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**Assessment of the Significance of the Impact of
Development on the Historic Landscape
ASIDOHL2:**

**Land at Pancross, Redlands and Oaklands
Farm, near Bonvilston, Vale of Glamorgan**

August 2022



Report No. 2118

By

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and
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Summary

In February 2022, Archaeology Wales was commissioned to carry out an ASIDOHL2 study to determine the potential impact for the proposed development of a solar farm and battery storage units with ancillary infrastructure on land at Pancross, Redlands and Oaklands Farm, Bonvilston, Vale of Glamorgan, centred on NGR ST 07000 72770. The proposed development lies within the Registered Historic Landscape of Llancarfan (HLW (SG) 1) and comprises of enclosed pasture and arable fields.

The ASIDOHL has been carried out in five stages:

Stage 1, the introduction, identifies contextual information regarding the site. It describes the current understanding of the form and appearance of the development along with relevant planning policies. Previous assessment of the area includes a Desk Based Assessment, which suggests that the potential direct and indirect (visual) impacts on the Registered Historic Landscape of Llancarfan should be taken into consideration during the creation of the final design scheme, as impact upon Llancarfan will be moderate.

Stage 2, considers the direct, physical impact of the proposed development, assessed in absolute, relative terms and landscape terms. This development lies within HLCA 010, Bonvilston Amalgamated Fieldscape. Cropmarks (NPRN 309284; GGAT03998s & NPRN 309275) are of medium archaeological value and the overall magnitude of the direct physical impact is considered to be considerable/severe. The location of a former limekiln/quarry (OFV02) is south of the crop marks and has low archaeological value due to the lack of standing remains. However, groundworks will have a considerable/severe direct impact.

Stage 3 assesses the indirect impacts of the proposed development. These indirect impacts affect a wider area and surrounding HLCAs are considered. The overall magnitude of indirect impacts on HLCA 010 was scored as considerable/severe. Direct impact on all listed buildings is considered slight however, they will be indirectly affected. Castle Ringwork 850m ENE of Ty'n-y-Coed (GM613) is the closest Scheduled Monument to the site, and the indirect impact will be moderate due to proximity. The impact on Castell Moel hillfort (GM298) will be slight due to the distance from the development.

Stage 4 forms an evaluation of the relative importance of the HLCA and the parts within them that are affected by the proposed development. This considers the overall value of all HLCAs to be Considerable.

Stage 5 forms an assessment of the overall significance of the impact. The impact of the development and the reduction in the value of the HLCA on the Register, combined with the relative values of the HLCAs, scores the significance of the impact on HLCA 010 as Moderate.

1 Introduction

1.1.1 In February 2022, Archaeology Wales (henceforth AW) was commissioned to carry out an ASIDOHL2 study to determine the potential impact of the proposed development of a solar farm and battery storage units with ancillary infrastructure on land at Pancross, Redlands and Oaklands Farm, Bonvilston, Vale of Glamorgan, centred on NGR ST 07000 72770. The development lies within the Llancarfan Registered Historic Landscape of Outstanding Interest (HLW (SG) 1). As such, an ASIDOHL2 (Assessment of the Significance of the Impact of Development on the Historic Landscape) was requested by the Local Planning Authority and Cadw to help inform the planning decision on the proposed development. AW was commissioned by Sirius Planning Ltd, on behalf of Sirius Renewable Energy Ltd (SREL). The AW project number is 2798.

1.2 ASIDOHL Layout

1.2.1 In assessing the impact of the proposed development, guidelines are laid out in 'Guide to Good Practice on Using the Register of Landscapes of Historic Interest in Wales in the Planning and Development Process' (Revised 2nd Edition) which includes revisions to the assessment process (ASIDOHL2). This guidance lays out a process for assessing the impacts, based on five stages.

- **Stage 1** consists of gathering the contextual information and provides the introduction to the report.
- **Stage 2** is an assessment of the direct physical impacts of the proposed development, in absolute terms, relative terms and landscape terms. Within this, tables are provided to quantify these impacts and their magnitude.
- **Stage 3** is an assessment of the indirect impacts of the development, in terms of both indirect, physical impacts and also indirect (non-physical) visual impacts. Again, tables are provided to quantify these impacts and their magnitude.
- **Stage 4** is an evaluation of the relative importance of the Historic Character Area directly and/or indirectly affected by the proposed development. This is done in relation to the whole of the Historic Character Area concerned and the whole of the historic landscape area on the Register, followed by an evaluation of the relative importance of the Historic Character Area concerned in the national context.
- **Stage 5** is an assessment of the overall significance of the impact. This combines Stages 2 and 4 to produce an assessment of the overall significance of the impact of the proposed development and the affect that altering the Historic Character Area has on the whole of the historic landscape area on the Register. This stage also includes an examination of mitigation or positive benefits and a concluding statement.

2 ASIDOHL STAGE 1

2.1 The Proposed Development

- 2.1.1 The proposed development comprises plans for a solar farm and battery storage development to export renewable energy to the local electricity network. The development area is a total of 127 hectares. The land currently comprises of enclosed pastoral and arable fields, hedgerows and blocks of woodland.
- 2.1.2 Details of the proposed layout and construction details have been provided. Solar photovoltaic (PV) panels will be mounted on a railing substructure and will be approximately 3m above ground level, the lower end of the solar panel will be 1m above ground level. The panels will be facing south, with an east to west alignment. All rows of panels will be 4m – 6m apart from one another to allow access for scheduled maintenance and to avoid over-shadowing.
- 2.1.3 The batteries will be stored in containers located within a secure compound inside the site boundary, this will preferably be located within a close distance to the point of connection for the local distribution network. The developer has accepted an offer from Western Power (Distribution Network Operator) to connect into the local distribution network from one of the existing tower pylons located within the site area. The batteries themselves will be storing electricity to provide instant power to the grid when the solar farm is unable to generate as much power at night-time and when demand is required.
- 2.1.4 The construction phase of the development will last approximately six months. A temporary parking lot and two temporary set down area will be set up during the construction phase, all within the site boundary. All deployment areas will be highly secured, possibly with a 2m high deer fence or similar, or any alternative to suit the ecological requirements. Ground disturbance is expected to be at a maximum depth of 2m, trenching for ground cables and the mounting foundations typically reach a depth of around 1.2m. The construction phase will consist of includes, large, piled foundations, the establishment of trackways and excavated cable trenching.
- 2.1.5 The PV panel sub-structure will be piled into the ground to a depth of 1.5m. The ground disturbance associated with the battery compound is expected to be up to 2m max below ground level, for at least 50% of the compound. Cable trenching will include stripping topsoil from a working route, trenches will then be excavated for high voltage cables. The total area of the development site disturbed for cable trenching is estimated to be 1% of the total.
- 2.1.6 The development is estimated to have a minimum lifetime of 40 years. Decommissioning will include the removal of all above ground infrastructure and underground cabling. The site will be reinstated to the former state and condition prior to development with continued use for agriculture.
- 2.1.7 The Local Planning Authority is the Vale of Glamorgan Council.

2.2 The Site

- 2.2.1 The proposed development is located 5km north of Cardiff Airport, Rhoose, and c.750m south of Bonvilston, Vale of Glamorgan (NGR ST 07000 72770). The Vale of Glamorgan is a lowland area stretching from the coast to the less fertile uplands of Blaenau, between Bridgend to the west and Cardiff to the east. Geologically it consists of a limestone plateau divided by shallow, north-south valleys.
- 2.2.2 The site straddles the northern end of the A4226, where it meets the A48. It comprises of three areas, with Areas One and Three on the west of the A4226 and Area Two on the eastern side of the road (Figure 1 and 2).
- 2.2.3 Area One is bounded to the north and south by enclosed fields, the east by the A4226, and to the west by a single-track road. Area Two is situated to the east of Area One and it is bounded to the north-west by enclosed fields, to the north-east, east and the south by woodland, and to the west by the A4226. Area Three is situated to the south of Area One and it is bounded to the north by enclosed fields, and to the east, south, and west by woodland.
- 2.2.4 The site is located on a low hill. Area, one slopes down from approximately 95m aOD in the north-east to 45m aOD in the south-west. The slope steepens towards the south-west. Area Two slopes down to the south-east towards the River Waycock. The western part of the area is approximately 90m aOD and the south-eastern edge is at approximately 50m aOD. Area Three is located on a south-western spur of the hill, with the land dropping away steeply towards the south, west, and north. This area is between 75m and 85m aOD.
- 2.2.5 The geology beneath the site varies, with four bedrock formations recorded. The majority of the site is underlain by the Mary's Well Bay Member, which is comprised of interbedded limestone and mudstone that formed in the Jurassic and Triassic Periods. A band of the Lavernock Shales Member is recorded on the eastern and southern edge of Area Three. This bedrock formation is comprised of mudstone, which formed in the Jurassic Period. Area Two is largely underlain by the Blue Anchor Formation, which is a mudstone sedimentary bedrock that formed in the Triassic Period. This is surrounded by a band of the Penarth Group, which is comprised of interbedded mudstone and limestone that formed in the Triassic Period. No superficial deposits are recorded across the area of the site (BGS 2022).

2.3 Previous Assessments

- 2.3.1 The area is included in the Llancarfan Landscape of Outstanding Historic Interest, within the Register of Landscapes of Historic Interest in Wales, published by Cadw, CCW and ICOMOS UK in 1998. The site and the area around it sit within HCLA 010, Bonvilston Amalgamated Fieldscape, characterised as a “post-medieval agricultural landscape of large fields formed by the merging of the smaller fields of the earlier medieval and post-medieval field systems.” The description highlights that although the existing fieldscapes are post medieval, aerial photographic and earthwork evidence preserves the boundaries of the earlier medieval strip fields.

- 2.3.2 Studies have been undertaken in association with the current proposed development. These include a Desk Based Assessment (Evans, 2020) undertaken by Archaeology Wales Ltd. This study examined the potential for archaeological remains to exist on the site and included a search area of 1km from the centre of the development site, which had discovered 58 investigations had previously been undertaken with 136 recorded sites within close proximity to the proposed development area. A total of fourteen known sites of archaeological value had been located within the red line boundary. The majority are of a post-medieval date, several crop marks of unknown dates were also identified within the red line boundary (GGAT03998s; NPRN 309275 and NPRN 309284), it is possible that they pre-date the post-medieval and medieval activity in the area. Furthermore, an old quarry/limekiln had been identified (OFV02). Although there is a high potential for Medieval and Post-Medieval remains, although these would be of low significance. The report also examined the potential visual impact on designated archaeological sites in the surrounding landscape including Castle Ringwork 850m ENE of Ty'n-y-Coed (GM613) which would have a moderate indirect impact because of its close proximity to the proposed development site.
- 2.3.3 A number of other archaeological assessments and investigations have been undertaken within a 1km search area around the proposed development area. Access Archaeology carried out a Desk Based study of HER data for a proposed development within the area which concluded it was a region of archaeological interest (GGATE001481). A total of 53 sites are listed by Cadw, the regional HER and the National Monuments Record. None of which lie inside the proposed development site, they are all within 1km of the site. A variety of other investigations in the surrounding landscape have found medieval and post-medieval archaeological remains, with limited evidence of prehistoric and Roman activity, but these investigations are summarised within the recent Desk Based Assessment and help inform the general archaeological background illustrated in the report.
- 2.3.4 A further part of the studies undertaken in association with the proposed development includes a Landscape and Visual Impact Assessment, which is currently ongoing but provides content of use in an ASIDOHL study.

2.4 Planning Policy Context

- 2.4.1 National Policies relating to archaeology and cultural heritage include the following:
- Ancient Monuments and Archaeological Areas Act 1979.
 - Planning (Listed Buildings and Conservation Areas) Act 1990.
 - Planning Policy Wales – Edition 10, Section 6, 2018.
 - Technical Advice Note (TAN) 24: The Historic Environment, 2017.
- 2.4.2 There are a number of elements within The Vale of Glamorgan Local Development Plan (LDP) 2011-2026 of relevance to the historic environment in this area.
- 2.4.3 **Strategic Policy (SP) 10 Built and Natural environment** emphasises the need to protect the natural and built environment assets in the Vale of Glamorgan, it also

reinforces the choice of location and sensitive design of new developments can have a positive effect. It states that:

“Development proposals must preserve and where appropriate enhance the rich and diverse built and natural environment and heritage of the Vale of Glamorgan including:

- *The architectural and / or historic qualities of buildings or conservation areas, including locally listed buildings.*
- *Historic landscapes, parks and gardens.*
- *Special landscape areas.*
- *The Glamorgan Heritage Coast.*
- *Sites designated for their local, national and European nature conservation importance; and*
- *Important archaeological and geological features.”*

2.4.4 Further policies within the LDP address development within the countryside. Specific policies of relevance include Policy MG17 – Special Landscape Areas, is a specific policy to the protection of the designated Special Landscape Areas, which states that:

“The following areas are designated as special landscape areas:

- *Castle Upon Alun.*
- *Upper & Lower Thaw Valley.*
- *Ely Valley & ridge slopes.*
- *Nant Llancarfan.*
- *Dyffryn basin & ridge slopes.*
- *Cwrt-yr-Ala basin.*

Within the special landscape areas identified above, development proposals will be permitted where it is demonstrated they would cause no unacceptable harm to the important landscape character of the area.”

2.4.5 Other policies, not directly related to the historic landscape, but still of relevance to the historic environment include policy MD8 – Historic Environment and Policy MD2 – Design of New Development.

2.5 Limitations

2.5.1 This ASIDOHL2 study was carried out by Susan Stratton, Desk Based Officer and Rachel Willmot, Field Archaeologist at Archaeology Wales, using the guidelines and

methodology set out in the *Guide to Good Practice on Using the Register of Landscapes of Historic Interest in Wales in the Planning and Development Process, Revised 2nd Edition* (Cadw and CCW 2007).

- 2.5.2 Open access was available to the majority of relevant locations and viewpoints within the affected HLCAs, which were visited in April 2020 and January 2021. The timing of the visits meant vegetation levels were relatively low and good visibility was achieved during the visits.
- 2.5.3 The Historic Landscape is described in the Register of Landscapes of Historic Interest in Wales, published by Cadw, CCW and ICOMOS UK in 1998, and the relevant HLCAs have been subject to a detailed characterisation exercise, described in detail by Glamorgan-Gwent Archaeological Trust.
- 2.5.4 Confidence levels for this ASIDOHL are therefore high in most respects.

3 ASIDOHL Stage 2 – Assessment of direct, physical impacts of development

3.1 Introduction

- 3.1.1 This section comprises a description and quantification of the direct physical impacts of the proposed development on the Historic Character Area(s).
- 3.1.2 The description and quantification are considered in three ways:
 - a) in absolute terms, *i.e.*, the proportion of the surface area of the HLCA affected.
 - b) in relative terms, *i.e.*, the proportion of each of the key historic landscape characteristics (as identified in the Historic Landscape Characterisation report) that will be permanently lost or removed by the proposed development.
 - c) in landscape terms, the contribution that the affected elements of the key historic landscape characteristics make to the value of the Historic Character Area as a whole.
- 3.1.3 In each case, the physical impacts are assigned a score, and the overall scores for the impacts on the individual Historic Character Area are used to produce a quantified expression of the overall magnitude of direct impact on a 24-point scale. For each HLCA these are presented as a table; each table is supplemented with qualifying statements and background information.

3.2 Impact Assessment

- 3.2.1 The proposed development site lies partially within the Registered Historic Landscape of Llancarfan. Area 1 almost completely equates to HLCA 010, Bonvilston Amalgamated Fieldscape, while the other two areas of the development are outside of the Registered Landscape. Area 2 is within 50m of HLCA 010 to the south and 200m east of HCLA 009, Greendown. Area 3 is on the opposite side of the A4226 and at its closest it is 30m east of HLCA 010.

HISTORIC LANDSCAPE CHARACTER AREA 010 – Bonvilston Amalgamated Fieldscape

- 3.2.2 This area is characterised by its large agricultural fields, amalgamated in the 20th century as part of agricultural improvements from smaller post-medieval and medieval field systems. Aspects of these earlier field systems, such as medieval strip fields or quilllets, are preserved in the landscape in the form of earthworks and crop marks. Patches of broadleaf woodland, including as field boundaries, are also characteristic of the area.
- 3.2.3 Specific known features of interest include a small number of agri-industrial features, such as a limekiln (GGAT02617s), a former dwelling or agricultural building (OFV01) and a lime kiln and quarry site (OFV02) (Evans, 2022).

A – In Absolute Terms

- 3.2.4 The development area covers 97% of HLCA 010. The calculation of the direct physical impact of solar farm schemes has been open to debate. The nature of their construction, drilling piles to support the arrays, although physically affecting only a small percentage of the area, can be cumulatively regarded as having an impact across the whole development area. For the purposes of this assessment, the physical impact area will be considered as all land covered by the arrays, not just the piled area.
- 3.2.5 Solar farms are considered to have a limited lifespan, in this case a minimum of 40 years. Responses from Cadw in relation to the solar scheme at Llanwern, Newport, clarify their position that a lifespan of at least 35 years for a solar farm is considered to have a permanent impact upon the landscape, particularly given the potential for renewal of the site.
- 3.2.6 The proposed development will establish PV panels on frames across a little under a third of the area, with buffer zones around hedges and the site boundary and a few larger areas left undeveloped. The development also includes a substation and BESS compound, nine inverter stations, cable trenching between the inverter stations and substation, earthing cables for each array area, access trackways, and perimeter fencing. The PV panel frames will be fixed using piles. The cable trenches will be 1.3m deep and the earthing cable trenches will be 0.4m deep. The trackways and substation compound will be surfaced with gravel. It is estimated that 65% (almost 2/3) of HLCA 010 will be permanently lost or removed by the development.

Table 1. A - Assessment of Direct, Physical Impacts on Historic Character Area 010 Bonvilston

Absolute Impact (loss of area)	Magnitude and Score
c. 44ha, 65% area	Severe – 5

3.3 B – In Relative Terms

- 3.3.1 The main characteristics of the HLCA consists of large post-medieval fields formed by the merging of smaller fields, evidenced by surviving cropmarks and earthworks. Characteristic archaeological remains include these field systems, earthworks and

cropmarks, along with some boundaries of former strip fields, and evidence of industrial activity. The area also has potential for unknown sub-surface archaeological remains of prehistoric, Roman or medieval date.

- 3.3.2 The proposed development site will not affect any known Category A assets within the HCLA.
- 3.3.3 There is only one Category B asset in the area. This is NPRN 309275, Cropmark SE of Ty'n-y-coed, recorded cropmarks of an enclosure. An evaluation excavation conducted by Archaeology Wales as part of the pre-planning work for the development found that the enclosure ditches survive to depths of 0.55m and contained Roman pottery. Further archaeological mitigation work is planned for this asset, in the form of an SME. This is likely to result in c. 30% removal of the archaeological deposits, although all features and deposits will be fully recorded. The asset lies almost entirely within the area of PV panels, which would essentially obscure any view of the surviving cropmarks. The piling would also potentially remove archaeological material, although it is difficult to estimate a percentage without knowing the exact location of the piles and the extent of archaeological features and deposits.
- 3.3.4 There are four Category C assets of local importance. Surviving cropmarks of former medieval and post-medieval fields are one of the main characteristics of the HLCA. Cropmarks observed on aerial photographs of the area are a non-designated asset (NPRN 309284; GGAT03998s), although the exact area the NPRN covers is not specified. Former field boundaries are also depicted on historic mapping, representing post-medieval enclosed fields. There are also cropmarks that relate to earlier field systems. The evaluation excavation determined that some of these ditched boundaries, including of Roman and post-medieval date, survive as archaeological features. The development design includes buffer zones with no PV panels around six former post-medieval field boundaries. There are 22 further field boundaries within the area according to historic map evidence, and an unknown number of earlier boundaries, with at least three identified by the evaluation excavation. These will be subject to piling, cable trench excavation, and the laying of gravel for the access track and substation compound.
- 3.3.5 The amalgamated character of the fields within HLCA 010 means that there are few extant field boundaries. A central, roughly east – west boundary runs across almost the entire width of the area. Its irregular shape in places reflects former, smaller fields. The boundary is marked by a hedgerow. There is also a roughly north-west – south-east orientated surviving boundary, which consists of a low earthwork and hedgerow. Both of these surviving boundaries will be left undisturbed by the development, with the access track making use of existing gaps within them.
- 3.3.6 In the western area of site, a row of three buildings within a small enclosure was noted on historic map sources (OFV01). These buildings dated to the latter half of the 19th century and may have originally been terraced farm workers housing or farm buildings. Map and aerial photographic evidence demonstrated that the western and then eastern building were abandoned and demolished, leaving only the central

building in the tree-lined enclosure. This was demolished prior to 2000. The area occupied by this asset is to be left undisturbed by the development.

- 3.3.7 A post-medieval limekiln and associated quarry (OFV02) were identified by map regression, but no earthworks or cropmarks survive (Evans, 2022). The subsurface level of survival is unclear, but both features would be considered at most of Category C importance. The location of the asset lies on the existing east – west field boundary and therefore within a buffer zone. However, the full extent of the quarry is unknown. Historic mapping suggests that around half of the quarry may be within the area of PV panels.

Table 2. B - Relative and Landscape Impacts (Loss of Known Elements or Characteristics) & Scores

Element / % Loss	Category	Magnitude	Landscape Value	Landscape Value Effect
NPRN 309275, Cropmark SE of Ty'n-y-coed – 5,442m ² , 95%	B - 3	Very Severe - 5	Low – 2 (Not a characteristic element of the HLCA)	Substantially Reduced – 5
Former field boundaries (earthworks and cropmarks) – 3,528m, 60%	C - 2	Severe - 5	Very High – 6 (Main characteristic element of HLCA)	Considerably Reduced – 4
Surviving field boundaries (hedgerows and earthworks) – less than 4%	C - 2	Very Slight - 1	High – 5 (Distinctive characteristic element of HLCA)	Slightly Reduced – 2
OFV02 Limekiln and Quarry – 241m ² , 41%	C - 2	Considerable – 4	Low – 2	Very Slightly Reduced – 1
Total score (3+5+2+5) + (2+5+6+4) + (2+1+5+2) + (2+4+2+1) / 4 = 12.75				

Table 3. Overall Magnitude of Direct Physical Impacts on Historic Character Area 010 Bonvilston amalgamated landscape

Score	Grading
5 + 12.75 = 18 (rounded to nearest whole number)	Considerable

4 ASIDOHL Stage 3 – Assessment of indirect impacts of development

4.1 Introduction

4.1.1 This section comprises a description and quantification of the indirect impacts of development on all the Historic Character Area(s) affected.

4.1.2 A clearly defined area will be directly or physically affected by the development, but a much greater area could be indirectly affected due to fragmentation or changes to the setting of features in the landscape. Changes to views of, or views from, a landscape feature are also important potential impacts. This stage is divided into two categories: the first (A) assesses the indirect physical impacts, the second (B) the indirect (non-physical) visual impacts.

4.1.3 A – indirect, physical impacts

The principal types of indirect physical impact listed in the Guide to Good Practice are:

- (i) An increased risk of exposure, erosion, disturbance, decay, dereliction or any other detrimental physical change to elements, during or consequent to development.
- (ii) Related to (i), the likelihood of increased management needs to maintain elements as, for example, through altered habitats, water levels, increased erosion, new access provision etc., during or consequent to development.
- (iii) The severance, fragmentation, dislocation or alteration of the functional connections between related elements, for example, a field system becomes ‘severed’ from its parent farmstead by an intervening development.
- (iv) The frustration or cessation of historic land use practices, for example, it becomes more difficult or impossible to manage an area in a traditional manner as a result of development.
- (v) The frustration of access leading to decreased opportunities for education, understanding or enjoying the amenity of elements, during or consequent to development.

4.1.4 B – indirect (non-physical) visual impacts

The principal types of indirect (non-physical) visual impact listed in the Guide to Good Practice are:

- (i) Visual impacts on elements from which a development can be seen (considered up to its maximum height). The impact might be on ‘views to’ or ‘views from’ these elements, and it should be assessed with reference to key historic viewpoints and essential settings. These should be considered in relation to a site’s original character and function, as well as to the vantage points and visual experience of a visitor today.

- (ii) Impact on the visual connections between related elements, by occlusion, obstruction, etc.
- (iii) Conversely, the creation of inappropriate visual connections between elements not intended to be inter-visible originally.
- (iv) Visual impact of the development itself in relation to the existing historic character of the area considering:
 - its form — the scale, number, density, massing, distribution etc.
 - its appearance — the size, shape, colour, fabric etc. of its constituent features

4.2 Impact Assessment

4.2.1 Llancarfan Registered Historic Landscape contains twelve HLCAs (Figure 1), of which five lie within 1km of the proposed development area and may potentially be impacted either physically or non-physically: HLCA008 Middle Llancarfan Valley: Llanvithyn and Garnllwyd; HLCA009 Greendown, HLCA010 Bonvilston Amalgamated Fieldscape, HCLA011 Liege Castle and HCLA012 Ty'n-y-coed.

HISTORIC LANDSCAPE CHARACTER AREA 008 MIDDLE LLANCARFAN VALLEY: LLANVITHYN AND GARNLLWYD

4.2.2 The Middle Llancarfan Valley lies to the north of the centre of the Llancarfan Registered Landscape. It covers the steep valley sides and river terrace of Nant Llancarfan, which is a mixture of woodland and grazing land. The fields are mostly small – medium, irregular fields although there are larger, amalgamated fields on less sloping land that probably date to 20th century agricultural improvements.

4.2.3 The landscape is characterised by post-medieval agriculture with dispersed farmsteads and some agri-industrial features such as mills, limekilns, and surface quarries. However, there are aspects of earlier activity, including the Iron Age hill fort Llanvithyn Camp, GM293, and medieval features, including the deserted medieval village of Bradington, near Llanvithyn House, field boundaries and pillow mounds. Llanvithyn House was part of Margam Abbey's Llanvithyn grange, documentary evidence for which dates back to the 12th century. Garnllwyd was a manorial site, and the existing house (LB13592) was first recorded in 1441, although the medieval hall has been significantly extended and altered since.

4.2.4 There will be no indirect physical impacts on this HLCA by the proposed development.

4.2.5 The following indirect non-physical (visual) impacts are laid out in relation to the references given in 4.1.4 above:

B (i): The affected elements are confined largely to visual impacts on areas to the upper slopes of the Nant Llancarfan valley to the north of the HLCA. Due to the topography, views from the affected area are to the north and east, over the Nant Llancarfan valley to the opposite valley slopes, which has traditionally been mixed

farmland. Area 1, to the east, will largely be obscured from view by Coed Quinnet woodland. However, the western slopes of Area 3 will be visible and will impact of the visual experience of the landscape. This will include views from Llanvithyn Camp (GM293). However, the area is not accessible to the public, meaning that the experience of these impacts will be low.

B (ii): There will be no impact on visual connections between related elements in the HLCA.

B (ii): The development does not open up new views or visual links.

B (iv): The proposed development will not affect the visual historical character of this HLCA.

Table 4. Assessment of Indirect (Non-Physical) Visual Impacts on Historic Character Area 008 Middle Llancarfan Valley: Llanvithyn and Garnllywd

Impacts	Category & Score	Magnitude & Score
B (i) Visual impact on HLCA elements	A - 4	Slight – 2
Average Score (4+2) / 1 = 6		

4.2.6 To create a number on a 28-point scale - $(6 \times 28) / 20 = 8$ (rounded off)

Table 5. Overall Magnitude of Indirect Impacts on Historic Character Area 008 Middle Llancarfan Valley: Llanvithyn and Garnllywd

Score	Grading
8	Slight

HISTORIC LANDSCAPE CHARACTER AREA 009 Greendown

4.2.7 HLCA 009, Greendown, lies to the east of the Llancarfan Registered Landscape, on a raised area to the east of Nant Llancarfan. It is characterised by a fieldscape of small to medium irregularly shaped fields, mostly bounded by hedgerows. Many of the field boundaries, especially those formed by streams, are probably of medieval date, while a few fields to the south of the area are post-medieval amalgamations. It is principally agricultural, with a few agri-industrial features, including limekilns and a quarry.

4.2.8 The area was part of the ‘Greendona’ grange lands, gifted to Margam Abbey by Hugh de Raleigh c. 1161, although location of the grange is unknown. During the Dissolution the grange lands of the character area and the Manor of Bonvilston were bought by Sir John St. John in 1541. There are few buildings in the area, and they are mostly modern, although ‘Meadowbank’ farmstead is thought to be post-medieval.

4.2.9 The HLCA borders the development area at its northern edge where it borders HLCA 010, but there will be no indirect physical impacts on this HLCA.

4.2.10 The following indirect non-physical (visual) impacts are laid out in relation to the references given in 4.1.4 above:

B (i): The main views from Greendown HLCA are over the Nant Llancarfan valley to the east and north-east. The visual impact on the HLCA is on views to the north and east of the area, with parts of both development Area 1 and 3 visible. The element affected is the group of amalgamated fields to the north-east of the area. Despite the proximity, these views are intermittent due to boundary vegetation and small areas of woodland. As with the previous HLCA, the area is not accessible to the public, meaning that the experience of these impacts will be low.

B (ii): There will be no impact on visual connections between related elements in the HLCA.

B (iii): The development does not open up new views or visual links.

B (iv): The proposed development will not affect the visual historical character of this HLCA.

Table 6. Assessment of Indirect (Non-Physical) Visual Impacts on Historic Character Area 009 Greendown

Impacts	Category & Score	Magnitude & Score
B (i) Visual impact on HLCA elements	C - 2	Very Slight – 1
Average Score (2+1) / 1 = 3		

4.2.11 To create a number on a 28-point scale - $(3 \times 28) / 20 = 4$ (rounded off)

Table 7. Overall Magnitude of Indirect Impacts on Historic Character Area 009 Greendown

Score	Grading
4	Slight

HISTORIC CHARACTER AREA 010 Bonvilston Amalgamated Fieldscape

4.2.12 This area is described in 3.2.12 to 3.2.14 above.

4.2.13 The HLCA lies almost entirely within the development area, with about two-thirds of the HLCA being subject to development. Direct impacts on this HLCA are discussed in Stage 2. The following indirect physical impacts are laid out in relation to the references given in 4.1.3 above:

A (i): The land between and beneath the panels, as well as the non-developed areas of the site will be formally managed during the lifetime of the scheme. The area will principally be grassland with some wet grassland margins. The hedgerows will be reinforced. Therefore, there is not an increased risk of exposure, erosion or dereliction. The PV panels will not reduce the permeable area of the site and there will be no increase in water run-off across the development area.

A (ii): The change in agricultural regime within the development area will require management of the grasslands (as stated A (i) above) and the site will be monitored for its biodiversity management during its lifetime. This should not lead to any increase in management needs to retain the existing character elements of the HLCA and requires no new access provision.

A (iii): The change in agricultural regime could be seen as a fragmentation of the historic field systems. However, the existing field boundary layouts are to be maintained in the placement of the panel arrays, and there will also be some buffer areas along former boundaries currently visible as cropmarks in the amalgamated fields. By respecting the historic fieldscapes in the development layout the magnitude of this impact is reduced.

A (iv): The development area will cease to be used for agriculture. However, the management of the area to promote biodiversity will have parallels with the way traditional pastoral landscapes were utilised. Even so, for the duration of the development life some aspects of its current and traditional agricultural function will be lost.

A (v): There will be no impact on the existing opportunities for access to the site either during or after the development.

Table 8. Assessment of Indirect, Physical Impacts on Historic Character Area 010 Bonvilston Amalgamated Fieldscape

Impacts	Category & Score	Magnitude & Score
A (iii) Potential fragmentation of coherent agricultural field system	B – 3	Slight – 2
A (iv) Cessation of some historic land use practices	C – 2	Slight – 2
Average Score $(3+2) + (2+2) / 2 = 4.5$		

4.2.14 The following indirect non-physical (visual) impacts are laid out in relation to the references given in 4.1.4 above:

B (i): As the proposed development covers c. 65% of the HLCA, the visual impact includes ‘views to’ as well as ‘views from’ its character elements and groups. The mains character elements of this HLCA are the amalgamated field system and the relict field boundaries visible as cropmarks and earthworks. Although the positioning of the panels respects the existing field system and some of the former boundaries, the setting of these elements will be substantially different. Furthermore, many of the cropmark boundaries will be entirely obscured by the panels. This will impact views of the HLCA from other parts of the Registered Landscape as well as the wider landscape, including the nearby Scheduled Monuments GM613.

Views from the HLCA will also be impacted by Areas 2 and 3 of the development, although due to the local topography, hedgerows, and other vegetation these views will be very intermittent and mainly to the east of the

area. Nevertheless, the existing historic character of the landscape as agricultural farmland will be impacted.

B (ii): The site area forms part of an extensive area of farmland. The physical fragmentation of this landscape is discussed in A (iii), but the visual fragmentation is perhaps more significant as the physical aspects of the landscape are unlikely to change significantly, but the visual imposition of solar panels on an agricultural landscape such as this is more prominent, obstructing a continuous view of the landscape. This however is reduced somewhat by the lack of prominent viewpoints as illustrated in point B (i) above, and also by this area containing more recently amalgamated fields, and therefore poorer character survival.

B (iii): The development does not open up new views.

B (iv): The visual appearance of the proposed development will be different from the stated existing historic character, which is at present an agricultural fieldscape. The appearance will be dominated by PV panels, rather than managed agricultural crops or pasture, and will extend across two-thirds of the area. Although the field patterns will be maintained, and in places former boundaries will be visually reinstated by use of buffer zones between areas of panels, and will be physically reinstated in some cases. The appearance will be markedly different from its existing historical character.

Table 9. Assessment of Indirect (Non-Physical) Visual Impacts on Historic Character Area 010 Bonvilston Amalgamated Fieldscape

Impacts	Category & Score	Magnitude & Score
B (i) Visual impact on HLCA elements	B – 3	Severe – 5
B (ii) Visual fragmentation of landscape coherence	B – 3	Severe – 5
B (iv) Visual impact of development itself	B - 3	Severe – 5
Average Score (3+5) + (3+5) + (3+5) / 3 = 8		

4.2.15 Indirect, physical impacts + indirect, non-physical (visual impact): 4.5 + 8 = 12.5.

4.2.16 To create a number on a 28-point scale - (12.5 x 28) / 20 = 18 (rounded off).

Table 10. Overall Magnitude of Indirect Impacts on Historic Character Area 010 Bonvilston Amalgamated Fieldscape

Score	Grading
18	Considerable

HISTORIC CHARACTER AREA 011 LIEGE CASTLE

4.2.17 HLCA 011 is situated in the north-west of the Registered Landscape, on the western slopes of the Nant Llancarfan valley. It is characterised by small to medium irregular rectangular and sub-rectangular fields. Some sinuous linear boundaries indicate

origins in medieval strip fields. Medieval settlement focused on Liege Castle, which was a small, 13th century moated site built within Castell Moel Iron Age hillfort (GM298), with a hamlet probably located at the modern location of Leach Castle Farm.

4.2.18 Notable features in the HLCA include the Scheduled Monument of Castell Moel hillfort, the crop marks of a prehistoric enclosure, a deserted medieval village near Liege Castle Chapel, and agri-industrial lime quarry sites. Traditional boundary types survive in the form of earth banks with hedges and hedgerows, although modern post and wire fences are also present. Settlement is dispersed, with farmsteads and cottages in the post-medieval vernacular. Communication routes across the landscape also survive in the form of sunken ways, footpaths and trackways.

4.2.19 A small length of the HLCA's boundary with HLCA 010 in the south-east borders the development area, but there will be no indirect physical impact on this Character Area by this proposed development.

4.2.20 The following indirect non-physical (visual) impacts are laid out in relation to the references given in 4.1.4 above:

B (i): The main views from HLCA 011 are to the east, due to its location on the east-facing slope to the west bank of Nant Llancarfan. The development will be visible from almost all parts of the HLCA, although existing hedgerows and small areas of woodland to create some screening. Elements affected include the Scheduled Monument Leige Castle (GM298), Leach Castle Farm post-medieval farmstead, and the irregular fieldscapes that constitute the main character element of the area. The presence of solar panels on a formerly open field system in a prominent location will have a significant impact on the visual experience of the HLCA. Visitor access is limited, as the majority of the HLCA is private land, but several public footpaths do cross the landscape.

B (ii): There will be no impact on visual connections between related elements in the HLCA.

B (iii): The development does not open up new views or visual links.

B (iv): The proposed development will not affect the visual historical character of this HLCA.

Table 11. Assessment of Indirect (Non-Physical) Visual Impacts on Historic Character Area 011 Liege Castle

Impacts	Category & Score	Magnitude & Score
B (i) Visual impact on HLCA elements	A – 5	Considerable – 4
Average Score (5+4) / 1 = 9		

4.2.21 To create a number on a 28-point scale - $(9 \times 28) / 20 = 13$ (rounded off)

Table 12. Overall Magnitude of Indirect Impacts on Historic Character Area 011 Liege Castle

Score	Grading
13	Considerable

HISTORIC CHARACTER AREA 012 TY’N-Y-COED

4.2.22 The HLCA 012 Ty’n-y-coed, lies at the north of the Llancarfan Registered Landscape. Nant Llancarfan runs north – south to the centre of the southern part of the area before turning east. The valley sides are steep and wooded in the southern area, but shallow as it turns eastwards. The fields in the north and east of the area are small to medium, partially amalgamated medieval strip fields, some with the characteristic sinuous boundaries. The fields in the south are irregular, enclosed fields that are probably the result of assarting. There is a Neolithic Chambered Tomb (GGAT00934s) above the woodland on the east valley side. Otherwise, despite the medieval origins of some of the field systems, the archaeological features in the HLCA are post-medieval, including farmsteads Pen Carreg and Ty’n-y-coed, limekilns and quarries. A sewage works is now located on one the former quarries.

4.2.23 The HLCA borders the development area on its southern edge, but there will be no indirect physical impact on this Character Area by the proposed development.

4.2.24 The following indirect non-physical (visual) impacts are laid in relation to the references given in 4.1.4 above:

B (i): The viewpoints in this HLCA differ slightly from those above in that it does not have main views across the Nant Llancarfan valley. The topography of the area, which is crossed both by Nant Llancarfan and an eastern tributary, means that there are shorter views to the south and west. The southern half of the HLCA will be visually impacted by the development, although existing hedgerows mean views are intermittent. The elements affected are the field system of small, irregular fields, and the post-medieval farmstead Ty’n-y-coed. The presence of solar panels on a formerly open field system adjacent to the HLCA will impact on the visual experience of the HLCA. Visitor access is limited, as the majority of the HLCA is private land, but several public footpaths do cross the landscape with views of the development area.

B (ii): There will be no impact on visual connections between related elements in the HLCA.

B (iii): The development does not open up new views or visual links.

B (iv): The proposed development will not affect the visual historical character of this HLCA.

Table 13. Assessment of Indirect (Non-Physical) Visual Impacts on Historic Character Area 0012 Ty’n-y-Coed

Impacts	Category & Score	Magnitude & Score
B (i) Visual impact on HLCA elements	B - 3	Moderate – 3
Average Score (3+3) / 1 = 6		

4.2.25 To create a number on a 28-point scale - $(6 \times 28) / 20 = 8$ (rounded off)

Table 14. Overall Magnitude of Indirect Impacts on Historic Character Area 0012 Ty’n-y-Coed

Score	Grading
8	Slight

5 ASIDOHL Stage 4 - Evaluation of relative importance

5.1 Introduction

5.1.1 The following section comprises an evaluation of the relative importance of the Historic Character Area(s) (or part(s) thereof) directly and/or indirectly affected by development in relation to:

(a) the whole of the Historic Character Area(s) concerned, and/or

(b) the whole of the historic landscape area on the Register, followed by

(c) an evaluation of the relative importance of the Historic Character Area(s) concerned in the national context, and a determination of the average overall value of all the Historic Character Areas (or parts thereof) affected.

5.1.2 The section (Stage 4) will be completed with a determination of the average, overall value of all the Historic Character Areas (or part(s) thereof) affected.

5.1.3 The evaluation criteria used is that suggested within the Good Practice on Using the Register of Landscapes of Historic Interest in Wales in the Planning and Development Process (Cadw and CCW 2007).

5.2 Evaluation of the relative importance of the part of Historic Landscape Character Areas directly and/or indirectly affected by development.

5.2.1 **HLCA008 Middle Llancarfan Valley: Llanvithyn and Garnllwyd:** The affected elements within this HLCA are very limited and confined largely to visual impacts on areas to the upper slopes of the Nant Llancarfan valley to the north of the area, including the only Scheduled Monument in the HLCA, Llanvithyn Camp (GM293). The area contains only a few of the elements that characterise the landscape, these being irregular field patterns and relict archaeological features. Documentary evidence relating to the area is low, consisting only of historic mapping from the mid 19th century onwards. As only a few elements, group value is low, but historic mapping indicates the survival of the field systems is very high. Condition, coherence and integrity are also relatively good. The potential for analysis of the development of the irregular field systems is moderate. Amenity is low, as the area is not publicly accessible. The landscape has historical associations with Margam Abbey and may have been part of Llanvithyn grange.

Table 15. Evaluation of the relative importance of the part of HLCA 008 Middle Llancafarn Valley: Llanvithyn and Garnllwyd directly and/or indirectly affected by development

Value	V-High / V-Good	High/ Good	Mod/ Med	Low	V-Low/ Poor	V-High/ V-Good	High/ Good	Mod/ Med	Low	V-Low/ Poor
In relation to:	a) Whole of Historic Character Area					b) Whole of Historic Landscape Area on the Register				
Criterion:										
Rarity		✓						✓		
Representativeness				✓					✓	
Documentation				✓					✓	
Group Value				✓					✓	
Survival	✓					✓				
Condition		✓					✓			
Coherence		✓					✓			
Integrity			✓					✓		
Potential			✓					✓		
Amenity					✓					✓
Associations				✓					✓	

Calculations for the relative importance of the HLCA for:

Step A: (1 x Very High @ 5) + (3 x High @ 4) + (2 x Moderate @ 3) + (4 x Low @ 2) + (1 x Very Low @ 1) = 32

Step B: (1 x Very High @5) + (2 x High @ 4) + (3 x Moderate @ 3) + (4 x Low @ 2) + (1 x Very Low @ 1) = 31

- 5.2.2 **HLCA 009 Greendown:** The affected part of the HLCA is limited to the amalgamated fields to the north-east of the area, which is a common feature across the area. One of the fields has been suggested to be the former site of Margam Abbey’s Greendown grange; should this be the case it would increase the rarity value. The representativeness and group value are very low, as only one character group will be affected. Documentary evidence includes a papal bull referring to land at Bonvilston, which is thought to relate to Greendown. Survival is moderate, as the fields have been amalgamated. Condition, coherence and integrity are moderate. The potential for future landscape study is moderate, given the uncertain attribution of one of the fields as a monastic grange. Amenity is low, as the area is not publicly accessible. The landscape has historical associations with Margam Abbey, having been proposed as the location of Greendown grange, but there are other possible locations.

Table 16. Evaluation of the relative importance of the part of HLCA 009 Greendown directly and/or indirectly affected by development

Value	V-High / V-Good	High/ Good	Mod/ Med	Low	V-Low/ Poor	V-High/ V-Good	High/ Good	Mod/ Med	Low	V-Low/ Poor
In relation to:	a) Whole of Historic Character Area					b) Whole of Historic Landscape Area on the Register				
Criterion:										
Rarity				✓						✓
Representativeness					✓					✓
Documentation			✓						✓	
Group Value					✓					✓
Survival			✓					✓		
Condition			✓					✓		
Coherence			✓					✓		
Integrity			✓					✓		
Potential			✓					✓		
Amenity					✓					✓
Associations				✓					✓	

Calculations for the relative importance of the HLCA for:

Step A: (6 x Moderate @ 3) + (2 x Low @ 2) + (3 x Very Low @ 1) = 25

Step B: (5 x Moderate @ 3) + (2 x Low @ 2) + (4 x V Low @ 1) = 23

5.2.3 HLCA 0010 – Bonvilston Amalgamated Landscape: Almost the entire area of HLCA is affected by the development. The post-medieval and modern amalgamated fieldscapes and medieval relict features are relatively common across the Registered Landscape, although cropmarks and earthworks are less common. As the affected elements cover the entire HLCA their representativeness of the character is Very High. However, considering the Registered Landscape, very few of the character elements are represented. Parts of the HLCA were part of Bonvilston Manor grange, which is mentioned in a papal bull from 1261 and in other medieval charters. Only a few character groups are represented, meaning the group value is low. The extensive amalgamation of medieval and post-medieval fields means the survival, condition and coherence are low, despite some aspects of these surviving as cropmarks or earthworks. The integrity of the landscape is moderate, with the shape of the surviving field boundaries and the survival others as cropmarks/earthworks meaning it is possible to understand aspects of the area’s original character. The groups have a moderate potential for future studies due to the visible archaeological survival of former field boundaries. Amenity is low, as the area is not publicly accessible. The landscape has historical associations with Bonvilston Manor, considered of low value.

Table 17. Evaluation of the relative importance of the part of HLCA 010 Bonvilston Amalgamated Fieldscape directly and/or indirectly affected by development

Value	V High/ V Good	High/ Good	Mod/ Med	Low	V Low/ Poor	V High/ V Good	High/ Good	Mod/ Med	Low	V Low/ Poor
In relation to:	a) Whole of Historic Character Area					b) Whole of Historic Landscape Area on the Register				
Criterion:										
Rarity				✓					✓	
Representativeness	✓								✓	
Documentation			✓					✓		
Group Value				✓					✓	
Survival				✓					✓	
Condition				✓					✓	
Coherence				✓					✓	
Integrity			✓					✓		
Potential			✓					✓		
Amenity					✓					✓
Associations				✓					✓	

Calculations for the relative importance of the HLCA for:

Step A: (1 x Very High @ 5) + (3 x Moderate @ 3) + (6 x Low @ 2) + (1 x Very Low @ 1) = 27

Step B: (3 x Moderate @ 3) + (7 x Low @ 2) + (1 x Very Low @ 1) = 24

5.2.4 **HLCA 011 – Liege Castle:** The majority of this HLCA will be visually impacted by the development, with only low areas along the Nant Llancarfan valley bottom being completely unaffected. The affected elements include the Scheduled Monument Liege Castle (SM298), Leach Castle Farm farmstead and neighbouring DMV, medieval and post-medieval field boundaries, and relict boundaries. The rarity of the affected elements is very high, as they include the only example of an Iron Age hill fort, reused as a medieval moated site, and DMV, in the HCLA. The affected elements represent all of the elements that characterise the HLCA. There are some documentary references relating to the landscape, principally to Liege Castle, such as in the 1320 Despenser survey of Glamorgan, and the Margam Abbey archives. The group value of the related prehistoric, medieval and post-medieval agricultural elements, including the DMV, surviving farmstead and field systems, is very high. Survival is overall good, with some historic fields having been amalgamated, and the condition is moderate. The coherence and integrity of the landscape elements affected is high, as it retains its agricultural use, although in altered form. The landscape has low scope for recreational activity, as it is on private land, although a public footpath does cross the area. Liege Castle has associations

with Margam Abbey, as it is thought to represent part of the Abbey’s Moyle Grange, and local families, including the Norris family and the Raglans of Carnllwyd, in the medieval and post-medieval periods.

Table 18. Evaluation of the relative importance of the part of HLCA 011 Liege Castle directly and/or indirectly affected by development.

Value	V High/ V Good	High/ Good	Mod/ Med	Low	V Low/ Poor	V High/ V Good	High/ Good	Mod/ Med	Low	V Low/ Poor
In relation to:	a) Whole of Historic Character Area					b) Whole of Historic Landscape Area on the Register				
Criterion:										
Rarity	✓								✓	
Representativeness	✓						✓			
Documentation			✓						✓	
Group Value		✓						✓		
Survival		✓					✓			
Condition			✓					✓		
Coherence		✓					✓			
Integrity		✓					✓			
Potential		✓						✓		
Amenity				✓					✓	
Associations			✓					✓		

Calculations for the relative importance of the HLCA for:

Step A: (2 x Very High @ 5) + (4 x High @ 4) + (3 x Moderate @ 3) + (1 x Low @ 2) = 37

Step B: (4 x High @ 4) + (4 x Moderate @ 3) + (3 x Low @ 2) = 34

- 5.2.5 **HLCA 012 – Ty’n-y-Coed:** Elements in the south-eastern half of the HLCA will be visually affected by the development. This includes the unique to this HLCA St. Nicholas Chambered Tomb (PRN 00394s), Ty’n-y-Coed post-medieval farmstead, and a mixed fieldscape of small, rectangular asserted fields to the south and fossilised medieval strip fields to the north. The representativeness of the elements is high, as it includes nearly all the characteristic elements of the HLCA. Documentary evidence is only in the form of historic mapping, including the Tithe map. The elements have a medium group value, as although most of them represent agricultural use of the landscape they date to different periods of use. Survival and condition are also moderate, as several field boundaries have been removed to amalgamate smaller fields during the modern period and Ty’n-y-Coed Farmstead has been substantially altered. Coherence and integrity are moderate, with modern changes to the landscape and its agricultural use detracting from the visibility of its original character. There is a low potential for

research due to the modern agricultural use of the land. The landscape has low scope for recreational activity, as it is on private land, although it is crossed by several public footpaths. The landscape has no apparent historical associations.

Table 19. Evaluation of the relative importance of the part of HLCA 012 Ty'n-y-Coed directly and/or indirectly affected by development.

Value	V High/ V Good	High/ Good	Mod/ Med	Low	V Low/ Poor	V High/ V Good	High/ Good	Mod/ Med	Low	V Low/ Poor
In relation to:	(a) Whole of Historic Character Area					(b) Whole of Historic Landscape Area on the Register				
Criterion:										
Rarity	✓						✓			
Representativeness		✓						✓		
Documentation				✓					✓	
Group Value			✓					✓		
Survival			✓					✓		
Condition			✓					✓		
Coherence			✓					✓		
Integrity			✓					✓		
Potential				✓						✓
Amenity				✓					✓	
Associations					✓					✓

Calculations for the relative importance of the HLCA for:

Step A: (1 x Very High @ 5) + (1 x High @ 4) + (5 x Moderate @ 3) + (3 x Low @ 2) + (1 x Very Low @ 1) = 31

Step B: (1 x High @ 4) + (6 x Moderate @ 3) + (2 x Low @ 2) + (2 x Very Low @ 1) = 28

5.3 Evaluation of the relative importance in the national context of the Historic Character Areas directly and/or indirectly affected by the proposed development (Step C)

5.3.1 Several coastal areas are included in the Register of Landscape of Outstanding and Special Historic Interest, particularly along the South Wales coastline, including areas such as Merthyr Mawr & Kenfig, Gower and Laugharne & Pendine Marshes. The Gwent Levels are however the most extensive, with the greatest time-depth, and have produced some important archaeological and paleoenvironmental remains within its waterlogged deposits, as well as having early documentary references to its enclosure.

5.3.2 The fieldscapes of the Llancarfan Registered Landscape are unique in the Registered Landscapes of south Wales. The closest Registered Landscape with a comparable mixture of medieval, post-medieval and amalgamated fieldscapes with principally hedgerow boundaries and dispersed farmstead settlements is the Middle Usk Valley: Brecon and Llangorse. The border areas of the Middle Wye Valley and Bro Trefaldwyn and the Towy Valley in west Wales also have fieldscapes originating in medieval strip agriculture and with monastic and manorial associations.

5.3.3 The overall value of the HLCAs in the national context is calculated using the same criterion as laid out in Table 15 to 19 but applied nationally. The scores are summarised below:

- HLCA 008 - Middle Llancarfan Valley: Llanvithyn and Garnllwyd = 29
- HLCA 009 – Greendown = 22
- HLCA 010 – Bonvilston Amalgamated Landscape = 24
- HLCA 011 – Liege Castle = 23
- HLCA 012 – Ty'n-y-coed = 28

5.3.4 In order to determine an average overall value for the HLCA on a scale of 1 – 100 the results of each individual step were divided by 55, then multiplied by 100. This was then divided by 3 (the number of steps) and the average overall value is then rounded off and is presented in the table below:

Table 20. Average, overall value of all the Historic Character Areas (or part(s) thereof) affected

HLCA	Calculations	Grading
HLCA 008 – Middle Llancarfan Valley	$(58.2 + 56.3 + 52.7)/3$	56 – Considerable
HLCA 009 – Greendown	$(45.4 + 41.8 + 40)/3$	42 – Considerable
HLCA 010 – Bonvilston Amalgamated Landscape	$(49 + 43.6 + 43.6)/3$	45 – Considerable
HLCA 011 – Liege Castle	$(67.2 + 61.8 + 41.8)/3$	57 – Considerable
HLCA 012 – Ty'n-y-coed	$(56.3 + 50.9 + 50.9)/3$	53 – Considerable

5.3.5 The average overall figure for all areas combined is 51 – Considerable.

6 ASIDOHL Stage 5 - Assessment of overall significance of impact

6.1 Introduction

6.1.1 This section comprises an assessment of the overall significance of impact of development, and the effects that altering the Historic Character Area(s) concerned has on the whole of the historic landscape area on the Register. This combines the results of previous stages of the ASIDOHL, with the reasoning behind those results laid out in the relevant sections. Although scoring is used extensively in the previous sections, this does not convert directly into the following table, rather the previous scorings are used to help inform a professional judgement on the value of and impact upon the historic landscape.

Table 21. Summary of the overall significance of the impact of development on Llancarfan Landscape of Outstanding Historic Interest (HLW (SGI) 1)

HLCA	Value of Historic Character Area (based on Stage 4 results)	Impact of Development (based on Stages 2 & 3 results)	Reduction of Value of the Historic Landscape Area on Register	Overall Significance of Impact
HLCA 008 – Middle Llancarfan Valley	5	3	4	12 – Moderate
HLCA 009 – Greendown	3	1	1	5 – Slight
HLCA 010 – Bonvilston Amalgamated Fieldscape	4	8	8	20 – Fairly Severe
HLCA 011 – Liege Castle	5	4	4	13 – Moderate
HLCA 012 – Ty'n-y-Coed	4	3	2	9 – Slight

7 Conclusion

- 7.1.1 An Assessment of the Significance of Impact of Development on the Historic Landscape (ASIDOHL2) has been undertaken on a proposed development of Oaklands solar farm and battery storage units, Bonvilston, Vale of Glamorgan. The proposed development comprises plans for a solar farm development, with panels covering approximately 75 hectares across three areas. The proposed development lies within the Llancarfan Landscape of Outstanding Historic Interest (HLW (SGI) 1). This Landscape is further subdivided into individual Historic Landscape Character Areas (HLCAs).
- 7.1.2 The ASIDOHL is laid out in five stages. Stage 1, the introduction, identified the contextual information regarding the site. Details of the proposed development are provided here, as well as the planning policy context.
- 7.1.3 Stage 2 assessed the direct, physical impact of the proposed development, assessed in absolute, relative terms and landscape terms. This was considered in terms of its impact on HLCA 010 Bonvilston Amalgamated Fieldscape. Area 1 of the development area occupies almost the entire area of the HLCA. The overall magnitude of the direct physical impact on the HLCA is considered to be **Severe**.
- 7.1.4 Stage 3 assessed the indirect impacts of the proposed development, in terms of indirect, physical impacts, and indirect (non-physical) visual impacts. These indirect impacts affect a wider area and several surrounding HLCAs were considered. Five HLCAs were assessed at this stage. These were HLCA 008 Middle Llancarfan Valley: Llanvithyn and Garnllwyd, HLCA 009 Greendown, HLCA 011 Liege Castle, and HLCA 012 Ty'n-y-Coed as well HLCA 010 Bonvilston Amalgamated Fieldscape. The overall magnitude of indirect impact on HLCA 010 and HLCA 011 was scored as **Considerable**, and the indirect impact on HLCA 008, 009 and 012 was scored as **Slight**.
- 7.1.5 Stage 4 formed an evaluation of the relative importance of the impacted HLCAs and the elements and groups within them that were affected by the proposed development. When combined, the overall value of the five HLCAs was scored as **Considerable**.
- 7.1.6 Stage 5 formed an assessment of the overall significance of the impact. The impact on HLCA 010 Bonvilston Amalgamated Fieldscape is considered to be **Fairly Severe**. The impact on HLCA 008 Middle Llancarfan Valley and HLCA 011 Liege Castle is considered to be **Moderate**. The impact on HLCA 009 Greendown and HLCA 012 Ty'n-y-Coed is considered to be **Slight**.
- 7.1.7 The impact upon HLCA 010 includes both direct physical impacts and indirect visual impacts over two-thirds of the area. The physical impacts will affect one of the main character elements of the HLCA, the cropmarks and earthworks relating to medieval and post-medieval field systems, as well as the less representative elements of a probable Roman enclosure and post-medieval quarry. Visually, the development will not only affect the appearance of the HLCA but also fragment the amalgamated fieldscape.

8 Bibliography

Cadw & CCW. 2007. *Guide to Good Practice on Using the Register of Landscapes of Historic Interest in Wales in the Planning and Development Process (Revised 2nd Edition)*.

Cadw, CCW & ICOMOS. 1998. *Register of Landscapes of Outstanding Historic Interest*.

Evans, J. 2020. *Land at Pancross and Oakland Farm, Bonvilston, Vale of Glamorgan. Archaeological Desk-based Assessment*. Archaeology Wales Report N. 1900.

Websites

British Geological Survey: Geology of Britain viewer:
www.bgs.ac.uk/discoveringGeology/geologyOfBritain/viewer.html (accessed 23/02/22)

GGAT, Historic Landscape Characterisation Llancarfan:
www.ggat.org.uk/cadw/historic_landscape/llancarfan/english/llancarfan_main (accessed August 2022)

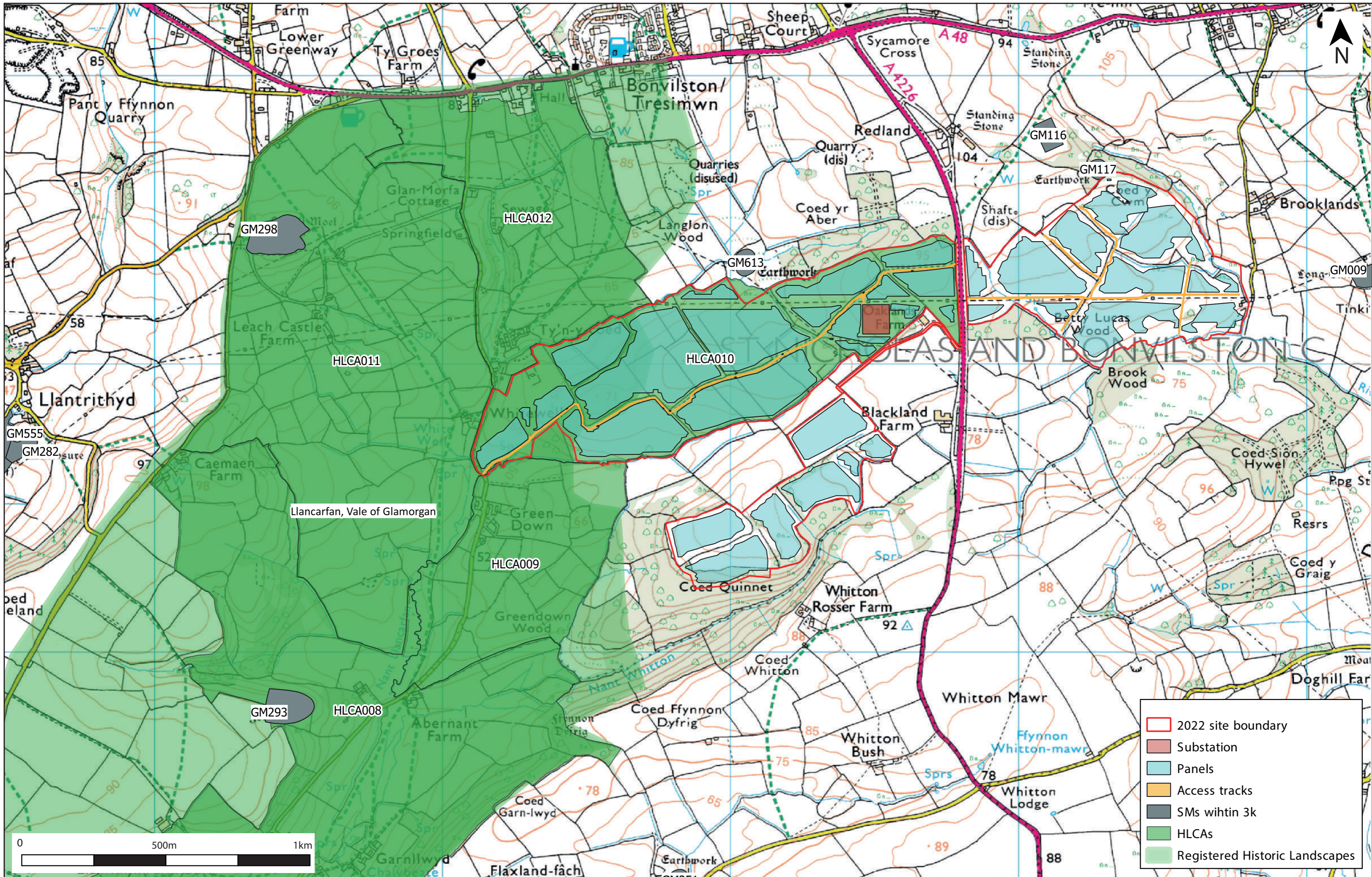


Figure 1. Plan showing the proposed development and the Registered Historic Landscape of Llancaiach with the HLCA and SMs

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