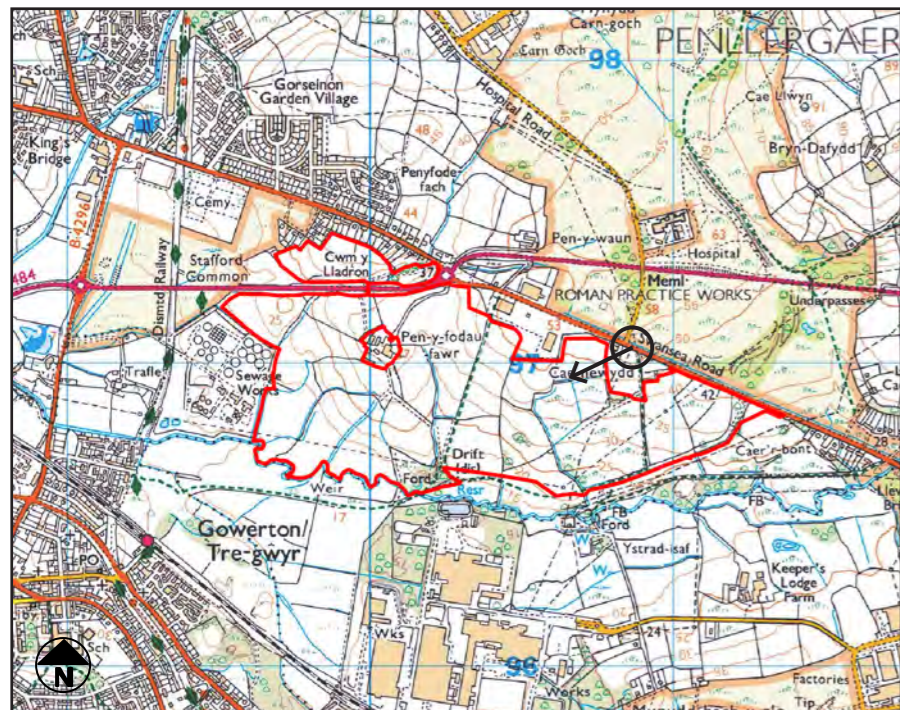


Approximate extent of site  
(extends beyond photo)



### CONTEXT BASELINE VIEWPOINT 16B (SOUTH WEST)

Swansea Road



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Camera make & model - Canon EOS 5D, FFS Viewpoint height (AOD) - 53m  
 Date & time of photograph - 09/03/2022 @ 10:09 Distance from site - 90m  
 OS grid reference - 260869, 197053

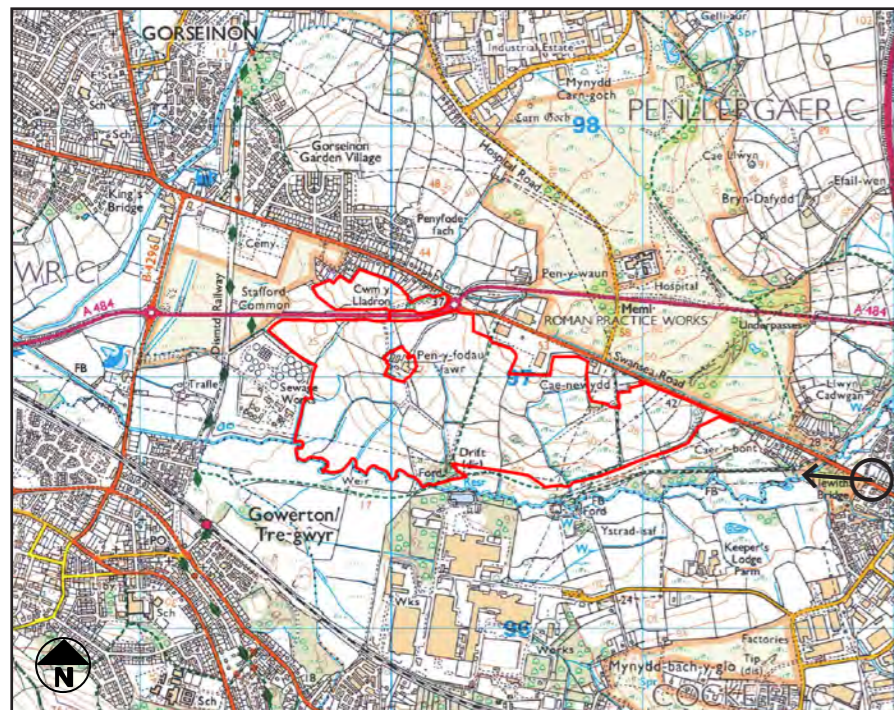


Approximate extent of site  
(extends beyond photo)



### CONTEXT BASELINE VIEWPOINT 17

Swansea Road



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Camera make & model - Canon EOS 5D, FFS Viewpoint height (AOD) - 27m  
 Date & time of photograph - 09/03/2022 @ 10:27 Distance from site - 580m  
 OS grid reference - 261891, 196591





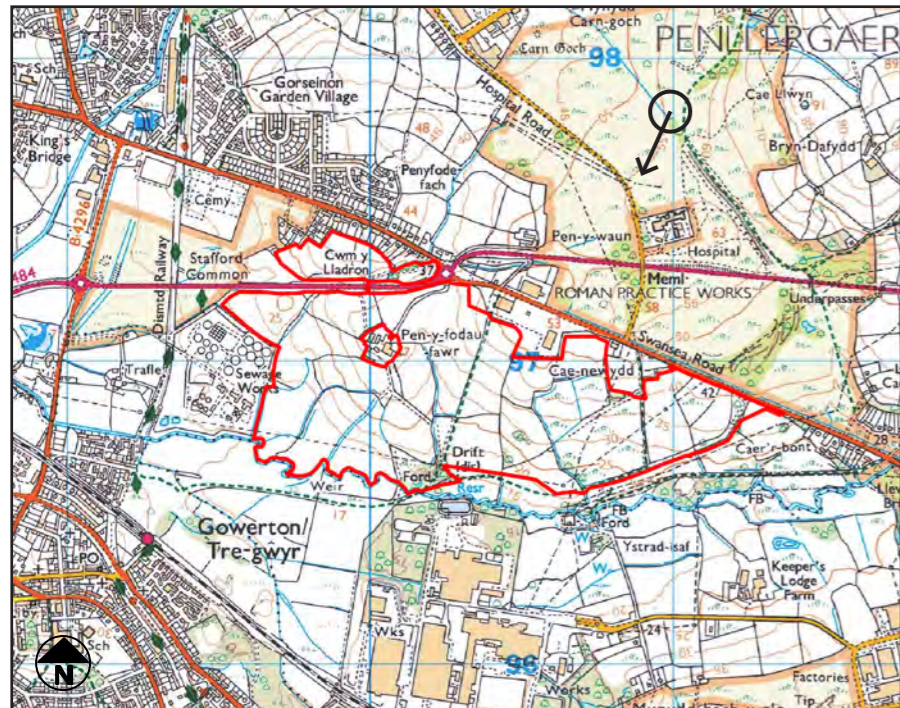


Approximate extent of site



## CONTEXT BASELINE VIEWPOINT 18

Public Footpath LC28 near Bryn-Dafydd within Penllergaer Common



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Camera make & model - Canon EOS 5D, FFS    Viewpoint height (AOD) - 56m  
 Date & time of photograph - 01/12/2021 @ 14:04    Distance from site - 775m  
 OS grid reference - 260987, 197819



Approximate extent of site  
(extends beyond photo)

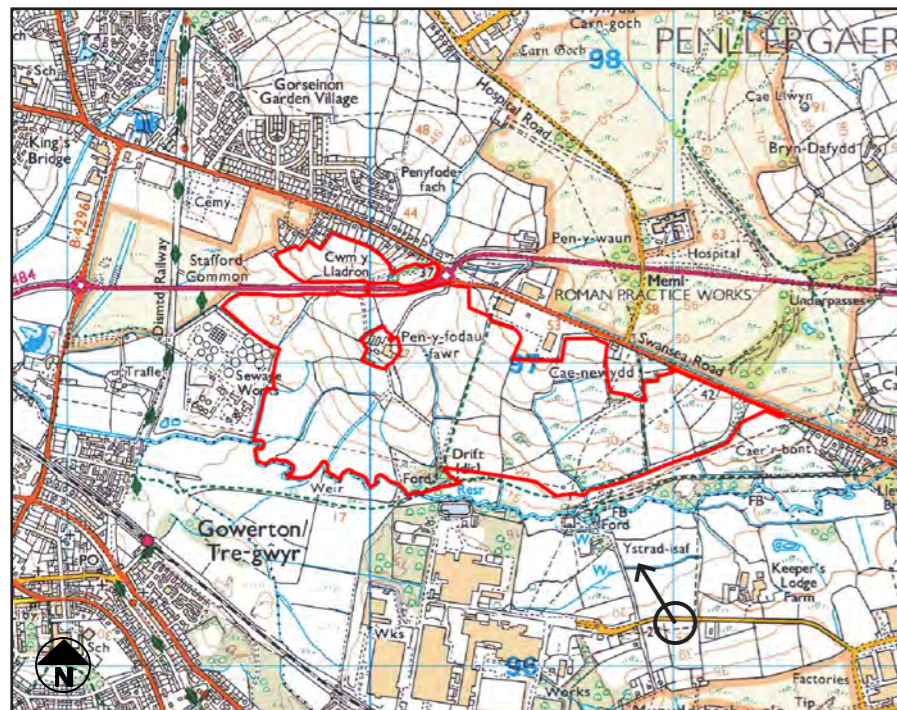


Properties along  
Swansea Road

Pylon within  
the site

### CONTEXT BASELINE VIEWPOINT 19

Titanium Road, Waunarlwydd

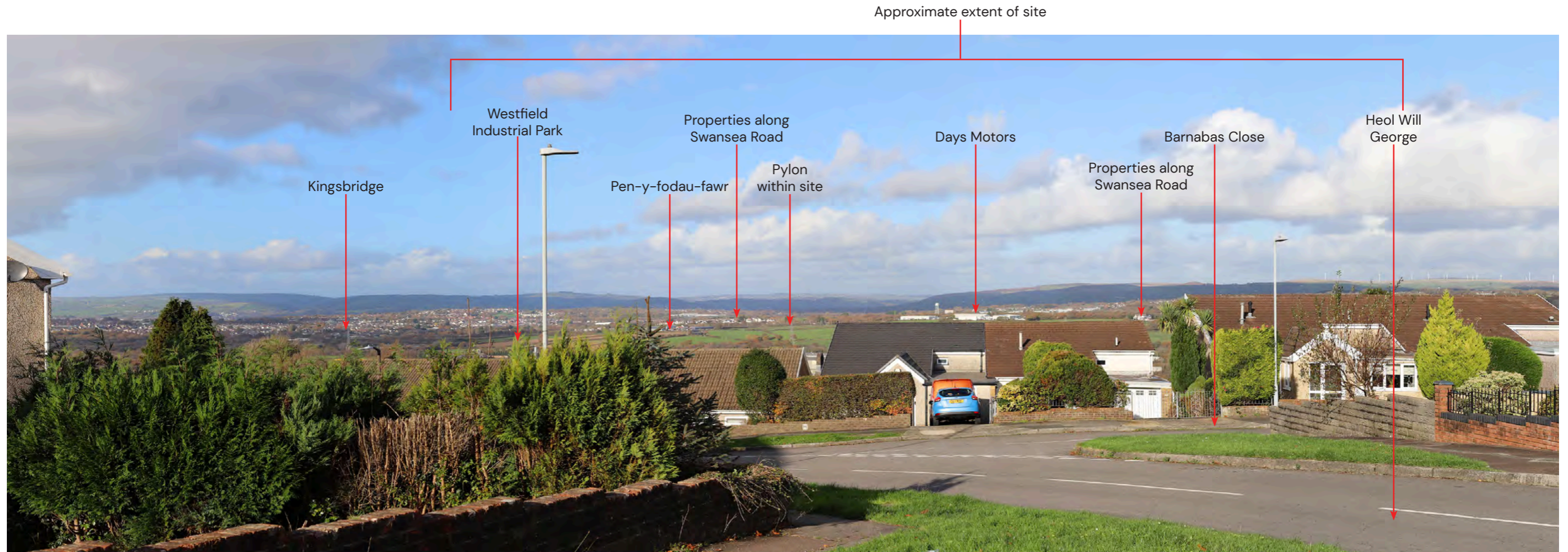


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Camera make & model - Canon EOS 6D, FFS    Viewpoint height (AOD) - 25m  
 Date & time of photograph - 18/11/2022@ 14:00    Distance from site - 480m  
 OS grid reference - 260996, 196154

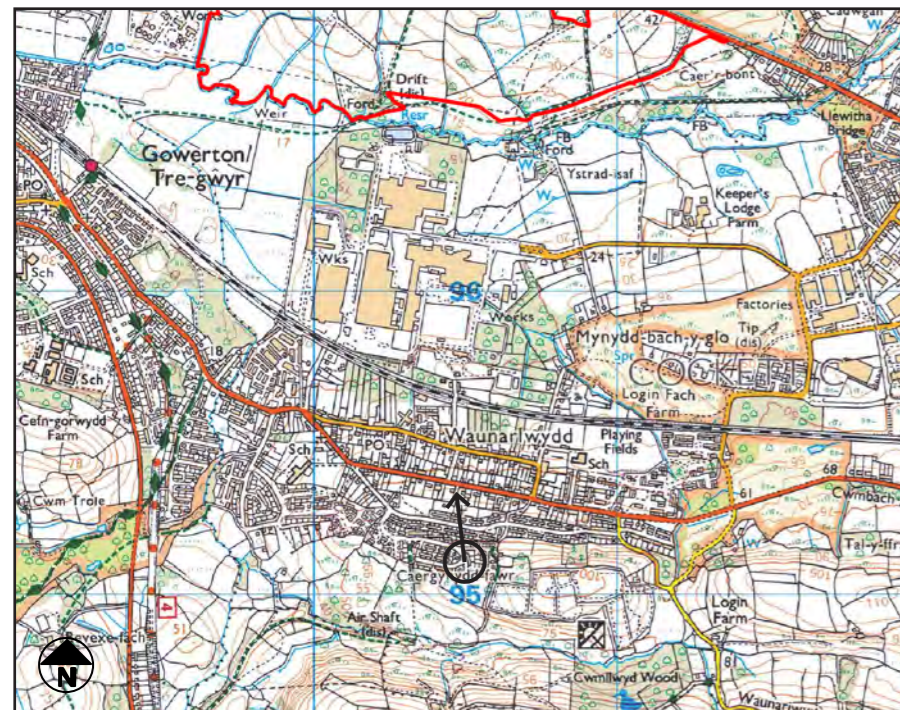






## CONTEXT BASELINE VIEWPOINT 20

Junction of Heol Will George and Sardis Close



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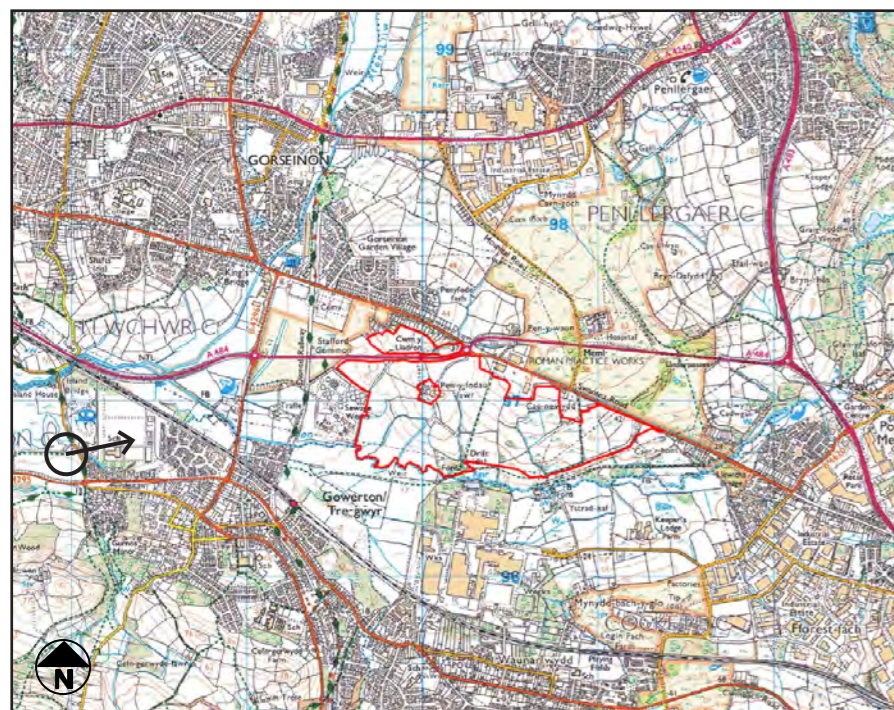
Camera make & model - Canon EOS 6D, FFS  
 Date & time of photograph - 18/11/2022@ 14:18  
 OS grid reference - 260493, 195117  
 Viewpoint height (AOD) - 82m  
 Distance from site - 1455m





## CONTEXT BASELINE VIEWPOINT 21

Public Footpath LC48, off Pont y Cob Road



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Camera make & model - Canon EOS 5D, FFS  
 Date & time of photograph - 09/03/2022@ 11:43  
 OS grid reference - 257981, 196705  
 Viewpoint height (AOD) - 8m  
 Distance from site - 1600m



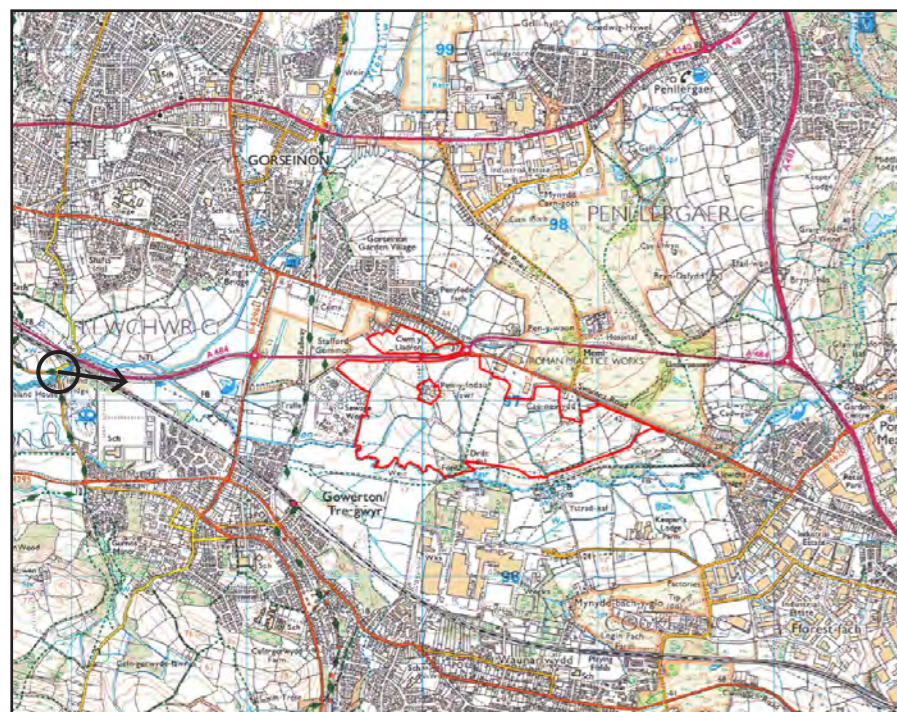






**CONTEXT BASELINE VIEWPOINT 22**

Wales Coast Path



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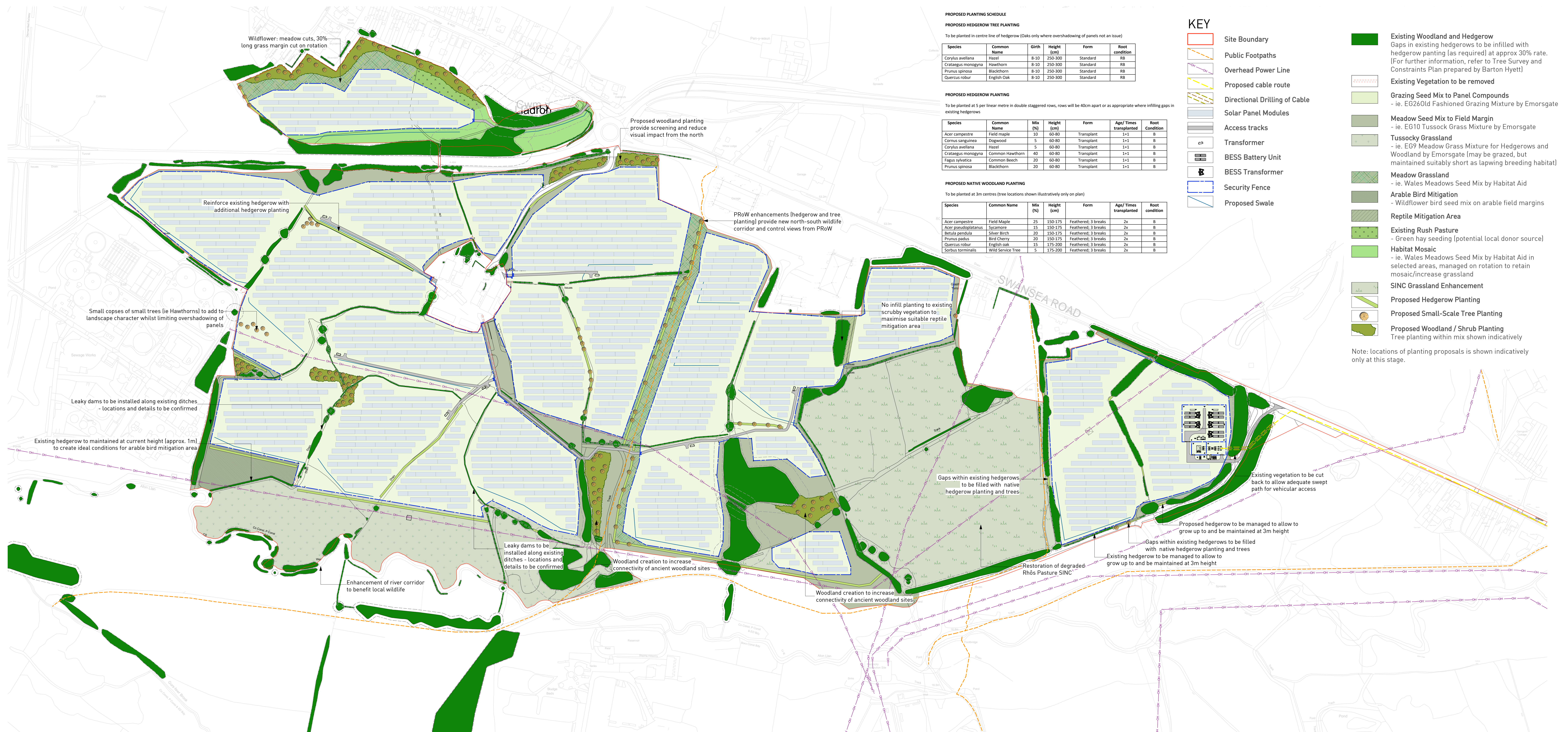
Camera make & model - Canon EOS 5D, FFS    Viewpoint height (AOD) - 5m  
 Date & time of photograph - 09/03/2022 @ 11:59    Distance from site - 1590m  
 OS grid reference - 257921, 197153







## Appendix 3: Landscape Strategy Plan



**PROPOSED PLANTING SCHEDULE**

**PROPOSED HEDGEROW TREE PLANTING**

To be planted in centre line of hedgerow (Oaks only where overshadowing of panels not an issue)

Species	Common Name	Girth (cm)	Height (cm)	Form	Root condition
Corylus avellana	Hazel	8-10	250-300	Standard	RB
Crataegus monogyna	Hawthorn	8-10	250-300	Standard	RB
Prunus spinosa	Blackthorn	8-10	250-300	Standard	RB
Quercus robur	English Oak	8-10	250-300	Standard	RB

**PROPOSED HEDGEROW PLANTING**

To be planted at 5 per linear metre in double staggered rows, rows will be 40cm apart or as appropriate where infilling gaps in existing hedgerows

Species	Common Name	Mix (%)	Height (cm)	Form	Age/ Times transplanted	Root Condition
Acer campestre	Field maple	10	60-80	Transplant	1+1	B
Cornus sanguinea	Dogwood	5	60-80	Transplant	1+1	B
Corylus avellana	Hazel	5	60-80	Transplant	1+1	B
Crataegus monogyna	Common Hawthorn	40	60-80	Transplant	1+1	B
Fagus sylvatica	Common Beech	20	60-80	Transplant	1+1	B
Prunus spinosa	Blackthorn	20	60-80	Transplant	1+1	B

**PROPOSED NATIVE WOODLAND PLANTING**

To be planted at 3m centres (tree locations shown illustratively only on plan)

Species	Common Name	Mix (%)	Height (cm)	Form	Age/ Times transplanted	Root Condition
Acer campestre	Field Maple	25	150-175	Feathered, 3 breaks	2x	B
Acer pseudoplatanus	Sycamore	15	150-175	Feathered, 3 breaks	2x	B
Betula pendula	Silver Birch	20	150-175	Feathered, 3 breaks	2x	B
Prunus padus	Bird Cherry	20	150-175	Feathered, 3 breaks	2x	B
Quercus robur	English oak	15	175-200	Feathered, 3 breaks	2x	B
Sorbus torminalis	Wild Service Tree	5	175-200	Feathered, 3 breaks	2x	B

- KEY**
- Site Boundary
  - Public Footpaths
  - Overhead Power Line
  - Proposed cable route
  - Directional Drilling of Cable
  - Solar Panel Modules
  - Access tracks
  - Transformer
  - BESS Battery Unit
  - BESS Transformer
  - Security Fence
  - Proposed Swale
  - Existing Woodland and Hedgerow
  - Gaps in existing hedgerows to be infilled with hedgerow planting (as required) at approx 30% rate. [For further information, refer to Tree Survey and Constraints Plan prepared by Barton Hyett]
  - Existing Vegetation to be removed
  - Grazing Seed Mix to Panel Compounds
    - ie. EG26 Old Fashioned Grazing Mixture by Emorsgate
  - Meadow Seed Mix to Field Margin
    - ie. EG10 Tussock Grass Mixture by Emorsgate
  - Tussock Grassland
    - ie. EG9 Meadow Grass Mixture for Hedgerows and Woodland by Emorsgate (may be grazed, but maintained suitably short as lawping breeding habitat)
  - Meadow Grassland
    - ie. Wales Meadows Seed Mix by Habitat Aid
  - Arable Bird Mitigation
    - Wildflower bird seed mix on arable field margins
  - Reptile Mitigation Area
  - Existing Rush Pasture
    - Green hay seeding (potential local donor source)
  - Habitat Mosaic
    - ie. Wales Meadows Seed Mix by Habitat Aid in selected areas, managed on rotation to retain mosaic/increase grassland
  - SINC Grassland Enhancement
  - Proposed Hedgerow Planting
  - Proposed Small-Scale Tree Planting
  - Proposed Woodland / Shrub Planting
    - Tree planting within mix shown indicatively
- Note: locations of planting proposals is shown indicatively only at this stage.

**PLANTING SPECIFICATION**

These implementation and maintenance guidelines are for planning purposes only to indicate the level of workmanship to be specified and do not constitute a detailed specification.

**1. GENERAL**

1.1. All landscape operatives will be appropriately trained, certified and qualified to undertake the tasks required. When required, the relevant certificates will be made available for inspection. All work is to be carried out in accordance with the relevant British Standards, Codes of Practice and Legislation.

1.2. All plants shall conform to BS 3936 Nursery Stock Specification for Trees and Shrubs and be in accordance with the National Plant Specification. Supplying nurseries shall be registered under the NTA Nursery Certification Scheme. All plants shall be packed and transported in accordance with the Code of Practice for Plant Handling as produced by CPSE.

1.3. Planting shall not be carried out when the ground is waterlogged, frost bound or during periods of cold drying winds. All bare-root planting stock will be kept covered until actually planted in order to minimise water-loss and prevent the roots from drying out. Tree handling, storage and planting shall be in accordance with BS 8545 Trees: From nursery to independence in the landscape, Chapters 9 to 10 and Annexes E to F.

1.4. The landscape contractor shall maintain all areas of new planting for a period of 12 months following practical completion. All stock deemed to be dead, dying or diseased within the defects period shall be replaced by the contractor at his own cost.

1.5. A minimum intervention approach will be used in terms of weed control. In areas of transplant tree/shrub or ornamental shrub planting this is to be achieved by using mulch mats. Weed killer and other chemicals will be used as little as possible on site. Spot removal of weeds will be carried out by hand removal as necessary.

**2. TREE PLANTING**

- Ground Preparation and Tree Pit Excavation**
- 2.1. Where necessary remove existing weeds by hand. Chemical removal using a glyphosate based herbicide (and/ or other suitable alternative) will be avoided unless large areas need clearing – following which allow a suitable period to elapse, as recommended by the manufacturer, for the herbicide to take effect.
- 2.2. Tree pits of at least 75mm diameter greater than the root system and no deeper than the rootball / container depth are to be excavated and the sides well scarified to prevent smearing. All extraneous matter such as plastic, wood, metal and stones greater than 50mm in any dimension shall be removed from site.
- 2.3. During excavation of the pit, the soil dug should be placed to one side separating topsoil and subsoil as far as is practical.
- Tree Planting**
- 2.4. Trees shall be planted as per the planting arrangement as set out on the planting plan and plant schedule.
- 2.5. The typical rooting depth for trees is 900mm. The first 300mm shall be made up of topsoil; it shall be ensured that a suitable subsoil provides the remainder of the minimum rooting depth.
- 2.6. The root system of the tree should be wetted prior to planting. The tree should be planted at the correct depth taking into account the position of the root flare and the finished level - the rootball or root stem transition should be level with the existing host soil or surface. The base of the rootball should typically sit on subsoil, for larger rootballs the subsoil will sit around the lower portion of the rootball.
- 2.7. Tree pits should be backfilled with the excavated topsoil. If the original topsoil is not available or deemed unsuitable, a multi-purpose topsoil should be used. Any subsoil excavated should be discarded and the subsoil depth (beyond 300mm deep) backfilled with a high sand content subsoil. Backfill should be added gradually, in layers of 150mm to 200mm depth, ensuring the tree is held upright at each stage the fill should be firmed in to eliminate all air pockets under and around the root system, but with care being taken not to excessively compact the soil. The final layer should not be consolidated.
- 2.8. General-purpose slow release fertiliser (at the rate of 75gm/m<sup>2</sup>) and Tree Planting and Mulching Compost at the rate of 20litres/m<sup>2</sup>) are to be incorporated into the top 150mm of topsoil during final cultivations.
- 2.9. Selected standard trees will be protected from rabbit and deer damage by fitting appropriate tree guards.
- 2.10. Heavy Standard trees are to be single staked with 75mm dia stakes. Stakes should be driven at least 300mm into undisturbed ground before planting the tree, taking care to avoid underground services and cables etc. and should typically be one third the height of the tree stem above ground.
- 2.11. Staked trees shall be secured to stakes with suitable proprietary rubber tree ties and spacers.
- 2.12. Immediately after planting, but before applying the below bark mulch, all trees should be saturated to field capacity.
- 2.13. Ornamental composted bark mulch will be spread to a depth of 50mm across a 1m dia circle around individual trees, ensuring that the root flare and base of the stem, along with any ground cover plants, are not buried.

**3. NATIVE HEDGEROW PLANTING**

- Ground Preparation**
- 3.1. Where necessary existing weeds will be treated with a glyphosate-based herbicide (and/ or other suitable alternative) and a suitable period allowed to elapse, as recommended by the manufacturer, for the herbicide to take effect.
- 3.2. All extraneous matter such as plastic, wood, metal and stones greater than 50mm diameter shall be removed from site.
- Planting**
- 3.3. The planting arrangement shall be as set out in the plant schedule on the relevant planting plan.
- 3.4. Bare-root hedge plants shall be notch planted in a double staggered row at the rate of 5 plants per linear metre (using L-shaped notches) using spades of a design suitable for this purpose. The notches must be vertical and deep enough for the roots to hang freely, with the transplant being planted so that the root collar is exactly level with the ground surface. The notch must then be closed and the soil will be well firmed round the roots in line with the guidelines as set out in BS 4428 (1989).
- 3.5. All bare-root hedge planting stock will be protected from rabbit damage using approved proprietary 600mm clear plastic spiral guards, supported with 0.9m 12/14lb canes as advised by the manufacturer.
- Maintenance during first growing season**
- 3.6. All dead, dying or diseased hedge plants will be replaced with plants of similar size and species. If the failure of the plant is due to disease and the disease is considered likely to re-occur then an alternative species may be used as replacement if agreed with the LPA.
- 3.7. The planting area will be kept weed free throughout the maintenance period by manually removing (or using approved herbicides where necessary in April, June and August).

**4. NATIVE HEDGEROW SUPPLEMENTARY INFILL PLANTING**

- Ground Preparation**
- 4.1. Where necessary existing weeds will be treated with a glyphosate-based herbicide (and/ or other suitable alternative) and a suitable period allowed to elapse, as recommended by the manufacturer, for the herbicide to take effect.
- 4.2. All extraneous matter such as plastic, wood, metal and stones greater than 50mm diameter will be removed from site to a registered waste disposal facility.
- Planting**
- 4.3. The planting arrangement shall be as set out in the plant schedule on the relevant planting plan.
- 4.4. Bare-root hedge plants shall be notch planted in a double staggered row at the rate of 5 plants per linear metre (using L-shaped notches) using spades of a design suitable for this purpose. The notches must be vertical and deep enough for the roots to hang freely, with the transplant being planted so that the root collar is exactly level with the ground surface. The notch must then be closed and the soil will be well firmed round the roots in line with the guidelines as set out in BS 4428 (1989).
- 4.5. All container-grown planting stock will be protected from rabbit damage using approved proprietary 600mm plastic shrub shelters, supported with 0.9m x 32mm x 32mm softwood stakes as advised by the manufacturer.
- 4.6. All bare-root hedge planting stock will be protected from rabbit damage using approved proprietary 600mm clear plastic spiral guards, supported with 0.9m 12/14lb canes as advised by the manufacturer.
- Maintenance during first growing season**
- 4.7. All dead, dying or diseased hedge plants will be replaced with plants of similar size and species. If the failure of the plant is due to disease and the disease is considered likely to re-occur, then an alternative species may be used as replacement if agreed with the LPA.

**5. NATIVE WOODLAND PLANTING**

- Ground Preparation**
- 5.1. Cut existing rough grass and weeds to between 20mm and 30mm and remove 300x300mm squares of turf.
- Planting**
- 5.2. All native shrub planting to be UK grown, cell grown 60-80cm stock.
- 5.3. The minimum overall recommended rooting depth for shrubs is 600mm and for trees is 900mm. The first 300mm shall be made up of multi-purpose topsoil; it shall be ensured that a suitable subsoil provides the remainder of the minimum rooting depth. Before receiving topsoil, subsoils should be loosened using ripping equipment, this shall be done when the subsoil is dry to encourage soil shattering. All stones and other objects larger than 50 mm shall be removed from the prepared surface.
- 5.4. Shrub / tree planting is to be as per the planting pattern as set out on the planting plan and planting schedule, with shrubs / trees planted at even spaces into the prepared soil at the specified number per centre, with minimal disturbance to the rootball, and well firmed in. Planting should avoid man-made grids and lines, and should group species together in groups of 5-7 plants. Spread ornamental pine bark mulch to a depth of 75mm to a 900mm diameter around each planting station.
- 5.5. All bare-root planting stock will be protected from rabbit damage using approved proprietary 0.6m (for shrub species) or 1.2m (for tree species) plastic shrub/tree guards, supported with 0.9m (or 1.35m for trees) x 32mm x 32mm softwood stakes as advised by the manufacturer.
- 5.6. All areas to receive native shrub planting to be covered with weed suppressing coir matting and pinned into place. Wood chip mulch be spread to a depth of 75mm across the full extent of the coir matting, ensuring that the root flare and base of the stem, along with any ground cover plants, are not buried.
- Maintenance**
- 5.7. Using approved herbicides, a 900mm diameter circle centred on each planting station shall be kept weed free throughout the maintenance period. In the autumn following planting the CA will prepare a list of all plants which are dead, dying or diseased and are to be replaced during the following planting season.
- 6. GRAZING MIXTURE AND MEADOW MIXTURE**
- Preparation**
- 6.1. Areas of grassland to be seeded shall be sprayed out with a glyphosate herbicide (and/ or other suitable alternative) and cultivated to a depth of 100mm removing all weeds debris and stones over 75mm diameter. The surface shall be raked to smooth flowing contours with a fine tith.
- Seeding**
- 6.2. Seeds shall be sown in September during calm weather and not when the ground is frost bound or waterlogged.
- 6.3. To achieve an even sowing, bulk with an inert carrier, such as sand. Seed shall be sown in two equal sowings in transverse directions at e.g. EG26 Standard Old Fashioned Grazing Mixture and EM2 Standard General Purpose Meadow Mixtures. After sowing the contractor shall roll in the seed to guarantee intimate contact with the soil, ensuring not to rake or cover the seed with soil.

**7. GENERAL MAINTENANCE**

- 7.1. The Landscape contractor shall maintain all areas of new planting for a period of 12 months following practical completion. All stock deemed to be dead, dying or diseased within the defects period shall be replaced by the contractor at his own cost. The site is to be visited monthly throughout the year to undertake the Following operations:
- Weed clearance: All planting areas to be kept weed free by herbicide treatment.
  - Litter clearance: All litter is to be removed from planting beds.
  - Watering: All planted areas are to be watered for the first two years from May to September following any dry periods of 7 days.
- Trees and Shrubs**
- 7.2. All trees are to be watered weekly from May to the end of September unless unnecessary due to heavy rain; to receive 20 gallons of water. All shrubs are to be watered for the first two years from May to September following any dry periods of 7 days. All tree ties and stakes are to be checked and adjusted if too loose, too tight or if chafing is occurring. Any broken stakes are to be replaced. Any damaged shoots/branches are to be pruned back to healthy wood. Plants are to be pruned in accordance with good horticultural practice to maintain healthy, well-shaped specimens. Native shrubs - Using approved herbicides a 1m diameter circle centred on each planting station shall be kept weed free throughout the maintenance period. Stakes may be removed from Year 2 if plant is fully established and if shelter is suppressing further growth.
- Hedges**
- 7.3. Hedge lines shall be kept mulched until established. At the end of the Defects Liability Period / First Year's Maintenance the CA will prepare a list of all plants which are dead, dying or diseased and are to be replaced during the following planting season at the contractor's expense.

Revisions:- 15/04/2022 LAB  
 A- 12/06/2022 LAB Landscape proposal updated to client comment  
 B - 04/07/2022 IHW Amended to client and ecologists comments  
 C - 08/07/2022 IHW Amended to client and comments  
 D - 16/08/2022 IHW Proposed pond added, panels simplified  
 E - 13/10/2022 IHW Hedgerow alignments amended to central PRoW corridor following comments received from LPA PRoW officer  
 F - 11/02/2023 IHW Redline amended; landscape adjusted to revised layout; PRoW alignments updated; connecting cable routes added  
 G - 28/02/2023 IHW Redline amended; ecology notes added  
 H - 01/03/2023 IHW Solar layout amended  
 J - 04/10/2023 IBD Red line amended to exclude southern fields; solar layout amended site-wide; landscape proposals amended to suit revised solar layout  
 K - 05/10/2023 IBD Reptile Mitigation Area amended  
 L - 11/10/2023 IBD Planting clash corrected  
 M - 08/12/2023 IBD Amended to suit layout PSC 100 001 V13  
 N - 13/12/2023 IBD Key amended to client comments

**Landscape Strategy  
 Parc Solar, Caenewydd**

Client: Taiyo Power & Storage Ltd

DRWG No: **P21-2998\_12** REV: N

Drawn by: LAB/IBD Approved by: IBD

Date: 13/12/2023

Scale: 1:2000 @ A0 **Pegasus** Design





## Appendix 4: Photomontage





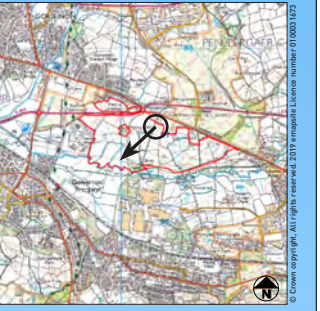


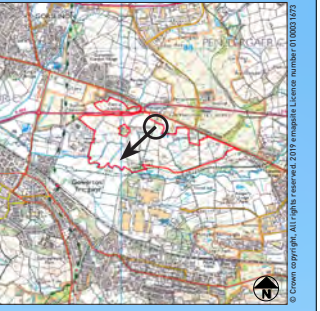


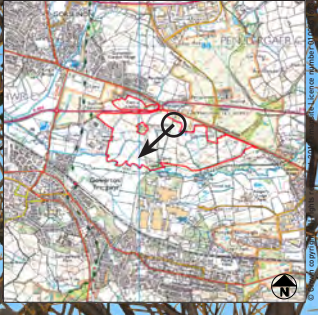


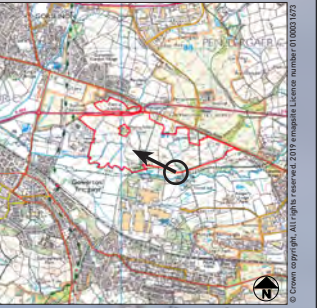




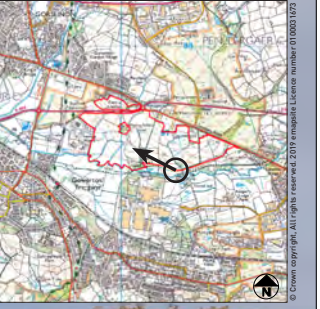


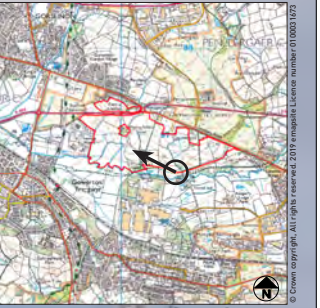


























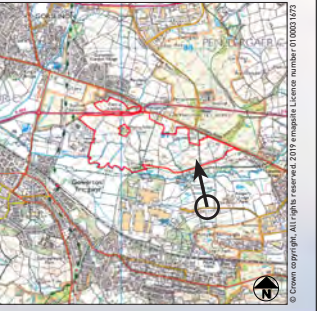




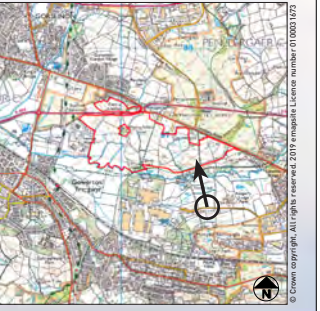
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 Roundabout, Swansea Road/A484



**VIEWPOINT 13 – PHOTOMONTAGE (YEAR 15)**  
 Roundabout, Swansea Road/A484







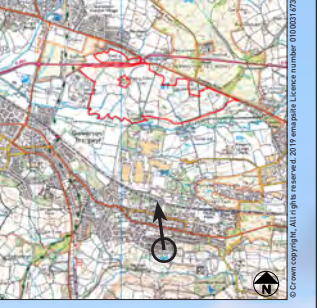
**VIEWPOINT 19 – PHOTOMONTAGE (YEAR 15)**  
Titanium Road, Waunarlwydd

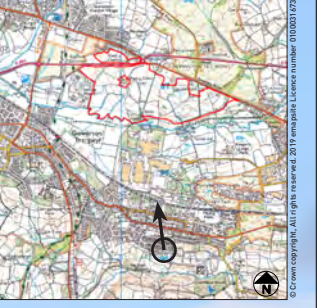


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 Lens make & focal length - Canon EF 50mm, f/1.4 USM  
 Date & time of photograph - 18/11/2022@ 14:00  
 OS grid reference - 260996 , 196154

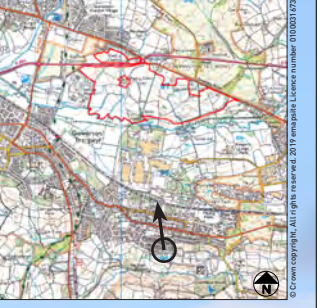
Viewpoint height (AOD) - 25m  
 Distance from site - 497m  
 Projection - Cylindrical  
 Sheet Size - A1

Visualisation Type - Type 3  
 Horizontal Field of View - 75°  
 Height of camera AGL - 1.5m  
 Page size / Image size (mm) - 841 x 297 / 820 x 260









Town & Country Planning Act 1990 (as amended)  
Planning and Compulsory Purchase Act 2004

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