



9. HERITAGE RESOURCES

9.1 INTRODUCTION

9.1.1 This chapter of the ES considers the potential impact of the proposed Parc Solar Traffwll project on archaeological and cultural historic assets. The chapter describes the scope, assessment methodology and the baseline conditions currently existing at the site and its immediate environs. It then considers any potential significant effects the proposed development might have on the baseline and the mitigation measures required to prevent, reduce or offset any significant adverse effects.

9.1.2 The assessment compiles information from other assessments and evaluations undertaken in support of the pre-application:

- Garcia Rovira, I, and Sinnot, S, 2019, Caergeiliog, Anglesey: Desk Based Assessment and Site Visit, Archaeology Wales Report 1758 (draft version);
- McGuinness, N, 2020, Parc Solar Traffwll, Archaeological Evaluation (Geophysical Survey), Gwynedd Archaeological Trust Report No. 1560;
- Reilly, S, Ryan Young, C, Roberts, J, and Ferreira, C, 2021, Parc Solar Traffwll, Ynys Môn, Archaeological Evaluation (Trial Trenching), Gwynedd Archaeological Trust Report No. 1571;
- McGuinness, N, 2021, Parc Solar Traffwll, Llanfihangel Yn Nhowyn, Ynys Môn, Historic Asset Setting Impact Assessment, Stages 1 and 2, Gwynedd Archaeological Trust Report No. 1575; and
- McGuinness, N, 2021, Parc Solar Traffwll, Llanfihangel Yn Nhowyn, Ynys Môn, Historic Asset Setting Impact Assessment, Stages 3 and 4, Gwynedd Archaeological Trust Report No. 1584.

9.1.3 Draft versions of each of the above documents have been submitted to Gwynedd Archaeological Planning Service (GAPS) and Cadw for comment prior to completion. The comments provided by GAPS and Cadw have been incorporated into the final versions of the documents (included in **Appendix 9.1 to 9.5** to this ES) and have informed the assessment presented in this chapter.

Proposed Development

9.1.4 A full description of the proposed development is provided in Chapter 3. The location of the Proposed Development (the Site) is shown on **Drawing LOC1001/1/01**.

Consultation

9.1.5 GAPS and Cadw were consulted in relation to the archaeological assessment. The consultation took place before the assessment was undertaken, at each stage of the assessment process thereafter and in relation to final reporting.

9.1.6 The archaeological assessment conformed to the following guidelines:

- Conservation Principles for the Sustainable Management of the Historic Environment in Wales (Cadw 2011);
- Design Manual for Roads and Bridges (DMRB) LA 104 Environmental assessment and monitoring, Version 1, Highways England 2020;
- Design Manual for Roads and Bridges (DMRB) LA 106 Cultural Heritage assessment, Revision 1, Highways England 2020;
- Guidance for the Submission of Data to the Welsh Historic Environment Records (HERs) Version 1.1 (The Welsh Archaeological Trusts, 2018);
- Guidelines for digital archives (Royal Commission on Ancient and Historic Monuments of Wales, 2015);
- Management of Archaeological Projects (English Heritage, 1991);

- Management of Research Projects in the Historic Environment: The MoRPHE Project Managers' Guide (Historic England, 2015);
- Planning Policy Wales, 11th edition (Welsh Government 2021);
- Standard and Guidance for Archaeological Field Evaluation (Chartered Institute for Archaeologists, 2020); and
- Standard and Guidance for Desk-Based Assessment (Chartered Institute for Archaeologists, 2020).

9.1.7 Gwynedd Archaeological Trust (GAT) is certified to ISO 9001:2015 and ISO 14001:2015 (Cert. No. 74180/B/0001/UK/En) and is a Registered Organisation with the Chartered Institute for Archaeologists and a member of the Federation of Archaeological Managers and Employers (FAME).

9.1.8 The project was monitored by the GAPS on behalf of the Local Planning Authority.

Competence

9.1.9 The author of this chapter, Stuart Reilly, is a senior archaeologist with GAT. Stuart has worked at GAT for seven years and has 22 years field experience on a diverse range of archaeological projects of all sizes and periods, in the UK and Ireland. At GAT Stuart has extensive knowledge of working on projects at various levels, from inception to completion, and has comprehensive experience of project management, in particular archaeological and administrative. Stuart is a Member of Chartered Institute for Archaeologists (MCIfA membership number 10279) and Site Management Safety Training Scheme (SMSTS) for the Construction and Civil Engineering Industries.

9.2 CONTEXT

Introduction & Planning Policy

9.2.1 The Environmental Impact Assessment (EIA) in relation to cultural heritage was undertaken in accordance with the best-practice guidance outlined in Design Manual for Roads and Bridges (DMRB) LA 104 Environmental assessment and monitoring, Version 1, (Highways England 2020) further to consultation with GAPS.

Methodology

9.2.2 This section details the methodology used to determine the significance of the impacts of the proposed solar farm on archaeological and cultural historic assets. The assessment criteria and assignment of significance with respect to archaeology and cultural heritage are based on available standards and guidance (as outlined in section 9.1 above and DMRB LA 104), good practice, consultation and professional judgement.

9.2.3 Identifying the impact of a development upon historic assets is a four-stage approach. Initially, historic assets potentially impacted need to be identified (Stage 1), whilst their significance (heritage interest) also needs to be understood (Stage 2). Identification of historic assets was undertaken as part of the Desk-based Assessment (DBA) (refer to Archaeology Wales Report 1758 in **Appendix 9.1**), whilst an initial assessment of significance is also undertaken in the DBA and refined as part of this ES. Following this, the magnitude of effect needs to be identified (Stage 3) followed by an assessment of impact significance to the historic asset (Stage 4).

9.2.4 A historic assets' significance, for the purposes of this report, is identified as anywhere from negligible (no significant heritage interest) to high (an asset with significant heritage interest) (see **Table 9.1** below). The categories and definitions of heritage significance do not necessarily reflect a definitive level of importance of an asset. They are intended to provide a provisional guide to the assessment of perceived heritage significance, which is to be based upon professional judgement incorporating the evidential, archaeological, historical, aesthetic, architectural and communal heritage values of the asset or assets.

Table 9.1 Definitions of Significance (Heritage interest)

Heritage Significance	Definition
Very High (perceived International Importance)	World Heritage Sites; Historic landscapes of international value, whether designated or not; Extremely well preserved historic landscapes with exceptional coherence, time-depth, or other critical factor(s).
High (perceived National Importance)	Grade I and II* Listed Buildings or structures; Scheduled Monuments; Other listed buildings that can be shown to have exceptional qualities in their fabric or historical associations not adequately reflected in the listing grade; Conservation DAs containing very important buildings; Undesignated structures of clear national importance; Designated historic landscapes of outstanding interest. Undesignated landscapes of outstanding interest; Undesignated landscapes of high quality and importance, and of demonstrable national value; Well preserved historic landscapes, exhibiting considerable coherence, time-depth or other critical factor(s).
Medium (perceived Regional Importance)	Grade II Listed Buildings; Conservation DAs containing buildings that contribute significantly to its historic Character; Historic Townscape or built-up DAs with important historic integrity in their buildings, or built settings (e.g. including street furniture and other structures); Designated special historic landscapes; Undesignated historic landscapes that would justify special historic landscape designation, landscapes of regional value; Averagely well-preserved historic landscapes with reasonable coherence, time-depth or other critical factor(s).
Low (perceived Local Importance)	'Locally Listed' buildings (Scotland Category C(S) Listed Buildings); Historic (unlisted) buildings of modest quality in their fabric or historical association;

Heritage Significance	Definition
	Historic Townscape or built-up DAs of limited historic integrity in their buildings, or built settings (e.g. including street furniture and other structures); Robust undesignated historic landscapes; Historic landscapes with importance to local interest groups; Historic landscapes whose value is limited by poor preservation and/or poor survival of contextual associations.
Negligible	Buildings of no architectural or historical note; buildings of an intrusive character; Assets with no significant value or archaeological / historical interest; Landscapes with little or no significant historical interest.
Unknown	Buildings with some hidden (i.e. inaccessible) potential for historic significance; Assets with an unknown value or archaeological / historical interest.

9.2.5 The classification of the magnitude or scale of impact (**Table 9.2** below) on known historic assets takes account of such factors as:

- The physical scale and nature of the anticipated impact; and
- Whether specific features or evidence would be lost that is fundamental to the historic character and integrity of a given asset, and its understanding and appreciation.

Table 9.2: Magnitude of Impact

Magnitude of Effect	Criteria for assessing impact
Major	Total loss of or substantial harm to an asset
Moderate	Partial loss of, harm to or alteration of an asset which will affect its significance
Minor	Minor loss of or alteration to an asset which leaves its significance largely intact
Negligible	Minor alteration to an asset which does not affect its significance in any notable way.
No change	No alteration to an asset.

9.2.6 Following identification of the magnitude of impact, the significance of the effect is predicted. To provide a consistent framework for the consideration and evaluation of impacts on different environmental parameters, the following terminology will be used (**Table 9.3**).

Table 9.3 Definitions for Significance of Effect

Significance of Effect	Criteria
Major adverse	The impact gives rise to serious concern that should factor into the decision-making process for the development.
Moderate adverse	The impact gives rise to some concern, but it is likely to be tolerable (depending on its scale and/or duration)
Minor adverse	The impact is undesirable, but of limited concern
Negligible	The impact is considered to be of limited or no concern
Minor beneficial	The impact is of minor significance but has some heritage-related benefit
Moderate beneficial	The impact provides some tangible benefit to the historic environment
Major beneficial	The impact provides a significant positive benefit to the historic environment

9.2.7 Assessment of the significance of the effect is reliant on professional judgement and experience and is tailored to each historic asset. Any judgment is accompanied by a narrative description to qualify that opinion. The following matrix (**Table 9.4**) for calculation of the significance of effect should therefore be seen as a framework to aid in understanding how the level has been reached, rather than as a direct tool for direct decision making.

Table 9.4 Effect Significance Assessment

	Very High	Neutral	Slight	Moderate/ Large	Large or Very Large	Very Large
	High	Neutral	Slight	Moderate/Slight	Moderate/Large	Large/Very Large
VALUE	Medium	Neutral	Neutral/Slight	Slight	Moderate	Moderate/Large
	Low	Neutral	Neutral/Slight	Neutral/Slight	Slight	Slight/Moderate
	Negligible	Neutral	Neutral	Neutral/Slight	Neutral/Slight	Slight
		No change	Negligible	Minor	Moderate	Major
				MAGNITUDE OF IMPACT		

9.2.8 Both direct physical and indirect non-physical (for example visual, setting) effects on historic assets are considered relevant. Effects may be adverse or beneficial. Depending on the nature of the impact and the duration of development, effects can also be temporary and / or reversible or permanent and / or irreversible. The finite nature of archaeological remains means that physical impacts are almost always adverse, permanent and irreversible; the 'fabric' of the asset and, hence, its potential to inform our historical understanding, will be removed.

9.2.9 For this assessment, 'major' and 'moderate' effects are generally deemed to be significant. In addition, whilst, minor, effects are not significant in their own right, it is important to distinguish these from other non-significant (negligible) effects as they may contribute to significant effects cumulatively or through interactions between historic assets or elements of the historic environment (or historic landscape).

9.3 BASELINE CONDITIONS

Historic Landscape

- 9.3.1 The proposed Parc Solar Traffwll development is located on the western side of Ynys Môn, spread across three development areas (DA4, DA5 and DA6) positioned between the A55 and RAF Valley. DA3, located 1.5km to the southwest of Bryngwyrán, just to the north of the farm at Tai Croesion Newydd (Figure 01), has been removed from the proposed development as a consequence of the heritage assessment undertaken. Some references to DA3 remain within this chapter when the context requires it.
- 9.3.2 DA4 and DA5 are located 0.5km to the southwest of Bryngwyrán. DA4 sits on the western side of the Bryngwyrán to Llanfaelog road, to the west of Plas Llechlched Farm. It is bounded on its western side by boggy, waterlogged ground and ponds and the Afon Crigyll, and to the north by the minor road from Llanfihangel yn Nhowyn to Engedi. The site of the former church of St Ulched abuts the southeast side of DA4.
- 9.3.3 DA5 is located on the opposite, eastern side of the Bryngwyrán to Llanfaelog Road to DA4. It is bounded on its north, south and eastern sides by pasture fields and the Llanfihangel yn Nhowyn to Engedi road forms the boundary at its northeastern corner.
- 9.3.4 DA 6 is located 100m to the west of Llanfihangel yn Nhowyn, to the north and east of the farm at Glan-y-gors. The minor road, Lon Bach, forms its northern boundary, while marshy ground, the Glan-y-gors farm and Llyn Dinam lie to the west. Pasture fields separate the DA from Llanfihangel yn Nhowyn to the east and more pasture fields lie to the south.
- 9.3.5 The proposed development is set within a landscape of flat or gently undulating low-lying ground with a maximum elevation of 10m AOD. The three DAs are currently used for pasture, with DA4 and DA5 being improved grassland while DA6 is more marginal ground. The fields are defined by a mixture of drystone walls, post and wire fences and drainage ditches.
- 9.3.6 The underlying geology is comprised of Ordovician Rocks (undifferentiated) - Sandstone and Conglomerate, interbedded. Superficial: Till, Devensian - Diamicton (BGS, 2020) in DA4. Whereas DA5 consists of Ordovician Rocks (undifferentiated) - Sandstone and Conglomerate, interbedded to the west. Coedana Complex-Gneiss, Micaceous to the east. Superficial: Till, Devensian - Diamicton (BGS, 2020). DA6 is New Harbour Group - Mica Schist and Psammite, New Harbour Group – Jasper in northwestern corner. Superficial: Till, Devensian - Diamicton (BGS, 2020).
- 9.3.7 The soils within the proposed development varied. In DA6 these consisted of slowly permeable seasonally wet acid loamy and clayey soils (Soilscapes, 2020). Whereas DA4 has slowly permeable seasonally wet acid loamy and clayey soils to the north, freely draining slightly acid loamy soils to the south and DA5 freely draining slightly acid loamy soils to the south (Soilscapes, 2020).

History

Prehistory and Roman Archaeology

- 9.3.8 No known upstanding Prehistoric or Roman archaeological sites are present within the proposed DAs. There are though several monuments from Prehistory (250,000

BC to AD 43) and Roman (AD 43 to 410) within the immediate vicinity of the proposed development. A more in-depth examination of the Prehistoric/Roman archaeological sites in the vicinity of the development can be viewed in Appendix I.

- 9.3.9 The earliest known activity includes a findspot for a stone axe (PRN 2575) located 656m east of DA6, and the burial chambers of Presaddfed (AN010), Ty-Newydd (AN013) and Castellor (PRN 1539).
- 9.3.10 Presaddfed burial chamber is located on even ground at the southern end of Llyn Llywenan, approximately 3.7km northeast of DA4 and DA5. The monument is composed of two distinct burial chambers of Neolithic (4000 – 2000 BC) date. It is possible that these chambers were never directly connected but were enclosed within a single mound (Garcia Rovira and Sinnot 2019, 56).
- 9.3.11 Ty-Newydd burial chamber is positioned approximately 2.7km south of DA4 and DA5. It is the remnants of a megalithic chamber with a large cracked capstone. The monument was excavated in 1936 and this revealed the chamber may have once measured 2.8m by 1.2m as defined by a spread of charcoal with a hearth at the eastern end. Beaker pottery was recovered during the excavation but it is highly likely that represent the reuse of an earlier, Neolithic monument.
- 9.3.12 Castellor burial chamber is located a maximum of 800m southwest of DA4 and DA5 (and is also in close proximity (140m north) to DA3 which is not part of the application scheme). The monument comprises two standing stones with a capstone. It has been observed though that the capstone may be the result of prehistoric action or post-medieval clearance activity (Garcia Rovira and Sinnot 2019, 85).
- 9.3.13 Later Prehistoric activity within the local vicinity of the proposed development includes Bronze Age (2000 – 650 BC) Palstave findspot (PRN 7624) 941m northeast of DA6 as well as a series of burnt mounds that were uncovered and investigated as part of the groundworks for the A55, located to the immediate north of the proposed development. The closest being the burnt mounds PRN31812-4) that were 770m north of DA6 (Rovira I. G. & Sinnot S, 2019, 108). In addition, a Bronze Age site (PRN 61578) located approximately 600m north of DA6 included a number of pits which may have been the remnants of ovens (Rovira I. G. & Sinnot S, 2019, 108).
- 9.3.14 There are also a number of Iron Age/Roman (650 BC – 410 AD) settlements in close proximity of the proposed development, the most notable being the Castellor Hut Group (AN088; PRN 2520) a scheduled monument that is situated 45m southwest of DA4 and 700m southwest of DA5. The monument is defined by the remains of a group of hut circles located in two pasture fields. The settlement spans 200-280m of an area above the confluence of Afon Crigyll and an unnamed stream. Many of the features are upstanding and visible above ground with locations of two enclosed roundhouse settlements to the north (NPRN 308122) and south (NPRN 308123) of the scheduled area; the latter with satellite roundhouses. NPRN 308122 contains traces of a 10m diameter roundhouse with a 1m wide stone founded wall and joined to an angle of walling. NPRN 308123 is the location of two late prehistoric roundhouses that are about 9m in diameter with stone walls about 1m wide set on the west side of a rectangular stone-walled enclosure about 20m by 30m. There are remains of three similarly sized detached or satellite roundhouses about 25-45m away to the northwest and west. Both areas appear to have been associated with a

cluster of settlements within Castellor. These roundhouse settlements are characteristic of later prehistoric activity, with evidence of material that suggests later use of the site during the Roman (43 – 410 AD) period. Artefacts recovered during clearance in the 19th century, included quernstones, stone mortars, unspecified coins and 'gold' tweezers. Three copper ingots or cakes were discovered at the site, one of which is now housed at the National Museum (Accession No. 19.298A/1); all are believed to be Roman (Rovira I. G. & Sinnott S, 2019, 36).

- 9.3.15 In addition to the Castellor Hut Settlement, there are Melin Y Plas hut settlement (PRN 9945) and Ynys Leurad Hut Circles (AN035) in the immediate vicinity of the proposed development areas. The Melin Y Plas hut settlement was excavated as part of the A55 Road Scheme Project; the A55 is positioned to the north of DA4, DA5 and DA6. The excavation identified four phases of occupation that extended from the Late Neolithic (c. 3000 – 2000 BC) to Medieval (1110 – 1539 AD) period (Rovira I. G. & Sinnott S, 2019, 65). The structures at Melin Y Plas that dated from the Roman period (43 – 410 AD) were constructed with thick clay or possibly turf walls bounded by narrow gullies; the gullies may have been the base of a wattle or timber revetment. These structures date from the early 1st to late 2nd or 3rd century AD and may have been preceded by Iron Age occupation (Ghey E., Edwards N. & Johnston R., 2008, 14-15).
- 9.3.16 Ynys Leurad Hut Circles are located 4km northwest of DA6 on a peninsula situated between Ynys Mon and Ynys Gybi. The site is comprised of a small group of hut circles, the best preserved are located on the north side of the group being on average c.9m in diameter, and those in the centre are c.6m diameter. At the southern end is a large ruined hut with a small rectangular 'workshop' to the east. Traces of enclosures can also be seen but they are not certainly contemporary. The general appearance and the dry masonry are similar to those of the huts on Ty Mawr, which suggest the settlement dates from the Roman period (43 – 410 AD).
- 9.3.17 North of the development is Y Werthyr Hillfort (AN042) situated on a low knoll above the marshes around Afon Caradog. The site is almost enclosed by marshland, except on the south side. The fragmentary remains consist of two concentric lines of ramparts enclosing an area 180m by 200m, except on the northeastern side where there are three concentric ramparts. On the western side of the monument, the line of the outer rampart is represented by a terrace with a retaining wall, which incurves towards the road which now cuts through the hillfort from northwest to southeast (RCAHMW).
- 9.3.18 An enclosure of Iron Age date (PRN 2517) is located more than 662m northeast of DA6. This enclosure has been recorded in historical Ordnance Survey maps; however, it is presently in poor condition due to ploughing. The latter has revealed a stone axe and a spindle whorl of possible Iron Age origin (Rovira I. G. & Sinnott S, 2019, 108).

Medieval and Post-Medieval Archaeology

- 9.3.19 No known upstanding Medieval or Post-Medieval archaeological sites are present within the proposed development areas. There are though several monuments from Medieval (Early Medieval 410 – 1110 AD & Medieval 1110 – 1539 AD) and Post-Medieval (1539 – 1750 AD) periods within the immediate vicinity of the proposed

development. A more in-depth examination of the Medieval/Post-Medieval archaeological sites in the vicinity of the development can be viewed in Appendix I.

- 9.3.20 Early Medieval sites include Bodedern Early Christian Cemetery (AN099) which is located approximately 2.km north of DA4 and DA5. This site was excavated in 1971. Burials belonging to three distinct phases as well as a curvilinear ditched enclosure were revealed during the excavation but there was no trace of the church or other associated infrastructure within the limits of the excavation. The area is currently occupied by two houses. The excavation at the site uncovered 114 extended inhumations comprising both long cists and unprotected dug graves. The latest period for the initial phase of the burials was from the 6th century. The burials ranged from simple dug graves to full lintel grooves all in a contemporary context. The earliest phase of burials consisted of scattered graves orientated north-south. A central, grave free, '*focal*' area of post settings was identified and may be of prehistoric origin. The central feature of the cemetery had multiple phases, one of which may be a small wooden chapel. One phase of the cemetery indicates east-west aligned burial and shows a tendency towards radial arrangement. In a secondary context, a 1.5m wide walled cist was capped by an inscribed stone (bearing the name *Ercagni*) lying face downwards. This stone now resides in Bodedern Church. The walled cist on which the Erchan stone had been re-used as a lintel had been built over a 'V-profile' ditch which had been deliberately back-filled with stones before the cist was built. The ditch was sectional in three places and appears to have enclosed the hilltop. No entrance causeway to the enclosed area was found. No graves were found cut into the ditch fill, but the presence of graves on both sides of it implies that an existing earthwork was used as a division of the sacred from the profane when the site was adapted for Christian use (Rovira I. G. & Sinnot S, 2019, 36-37).
- 9.3.21 Other Early Medieval sites include the Bodfeddan Inscribed Stone (AN021) and Pen-Sieri Inscribed Stone (AN058). The former is 2km southeast of DA4 and DA5, while the latter 5km south of DA4 and DA5. Bodfeddan is a memorial stone, of probable 5th or 6th century AD origin. It is a rough pillar stone, 2.0m high and roughly square sectioned, 0.8m-0.9m across. On the stone's north face there is vertically inscribed two line inscription: '*CVNOGVVS_HIC IACIT*' or '*the Stone of Cunogus(s)us He lies here*' (RCAHMMW).
- 9.3.22 Pen-Sieri Inscribed Stone measures 1.6m in length and 0.4m in width, with the word '*MAILIS*' inscribed in one vertical line. The stone is now located at Trecastle Barn and use as a lintel stone in the west wall of a barn (Rovira I. G. & Sinnot S, 2019, 78).
- 9.3.23 Another possible Early Medieval site is Cappel Lur (PRN 2522) which is located 700m north of DA4 according to the Gwynedd Historic Environment Record. The existence of this chapel is recorded in Baynes (1920), however the actual location of this building is unknown.
- 9.3.24 Another church site of possible Medieval origins, St Ulched's Church (Site of) (PRN 2525), is located immediately adjacent to the southern boundary of DA4. The church is thought to have been medieval in date, though no standing remains survive. The churchyard wall does survive and forms part of the southern boundary of DA4. It is possible that the remains of early graves may be located within the part of the area in proximity to the church site.

- 9.3.25 The remaining known archaeological sites are of Post-Medieval origin. The most notable, being scheduled monuments Felin Wen Tide Mill (AN130), Carnau Tide Mill (AN131) and Bodior Tide Mill (AN132) are located 4-5km west of DA4 and DA5. The tide mills are located along the Cymyran Strait that separates Ynys Mon and Ynys Gybi; Felin Win and Carnau are situated along the west coast of Ynys Mon while Bodoir is positioned on the east coast of Ynys Gybi. Felin Wen Tide Mill consists of a long dam across the mouth of the tidal inlet with the mill set on a rocky outcrop at the east end; the outcrop is linked to the shore by a short length of dam. Carnau Tide Mill was built on a small island, with dams in either direction from it across a small bay. The mill platform is visible as low foundations, with the remains of a channel on its west side and the hexagonal collar of an iron wheel. The remains of Bodior Tide Mill cut across the tidal inlet, and a rectangular mill building on a rocky outcrop at the south end of the dam (RCAHMW).
- 9.3.26 These mills were powered by seawater at high tide, a technique that was an important source of power for grinding corn from the early modern period in Anglesey. The first documentary evidence in relation to Felin Wen Tide Mill dates to 1724 and it appears to have operated until 1829. The first documentary reference to Bodior Tide Mill dates to 1778 (Rovira I. G. & Sinnot S, 2019, 96).
- 9.3.27 In addition, in the vicinity of DA6, there is the Stanley Embankment (AN146), which is located 3.8km of DA6, Thomas Telford's causeway between Valley and Ynys Gybi. It is 1.2km long, some 35m wide at the base, and up to 4.8m high. It crosses Beddmanarch Bay and was opened in 1823 (RCAHMW and Rovira I. G. & Sinnot S, 2019, 96).
- 9.3.28 Further along the coast of Ynys Mon (and 3.4km northwest of DA6) there is the Newlands Fish Weir (AN145). It is defined by dry stone walling on its northeast side, which together with natural rocks, encloses an area at the southeastern edge of the foreshore. The inner edge of walling is depicted as a 'Fish Weir' on historic (1889-1900) Ordnance Survey mapping. The section of walling runs northeast along the edge of the River Alaw channel for approximately 280m, before terminating at the point where the channel curves to the east. The trap is open at its northwest end, and is defined by rocks (bordering the coastline) on its south and southwestern edges (RCAHMW).
- 9.3.29 The remaining known Post-Medieval archaeological sites in proximity of the development include:
- Trackway, Cymunod (PRN 37225) is located 250m north of DA 4. The track is now covered in grass and it is known to run between Cymunod and the A5 (Davidson et al 1996);
 - Milestone (PRN 66114) is located 0.8km northeast of DA5;
 - Parish Church of St. Ulched (PRN 5372) is located 600m northeast of DA4. It is documented on the RCHAMWS 1937. The church is now destroyed, however, the churchyard wall is still standing;
 - Capel Salem, Bryngwran (PRN 7822) is a post-medieval non-conformist chapel documented by the RCAHMW Chapel Survey of 1994. The chapel is located 400m north of DA4;
 - Melin Cae Fadog (PRN 36148) is located 665m northeast of DA4. This mill is documented in Davidson's 'The Medieval Mills of Anglesey' (2002);
 - Building Foundations, Bryngwran (PRN 1780) is located 665m north of DA4. The

Gwynedd Historic Environment Record note that in 1968 a visit to the building was carried out during works associated with refurbishing the mill. The works revealed the foundations of a building;

- Pandy Cymunod, Bodedern (PRN 36105) is located 125m northwest of DA4 according to the Gwynedd Historic Environment Record. Davidson (2002) defined it as a possible site of a medieval mill, fully developed during the 19th century as a woollen mill;
- Pont Factory Cymunod (PRN 11669) is located 0.06km northwest of DA4;
- Melin y Plas (PRN 18366) is located 511m east of DA4. A photographic record of the mill was carried out prior its conversion, and it is recorded in Davidson's 'The Medieval Mills of Anglesey' (2002);
- Pont Melin-y-plas, Bryngwran (PRN 5750) is located 241m northeast of DA4. The Gwynedd Historic Environment Record notes the bridge as disused. The stream over which the bridge was built is the stream used by Melin y Plas;
- Capel Hebron, Bryngwran (PRN 7824) is a post-medieval chapel documented by the RCAHMW Chapel Survey of 1994. The chapel is located 100m northeast of DA4;
- The RCAHMWs noted the presence of a pond (PRN 28950) 145m southwest of DA4;
- PRNs 28942-8 are mostly associated with Afon Crigyll and take the form of footbridges. A number of these sites have been documented on cartographic sources, however, they are no longer any upstanding remains;
- PRN 16630 refers to a large free-standing boulder defining a parish boundary (Smith 2003) located approximately 2km south of DA6;
- PRN 28935 (positioned approximately 1.4km southwest of DA6) refers to a building recorded on the 1st Edition Ordnance Survey map of 1889. While Cerrig Bach building has been recorded as to be of unknown date, it is likely that it dates to post-medieval chronologies;
- PRNs 28937, 28939, 28940, 28946 refer to footbridges documented on historic maps postdating 1889, although they could be earlier in date;
- Finally, the Gwynedd Historic Environment Record documents a building of modern date. PRN 33382 records the presence of a hangars within the community of Llanfair-yn-Neubwll (Batten 2011) located approximately 1.8km southeast of DA6.

Listed Buildings

9.3.30 There are no listed buildings within the proposed development area but 94 listed buildings are located within the 5km search area of the desk-based assessment (Rovira I. G. & Sinnot S, 2019). The majority of these buildings were shown not to be indivisible with the layout of the development (see Appendix II of the Desk Based Assessment in **Appendix 9.1**). The listed buildings that are adjacent to and may be affected by the solar farm include:

- Pandy Cymunod - Grade II- LB 19488 – is a woollen mill and workshop built in the late 18th and early 19th centuries. It is a 2 storey 3 bay building with a single-storey workshop and cart shed. It is thought that the workshop might also have been used as a dye house. The buildings are constructed from rubble walls and the roofs dressed with small slates. A dove coat is located in the eastern gable. A plan of 1878 depicts this range of buildings illustrating a workshop, cart shed and mill pool. The mill is located 0.1km north of DA 4;
- Pont Factory Cymunod, over Afon Crigyll - Grade II – LB 5278 – is the earliest of two associated bridges, composed of rubble masonry with two arches with different structures and widely separated. The westward arch being high and

roughly hewn compared to the other segmented, squared arch with voussiors. A rough parapet spans both arches. The bridge is located 0.06km north of DA4; and

- Church of St Mihangel - Grade II -LB 5309- incorporates the construction material from an earlier church; the Church of St Mihangel was largely rebuilt in 1862 by Kennedy and Rogers of Bangor. Renovated in 1988, it is now used as a Royal Air Force church by RAF Valley. The church is located 1.7km west of DA4.

9.3.31 Details of the 94 listed buildings examined as part of the desk-based assessment can be found in Appendix I of the Desk Based Assessment in **Appendix 9.1**.

Archaeological Evaluation

9.3.32 Further to the completion of the Desk-based Assessment and the guidance provided in the EIA Scoping Direction for the proposed development, archaeological evaluation was conducted within the four Development Areas (DA3, DA4, DA5 and DA6) of the proposed development to help determine the level of subsurface archaeology present therein. The archaeological evaluation was a two staged process that comprised a geophysical survey conducted using a combination of a Bartington cart mounted multi-sensor gradiometer array and a handheld non-GPS Bartington Grad 601-2 dual fluxgate gradiometer (GAT Report 1560). Subsequent to the conclusion of the survey 131 trial trenches were excavated to investigate geophysical anomalies and blank development areas on the geophysical survey (GAT Report 1571).

Geophysical Survey (Appendix 9.2)

9.3.33 GAT undertook a magnetometer survey in July and August 2020 in DA3, DA4, DA5 and DA6. The survey did not identify any probable archaeological anomalies but it did reveal anomalies of possible archaeological provenance in DA3 and DA4 (Figures 02 & 03). In DA4, the corner of a possible ditched enclosure [4.1], a possible prehistoric burnt mound [4.2] recorded in the desk-based assessment as a possible prehistoric cairn (CAG-005) in the desk-based assessment, an enclosure [4.3], a small rectangular possible ditched settlement feature [4.4] and a possible kiln site [4.5] have been recorded (McGuinness, 2020, 40).

9.3.34 Former field boundaries recorded on 19th century historic maps have been identified in DA5 and DA6 (Figures 02 – 04). Anomalies which appear to represent field boundaries not recorded on historic maps have been identified in DA4 and DA5. In DA4 and DA5 these possible boundaries can be resolved into distinct field systems. The remains of ridge and furrow cultivation have been identified in DA4 and DA5 and modern ploughing is evident in DA4 and DA5. Land drains and other modern agricultural features were identified in DA4 and DA6.

Trial Trenching (Appendix 9.3)

9.3.35 A total of 131 trenches were excavated during November/December 2020 of which 77 contained no archaeological evidence. The remaining 55 trial trenches confirmed the presence of archaeological features, primarily linears, which upon investigation proved to be agricultural in nature, being for example, former field boundaries, former trackways, plough furrows or land drains. The identified remains of 51 probable field boundaries varied in size and depth. The field boundaries that were excavated ranged in width from 0.48m to 1.85m and in depth from 0.04m to 0.80m; the average

mean width of the boundaries was 0.57m with an average mean depth of 0.15m. On the whole, of the probable field boundaries that were investigated, the majority proved to be relatively shallow (as indicated by the mean average sum) that barely cut the surface of the underlying natural and their fills were broadly indistinguishable from that of the overlying subsoil or topsoil. The majority of the fills of these features were sterile with no presence of charcoal inclusions or organic material and only a handful produced limited 19th century pottery sherds, typically black glazed earthenware and tin glazed earthenware; the pot sherds examined, noted on the relevant GAT pro-forma and discarded.

- 9.3.36 There were though other more substantial or distinct linear features that are most likely former field boundaries and yet they do not correspond with field layouts depicted on available historical maps. This was notably the case, for example, with the linears investigated in Fields A and B in DA4 as well as the linears uncovered in the western half of DA5 (Figures 05 & 06; see Appendix IV). The ditches that corresponded with geophysical anomalies 4.6, 4.7, 4.8 and 5.4 (PRNs 91517-23, 91526, 91531-32, 91525-26, 91524-25 and 91537-39) were quite substantial which makes it highly probable that they were field boundary ditches but no artefacts were retrieved from the fills and ecofacts were not recovered as they were sterile and almost indistinguishable from the overlying topsoil. Aspects of geophysical anomaly 4.1 would also appear to correspond with the remnants of a clawdd (PRN 91529). Due to the lack of artefactual/ecofactual and cartographic evidence (the latter dating from the 19th century) it may be supposed that these linears are the remnants of field boundaries that pre-date the 19th century.
- 9.3.37 The remnants of burnt mound spreads were also sporadically identified across the proposed DAs, in Trench 4, Field D, DA4 (PRN 91534) (Figure 07). As were other probable prehistoric features such as a small ring ditch [1003] in Trench 10 (PRN 91542) and a possible standing stone [1306] in Trench 13 (PRN 91546), both in DA5 (Figure 10).
- 9.3.38 The remaining archaeological features uncovered within the trial trenches were isolated pits; in total four such features were identified in the trial trenches. The most notable of these were [1306] that contained a standing stone in DA5 and [104] in Trench 1, Field C, DA6 (PRN 91565) the basal fill of which (106) was sampled due to its charcoal content.

Historic Asset Setting Impact Assessment (Appendix 9.4)

- 9.3.39 A four-stage assessment of the impact of the proposed development on the Castellor Hut Group Scheduled Monument was completed in accordance with the guidance in Cadw's "Setting of Historic Assets in Wales". It was determined that the proposed solar farm, primarily DA3, would have a negative impact on the setting of Castellor Hut Group Scheduled Monument (AN088), and the magnitude of this impact was assessed as moderate, as the scale and proximity of the proposed development would result in considerable changes to the setting of the historic asset that significantly modify the setting. As a consequence of this, it was decided that the removal of DA3 from the proposed development was appropriate.

9.4 PROPOSED DEVELOPMENT

9.4.1 The proposal will comprise the following:

- Photovoltaic (PV) panels to a maximum height of circa 3m;
- Mounting frames - matt finished small section metal structure;
- Scheme of landscaping and biodiversity enhancement;
- Central Inverters (inverters and transformers will be housed together in prefabricated containers to a maximum height of circa 3m), substations (DNO and Customer to a maximum height of circa 3m) and associated cabling (below ground);
- Point of connection;
- Stock fencing up to a height of circa 2m to secure the development areas;
- Infra-red CCTV (CCTV cameras would operate using motion sensors and would be positioned inward only to ensure privacy to neighbouring land and property);
- Temporary set down areas;
- Internal service roads; and
- Site access for the construction, operational and decommissioning phases.

9.4.2 The construction of the solar farm is expected to last approximately 4 to 6 months and employ up to 150 staff at the peak of the construction period. The Construction Traffic Method Statement appended to Transport Statement provides details of proposed access arrangements, the anticipated programme, construction vehicle numbers and type, construction worker numbers and the proposed construction hours.

9.5 ASSESSMENT OF EFFECTS

Incorporated Mitigation

9.5.1 The archaeological assessments and evaluations have identified a wide variety of historic assets that may be impacted upon by the proposed development. The significance of the historic assets is outlined in **Table 9.5**.

Table 9.5: Key Historic Assets and Heritage Significance

Cadw/GAT PRN	Name	Designations	Significance
LB 19488	Pandy Cymunod	Grade II	Medium
LB 5309	Church of St Mihangel	Grade II	Medium
PRNs 91517-23	Geophysical anomaly 4.6; possible pre-19 th century field boundary	Undesignated	Medium
PRN 91526, PRNs 91531-32	Geophysical anomaly 4.7; possible pre-19 th century field boundary	Undesignated	Medium
PRNs 91524-25	Geophysical anomaly 4.8; possible pre-19 th	Undesignated	Medium

Cadw/GAT PRN	Name	Designations	Significance
	century field boundary		
PRNs 91537-39	Geophysical anomaly 5.4; possible pre-19 th century field boundary	Undesignated	Medium
PRN 91529	Geophysical anomaly 4.1; possible pre-19 th century clawdd	Undesignated	Medium
PRN 91514	Burnt mound spread	Undesignated	Medium
PRN 91515	Burnt mound spread	Undesignated	Medium
PRN 91534	Burnt mound spread	Undesignated	Medium
PRN 91542	Small ring ditch	Undesignated	Medium
PRN 91546	Possible standing stone	Undesignated	Medium
PRN 915565	Pit with charcoal rich deposit	Undesignated	Medium
PRN 91527	Geophysical anomaly 4.13; pre-19 th century field system	Undesignated	Low
PRN 91535	Stone filled pit in Field E, DA4	Undesignated	Low
PRN 91536	Geophysical anomaly 5.2; former trackway depicted on historic maps	Undesignated	Low
PRN 91543	Ridge and furrow DA5	Undesignated	Low
PRN 91544	Geophysical anomaly 5.5; possible former field boundary	Undesignated	Low
PRN 91545	Geophysical anomaly 5.4; possible former field boundary	Undesignated	Low
PRN 91549	Possible remnants of hedgerows, Field A, DA6	Undesignated	Low

Cadw/GAT PRN	Name	Designations	Significance
PRN 91550	Geophysical anomaly 6.1; possible former field boundary	Undesignated	Low
PRN 91553	Probable former 19 th century field boundary	Undesignated	Low
PRN 91556	Possible post hole Trench 01, Field B, DA 6	Undesignated	Low
PRN 91560	Possible post hole Trench 05, Field B, DA6	Undesignated	Low
PRN 91568	Unexcavated pit, Field D, DA6	Undesignated	Negligible
PRN 91569	Modern machine cut linear, Field D, DA6	Undesignated	Negligible
PRN 91561	Ephemeral linear, Field B, DA6	Undesignated	Negligible
PRN 91562	Ephemeral linear, Field B, DA6	Undesignated	Negligible
PRN 91563	Unexcavated linear, Field B, DA6	Undesignated	Negligible
PRN 91564	Unexcavated linear, Field B, DA6	Undesignated	Negligible
PRN 91566	Drainage ditch Field D, DA6	Undesignated	Negligible
PRN 91567	Unexcavated pit, Field D, DA6	Undesignated	Negligible
PRN 91557	Ephemeral linear, Field B, DA6	Undesignated	Negligible
PRN 91558	Ephemeral linear, Field B, DA6	Undesignated	Negligible
PRN 91559	Ephemeral linear, Field B, DA6	Undesignated	Negligible
PRN 91555	Possible drainage ditch Field B, DA6	Undesignated	Negligible
PRN 91554	Possible drainage ditch Field B, DA6	Undesignated	Negligible
PRN 91551	Unexcavated linear, Field A, DA6	Undesignated	Negligible

Cadw/GAT PRN	Name	Designations	Significance
PRN 91552	Ephemeral linear, Field A, DA6	Undesignated	Negligible
PRN 91547	Unexcavated linear, DA5	Undesignated	Negligible
PRN 91548	Unexcavated linear, Field A, DA6	Undesignated	Negligible
PRN 91540	Unexcavated linear, DA5	Undesignated	Negligible
PRN 91541	Modern machine cut linear DA5	Undesignated	Negligible
PRN 91533	Unexcavated linear Field C, DA4	Undesignated	Negligible

Construction/Decommissioning Phase Effects

Archaeological Remains

9.5.2 Based on the results of the trial trenching (GAT Report 1571) it was recommended that a programme of archaeological mitigation be carried out in advance of the proposed development groundworks. This might take the form of a controlled strip of the topsoil/subsoil in the vicinity of:

- The burnt mound spread (PRN 91534; medium value) in Trench 04, Field D, DA4 that would include the associated palaeochannels. This appears to be a well-preserved, large example of a burnt mound spread which is within 0.10m of the existing ground surface;
- The small ring ditch [1003] in Trench 10, DA5 (PRN 91542; medium value) to better determine its extent and confirm if there are associated features or burials within it or immediately adjacent to the monument;
- The possible standing stone [1306] in Trench 13, DA5 (PRN 91546; medium value) better determine its extent and confirm if there are associated features immediately adjacent to the monument. Also to better determine if it is a prehistoric monument or a gate post at the terminal of a field boundary.

9.5.3 The field boundaries that may pre-date the 19th century in Fields A and B, DA4 (PRNs 91517-26, 91529, 91531-32 & 91537-39; all medium value) may be sufficiently covered by an archaeological watching brief. This will be dependent on the confirmed layout of the solar panels and associated infrastructure of this area of the site.

Listed Buildings

9.5.4 There are no listed buildings within the proposed development site but 94 listed buildings are located within the 5km search area of the desk-based assessment (Rovira I. G. & Sinnott S, 2019). The assessment also assessed the potential of the visual impact of the project on the listed buildings (see Appendix II). It was found that four of the listed buildings would be impacted in this manner:

- Pany Cymunod (LB 19488; medium value) and Pont Factory Cymunod (LB 5278; medium value) would have partial views of DA4;
- Church of St Mihangel (LB 5309; medium value) the ZTV models predict slight views of DA6 but this was considered to be negligible. It may be necessary to confirm this through field inspection.

Scheduled Monuments

- 9.5.5 The desk-based assessment identified 13 scheduled monuments within the 5km search area of the proposed development (Rovira I. G. & Sinnot S, 2019). The desk-based assessment and the Historic Asset Setting Impact Assessment (McGuinness, N., 2021) determined that the majority of the scheduled monuments will not be directly or indirectly impacted upon by the proposed development. The one exception was Castellor Hut Settlement (AN 088; high value), which the Historic Asset Setting Impact Assessment determined that *“the impact of the proposed development on the setting of historic asset was assessed as being negative, and the magnitude of this impact moderate, as the visibility, density, scale and proximity of the proposed development in DA3 will result in considerable changes to the setting of the historic asset that significantly modify the setting, affecting the character of the historic asset and negatively impacting its illustrative historical and aesthetic heritage values. The impact on the setting is reversible however and limited in duration by the lifespan of the development, currently estimated at approximately 40 years”* (McGuinness, 2021, 43).
- 9.5.6 Based on the conclusions of the desk-based assessment (Rovira I. G. & Sinnot S, 2019) and Historic Asset Setting Impact Assessment (McGuinness, N., 2021) it was determined that DA3 would be removed from the proposed development due to the level of impact it would have on the adjacent Castellor Hut Settlement (AN 088; high value). The remainder of the proposed development areas are either not indivisible with the scheduled monument or the impact on it will be mitigated by distance as well as the screening effect of existing trees and hedgerows.

Operation Phase

Archaeological Remains

- 9.5.7 No additional mitigation will be required for archaeological remains when the solar farm is operational as it should have been suitably resolved prior to or during the construction phase of the project.

Listed Buildings

- 9.5.8 It is anticipated that no additional mitigation will be required for listed buildings during the operation of the solar farm. The partial views to the Grade II listed buildings outlined above (Section 9.5.2) from the solar farm should be suitably mitigated through a combination of landscaping and/or the introduction of additional vegetation.

Scheduled Monuments

- 9.5.9 The operational stage of the solar farm will not have a negative impact on the scheduled monuments in the proximity of the development. The removal of DA3 (as outlined in Section 9.5.5) will ensure that there will not be an adverse effect on the setting of the Castellor Hut Settlement (AN 088).

9.6 RESIDUAL EFFECTS

Construction and Decommissioning

- 9.6.1 This section outlines the residual effects having taken into account the good practice and mitigation described above. A summary of the residual effects and their

significance for archaeological remains, listed buildings and scheduled monuments are provided in **Table 9.6**.

9.6.2 After mitigation (see Section 9.5.2), no significant effects on any known archaeological remains, listed buildings and scheduled monuments are predicted.

9.6.3 The residual significance of effect during the three phases of operation of the development has been assessed to be minor adverse for the archaeological remains and most of the affected listed buildings; the exception being the Church of St Mihangel which the solar farm will have a negligible effect. This projection is provided with caveats, as it is dependent on:

- suitable archaeological mitigation for the highlighted archaeological remains during or before the construction phase (in relation to the scope of said mitigation refer to Section 9.5.2 and conclusions of GAT Report 1571 in Appendix IV); and
- where necessary landscaping and/or additional vegetation for the remaining listed buildings.

Table 9.6: Summary of Residual Effects on Historic Assets

Historic Asset	Description of potential effect	Value of Historic Asset	Potential magnitude of Effect	Potential significance of Effect	Additional mitigation	Post-mitigation magnitude of Effect	Significance of residual Effect
Burnt mound spread (PRN 91535)	Physical impacts as a result of construction activity	Medium	Major	Moderate adverse	Archaeological Excavation	Minor	Minor adverse
Ring Ditch (PRN 91542)	Physical impacts as a result of construction activity	Medium	Major	Moderate adverse	Archaeological Excavation	Minor	Minor adverse
Standing Stone (PRN 91546)	Physical impacts as a result of construction activity	Medium	Major	Moderate adverse	Archaeological Excavation	Minor	Minor adverse
Pre-19th century field boundaries, Area 4	Physical impacts as a result of construction activity	Medium	Moderate	Moderate adverse	Archaeological Excavation	Minor	Minor adverse
Pany Cymunod (LB 19488)	Visual change in setting for duration of operational life of solar farm	Medium	Minor	Minor adverse	Landscaping and/or additional vegetation	Minor	Minor adverse
Church of St Mihangel (LB 5309)	Visual change in setting for duration of operational life of solar farm	Medium	Negligible	Negligible	Landscaping and/or additional vegetation	Negligible	Negligible
Tyn Lidiart Bridge (LB 20428)	Visual change in setting for duration of operational life of solar farm	Medium	Minor	Minor adverse	Landscaping and/or additional vegetation	Minor	Minor adverse

Cumulative Effects

9.6.4 There is potential for historic assets to experience cumulative effects due to the construction and operation of the proposed Parc Solar Traffwll project on archaeological and cultural historic assets. This potential has been considered within the cultural heritage impact assessment. It is considered that the proposed development will not result in any cumulative effects on cultural heritage.

9.7 SUMMARY OF PREDICTED EFFECTS

9.7.1 In summary, the construction of the proposed Parc Solar Traffwll project will have a minor adverse residual effect on the historic assets PRNs 91535, 91542, 91546 and the pre-19th century field boundaries identified in DA4; see Table 6 above.

9.7.2 The construction of the proposed Parc Solar Traffwll project will have a negligible to minor adverse residual effect on three listed buildings (reference **Table 9.6**) during the construction and operation phase of the development.

9.8 SUMMARY AND CONCLUSIONS

9.8.1 The assessment shows that there would be no significant impacts during the construction or operation of the Proposed Development following the implementation of appropriate mitigation.