

**Penhill Farm Wind Turbines,
Ferryside, Carmarthen,
Carmarthenshire.**

Archaeological Desk Based Assessment



By

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HRSWales
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ARCHAEOLOGICAL DESK BASED ASSESSMENT

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On behalf of:

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Executive Summary

The following report presents the results of an Archaeological Desk Based Assessment for two proposed wind turbines with associated infrastructure on land near Penhill Farm, Ferryside, Carmarthen, Carmarthenshire, centered on OS grid reference SN 39450 09070.

The wind turbines will have a maximum overall height to blade tip of 47m when the rotor blades are in a vertical position. In terms of access, following the use of existing track into the site to the west of the turbines, there will also be the requirement to construct a length of new permanent track over privately owned land to the turbine site. This new track would typically be made up of crushed stone over a geotextile membrane and will be approximately 3.5m in width. The concrete turbine foundation will measure approximately 7.6m x 7.6m x 1.5m and will be installed within a 2/3 day period using a small tracked excavator. It is expected that the wind turbines will be connected to the local electricity grid by a new overhead line joining an existing overhead line running to the west of the site. The on-site section will be underground cabling to a substation containing switchgear and electrical equipment.

In response to requests made by Cadw and Dyfed Archaeological Trust, HRS Wales consulted with Dyfed Archaeological Trust (DAT), and it was agreed that the archaeological dimension would include an assessment of all undesignated sites up to a 2km radius from the proposed turbine locations and all designated sites up to a 5km radius, to include an assessment of the potential effects on Scheduled Ancient Monuments (SAMs), Listed Buildings (LBs), Registered Parks & Gardens (RPG), Registered Historic Landscapes (RHLs) and Conservation Areas (CAs). A Project Specification was submitted and approved by DAT on 3rd November 2015. This resulting report now addresses the aforementioned requests.

In summary, the desk based assessment and site visit identified no direct physical effects from the proposal on any known heritage asset during either the construction or the decommissioning phase.

However, the desk based assessment has shown that there is strong evidence for Bronze Age activity in the area. As such there is a moderate possibility that finds of this period or other periods may well still become exposed during construction work in the application area. Given these considerations, it has been advised that any groundwork undertaken for the proposed development i.e. the turbine foundations, hard-standings, the permanent access track and service cable trench, is undertaken under a archaeological watching brief condition.

With regards to predicted indirect effects, the assessment concluded that none of the undesignated sites of schedulable quality and designated sites (Scheduled Ancient Monuments (SAMs), Listed Buildings (LBs), Registered Parks & Gardens (RPGs), Conservation Areas (CAs), or Registered Historic Landscapes will be significantly indirectly affected by the proposed turbines on land at Penhill Farm. The highest effects predicted were those on the Pen yr Heol Round Barrow (SAM CM190), the Historic Landscape Character Areas (HLCAs) of Kidwelly and Llansaint Strip Fields HLCA and St. Ishmael HLCA, both character areas within the Taf & Tywi Estuary Registered Historic Landscape, and the undesignated site of Cae Gaer Defended Enclosure (PRN: 1396). The predicted indirect effect on the setting of each of these sites was predicted to be of Minor Magnitude and therefore of only Moderate/Minor significance.

With regard to the potential indirect effect on the Registered Park & Garden of Llechdwnni, the assessment has concluded that the proposed turbines at Penhill Farm will not have a significant effect on the essential setting nor the significant views of Llechdwnni due to both scale and distance of the proposed turbines from the gardens. As well as this, the significant views of Llechdwnni are focused primarily along the course of the Gwendraeth Fach Valley and as such the proposed turbines will only become distant peripheral components in the wider landscape to the west-south-west.

With regards to the indirect effect on the Registered Historic Landscapes of the Tywi Valley and the Taf & Tywi Estuary as a whole, the indirect effect is considered to be of Negligible magnitude and therefore of only Minor significance.

With regards to potential cumulative effects, the assessment has predicted that no designated or undesignated heritage assets will be significantly affected by the proposed turbines in conjunction with other cumulative turbines. The assessment predicted that the highest cumulative effect will occur on the Kidwelly and Llansaint Strip Fields HLCA (Taf & Tywi Estuary RHL) and the St. Ishmael HLCA (Taf & Tywi Estuary RHL), which will be of Minor magnitude and therefore of Moderate/Minor significance.

However, as a whole, the indirect cumulative effect on both of these Registered Historic Landscapes was assessed to be of Negligible magnitude and therefore of Minor significance and also temporary for the lifetime of the turbines.

1 Introduction

- 1.1 The following report presents the results of an Archaeological Desk Based Assessment for two proposed wind turbines with associated infrastructure on land near Penhill Farm, Ferryside, Carmarthen, Carmarthenshire, centered on OS grid reference SN 39450 09070. Both wind turbines will have a maximum height of 47m to blade tip.
- 1.2 The specific objectives of the assessment were to:
- Identify the cultural heritage baseline within and in the immediate vicinity of the proposed turbines;
 - Consider the application site in terms of its archaeological and historic environment potential;
 - Assess the potential and predicted effects of the construction and operation and decommissioning of the turbines on the baseline cultural heritage resource within the context of relevant legislation and planning policy guidelines; and
 - Propose measures, where appropriate, to mitigate against any predicted significant adverse effects.
- 1.2 The assessment comprised two main elements:
- i) An archaeological desk based assessment of all Historic Environment Record (HER) sites within a 2km radius from the proposed turbine positions and a site visit of the application area.
 - ii) Direct and In-direct Assessment of predicted effects on all designated High Value sites (Scheduled Ancient Monuments, Listed Buildings, Parks and Gardens, Conservation Areas and Registered Historic Landscapes) and undesignated of schedulable quality within the application area and within a 5km radius.
- 1.3 The Technical Appendices for this Chapter contains the following information:
- *Appendix I:* Figures;
 - *Appendix II:* Photographs and photomontage;
 - *Appendix III:* Gazetteer of all known HER sites up to 2km radius and all designated sites and undesignated High Value sites up to 5km radius from proposed turbine location.
- 1.4 The assessment entailed a site visit and an assessment of all readily available primary historical and archaeological documentary sources for the immediate application area and an assessment focusing on the indirect effect of the proposed turbines on the setting of designated sites (Scheduled Ancient Monuments, Listed Buildings, Parks & Gardens, Conservation Areas and Registered Historic Landscapes) and undesignated high value sites within a 5km radius from the position of the proposed turbines. The study of the application area assessed the direct and indirect impact of the proposed development on known heritage assets and also the potential for hitherto unknown heritage assets. It also assessed the known heritage assets within a 2km radius of the proposed application area, in order to inform the assessment of the application area, in accordance with Welsh Office Circulars 60/95 and 60/96, '*Planning and the Historic Environment: Archaeology*'.
- 1.5 All works were undertaken in accordance with the CIfA's Standards and guidance: for an *archaeological*

desk based assessment.

The site

- 1.6 The proposed wind turbines are to be positioned in an upland area at a height of approximately 135m AOD. The proposed turbine locations are at NGR: SN 39412 09076 (Turbine 1) and NGR: SN 39497 09047 (Turbine 2), each approximately 2.5km northwest of the town of Kidwelly, and approximately 3km southeast of the hamlet of Ferryside in the county of Carmarthenshire.
- 1.7 The fields in which the proposed turbines are to be located are grassland used for grazing. The site is completely surrounded by agricultural land, of a predominantly arable nature, all of which is agriculturally improved.
- 1.8 The wind turbines will have a maximum overall height to blade tip of 47m when the rotor blades are in a vertical position. In terms of access, following the use of existing track into the site to the west of the turbines, there will also be the requirement to construct a length of new permanent track over privately owned land to the turbine site. This new track would typically be made up of crushed stone over a geotextile membrane and will be approximately 3.5m in width.
- 1.9 The concrete turbine foundation will measure approximately 7.6m x 7.6m x 1.5m and will be installed within a 2/3 day period using a small tracked excavator. Following excavation, reinforced steel lattice work will be installed, which will be followed by the pouring of concrete into the foundation area. A concrete up-stand would be cast on top of the slab, to which the turbine tower would later be bolted. Approximately 67 cubic meters of concrete will be required. In total, the construction of the foundation and installation of the wind turbines is expected to take place over approximately 42 days, including a 20 day period to allow concrete to cure before the installation of the turbine.
- 1.10 It is expected that the wind turbines will be connected to the local electricity grid by a new overhead line joining an existing overhead line running to the west of the site. The on-site section will be underground cabling to a substation containing switchgear and electrical equipment.
- 1.11 The development site is not located within any Registered Historic Landscape (RHL). However, there are two RHLs positioned north, northwest and west of the proposed development location, that of the *Tywi Valley* (HLW (D) 5) and the *Taf and Tywi Estuary* (HLW (D) 9), each only lying approximately 500 meters from the proposed turbine locations. The proposed turbines will not be located within any Conservation Area (CA). The proposed turbines will not be within any Registered Park and Garden (P&G). The nearest P&G is *Llechdwnni* (PGW (Dy) 21(CAM)), which lies approximately 3.9km to the northeast of the proposed turbine locations. There are also no Scheduled Ancient Monuments (SAMs) or Listed Buildings (LBs) within the proposed development area. However, there is one SAM site located within the red line study area, the Pen yr Heol Round Barrow (CM190).
- 1.12 Within a 2km radius of the turbine site there are also five Bronze Age round barrows (PRNs 2129, 2112; SAM CM190, 1394 and 42579 – pair), the positions of four Bronze Age standing stones (PRNs 2125,

2111, 1392; SAM CM197 – pair), a Bronze Age cist burial (PRN 7344), a Bronze Age findspot (PRN 1395), and two Iron Age defended enclosures (PRNs 1396 and 2128). A complex of these prehistoric monuments is located just 1-1.3km east of the proposed development site.

- 1.13 Also, within the 5km radius assessment area there are several other designated heritage assets. This includes sixteen (16) Scheduled Ancient Monuments (SAMs), which include several prehistoric sites, Medieval Sites (including *Llansteffan Castle (CM004)*, *Kidwelly Castle (CM002)*, *Kidwelly Town – part of (CM209)* and Post Medieval sites (*St Ishmael's Scar Beach Defence Gun House (CM383)* and *Limekilns at Penymynydd, Pedair Heol (CM277)*). There are also 63 Listed Buildings (LBs), of which eight (8) are Grade II* Listed and three (3) have a Grade I Listing.

Geology

- 1.14 The geology of the application area is generally of undifferentiated Pridoli Rocks, consisting of mudstones, siltstones and sandstones.

2 Planning Policy Context and Legislation

2.1 Ancient Monuments and Archaeological Areas Act 1979

- 2.2 Under the Ancient Monuments and Archaeological Areas Act 1979 (1979 Act) (Ref. 1), the Welsh Assembly Government and Cadw are required to compile and maintain a Schedule of monuments considered to be of national importance. The statutory consent of Cadw is required before any works are carried out which would have the effect of demolishing, destroying, damaging, removing, repairing, altering, adding to, flooding or covering up a Scheduled Ancient Monument (SAM). There is one (1) Scheduled Ancient Monument within the study area (red line boundary) and fifteen (15) other SAM sites within 5km of the proposed turbine locations.

2.3 Town and Country Planning Act 1990

- 2.4 Under the 1990 Town and Country Planning Act. Historic hedgerows are protected under the Hedgerow Regulations 1997. A hedgerow is historic if it marks a parish or township boundary which pre-dates 1850 AD, incorporates an archaeological feature or is part of or incorporates an archaeological site, marks the boundary of (or is associated with) an estate or manor which predates 1600 AD or forms an integrated part of a pre-parliamentary enclosure.

2.5 Planning (Listed Building and Conservation Areas) Act 1990

Under the Welsh Office Circular 61/96, 'Planning and the Historic Environment: Historic Buildings and Conservation Areas' and the 'Planning (Listed Buildings and Conservation Areas) Act 1990 (Ref. 1) and the Historic Buildings and ancient Monuments Act of 1953 (Ref.1), listed buildings are categorised as Grades I and II in decreasing order of special architectural and historic importance. These buildings are of acknowledged importance to the nation's built heritage. Section 66 of the Planning (Listed Buildings and Conservation Areas) Act 1990 requires planning decision makers to have special regard to the desirability of preserving listed buildings, their settings or any features of special architectural or historic interest which they possess. There are no listed buildings within the proposed development area (red

line boundary). However, there are sixty-three (63) LB sites within the 5km radius from the proposed turbine locations.

- 2.6 Conservation Areas may be designated under the Planning (Listed Buildings and Conservation Areas) Act 1990. Section 72 of the 1990 Act requires decision makers on applications for planning consents to pay special attention to the desirability of preserving or enhancing the character or appearance of the area. As a matter of policy, planning decision makers must take into account the potential effects of development on the setting of Conservation Areas. There are no Conservation Areas within the proposed development area. Within the 5km radius from the proposed turbine locations there are three (3) Conservation Areas: Llansaint, Kidwelly and Llansteffan.

2.7 Welsh Office Circular 60/96 (Planning and the Historic Environment: Archaeology)

- 2.8 This guideline establishes the principles and framework within which archaeological matters are a material consideration within the planning process. It identifies how sites are preserved and recorded, and the role of local authorities and the Welsh Office working through Cadw. It states:

- 2.9 *Archaeological remains should be seen as a finite and non-renewable resource, in many cases highly fragile and vulnerable to damage and destruction...They are part of our sense of national identity and are valuable both for their own sake and for their role in education, leisure and tourism'. (Paragraph 3, Ref 1).*

- 2.10 Welsh Office Circular 60/96 places emphasis on the need for early consultation with the appropriate authorities (Paragraph 11) and includes information on the need for formal Environmental Assessments in some circumstances (Paragraph 12, Ref 1).

3 Methodology and Consultations

3.1 Planning Background & Consultations

- 3.2 A planning application for the proposed turbine development (reference W/32815), was submitted to Carmarthenshire County Council in October 2015.

- 3.3 Following consultation by the Carmarthenshire County Council (henceforth CCC) with the Heritage Management section of the Dyfed Archaeological Trust (henceforth DAT-HM), DAT-HM responded saying, *'We note that the screening opinion (November 2014), submitted with the supporting documentation, lists an Archaeological Assessment as one of the documents that should be included as part of this application. Such an assessment has not been carried out...We therefore recommend, as your professional advisors on matters relating to the historic environment, that a desk-based assessment should be provided by the applicant. This will ensure that the character, date, condition, value, etc. of the resource is fully understood at the time of determination and that in consequence suitable and reasonable mitigation, which will protect historic environment interests, may be considered. This predetermination assessment should be carried out to the Standards and Guidance of the Chartered Institute for Archaeologists (CIfA).....We also recommend that you consult with Cadw who*

take primacy on issues of impact on the setting of statutorily protected monuments and registered historic landscapes; the borders of (HLW (D) 9 Taf and Tywi Estuary and HLW (D) 5 Tywi Valley lie close to the development site (DAT-HM response dated 22nd October 2015).

- 3.4 *In response to this letter to CCC, Cadw were also contacted regarding the application and responded on the 23rd October 2015, saying that, 'The proposed development is located within the vicinity of the scheduled monuments known as CM004 Llansteffan Castle, CM190 Round Barrow 330m SW of Mynydd-Uchaf, CM270 Glanstony Aqueduct, Trimsaran, within the vicinity of the registered historic park and garden known as PGW (Dy) 21(CAM) Llechdwnni and within the vicinity of the registered historic landscapes known as HLW (D)5 Tywi Valley and HLW (D) 9 Taf and Tywi Estuary.*
- 3.5 *Having carefully considered the information provided with the planning application, we consider that the documentation inadequately analyses the impact of the proposal on the aforementioned designated historic assets. We therefore consider that the following information is critical to the determination of the application so that the suitability of the proposed development can be properly assessed against national planning policy and that the final decision is in line with administrative law.*
- 3.6 *The proposed wind turbines may have an adverse impact on the setting of the above scheduled monuments; however, apart from a statement in the Supporting Statement (paragraph 7.1.11) accompanying this application that there are 16 scheduled monuments inside 5km of the proposed development there is no assessment of the impact of the proposed development on the setting of the designated monuments.*
- 3.7 *In the local authority's response to a screening opinion it was stated that an environmental impact assessment was not required but that any application would need to be accompanied by a number of document including "an archaeological assessment". The local authority's website does not currently contain any document referred to as an "archaeological assessment" and there is no mention that such a document has been produced in the Supporting Statement accompanying this application. Therefore the applicant will need to provide an archaeological desk-based assessment, which should include information on the impact of the development on the setting of the scheduled monuments.*
- 3.8 *The application area is some 3.4km to the west-south-west of the registered historic garden of Llechdwnni. Normally the turbines of this size and at this distance would not have a significant impact; however in this case the proposed turbines will be in one of the identified significant views. Therefore there is a need for additional information on this issue to be included in an archaeological assessment*
- 3.9 *The application area is located some 540m to the east of the boundary of the registered Twyi Valley Landscape of Outstanding Historic Interest and 480m north of the registered Tad and Twyi Estuary Landscape of Outstanding Historic Interest. Whilst the turbines will not have a direct impact on the registered historic landscapes they will be visible from large areas of them in particular the historic landscape character areas Croesyceilog-Cwmffrwd; Ferryside and St.Ishmaels. The supporting statement (paragraph 7.1.9) accompanying this application notes the locations of the registered historic landscape but provides no information on the impact of the proposed turbines on them. Information on this issue should be included in an archaeological assessment. Cadw, therefore, advises that your authority should request that the applicant address the issues raised above, and re-consult Cadw*

accordingly. These views have been expressed without prejudice to the Welsh Ministers' consideration of the planning application, should it come before them formally for determination' (Cadw response dated 23rd October 2015).

3.3 Following consultation by HRS Wales with Dyfed Archaeological Trust (DAT), it was agreed that the archaeological dimension would include an assessment of all undesignated sites up to a 2km radius from the proposed turbine locations and all designated sites up to a 5km radius, to include an assessment of the potential effects on Scheduled Ancient Monuments (SAMs), Listed Buildings (LBs), Registered Parks & Gardens (RPG), Registered Historic Landscapes (RHLs) and Conservation Areas (CAs). A Project Specification was submitted and approved by DAT on 3rd November 2015. This resulting report now addresses the aforementioned requests.

3.4 Methodology of Baseline Survey

3.5 In accordance with the CIfA's *Standards and guidance*, the purpose of a desk-based assessment is to gain information about the known or potential archaeological resource within a given area or site (including the presence or absence, character and extent, date, integrity, state of preservation and relative quality of the potential archaeological resource), in order to make an assessment of its merit in context, leading to one or more of the following:

- the formulation of a strategy to ensure the recording, preservation or management of the resource;
- the formulation of a strategy for further investigation, whether or not intrusive, where the character and value of the resource is not sufficiently defined to permit a mitigation strategy or other response to be devised; and
- The formulation of a proposal for further archaeological investigation within a program of research.

3.6 The other aim of the assessment was to evaluate the potential direct effect of the proposed development on all cultural heritage features within the bounds of the application area, gather archaeological HER data for sites up to 2km from the proposed turbine locations and to assess the potential indirect effect on the setting of all high value designated sites (Scheduled Ancient Monuments (SAMs), Listed Buildings (LBs), Registered Parks & Gardens (RPGs), Registered Historic Landscapes (RHLs) and Conservation Areas (CAs). and other high value undesignated sites considered to be of national importance and worthy of scheduling, within a 5km radius from the proposed turbine locations. A further aim was to evaluate the potential impact of the proposal on hitherto unknown buried archaeological remains in the proposed development area.

3.7 All work was conducted in compliance with the *Codes of Practice* of the Chartered Institute for Archaeologists (CIfA 2014).

3.8 The assessment considered the following:

- the nature, extent and degree of survival of archaeological sites, structures, deposits and landscapes within the study area;
- the history of the site;
- the potential impact of the proposed development on the setting of known sites of archaeological importance; and
- a methodology for non intrusive survey and/or intrusive evaluation to determine the location, extent, date, character, condition, significance and quality of any surviving archaeological remains liable to be threatened by the proposed development.

3.9 In considering the above, the following repositories were consulted as part of the research assessment

- Dyfed Archaeological Trust (DAT) – HER database;
- Royal Commission on Ancient and Historic Monuments of Wales (RCAHMW), Aberystwyth – NMR, aerial Photos, maps, archives;
- National Library of Wales (NLW), Aberystwyth – Maps, archives;
- Cadw – SAM Listings, Listed Buildings, Parks & Gardens, Registered Historic Landscapes;
- County Records Office – Maps, plans; and

3.10 The following cartographic sources were included in the study:

- OS Surveyors drawing (1830);
- Tithe apportionment and parish map of St. Ishmael (1840);
- Tithe apportionment and parish map of Kidwelly (1840);
- Ordnance Survey 1st Edition map of 1887 (1:2500);
- Ordnance Survey 2nd Edition map of 1905 (1:2500);
- Ordnance Survey Edition map of 1948 (1:2500);
- Ordnance Survey Edition map of 1953 (1:2500);
- RAF Aerial Photo 1946
- RAF Aerial Photo 1953
- OS Aerial Photo 2014

3.11 **Photographs**

3.12 Aerial photos consulted spanned the years 1946 – 2014.

3.13 All photographs appropriated during the site walkover were undertaken using a 10MP Olympus SLR in SHQ JPEG format and where considered necessary RAW file format were also appropriated.

3.14 Following the results of the desk based element, the potential for further archaeological work was considered in order to assess the viability for further study of the assessment results and to provide an

indication of the relative importance of the material in any subsequent decision-making and mitigation strategies.

3.15 **Assessment of Direct Impact Methodology**

3.16 The system employed to evaluate the cultural value and direct effects of the proposed development on the archaeological resource is based on the site significance value scale as set out in the Design Manual for Roads and Bridges (DMRB, Volume 11, Section 3, part 2 HA 208/07) (Ref. 2).

3.17 The value of all the known and potential assets that may be affected by the Development should be ranked, whether they are archaeological remains, historic buildings or historic landscapes. The value of each asset has been ranked according to the following scale:

- *Very High* - World Heritage Sites (including nominated sites). Assets of acknowledged international importance. Assets that can contribute significantly to acknowledged international research objectives;
- *High* - Scheduled Monuments (including proposed sites). Undesignated assets of schedulable quality and importance. Assets that can contribute significantly to acknowledged national research objectives;
- *Medium* - Designated or undesignated assets that contribute to regional research objectives;
- *Low* - Designated and undesignated assets of local importance. Assets compromised by poor preservation and/or poor survival of contextual associations. Assets of limited value, but with potential to contribute to local research objectives;
- *Negligible* - Assets with very little or no surviving archaeological interest; or
- *Unknown* - The importance of the resource has not been ascertained.

3.18 The following list provides an indication as to the predicted effect the Development will have on individual archaeological features. Potential impacts, direct and indirect, have been assessed in terms of their longevity, reversibility and nature (beneficial / neutral / adverse):

- **Permanent impacts** are those that persist beyond the predicted operational lifetime of the Development. All direct impacts are considered to be permanent;
- **Temporary impacts** arise as a result of the presence of elements of the Development but which would be removed by the dismantlement of those elements. Temporary impacts can be short-term (e.g. construction phase impacts); or long-term (arising from the long-term presence of the development affecting the setting of a receptor);
- **Reversible impacts** are those that are removed by the decommissioning / dismantling of the Development;
- **Irreversible impacts** are those that persist beyond the lifetime of the Development. All permanent and direct impacts are irreversible;
- **Beneficial impacts** are those that contribute to the value of a receptor through enhancement of desirable characteristics or the introduction of new, positive attributes. In

terms of cultural heritage, beneficial impacts include those that add to an appreciation of the receptor and/or its setting;

- **Neutral impacts** occur where the development can be accommodated comfortably by the receptor while neither contributing to nor detracting from the value of the receptor; and
- **Adverse impacts** are those that detract from the value of a receptor through a reduction in, or disruption of, valuable characterising components or patterns, or the introduction of new inappropriate characteristics. In terms of cultural heritage, adverse impacts include those that detract from an appreciation of the receptor and/or its setting, or compromise views to or from the receptor.

3.19 The magnitude of the effect needs to be viewed in conjunction with the value of the monument, in order to appreciate the overall significance of any effect on a given archaeological feature. The magnitude of the effect (degree of change) can also be negative or positive, and should be ranked without regard to the value of the asset. The total destruction of a Low Value asset will have the same magnitude of impact on the asset as the total destruction of a High Value asset; the value of the asset is factored in when the significance of the effect is assessed.

3.20 The magnitude of the effect was ranked according to the following scale:

- **Major:** Change to most or all key archaeological materials, such that the resource is totally altered. Comprehensive changes to setting;
- **Moderate:** Changes to many key archaeological materials, such that the resource is clearly modified. Considerable changes to setting that affect the character of the asset;
- **Minor:** Changes to key archaeological materials, such that the asset is slightly altered. Slight changes to setting;
- **Negligible:** Very minor changes to archaeological materials, or setting; or
- **No Change:** No change

3.21 Assessing the significance of the effects of the scheme brings together the value of the resource and the magnitude of the effect for each cultural heritage asset, using the matrix illustrated in the Table 1. The adverse or beneficial significance of effect has been expressed according to the following scale: Major; Moderate; Minor; or Negligible.

3.22 For the purpose of satisfying this assessment, those effects that are rated as 'moderate', 'major' or 'major/moderate' based on Table 1, are considered to be 'significant'.

Table 1. Matrix of Significance Criteria						
		Magnitude of Effect				
		No Change	Negligible	Minor	Moderate	Major
Value	Very High	Negligible	Minor	Moderate / Major	Major	Major
	High	Negligible	Minor	Moderate / Minor	Moderate / Major	Major
	Medium	Negligible	Negligible / Minor	Minor	Moderate	Moderate / Major
	Low	Negligible	Negligible / Minor	Negligible / Minor	Minor	Moderate / Minor
	Negligible	Negligible	Negligible	Negligible / Minor	Negligible / Minor	Minor

3.23 Site Inspection

3.24 The site visit set the context of the assessment, identifying:

- The location and character of archaeological sites and features within the proposed development area and all high value sites up to a 5km radius from the centre of the site that fall within Zones of Theoretical Visibility (ZTV).
- The current site condition.

3.25 Assessment of Indirect Impact Methodology

3.26 In terms of indirect effects concerned with issues of setting, there are no established definitive criteria or methodologies for assessing the setting of listed buildings or scheduled monuments, a concept that was introduced by the Planning (Listed Buildings and Conservation Areas) Act 1990. The requirement to assess the potential effects of a development on the setting of designated heritage features, such as scheduled monuments, conservation areas and listed buildings, is outlined in Planning Policy Wales (2014).

3.27 There are no established definitive criteria or methodologies for assessing the setting of listed buildings or scheduled monuments, a concept that was introduced by the Planning (Listed Buildings and Conservation Areas) Act 1990. In the absence of more detailed advice on setting in Wales, the requirement to assess the potential effects of a development on the setting of designated heritage features, such as scheduled monuments, conservation areas and listed buildings, has to turn to English Heritage's further detailed guidance advice in *The Setting of Heritage Assets (2012)* (Ref 6) and Cadw's Conservation Principles.

3.28 The guidance describes setting as,

3.29 *"....the surroundings in which an asset is experienced. All heritage assets have a setting, irrespective of the form in which they survive and whether they are designated or not. Elements of a setting may make a positive or negative contribution to the significance of an asset, may affect the ability to appreciate*

that significance, or may be neutral.

- 3.30 *The extent and importance of setting is often expressed by reference to visual considerations. Although views of or from an asset will play an important part, the way in which we experience an asset in its setting is also influenced by other environmental factors such as noise, dust and vibration; by spatial associations; and, by our understanding of the historic relationship between places. For example, buildings that are in close proximity but not visible from each other may have a historic or aesthetic connection that amplifies the experience of the significance of each. They would be considered to be within one another's setting.*
- 3.31 *Setting will, therefore, generally be more extensive than curtilage and its perceived extent may change as an asset and its surroundings evolve or as understanding of the asset improves.*
- 3.32 *The setting of a heritage asset can enhance its significance whether or not it was designed to do so. The formal parkland around a country house and the fortuitously developed multi-period townscape around a medieval church may both contribute to the significance.*
- 3.33 *The contribution that setting makes to the significance does not depend on there being public rights or an ability to access or experience that setting. This will vary over time and according to circumstance. Nevertheless, proper evaluation of the effect of change within the setting of a heritage asset will usually need to consider the implications, if any, for public appreciation of its significance." (Ref: 6).*
- 3.34 The aim in assessing the setting of an archaeological site, particularly one that is designated, such as a listed building, a scheduled monument or further still an historic landscape, is to prevent it becoming isolated from its surroundings.
- 3.35 For the purposes of this assessment, a setting is considered to have two principal dimensions - "immediate or near setting" and "wider or far setting", although some features, by nature of their location and surroundings, may not have a wider setting.
- *immediate/near setting* - ancillary land used with the building or monument, or within the curtilage of the building, e.g. the garden of a listed building or the rear gardens of buildings around the outskirts of a conservation area. Citation boundaries can be an indication of the immediate setting; and
 - *wider/far setting* - an area around the cultural heritage feature, which may be built environment or part of the countryside and which may or may not be functionally linked or contemporaneous with the age of the feature, but which contributes to the special interest and understanding of the feature.
- 3.36 There is no requirement under current statute, guidance or even case law that the wider setting should extend to the extreme limit of visibility, although the extent of a setting will tend to widen with the

importance of the principal heritage feature. Regard should be given to views from the cultural heritage feature towards the Proposal, views from the Proposal towards the cultural heritage feature and views from any other relevant location. However, visibility is only the necessary starting point and, thereafter, it must be determined just what of relevance is visible in the heritage feature and its setting, what relationships exist between these visible elements and what weight or importance should be attributed to the whole (Ref. 6).

- 3.37 Further to this approach, regard must be given to the fact that setting is primarily governed by function and even nationally important heritage features may have narrow settings.
- 3.38 Landscapes and land-use often change over time, and thus an assessment of the setting of a designated site within the wider landscape requires a balance to be achieved between the concept of its original historic setting and its development as part of the modern day landscape.
- 3.39 The study has considered the physical attributes of each site and its setting in terms of topography, its original economic function and natural resources, historic resonance with land-use, connections and communications with neighboring features of the historic landscape and inter-visibility between them, as well as cultural associations and issues of public perception. The assessment has also examined what peripheral effect the wind turbine would have on the historic views from each site, and on public appreciation of them as features of special historic and architectural interest.
- 3.40 Assessing the significance of the indirect effects of the scheme brings together the value of the resource and the magnitude of the effect for each cultural heritage asset, using the same matrix illustrated in the Table 1. The adverse or beneficial significance of effect has been expressed according to the following scale: Major; Moderate; Minor; or Negligible.
- 3.41 For the purpose of satisfying this assessment, those effects that are rated as 'moderate', 'major' or 'major/moderate' based on Table 1, are considered to be 'significant'.
- 3.42 The value of archaeological sites have been assessed in accordance with the value scale as set out in the Design Manual for Roads and Bridges (DMRB, Volume 11, Section 3, part 2 HA 208/07) (Ref. 2).
- 3.43 All designated Scheduled Ancient Monuments (SAMs), undesignated sites of schedulable quality and Grade I, Grade II* and Grade II Listed Buildings have been assessed as being High Value sites and as such are of National importance.
- 3.44 In order to aid and inform the assessment of the potential indirect effect of the proposed development on heritage assets within the 5km radius, a Zone of Theoretical Visibility (ZTV) map has been produced (see Figures 19 - 21(b) in Appendix I). By examining the ZTV map, specific sites, where impacts were visually predicted, were targeted and each identified site was assessed on its own merits. Photo-montages were produced where considered necessary and where possible.

- 3.45 As part of the indirect effect assessment the cumulative effect of the proposed development was assessed in conjunction with other known wind turbine sites within the 5km radius (see Figures 22 - 24 in Appendix I).

4 Baseline Conditions

4.1 Previous Archaeological Works

- 4.2 Other than general field work that has taken place in the wider landscape over the decades in the region, there has been no archaeological work undertaken within the immediate study area (red line boundary) itself.

4.3 Carmarthenshire Historic Landscape – LANDMAP

- 4.4 The proposed development falls entirely within one (1) historic Landscape character area within the LANDMAP survey region of Carmarthenshire. The Carmarthenshire region survey was surveyed in 2003.

- 4.5 The Carmarthenshire Historic Landscape was defined at Level 4 according to LANDMAP methodology (Ref 5). The application area falls within one (1) identified historic landscape area, that of *Allt y Banc*. The area of Allt y Banc is shown below, followed by a detailed description of its characteristics and value to the Ceredigion Historic Landscape as a whole.

Allt Hilltop (LANDMAP Ref id: CRMRTL40207)

- 4.6 This character area was surveyed at Level 4 in 2003 and is described as a Carmarthenshire rural agricultural environment, with large fields and regular field-scapes. Allt Hilltop is a fairly small historic landscape covering approximately 344 hectares in extent, with hedge-banks forming the traditional boundary type. Significant archaeological interests are confined to Relict earthworks, predominantly Bronze Age round barrows and standing stones, Documentary records, buried and dry remains and relict monuments. Periods covered span the prehistoric, the Medieval and the Post Medieval periods. There is only one Scheduled Ancient Monuments (SAM) within the area, but no Listed Buildings (LBs) within this historic landscape. The north-western region of this historic landscape area, also falls within the southern end of the Registered Historic Landscape of the Tywi Valley. The south-western edge of the area also borders with the Registered Historic Landscape of the Taf and Tywi Valley Estuary. There are no Conservation Areas or Registered Historic Landscapes within this Historic Landscape Character Area.
- 4.7 The area is considered of *High* value historically. Its condition has not been assessed. The existing management of this area has also not been assessed. According to LANDMAP evaluation, the landscape is considered to have *Moderate* integrity, *Outstanding* survival, *Moderate* rarity and is generally of *High* value overall. The following table lists the principle evaluation criteria for this character area. The overall evaluation of this landscape concludes that it is a *High* value landscape, which scores

Moderate in two categories and Outstanding in another. The areas Condition and Potential criteria have not been assessed.

Table 2 - LANDMAP Evaluation Criteria (Ref id: CRMRTL40207)					
Integrity	Survival	Condition	Rarity	Potential	Overall Evaluation
Moderate	Outstanding	-	Moderate	-	High

4.8 Heritage Assets within 5km radius (Historic Environment Records (2km) and Designated Sites (5km))

Prehistoric Periods (Palaeolithic, Mesolithic, Neolithic, Bronze Age)

- 4.9 Within the application red line study area. There are four (4) known Historic Environment Record Sites (HER). These sites are all Bronze Age sites and include two Bronze Age round barrows and two standing stones. Each of these sites is positioned at the far northern end of the red line area. One of the round barrow sites is a designated Scheduled Ancient Monument (SAM).

1) *Park Crig Bach Round Barrow (PRN: 11218)* – The evidence for the presence of this site is based on placename evidence from only (Tithe Map 1840) and may in fact relate to the other surviving round barrow in the area. There are no visible surface remains of this possible site.

2) *Pen yr Heol Round Barrow (PRN: 2112 / SAM No. CM190)* – Remains of a Bronze Age round barrow positioned beneath a post medieval field boundary. The visible surface remains of this earthwork measure approximately 12 meters in diameter. However, the earthwork has been subjected to repeated ploughing over the centuries and as such very little remains of the earthwork today to offer its exact former diameter and in fact it may have been much larger at one time, perhaps. The earthwork stands to a height of only approximately 1 meter above the average height of the surrounding field. This site lies approximately 930m north of the nearest proposed turbine location.

3) *Park Maen Bach Standing Stone (PRN: 11219)* - The evidence for the presence of this site is based on placename evidence from only (Tithe Map 1840). There are no visible surface remains of this possible site.

4) *Park Maen Mawr Standing Stone (PRN: 11220)* - The evidence for the presence of this site is based on placename evidence from only (Tithe Map 1840). There are no visible surface remains of this possible site.

- 4.10 Within the prescribed 2km radius from the proposed turbine locations, there are eighteen (18) prehistoric sites recorded within the HER database. These medium value sites include six(6) Bronze Age Round Barrows, eight (8) standing stones, one (1) Bronze Age cist, one(1) prehistoric field system,

one (1) Bronze Age findspot and one (1) possible Neolithic or Bronze Age Henge site. For summary details of each of these sites, see Appendix III:

- 1) *Allt Cunedda Round Barrow I (PRN: 1393 and 42579)* – Positioned on a summit approximately 1.26km E of the proposed turbine locations.
- 2) *Allt Cunedda Round Barrow II (PRN: 1393 and 42579)* – Positioned on a summit with PRN: 1393, approximately 1.03km E of the proposed turbine locations.
- 3) *Penlan Isaf Round Barrow (PRN: 2129)* – No surface trace of this barrow. Positioned on a summit approximately 770m S of proposed turbine locations.
- 4) *Llain Garn Round Barrow (PRN: 11224)* - Positioned on a southwest facing slope approximately 860m NW of the proposed turbine locations.
- 5) *Llansaint Tump Round Barrow (PRN: 11227)* - Positioned on a south facing slope approximately 770m NW of the proposed turbine locations.
- 6) *Meini Hirion; Cae Garreg Fawr Standing Stone Pair (PRN: 1392)* – Intact stones. Positioned approximately 1.86km SE from proposed turbine locations.
- 7) *Parc Maen Llwyd Standing Stone (PRN: 2111)* – Near intact standing stone. Positioned approximately 1.72km SW from proposed turbine locations.
- 8) *Maen Llwyd Standing Stone (PRN: 2125)* – No trace of this stone. Positioned approximately 980m S from proposed turbine locations.
- 9) *Park y Maen Standing Stone (PRN: 11214)* – Placename Evidence only. Positioned approximately 1.92km NW from proposed turbine locations.
- 10) *Cae Main Standing Stone (PRN: 11221)* - Placename Evidence only. Positioned approximately 630km NW from proposed turbine locations.
- 11) *Cefn Maen Standing Stone (PRN: 11222)* - Placename Evidence only. Positioned approximately 1km NW from proposed turbine locations.
- 12) *Llain Fain Standing Stone (PRN: 11223)* - Placename Evidence and near destroyed earthwork only. Positioned approximately 870m NW from proposed turbine locations.
- 13) *Penlan Isaf Cist (PRN: 7344)* – No longer extant. Positioned approximately 730m SE from proposed turbine locations.
- 14) *Penlan Ucha Field System (PRN: 7325)* - Positioned approximately 1.98km SE from proposed turbine locations.
- 15) *Penlan Ucha Henge/Defended Enclosure? (PRN: 7324)* – Circular enclosure. More likely to be a defended enclosure of the Iron Age period. Positioned approximately 1.95km SE from proposed turbine locations.
- 16) *Allt Cunneda Findspot (PRN: 1395)* – Bronze Age stone axe hammer. Positioned approximately 910m E from proposed turbine locations.

4.12 Within the 2km - 5km radii from the proposed turbine positions, there are a further four (4) designated prehistoric sites:

- 1) *Is Coed-Uchaf Standing Stone (SAM No. CM198)* – Positioned approximately 3.35km NNW from proposed turbine locations.

- 2) *Group of Standing Stones NE of Llechdwnni (SAM No. CM060)* – Positioned approximately 3.8km ENE from proposed turbine locations.
- 3) *Is-Coed Standing Stone (SAM No. CM199)* – Positioned approximately 2.48km NW from proposed turbine locations.
- 4) *Pen-Lan-Uchaf Standing Stone (SAM No. CM197)* - Positioned approximately 1.85km ESE from proposed turbine locations.

4.13 Iron Age and Romano-British period

4.14 There is no known Iron Age or Romano-British period sites within the application site red line study area recorded within the regional HER, nor within the National Monuments Record database.

4.15 However, within the 2km radius there are four (4) Iron Age/Romano-British Defended Enclosures. These sites include:

1) *Cae Gaer Defended Enclosure (PRN: 1396)* – This undesignated defended enclosure is a large, circular, hillslope enclosure, known as Cae Gaer. It has an average diameter of 160m and encloses an area of approximately 2 hectares. Positioned approximately 980m ESE of the proposed turbine locations.

2) *Parc y Castell Defended Enclosure (PRN: 2128)* – The RCAHM in 1917 noted that this field is called Parc y Castell. They noted some 'slight indications in the soil, and some vague traditions, of the former existence of an earthwork.' Savory, 1954-6 recorded an almost obliterated single-banked hillslope. Positioned approximately 1.4km SW from the proposed turbine locations.

3) *Penlan Ucha Defended Enclosure (PRN: 7324)* – On Penlan Uchaf farm there exists a univallate circular enclosure on a south east facing slope at 100m above sea level. The field in which the enclosure lies has been heavily ploughed. Positioned approximately 1.9km SE from the proposed turbine locations.

4) *Penlan Isaf Defended Enclosure (PRN: 8457)* - This site is best observed using aerial photographs. One distinct univallate circular enclosure is visible plus other undulations that may represent hut platforms or annexes, or perhaps another enclosure. Positioned approximately 1.53km SE from the proposed turbine locations.

4.16 Within the 2km - 5km radii from the proposed turbine positions, there are no designated Iron Age sites. However, it is generally believed that the foundations of Llansteffan Castle (SAM No. CM004) were built on an existing Iron Age Promontory Fort. Llansteffan Castle is positioned approximately 4.4km WSW of the proposed turbine locations.

4.17 Medieval Periods

4.18 The HER records no medieval site within the application area itself. However, within the 2km radius there are eighteen (18) known medieval data-points. One of these is a designated scheduled monument (PRN: 2126 /SAM No. CM152) and another is a Grade I Listed Building (LB No. 2118). These sites include:

- 1) *Coleman Dovecote* (PRN: 2126 /SAM No. CM152) – Medieval Dovecote positioned approximately 1.89km S of proposed turbine locations.
- 2) *Llansaint Chapel* (PRN:2118 / LB No. 9414) - Medieval Chapel located at the core of Llansaint village. Positioned approximately 1.4km SW of proposed turbine locations.
- 3) *Cobwell Holywell* (PRN: 1636) – Medieval Holy Well positioned approximately 1.8km SSE from proposed turbine locations.
- 4) *Ffynnon Stockwell Holy Well* (PRN: 1637) – Same site as above.
- 5) *Llansaint Chapel Inscribed Stone* (PRN: 2119 / 2120) – Inscribed stone positioned within Llansaint Chapel. Likely of 6th century date. Positioned approximately 1.4km SW of proposed turbine locations.
- 6) *Ffynnon Saint Holy Well* (PRN: 2122) – Positioned approximately 1.1km SW of proposed turbine locations.
- 7) *Parc Maen Llwyd Holy Well* (PRN: 2127) – Positioned approximately 2km SW of proposed turbine locations.
- 8) *Parc y Prior Monastic Land* (PRN: 7269) – Placename evidence only. Positioned approximately 1.3km SSW of proposed turbine locations.
- 9) *Portway Road* (PRN: 7271) – Positioned approximately 1.3km SSW of proposed turbine locations.
- 10) *Look Over Platform* (PRN: 9707) – Positioned approximately 1.6km SSE of proposed turbine locations
- 11) *Park Ty Abbey Monastic Land* (PRN: 11217) – Placename evidence only. Positioned approximately 2km N of proposed turbine locations
- 12) *Park Whitland Monastic Land* (PRN: 11225) – Placename evidence only. Positioned approximately 680m SW of proposed turbine locations
- 13) *Kings Wood Crown Land* (PRN: 12189) – Placename evidence only. Positioned approximately 1.5km E of proposed turbine locations
- 14) *Llansaint Village; Hawton; Halkin* (PRN: 14389) – Positioned approximately 1.56km SW of proposed turbine locations
- 15) *Llansaint Chapel Churchyard* (PRN: 49319) - Positioned approximately 1.5km SW of proposed turbine locations

4.19 Within the 2km - 5km radii from the proposed turbine position, there are five (5) designated medieval sites:

- 1) *Kidwelly Castle (SAM Ref: CD002)* – Positioned approximately 2.3km SE of proposed turbine locations
- 2) *Kidwelly Town Gate and Defences (SAM Ref: CM183)* – Positioned approximately 2.3km SE of proposed turbine locations
- 3) *Kidwelly Medieval Town (SAM Ref: CM209)* - Positioned approximately 2.3km SE of proposed turbine locations.
- 4) *Spudders Bridge (SAM Ref: CM006)* - Positioned approximately 4.9km SE of proposed turbine locations.
- 5) *Llansteffan Castle (CM004)* - Positioned approximately 4.3km WNW of proposed turbine locations

4.20 Post-Medieval periods

4.21 Within the HER database there is only one (1) post-medieval sites recorded within the application red line study area itself. This records the position of a former post medieval deserted rural farmstead known as Maesgwynne (PRN: 23411). The remains of this farmstead are positioned in a dip approximately 470m north of the nearest proposed turbine.

4.22 As would be expected, this chronological period marks the greatest number of known sites within the wider study area, a total of fifty-five (55) post medieval sites are located within the 2km radius. A small number of these sites also have medieval foundations. Site types include: 3 Blacksmiths Workshops, 2 Buildings, 2 Bridges, 1 Cemetery, 2 Chapels, 1 Church, 2 Churchlands, 1 Churchyard, 8 Cottages, 1 Crown Land, 2 Dovecotes, 2 Dwellings, 11 Farmsteads, 1 Fish Weir, 1 Flood Defence, 1 Mill Race, 2 Monastic Lands, 1 Parliamentary Field System, 3 Pounds, 1 Public House, 2 Quarries, 1 Race Course, 1 Road, 1 School, 1 Village and 1 Well. For further details of these sites see Appendix III. The majority of these sites are undesignated medium value sites. However, two (2) are also designated listed sites, each of which have already been cited above in the medieval section. These listed sites include:

1) *Llansaint Chapel (PRN:2118 / LB No. 9414)* – Grade II Listed Medieval Chapel located at the core of Llansaint village. Positioned approximately 1.4km SW of proposed turbine locations.

2) *Coleman Dovecote (PRN: 2126 /SAM No. CM152)* – Grade II* Listed Medieval Dovecote positioned approximately 1.89km S of proposed turbine locations.

4.23 Within the 2km – 5km radius, there are a further sixty-one (61) designated Listed Building sites. Fifty-one (51) of these listed sites have Grade II listing. However eight (8) have a Grade II* Listing and three (3) have a Grade I Listing. The greater part of these designated are positioned in the west-north-west and the southwestern regions, the towns of Llansteffan and Kidwelly respectively. With regard to the Grade I and Grade II* Listed sites, these are listed below. For the location and details of all of the other Grade II LBs please see the Site Gazetteer in Appendix III with reference to Figures 14 .

1) *Kidwelly Castle (LB Ref: 11876)* – This Grade I Listed castle is positioned at the core of

Kidwelly town. Positioned approximately 2.4km SE of the proposed turbine locations.

2) *Church of Saint Mary (LB No. 11878)* – This Grade I church is positioned at the southwest region of the town of Kidwelly. Positioned approximately 2.4km SE of the proposed turbine locations.

3) *Llansteffan Castle (LB No. 9405)* – This Grade I castle is positioned approximately 4.4km WNW of the proposed turbine locations.

4) *Kidwelly Town Gate (LB No. 11877)* – This Grade II* Listed structure is positioned at the core of Kidwelly town just southwest of the castle. Positioned approximately 2.47km SE of the proposed turbine locations.

5) *Dovecote NW of Coleman Farm (LB No. 11879)* – This Grade II* Listed dovecote is positioned approximately 1.85km S of the proposed turbine locations.

6) *Cold-roll Engine-house at former Kidwelly Tinplate Works (LB No. 20197)* – This Grade II* Listed engine house is positioned approximately 2.8km SE of the proposed turbine locations.

7) *Coach House and Stable Range at Y Plas (LB No. 27075)* – This Grade II* Listed Coach House is positioned approximately 4.7km W of the proposed turbine locations.

8) *Y Plas Mansion (LB No. 9385)* – This Grade II* Listed Mansion House is positioned approximately 4.7km W of the proposed turbine locations.

9) *Church of St Ystyffan (LB No. 9404)* – This Grade II* Listed Church is positioned approximately 4.7km W of the proposed turbine locations.

10) *Vale View (LB No. 9406)* - This Grade II* Listed house is positioned approximately 4.7km W of the proposed turbine locations .

4.24 Within the 5km radius from the proposed turbine location there is also one (1) Registered Park & Garden site, that of *Llechdwnni* (PGW (Dy) 21(CAM)).

1) *Llechdwnni* (PGW (Dy) 21(CAM)) – Surviving remains of a 17th Century walled garden with formal pools, terraces and gazebos. The survival of an unusual & early walled garden & formal pool, associated with one of the former most historic houses in the south of the country. The large garden has a long terrace, terminated at each end by projecting round gazebos. Within the grounds of the park is *Llechdwnni House*, which has a Grade II Listing.

The park and gardens of Llechdwnni have an essential setting with significant views to the north-north-east and to the south-south-west. Positioned approximately 3.34km NW of proposed turbine locations.

4.25 Modern Period

- 4.26 Within the HER database there are no modern sites recorded within the 2km radius of the application area study area.
- 4.27 Within the 2km to 5km radii there are six (6) what are considered to be Modern designated sites. One of these modern sites, Coleman Dovecote, also has medieval and post medieval foundations.

- 1) *Kidwelly Old Tinplate Works and Dam (SAM Ref: CM291)* – Positioned approximately 2.9km SE from the proposed turbine locations.
- 2) *Glanstony Aqueduct, Trimsaran (SAM Ref: CM270)* – Positioned approximately 4.9km SE from the proposed turbine locations.
- 3) *Limekilns at Penymynydd, Pedair Heol (SAM Ref: CM277)* – Positioned approximately 4.3km E from the proposed turbine locations.
- 4) *Coleman Dovecot (SAM Ref: CM152)* – Positioned approximately 1.9km S from the proposed turbine locations.
- 5) *Hot & Cold Rolling Mills, Kidwelly Tinplate Works (SAM Ref: CM254)* - Positioned approximately 2.9km SE from the proposed turbine locations.
- 6) *St Ishmael's Scar Beach Defence Gun House (SAM Ref: CM383)* - Positioned approximately 3.3km SW from the proposed turbine locations.

4.28 Unknown Period

- 4.29 Within the HER database there are five (5) sites of unknown period within the 2km radius from the application site. These include:
- 1) *Tir Bach Cropmark (PRN: 2114)* - No further details.
 - 2) *Penlan Uchaf cropmark (PRN: 4971)* - No further details.
 - 3) *Ffynnon Sul Well (PRN: 5330)* – No further details.
 - 4) *Rhiwlun Field System (PRN: 7340)* – Documentary Records only.
 - 5) *Baily Glas Placename (PRN: 11215)* - No further details.

4.30 Cartographic Sources

OS Surveyors drawing (1830) (Figure 5)

- 4.31 This early OS map shows the study area within the red line study area as being divided into regular

fields. Both the farms of Penhill and the now absent Maesgwynne farm are shown. No other features but field boundaries are depicted on this early series.

Tithe Map and Apportionment details for the parishes of St. Ishmael and Kidwelly (1840) (Figure 6 and 7)

- 4.32 The red line study area is split between the parishes of St. Ishmael to the north and Kidwelly to the south. The Tithe map and apportionment records for the parish of *St. Ishmael* of 1840 shows much the same story as that shown on the earlier OS Surveyors drawing. The only structure depicted is the former farmstead of Maesgwynne (No. 685)
- 4.33 According to the tithe apportionment details, the red line study area that falls within the St. Ishmaels parish was jointly owned between one John Colby, Harry Lawrence and William Williams who tenanted the land out to Edward Gower, David Laws and Andrew Williams respectively.

Table 4 - Tithe Map and Apportionment details for St.Ishmael parish within Application Area				
Tithe No.	Name	Owner	Occupier	Details
St. Ishmael Parish				
643	Peny lyga	William Williams	Andrew Williams	No details given
644	Park Newydd	William Williams	Andrew Williams	No details given
678	-	John Colby	Anthony Williams	No details given
693	-	William Williams	Andrew Williams	No details given
721	Park crug bach	Henry Lawrence	David Laws	No details given
676	-	John Colby	William Anthony	No details given
677	-	John Colby	William Anthony	No details given
679	Park y diffance	John Colby	William Anthony	No details given
680	-	John Colby	William Anthony	No details given
681	Parc Maen Mawr	John Colby	Edward Gower	
682	Park canol	John Colby	Edward Gower	No details given
683	Park y odin	John Colby	Edward Gower	No details given
684	Waun	John Colby	Edward Gower	No details given
685	Maesgwynne	John Colby	Edward Gower	house and yard
686	Cae bach	John Colby	Edward Gower	No details given
687	Park perot	John Colby	Edward Gower	No details given
688	Park udin	John Colby	Edward Gower	No details given
689	Park y lan	John Colby	Edward Gower	No details given
690	Park main bach	John Colby	Edward Gower	No details given
691	Park perot bach	John Colby	Edward Gower	No details given
692	Park y eithin	John Colby	Edward Gower	No details given
693	-	John Colby	Edward Gower	No details given

- 4.34 The tithe map and apportionment records for the parish of Kidwelly in 1840, again shows much the same details as those shown on the early OS Surveyors Drawing of 1830. The land that falls within the

red line study area and the proposed development area was formerly owned by John Colby who tenanted Penhill Farm and its surrounding fields out to William Anthony.

Table 5 - Tithe Map and Apportionment details for St.Ishmael parish within Application Area				
Tithe No.	Name	Owner	Occupier	Details
Kidwelly Parish				
1246	Penhill Farm	John Colby	Wiliam Anthony	No details given
1247	Penhill Farm	John Colby	Wiliam Anthony	No details given
1248	Penhill Farm	John Colby	Wiliam Anthony	No details given
1249	Penhill Farm	John Colby	Wiliam Anthony	No details given
1250	Penhill Farm	John Colby	Wiliam Anthony	No details given
1251	Penhill Farm	John Colby	Wiliam Anthony	No details given
1252	Penhill Farm	John Colby	Wiliam Anthony	No details given
1253	Penhill Farm	John Colby	Wiliam Anthony	No details given
1254	Penhill Farm	John Colby	Wiliam Anthony	No details given
1266	Penhill Wood	John Colby	Wiliam Anthony	No details given
1267	Penhill Wood	John Colby	Wiliam Anthony	No details given
1268	Penhill Wood	John Colby	Wiliam Anthony	No details given
1269	Penhill Wood	John Colby	Wiliam Anthony	No details given
1270	Penhill Wood	John Colby	Wiliam Anthony	No details given
1271	Penhill Wood	John Colby	Wiliam Anthony	No details given
1272	Penhill Wood	John Colby	Wiliam Anthony	No details given
1273	Penhill Wood	John Colby	Wiliam Anthony	No details given
1274	Penhill Wood	John Colby	Wiliam Anthony	No details given
1275	Penhill Wood	John Colby	Wiliam Anthony	No details given
1276	Penhill Wood	John Colby	Wiliam Anthony	No details given
1277	Penhill Wood	John Colby	Wiliam Anthony	No details given

OS First Edition map 1:2500 (1887) (Figure 8)

- 4.35 This first published Ordnance Survey map series shows the application area much as it was on the earlier Tithe Map of 1840, an enclosed field area. The only feature worth mentioning on this first Ordnance Survey edition is the fact that the former farmstead of Mesgwynne is now shown as being deserted and unroofed with only a few enclosure banks readily evident.

OS second Edition map 1:2500 (1906) (Figure 9)

- 4.36 No great changes on this map series from the earlier map series.

OS 1948 Edition map 1:2500 (Figure 10)

- 4.37 No changes from the earlier edition map.

Aerial Photos (Figure 11)

- 4.38 Aerial photos investigated as part of the desk based work included vertical sheets from the RAF 1946 and 1953 vertical photograph series. This early aerial photo shows the application site much as it is shown on the OS 1948-1953 Edition Map series. No apparent crop-marks were identified on any of the 1940s RAF aerial photos analysed. The vertical photographs of the area suggest that the area of the proposed turbines has been repeatedly ploughed over the decades.

Table 6. RAF Vertical Aerial Photos consulted				
Sheet No.	Sortie	Frame No.	Date	Type
152	106G/UK/1629	3086-3087	08/07/1946	RAF
152	106G/UK/1400	4090-4091	11/04/1948	RAF
152	106G/UK/1400	3154-3155	11/04/1948	RAF
152	540/993	37, 44, 45	20/01/1953	RAF

4.39 Site Visit

- 4.40 The field visit to the site walked all of the immediate fields around the proposed turbine locations. It also walked along the route of the proposed access track and proposed service cable trench, noting the character and form of all of the boundaries. The perimeter boundaries were all either 18th century, or else 19th century hedgerow and hedge-banks with occasional modern post and wire fencing. All of the internal field boundaries are all hedgerow.

- 4.41 In the area of the proposed turbines and access track options, no surface features were readily evident. All of the fields within the study area were improved pasture and appeared to have been ploughed fairly recently. The walkover along the route of the proposed access track extension and service cable run also observed no significant features.

- 4.42 A site visit was also undertaken to key designated and undesignated sites of schedulable quality within the 5km study area, as identified by those falling within the Zones of Theoretical Visibility (ZTV), in order to assess their potential significance of indirect effect from the proposed turbines on their setting.

4.43 Sites noted within the Application Area

- 4.44 Within the application area, the regional HER database recorded only six (6) archaeological sites:, a designated Bronze Age Round Barrow (PRN: 2112 / SAM Ref: CM190), known as Pen yr heol round barrow, positioned at the far north of the study area; the approximate positions of two possible Bronze Age standing stones, both evident from placename evidence only and both also positioned at the far northern end of the study area (PRN's: 11219 / 11220). Both these placenames are indicative of large

standing stones given that the field names from the tithe map of 1840 have the word *Maen* in their names; one further possible Bronze Age round barrow, again only evident from placename evidence given in the tithe apportionment details of 1840, the field being known as Park Crug bach (PRN: 11218). However, this name may well be a doubling up of the designated Pen yr heol round barrow; Maesgwynne farmstead (PRN: 23411); and an area of church land as evident again from placename evidence as detailed in the tithe map of 1840.

- 4.45 The cartographic study and site visit however, identified a total of forty-three (43) new assets. The greater part of these are all boundaries shown on both the OS Surveyors drawing of 1830, the Tithe Map of 1840 and the OS First Edition Map of 1887. These boundaries are predominantly hedgerows. The only other feature not a field boundary is the possible site of a kiln associated with the now absent Maesgwynne farmstead. This kiln is evident from placename evidence only, from the name of one of the fields close to Maesgwynne and named on the tithe map of 1840, Park y odin (Site No. 683). A list of all the sites identified is given below in Table 6 below (see also Figures 6 and 11).

Table 7. Heritage Assets within application site				
Site No.	PRN	Site Type	Condition	Source & period
1		Boundary	Still present	OS Surveyors Drawing 1830
2		Boundary	Still present	OS Surveyors Drawing 1830
3		Boundary	Still present	OS Surveyors Drawing 1830
4		Boundary	Still present	OS Surveyors Drawing 1830
5		Boundary	Still present	OS Surveyors Drawing 1830
6		Farmhouse	Still present	OS Surveyors Drawing 1830
7		Boundary	Still present	OS Surveyors Drawing 1830
8		Boundary	Still present	OS Surveyors Drawing 1830
9		Track	Still present	OS First Edition Map 1887
10		Boundary	Still present	OS Surveyors Drawing 1830
11		Boundary	Still present	OS Surveyors Drawing 1830
12		Boundary	Still present	OS Surveyors Drawing 1830
13		Boundary	Still present	OS Surveyors Drawing 1830
14		Boundary	Still present	OS Surveyors Drawing 1830
15		Track	Still present	OS First Edition Map 1887
16		Boundary	Still present	OS Surveyors Drawing 1830
17		Boundary	Still present	OS Surveyors Drawing 1830
18		Boundary	Still present	OS Surveyors Drawing 1830
19		Boundary	Still present	OS Surveyors Drawing 1830
20		Boundary	Absent	OS Surveyors Drawing 1830
21		Boundary	Still present	OS Surveyors Drawing 1830

Table 7. Heritage Assets within application site				
Site No.	PRN	Site Type	Condition	Source & period
22		Boundary	Still present	OS Surveyors Drawing 1830
23		Boundary	Still present	OS Surveyors Drawing 1830
24		Boundary	Still present	OS Surveyors Drawing 1830
25		Boundary	Still present	OS Surveyors Drawing 1830
26		Boundary	Absent	OS Surveyors Drawing 1830
27		Track	Still present	OS First Edition Map 1887
28		Boundary	Still present	OS Surveyors Drawing 1830
29		Boundary	Still present	OS Surveyors Drawing 1830
30		Boundary	Still present	OS Surveyors Drawing 1830
31		Boundary	Still present	OS Surveyors Drawing 1830
32		Boundary	Still present	OS Surveyors Drawing 1830
33		Boundary	Absent	OS Surveyors Drawing 1830
34		Boundary	Absent	OS Surveyors Drawing 1830
35		Boundary	Absent	OS Surveyors Drawing 1830
36		Boundary	Absent	OS Surveyors Drawing 1830
37		Boundary	Still present	OS Surveyors Drawing 1830
38		Boundary	Still present	OS Surveyors Drawing 1830
39		Boundary	Absent	OS Surveyors Drawing 1830
40		Boundary	Absent	OS Surveyors Drawing 1830
41		Boundary	Still present	OS Surveyors Drawing 1830
42		Kiln (placename). Limekiln?	Still present	Tithe Map 1840
43		Boundary	Absent	Tithe Map 1840
44		Boundary	Absent	Tithe Map 1840
45		Boundary	Absent	Tithe Map 1840
46		Boundary	Absent	Tithe Map 1840

5 Assessment of Effects

Direct Physical Effects

- 5.1 The desk based assessment and site visit has identified no direct physical impact on any known heritage assets from any element of the proposed development. However, given that there is Bronze Age activity fairly close to the site in the form of round barrows and the positions of possible former standing stones of the same period, any proposed groundwork for the turbine foundations, hard standings, permanent access track and the service cable trench could very well expose remains associated with this period.

Indirect non-physical Effects

- 5.2 Indirect physical effects associated with the development are not considered to be of sufficient magnitude in this instance to warrant separate assessment. There are no known sites within the development site boundary that include fragile deposits (for example waterlogged organic remains) that might be affected by changes in hydrology or from increased erosion. In terms of dislocating certain features from their attendant landscapes, the development will inevitably however introduce a visual component, which is considered under indirect visual effects below.

Indirect Visual Effects

- 5.3 Within the 5km radius from the proposed turbine locations, the assessment has identified a total of eighty-five (85) designated sites. Sixteen (16) of these high value sites are individual Scheduled Ancient Monuments (SAMs), sixty-three (63) are Listed Buildings (LBs), two (2) are Registered Historic Landscapes (RHLs), one (1) is a Registered Park & Garden (RPG) and three (3) are Conservation Areas (CAs). Each of these designated sites has been assessed in terms of the indirect effect of the proposed development on their setting. To aid this assessment, a Zone of Theoretical Visibility (ZTV) map was produced at blade tip (see Figures 19 – 21(b)).
- 5.4 This ZTV map predicts that only three (3) of the SAM sites within the 5km radius will potentially have visibility of the proposed turbines. The ZTV map also predicts that twenty-three (23) listed buildings within the 5km radius will also potentially have visibility of the turbines at blade tip. The ZTV map also predicts that the extreme western region of the Registered Park & Garden of *Llechdwnni*, positioned approximately 3.3km ENE of the proposed turbine locations, could also potentially have visibility of the turbines at blade tip. The ZTV also predicts that the proposed turbines could also potentially have a slight indirect effect on the extreme western part of the RPGs essential settings that lie immediately to the north and south of the park & garden of *Llechdwnni*, which have significant wider landscape views looking northwest and southwest.
- 5.5 The ZTV map has also predicts that the proposed turbines could potentially have an indirect effect on parts of the setting of the Conservation Areas (CAs) of *Llansteffan* and *Llansaint*.
- 5.6 Lastly, the ZTV map also predicts that the proposed turbines could potentially have an indirect effect on a number of Historic Landscape Character Areas (HLCAs) of the Registered Historic Landscapes (RHL) of the *Taf and Tywi Estuary* and the *Tywi Valley* positioned within the prescribed 5km radius.
- 5.7 Due to the relatively low height of the proposed turbines, at 47m to blade tip, it has been predicted that any designated sites over 3km away from the proposed turbine positions, will not be *significantly* indirectly affected by the proposal due to distance and screening from intervening landscape components, unless there is evidence that the turbine positions will have an indirect effect on either a landscape park & garden, a site's potential group setting or potential inter-visibility lines of sight, such as the relationship between prehistoric burial sites and Iron Age hillforts and defended enclosures, or

Castles, where views into the wider landscape beyond the 3km radius played an important role in their original and operational setting. In this instance, there are two such sites that fall within this category, that of *Llechdwnni Park & Garden* (PGW (Dy) 21(CAM)) and *Llansteffan Castle* (SAM Ref: CM004). Other than these two aforementioned sites, which will both be assessed in more detail in the following section, only designated sites and undesignated sites of schedulable quality that fall within the 3km radius have been assessed further with regards to indirect visual effects.

- 5.8 All other designated sites over 3km away, which the ZTV map predicts would have visibility of the proposed turbines, will either be screened by intervening landscape components, such as hedgerows, trees and buildings, or else the scale of the turbines at this distance would have only a *Negligible* magnitude of effect and therefore their presence would be of only *Minor* significance.
- 5.9 This means that only two (2) Scheduled Ancient Monuments (SAMs), one (1) Listed Building (LB), one (1) Registered Park & Garden (RPG), one (1) Conservation Area, and three (3) Historic Landscape Character Areas (HLCAs) associated with the RHLs of the *Tywi Valley* and the *Taf and Tywi Estuary* need to be assessed further in more detail.
- 5.10 Other than the above mentioned designated sites within the 3km radius, there are also two (2) undesignated sites of schedulable quality within the 2km radius that deserve further attention, especially as the ZTV map predicts that the proposed turbines could well have an indirect effect on their setting. These two sites include a pair of round barrows (PRN'S: 1394 / 1393 / 42579) that lie on the summit of Allt Cunedda only 1km to the east of the proposed turbines and the remains of an Iron Age Defended Enclosure (PRN: 1396), also positioned toward the summit of Allt Cunedda.
- 5.11 All other medium value undesignated HER sites within the 2km radius will not be significantly affected by the proposed turbines and as such it is predicted that the effect on these sites will be of *Negligible* magnitude and therefore of only *Negligible/Minor* significance.

5.12 Designated and Undesignated Sites of Schedulable quality indirectly affected **SAM Sites indirectly affected within 5km**

- 1) *Pen yr Heol Round Barrow* (SAM Ref: CM190) – Site lies approximately 940m N from proposed turbine locations.
- 2) *Llansteffan Castle* (SAM Ref: CM004) - Site lies approximately 4.4km WNW from proposed turbine locations.

LB Sites indirectly affected within 3km

- 1) *Llansaint Church* (LB No. 9414/ PRN: 2118) - This Grade II Listed Church is positioned at the core of the village of Llansaint, standing approximately 1.4km SW of the proposed turbine locations.

Registered Park & Garden indirectly affected within 5km

- 1) *Llechdwnni Park and Garden (PGW (Dy) 21(CAM))* – Site positioned approximately 3.35km ENE from proposed turbine locations.

Conservation Areas indirectly affected within 3km

- 1) *Llansaint Conservation Area* - Area positioned approximately 1.2km SW from proposed turbine locations.

Tywi Valley Registered Historic Landscape HLCA indirectly affected within 3km

- 1) *Croesyceilog-Cwmffrwd HLCA* - HLCA positioned approximately 950m NW from proposed turbine locations.

Taf & Tywi Estuary Registered Historic Landscape HLCAs indirectly affected within 3km

- 1) *Kidwelly and Llansaint Strip Fields HLCA* - HLCA positioned approximately 290m S and SW from proposed turbine locations.
- 2) *St. Ishmael HLCA* - HLCA positioned approximately 670m W from proposed turbine locations.

Undesignated Sites of Schedulable Quality indirectly affected within 3km

- 1) *Allt Cunedda Bronze Age Round Barrows (PRN: 1394 / 1393 / 42579)* – Undesignated Bronze Age Round Barrows positioned approximately 1.03km and 1.2km east of the proposed turbine locations.
- 2) *Cae Gaer Iron Age Defended Enclosure (PRN: 1396)* - Undesignated Iron Age site positioned approximately 980m east-south-east of the proposed turbine locations.

- 5.13 Each of the above listed sites will be assessed further on their own individual merits in the following section.

Scheduled Ancient Monuments (SAMs) Indirectly affected

1) Pen yr Heol Round Barrow (PRN: 2112 / SAM Ref: CM190)

Location and Context

- 5.14 This designated round barrow is positioned partly under a hedgebank of a field approximately 920m north of the proposed turbine locations at a height of approximately 130m AOD.

The Site

- 5.15 In 1986 this barrow was recorded as being a very substantial feature that appeared not to have been

recently mutilated. The barrow is not fenced off and is positioned within a ploughed field and appears to have undergone ploughing itself over the decades and as such its height is very much diminished and it is very hard to discern any defining edge for the earthwork. At an estimate it is approximately between 10m – 12m in diameter and stands only approximately 1m above the lower ground level of the field. A hedgebank traverses the earthwork running northeast to southwest. In 1986 it was also reported that another low mound was visible to the south of this barrow near the gateway of the field immediately to the south. This was interpreted as possibly another round barrow. Nothing is visible of this possible other mound today (see Photo Plates 19 - 20).

Setting

- 5.16 Pen yr Heol Round Barrow is set in an improved field presently used as a green pasture for sheep grazing with views of the hill of Allt Cunedda to the southeast that rises to 192m AOD and hegebanks to the north, west and south. The earthwork itself is traversed by an 18th Century hedgebank that runs northeast to southwest and as such the southern extremity of the barrow is on the southern side of this field boundary. In terms of local topography the barrow is set almost at the summit of gently sloping hill at a height of approximately 130m AOD. There is documentary evidence, from placename evidence attached to Tithe map field names, that there may well have been a number of standing stones in the immediate area, but if this was the case once then these are now absent probably having been cleared away as part of field clearance. In the wider landscape, it is entirely possible that this barrow would have had an intervisibility relationship with a pair of round barrows (*PRNs: 1394 / 1393 / 42579*) on the summit of the hill known as Allt Cunedda, which lies only approximately 1.68km to the southeast and rises to a maximum height of 192m AOD. HER records also imply that another round barrow was positioned directly to the south-south-east of the Pen yr Heol Round Barrow, approximately 1.76km away in the area known as Penlan Isaf (*PRN: 2129*) and was positioned at a height of 159m AOD and as such it would originally have had an intervisibility relationship with the Pen yr Heol barrow. However, the Penlan Isaf barrow has since been destroyed by ploughing and there is now no surface trace of the earthwork.

Assessment of Effects

- 5.17 According to the ZTV map at blade tip, the proposed turbines will be visible in their entirety from this round barrow when looking toward the south-south-east. However, due to the field bank that traverses much of the barrow's northern side, this view would be restricted slightly when viewing the barrow from the northern side and the proposed turbines would be in the background to the south over 920m away. Also, given that an intervisibility relationship does appear to have once existed between the Pen yr Heol round barrow and a former round barrow on Penlan Isaf hill (*PRN: 2129*) to the south-south-east, the proposed turbines would be in a direct line of site between these two barrows. However, the Penlan Isaf round barrow (*PRN: 2129*) is no longer visible and its exact location has been lost and as such this relationship no longer exists. As mentioned in the previous section, the other intervisibility relationship with the Pen yr Heol round barrow exists with the barrows on the summit of Allt Cunedda which lies to the southeast and as such the proposed turbines will not affect this setting relationship.

- 5.18 Given the above considerations, although the sensitivity of this monument is considered to be High value (of National importance) the indirect visual magnitude of effect is considered to be *Minor* and it is predicted that the overall significance of effect on the setting of this monument would be *Moderate/Minor*, but also temporary for the lifetime of the turbine.

2) Llansteffan Castle (SAM Ref: CM004)

Location and Context

- 5.19 Llansteffan Castle is positioned on rocky summit at approximately 61m AOD, overlooking the Tywi Estuary to the west. The castle lies approximately 4.3km west-north-west of the proposed turbine locations.

The Site

- 5.20 Llansteffan Castle is one of the great scenic castles of Wales, situated on a high ridge overlooking the Tywi estuary, and commands wonderful views over the surrounding countryside. Excavations have also proved that on the same site before the 12th century castle was a much earlier Iron Age promontory fort. The remains of the castle seen today were built in the twelfth century with subsequent additions and refortifications until the fifteenth century. The main surviving feature of the mostly ruined small inner ward is the 3-storey square inner gate. Evidence of several domestic buildings survives at foundation level. The spacious outer ward features a 3-storey thirteenth century gatehouse with pair of D-plan flanking towers. There are fragments of tracery to the windows.

Setting

- 5.21 Llansteffan Castle commands outstanding views looking over the Tywi estuary and the countryside to the north and east. As such, not only does the castle have an immediate setting overlooking the village of Llansteffan to the north, but being a castle it also commands a much wider landscape setting. This wider landscape setting was not only its original and operational setting in the medieval periods, but being a castle it has developed an inevitable aesthetic setting over the decades because of its history and ruination, so much so that it has been drawn and painted many times by famous antiquarians such as John Buck and Charles Norris and has been photographed by tourists an infinite number of times.

Assessment of Effects

- 5.22 According to the ZTV map at blade tip, the proposed turbines will be entirely visible from the viewing area of Llansteffan Castle when looking westwards (see Photo Plates 17 – 18). The wireframe view also seems to confirm this. However, in reality, due to intervening landscape components such as hedgerows, buildings, trees etc, the proposed turbines will likely only be visible at hub height. Also, due to the relatively small scale and the distance of the proposed turbines from the castle, the turbines will merge with other landscape components. The site visit to Llansteffan Castle has revealed that presently there are two other operating turbines visible from the viewing area of Llansteffan Castle, the Ty Mawr wind turbine and the Penlan Isaf wind turbine. Cumulatively these turbines in conjunction with the

proposed Penhill wind turbines will have an indirect effect on the setting of Llansteffan Castle, but as is demonstrated from the photo-montage and the wireframe view the views of the turbines are only very slight and do not effect the setting of the castle in any significant way, especially as the turbines lie over 4.3km away.

- 5.23 Given the above considerations, although the sensitivity of this monument is considered to be High value (of National importance) the indirect visual magnitude of effect is considered to be *Negligible* and it is predicted that the overall significance of effect on the setting of this monument would be *Minor*, but also temporary for the lifetime of the turbines.

Listed Buildings (LBs) Indirectly affected

1) Llansaint Church (LB No. 9414 / PRN: 2118)

Location and Context

- 5.24 This Grade II Listed church is positioned in a walled churchyard in the centre of the village of Llansaint, standing approximately 1.39km south-south-west of the proposed turbine locations at a height of approximately 125m AOD.

The Site

- 5.25 Discovery of 2 early Christian stones with Latin inscriptions is evidence of the early use of this site. The church is first mentioned in 1115 but only the 16th Century tower is medieval. The church owes its present character mainly to a restoration of 1862, when a vestry and North transept were added. The church was originally listed as being a prominently-sited church, with a medieval tower, in the centre of the village.

Setting

- 5.26 The immediate setting of Llansaint Church is essentially an urban one, being positioned on a rise surrounded by houses and roads that converge towards the church from all sides. Although originally the setting of this church in the medieval periods on a raised summit would have allowed the church visibility of the surrounding countryside, today that wider landscape setting has completely gone and all that is left is a localised urban view with the church surrounded by modern housing. However, although this is the case, the church tower is still visible standing tall above the village itself from outlying areas. But the church tower is not visible from the proposed turbine locations at ground level.

Assessment of Effects

- 5.27 The proposed turbines will lie over 1.39km to the south-south-west of this listed building. The ZTV map predicts that the proposed turbines will be visible from this designated site at blade tip. However, because of the distance, its immediate village urban setting with closely clustered buildings immediately adjacent to the church and intervening landscape components, views of the proposed turbines will greatly limited if not impossible.

- 5.28 Given the above considerations, although the sensitivity of this Grade II listed monument is considered to be High value (of National importance) the indirect visual magnitude of effect is considered to be *Negligible* and it is predicted that the overall significance of effect on the setting of the church will be *Minor* and also temporary for the lifetime of the turbine.

Registered Park & Garden indirectly affected

1) Llechdwnni Park & Garden (PGW (Dy) 21(CAM))

Location and Context

- 5.29 This registered park & garden is positioned approximately 3.3km east-north-east of the proposed turbine locations on the summit of a low hill at a height of approximately 109m AOD.

The Site

- 5.30 Llechdwnni (Dwnn's or Donne's refuge) is an ancient site, now a working farm, in the rolling hinterland north of Kidwelly, a short distance to the east of the Gwendraeth Fach valley. The present house is reached by a short drive from a minor road to the south, which leads to a parking area on its east side. It is a modest-sized, Victorian, stone farmhouse built into an east-facing slope and orientated north-south. Immediately to the north lies what remains of the old house, also built into the slope but orientated east-west. It is two-storey, of whitewashed rubble stone, with a slate roof, large chimney on the east end and an entrance on the south side. The building is now used as an outhouse and is in derelict condition. The history of Llechdwnni goes back to the medieval period. Before the beginning of the fifteenth century it was a property of the Gwyn-Lloide family. At that time it passed to the Donne or Dwnn family and later to the Bowens. It is one of the few houses shown on John Speed's 1610 map of Carmarthenshire, indicating its importance at that date. In 1626 Mary, daughter of Morris Bowen (died 1615), married John Brigstocke, who bought Llechdwnni. It continued in the Brigstocke family until they sold in 1909. At the time of the sale the tenant was a Mr D. Griffiths. The property was sold again, in 1913, but with less land than previously. During the eighteenth century the Brigstockes lived at Blaenpant, Ceredigion, and Llechdwnni was let as a farmhouse.
- 5.31 The old house is thought to have seventeenth-century origins, although parts may be older. It was formerly more than double the size of the present house, with a large wing to the east and a smaller one extending south from the centre of the south side. These parts were in existence when the 2nd edition 25 in. Ordnance Survey map (1906) was revised in 1905. They have now completely gone. The present house was built in 1854. The 1906 map shows that the main drive to both houses ran past the west side of the new house to a small court between the two. This approach has now gone and the secondary drive, to the east is now the only one.
- 5.32 The former garden of Llechdwnni is situated immediately to the west of both the old and present houses. It lies on a slope rising westwards to a wide ridge top on the east flank of the Gwendraeth Fach valley. There is a small, square compartment to the north of the old house, bounded by banks and a low wall on the south side. This was probably a garden or orchard compartment but is now grassed.

- 5.33 The garden is a large, square area of just over two acres surrounded by rubble stone walls faced on the inside with hand-made bricks. The interior is grassed. The lowest, east wall is the least well preserved. On the outside there is a stone wall, the base of which is a revetment wall, the northern half of which stands to about 1.6 m, tumbled in places, with a gap towards the north end. Further south the wall rises to about 2.5m then is tumbled and drops to ground level again. On the inside the wall (brick) stands up to about 1 m. At the south-east corner the wall rises up to about 3.5m and there is a narrow opening with the remains of an arch over it. The south wall stands up to its full height of about 3.5 m and has three wide gaps in it. The brick facing has partly come away at the west end. The north wall is similar but better preserved. It stands to its full height of about 2.6 m on the inside (3.5 m on the outside), with its slightly overhanging, horizontal, stone coping still in place. There is a wide gap in the middle and some of the facing bricks have gone. In the north-east corner there is a short return and then the east wall drops to ground level, on a revetment wall.
- 5.34 The top, west wall of the garden is well preserved and stands to its full height of about 3.5 m, complete with its stone coping. Along the length of its foot is a terrace about 8 m wide, with a drop on its east side of about 1.3 m. At either end of the terrace are circular projections of the same width beyond the north and south walls.
- 5.35 These were belvederes or gazebos and from them there are panoramic views of the countryside. The south-west gazebo is poorly preserved. Only the stone footings of its curving wall survives, with the broken stubs of its ends on the south and west walls of the garden. The north-west gazebo is much better preserved. On the inside there is a raised platform, about 1.6 m above the level of the terrace, bounded by a curving stone wall standing up to about 1.8 m high. The lining of the wall, where it survives, is of good quality, coursed stonework, with a brick course half way up. There is a gap on the west side. On the outside the circular wall is well built, of the same construction as the outer garden walling, and stands to about 3.5 m.
- 5.36 Outside the west side of the garden, in the middle of what is now a field, is a rectangular pond. This is placed centrally to the west wall of the garden and was undoubtedly a garden feature with, at least in part, an ornamental function. The pond is clearly demarcated and is now full of rushes.
- 5.37 The garden is associated with the old house. The earliest depiction of it appears to be on the 1st edition 1 in. Ordnance Survey map of 1830, surveyed by Lt. Col. Colby, which clearly shows it with both gazebo projections. The small compartment to the east is also shown. The 1906 25 inch Ordnance Survey map shows the terrace and the projections, the south one slightly irregular, suggesting that by this time it was already ruinous. In his *History of Kidwelly* (1908), D.D. Jones has a rather muddled account of the garden, mentioning the terrace and 'round towers at the northwest and south-west angles'.
- 5.38 The family history of Llechdwnni, and the style and construction of the garden, would suggest that it dates to the seventeenth century, during which time the property belonged to and was lived in by the wealthy and influential Brigstocke family. Although they continued to own Llechdwnni in the eighteenth

and nineteenth centuries they no longer lived there and let it out to farmers, making it unlikely that a grand garden would have been constructed during that time. The size and ornamental nature of the garden, with its grand terrace and gazebos, and with outlying features like the pond, indicate that during the seventeenth century Llechdwnni was an important house, with a grand garden appropriate to the status and wealth of the family.

Setting

- 5.39 As described above, Llechdwnni gardens are positioned on the summit of a low hill with panoramic views over the surrounding countryside, with significant views looking along the Gwendraeth Fach Valley to the north and north east and to the south-south-west toward Kidwelly. As such Llechdwnni has an essential wider landscape aesthetic setting.

Assessment of Effects

- 5.40 The proposed turbines will lie over 3.3km to the west-south-west of the Llechdwnni gardens. The ZTV map predicts that the proposed turbines will only be visible when looking west-south-west from the western extremities of the gardens and as such they will not affect the gardens significant views looking along the Gwendraeth Fach Valley to the north and south, but will only be within peripheral view in the distance on the distant horizon along with the operational Trefforis Fawr wind turbine. Also, because of the relatively small scale of the proposed turbines and the distance of over 3.3km away, any potential views of the turbines will not be significant (see Photo Plate 21).
- 5.41 Given the above considerations, although the sensitivity of this designated site is considered to be High value (of National importance) the indirect visual magnitude of effect is considered to be *Negligible* and it is predicted that the overall significance of effect on the setting of the Llechdwnni gardens will be *Minor* and also temporary for the lifetime of the turbines.

Conservation Areas indirectly affected

1) Llansaint Conservation Area

Location and Context

- 5.42 The Llansaint Conservation Area is positioned approximately 1.2km southwest of the proposed turbine locations, at an average height of approximately 124m AOD.

The Site

- 5.43 This conservation area surrounds the village of Llansaint with its Grade II Listed Church and churchyard at its core. The whole area covers an area of approximately 3.4 hectares in extent with its bounded limits described by minor public roads into the village, the Heol Llansaint to the east, the Y Crofft to the west and the Kidwelly Road to the south.

Setting

- 5.44 Llansaint Conservation area is essentially confined to its very compact village setting with its characterful narrow streets that all focus on the church and churchyard at the village core. In this sense

the setting of the village is very much an immediate and inward looking setting rather than an outward wider landscape setting. However, because Llansaint village is on a slight rise, with the church tower visible from certain points in the wider countryside, there is a wider landscape setting when approaching the village, but this is very limited due to its heavy urban modern housing element that surround its core.

Assessment of Effects

- 5.45 The proposed turbines will lie over 1.2km to the northeast of this conservation area. The ZTV map predicts that the proposed turbines will be visible from this designated area at both hub height and blade tip (see Plate 22). However, because of its immediate and compact village setting being focused around the listed church and churchyard, views of the turbines to the northeast will only be possible from the northern areas of the conservation areas, where modern housing and other landscape components will screen much of the development from view.
- 5.46 Given the above considerations, although the sensitivity of this designated area is considered to be High value (of National importance) the indirect visual magnitude of effect is considered to be *Negligible* and it is predicted that the overall significance of effect on the setting of the cottage will be *Minor* and also temporary for the lifetime of the turbine.

Tywi Valley Registered Historic Landscape HLCA indirectly affected

1) Croesyceilog-Cwmffrwd HLCA

Location and Context

- 5.47 This Historic Landscape Character Area is positioned approximately 950m NW from proposed turbine locations.

Area and General Setting

- 5.48 This very large historic landscape character area, covering over 2671 hectares, lies across low rolling hills on the southern and eastern side of the lower Tywi valley. It rises from sea level at the River Tywi to heights of over 120m on the summits of rounded hills southwest of Cwmffrwd. The area is characterised by scattered farms set in medium-sized irregular and regular fields of improved pasture. There is a little rougher and rushy ground, particularly at higher levels. Fields are defined by earth banks topped with hedges. Hedges are generally well maintained, though some neglect is evident in those at higher levels. Some hedges possess distinctive hedgerow trees. Stands of deciduous woodland are concentrated on steep valley sides, with few small conifer plantations on high ground. There is an area of former parkland around Iscoed Mansion. The settlement pattern is dominated by dispersed farms. Farmhouses mostly date to the late 18th- and 19th-century, are stone-built and rendered, with slate roofs, of two storeys and of three bays. Most are in the vernacular tradition. Stone-built farm buildings are associated with the farms. On the larger farms these are substantial and occasionally laid out on a formal basis, but most are of one or two ranges informally located in the farm yard. Large modern farm buildings are present on most holdings. Superimposed over this ancient

pattern of dispersed farms are more recent settlement patterns. Croesyceilog is a small linear hamlet with a core of 19th century stone-built houses and cottages interspersed with which are modern dwellings, mostly brick-built. Cwmffrwd is essentially a 20th century village of individual houses, small housing estates and garages, though it includes some older 19th century elements, strung out along the A484 and a B-road. Capel Dewi similarly has an old core, but is essentially a 20th century hamlet. Several other major and historic roads in addition to the A484 - which lies on the route of a presumed Roman road - radiate out from Carmarthen across this area. All of these routes have attracted 20th century linear development. Other 20th century components of the landscape comprise National Grid power lines and a water pumping station.

- 5.49 Recorded archaeology from such a large landscape area takes in a range of sites from all periods. Features relate primarily to agricultural land-use but the Roman road and possible villa at Abercyfor, and the Post-Medieval lead mine at Cystanog, deserve note.
- 5.50 There are some distinctive buildings. Iscoed mansion, rebuilt with brick facing between 1790 and 1804, is with its outbuildings Grade II listed, but semi-derelict; it features fine views across the estuary and retains some internal detail. Bryntowy Mansion, Llangynwr, built in the 1830s, is Grade II listed. The landmark medieval church at Llangynwr, without a tower, is not listed, nor are the largely 18th century Iscoed old mansion and Abercyfor House.
- 5.51 To the west the tidal flood plain of the River Tywi, to the northwest Carmarthen town, and to the north the plain of the River Tywi provide clearly defined boundaries to this area. To area to the south has many similar historic landscape components to this area, and here there is a zone of change, rather than a clear defined border. The area which provides the southern boundary to the northern part of this area is characteristically distinct, but again a zone of change is present rather than a hard-edged border. To the east, historic landscape areas have yet to be defined.

Assessment of Effects

- 5.52 The proposed turbines will lie over 990m southeast of a southern tip of this HLCA. The ZTV map predicts that the proposed turbines will be visible from only approximately 10% of this HLCA and these views will be confined to the southeast facing slopes of the south eastern regions of the HLCA and summits that lie over 120m AOD. The closest region of this HLCA that will potentially have views of the proposed turbines will be the narrow valley area of Trefforis Fach and Trefforis Fawr that lies immediately to the east. However, the ZTV predicts that only a small part of this area will have visibility of the proposed turbines and even this area will very likely have screening of the turbines from intervening landscape components such as trees and buildings. Beyond the area of Trefforis Fach and Trefforis Fawr, views of the turbines fall within the 2km – 5km radii and these are all confined to the southeast facing slopes and summits. Already on the summit of Trefforis Fawr is the now operational turbine of Trefforis Fawr with a blade tip to 48m.
- 5.53 Given the above considerations and the fact that this HLCA is very large in extent, over 2671 hectares, the proposed turbines at Penhill Farm will have very little indirect effect on the setting of this HLCA. Although the sensitivity of this designated area is considered to be of High value (of National

importance) the indirect visual magnitude of effect is considered to be *Negligible* and it is predicted that the overall significance of effect on the setting of the HLCA will be *Minor* and also temporary for the lifetime of the turbine.

Taf & Tywi Estuary Registered Historic Landscape HLCA indirectly affected

1) Kidwelly and Llansaint Strip Fields HLCA

Location and Context

- 5.54 This Historic Landscape Character Area is positioned approximately 300m southwest from the proposed turbine locations. It covers over 345 hectares in area.

Area and General Setting

- 5.55 An area lying between 25m and 150m, of a general southerly aspect. The manorial nature of tenure within the area during the Medieval period has given rise to a landscape characterised by its relict field strip system, the former strips of which were still apparent in 1840 (Kidwelly and St Ishmael tithe maps). There is little woodland, all of it secondary. There is the usual scatter of farmsteads and cottage sites. Within the foreignry of St Ishmael to the west, a nucleation around Llansaint Church - which occupies a distinct, central location within the village - lies at the focus of a number of roads within a discrete area of former field strips. The main Kidwelly-Ferryside road follows the line of a medieval routeway called the 'Ferry Way', which led from Kidwelly to the Llansteffan Ferry over the Tywi estuary (Rees 1932). A spur from this route is one of the routes that converges on Llansaint and was known as the 'Portway'. This half of the area is now all improved pasture with long, medium-sized enclosures divided by earth banks with low hedges, predominantly well-maintained. The eastern half of the area, which lay within the borough of Kidwelly, features numerous strip lynchets below 90 m, above which was common pasture (Barnie and James, 1977, 45) which may have been seasonal. The landscape here also features an overgrown hollow-way, 'The Summerway', recorded in 1396. This area would seem to have been embanked and hedged by the 16th century and there are a number of relict boundaries and boundary stones (Barnie and James, 1977, 42). However, the direction of a turnpike road through the area between 1763 and 1811, i.e. the present A484 (M S C Evans 1988, 66), affected a reorganisation of some of the boundaries; the earlier route followed a similar course and its boundaries are still present. This eastern half is basically an area of improved pasture but there is some bracken on steep slopes. The long, medium-sized enclosures are divided by earth banks with hedges, some of which are becoming overgrown and derelict with distinctive trees, but are well-maintained along the roadsides. In both areas the present settlement pattern is mainly one of dispersed farms, and there has been little modern development within the nucleation of Llansaint.

- 5.57 Recorded archaeology, in addition to the features mentioned above, includes elements from underlying landscapes such as two (possibly three) standing stones and two possible round barrows, from the Bronze Age, and a possible Bronze Age henge or Iron Age hillfort. The Medieval All Saints Church, Llansaint, with a landmark tower, is Grade B listed. The area also features a number of natural springs and wells, some of which are mentioned in late Medieval accounts and the possible site of a chapel dedicated to St Thomas near Kidwelly (Rees, 1932). Later archaeology is mainly represented by buildings.
- 5.58 Farmhouses are generally 19th century, stone-built and slate-roofed, two-storey, three-bay, rendered and in the vernacular tradition. Most farms have two or more ranges of stone-built, 19th century outbuildings as well as modern agricultural buildings. Llansaint village is characterised by a cluster of 19th century stone-built houses around the church surrounded by a loose girdle of farmsteads and modern residential development. There is a former smithy in Llansaint and two pounds.
- 5.59 This is a fairly distinct historic landscape area which contrasts with the pattern of more regular enclosures to the south and east and the large, very regular enclosures to the north and west.

Assessment of Effects

- 5.60 From the northern aspect of this HLCA, the proposed turbines will lie over 330km to the northwest. The ZTV map predicts that the proposed turbines will be visible from this designated area across only approximately 26% of the entire HLCA, essentially only visible from the northern areas above 120m AOD and predominantly only those areas immediately east of Llansaint village and Llansaint village itself where regular fields rather than the remnants of medieval strip fields are more prevalent to the far east. However, because of the close proximity of this HLCA to the proposed turbines and the fact that the HLCA is relatively small in comparison to a number of others within the Historic Landscape as a whole, the proposed turbines will be fairly observable from this HLCA. Also to consider is the presence of the Ty Mawr operational wind turbine positioned immediately east of Llansaint village. However, this turbine is also fairly small scale, standing at only 24.8m in height to blade tip.
- 5.61 Given the above considerations although the sensitivity of this designated area is considered to be of High value (of National importance) the indirect visual magnitude of effect is considered to be *Minor* and it is predicted that the overall significance of effect on the setting of the HLCA will be *Moderate/Minor* and also temporary for the lifetime of the turbines.

2) St. Ishmael HLCA

Location and Context

- 5.62 This closest part of this Historic Landscape Character Area is positioned approximately 640m southwest from the proposed turbine locations. It covers over 722 hectares in area.

Area and General Setting

- 5.63 An area of medium-large, irregular fields, that possibly evolved from strip fields during the 17th century, lying between sea level and 125m. Now all supporting improved pasture, the fields are divided by banks with hedges in fair-good condition and generally well-maintained, though a few are overgrown and some are becoming derelict; those north-east of Ferryside exhibit some distinctive trees. Some roadside banks near the coast to the west of the area have stone facing. There are some small areas of woodland and scrub, particularly on the steeper coastal slopes around St Ishmael, but it is probably all secondary. A number of large, historically important farms lie in the area, but all are stone-built, slate-roofed and with modern outbuildings. Settlement is mainly dispersed, but the cluster of buildings at Broadlay has 19th century origins. The Tywi estuary foreshore has been re-shaped as a cutting for the GWR main West Wales line, which opened in 1852 and is still operational (Ludlow 1999, 28).
- 5.64 Despite the size of the area, the recorded archaeology is limited. Several possible Bronze Age standing stones are suggested by field names, and there is a possible Medieval cross. An Iron Age hillfort is present. Post-Medieval sites include farmsteads and cottages, a mill and millrace, sandpits, the railway, sea defences and a Second World War battery and lookouts at St Ishmael.
- 5.65 There are a number of distinctive buildings. The landmark Medieval parish church of St Ishmael is Grade B listed, and a Medieval dovecote at Coleman Farm is a Scheduled Ancient Monument and Grade II listed building. The 16th century Penallt mansion is Grade II listed, but the 18th century Pengay mansion is unlisted. Generally farmhouses in this area are 19th century, stone-built, two-storey and three-bay, with examples in both the vernacular tradition and the 'polite' Georgian style. Most farms have relatively large 19th century farm outbuildings, sometimes arranged semi-formally around a yard, as well as modern agricultural buildings. Modern residential development is limited to a few scattered dwellings and some ribbon development at Broadway.
- 5.66 This is a fairly distinct landscape area bounded by the Tywi estuary and Ferryside to the west, coastal marsh to the south, and an area of smaller, narrower enclosures to the east. Only the boundary with the area to the north is indistinct; the fields in the latter area are rather more regular.

Assessment of Effects

- 5.21 The proposed turbines will lie over 640m to the west from the western region of this HLCA. The ZTV map predicts that the proposed turbines will be visible from this designated area across approximately 40% of the entire HLCA, essentially only visible from areas above approximately 120m AOD and as such its southern and western coastal areas and borders will not be affected. Intervening landscape components such as trees, hedgerows and buildings will also diminish potential views of the turbines. Also to consider is the presence of the Ty Mawr operational wind turbine positioned immediately east of Llansaint village. However, this turbine is also fairly small scale, standing at only 24.8m in height to blade tip.

- 5.61 Given the above considerations although the sensitivity of this designated area is considered to be of High value (of National importance) the indirect visual magnitude of effect is considered to be *Minor* and it is predicted that the overall significance of effect on the setting of the HLCA will be *Moderate/Minor* and also temporary for the lifetime of the turbines.

Undesignated Sites of Schedulable Quality indirectly affected

1) Allt Cunedda Bronze Age Round Barrows (PRN: 1394 / 1393 / 42579)

Location and Context

- 5.62 These two undesignated round barrows are positioned approximately 1.03km and 1.2km east of the proposed wind turbines on the summit of Allt Cunedda at a height of approximately 190m AOD.

The Site

- 5.63 These two round barrows are both severely denuded suggesting that they were both robbed at some time in the antiquarian periods. They are each approximately 75 feet in diameter and have unfortunately been ploughed down to around 0.5m high. Documentary accounts suggest that both barrows were opened in 1850 revealing possible mass cremation in the eastern barrow and an inhumation and separate cist in the western one. Beaker fragments and a stone 'axe hammer' are reported from the barrows as a group. As well as being intervisible with each other, these barrows, being positioned on a high summit would also have had an intervisibility relationship with other contemporary Bronze Age round barrows in the wider landscape, such as the lone designated barrow at Pen yr Heol that lies approximately 1.69km to the northwest within the red line study area.

Setting

- 5.64 The immediate setting of the two round barrows on the summit of Allt Cunedda is a rural hilltop setting positioned within regular fields of improved pasture. Field boundaries are hedgerow and hedgebank. Immediately west of the westernmost barrow is a strip of mixed woodland which limits views to the west into the wider landscape.

Assessment of Effects

- 5.65 The proposed turbines will be positioned between 1.03km and 1.2km west of these two hilltop barrows. The ZTV map predicts that the proposed turbines will be visible from these two barrows. However, views looking west toward the proposed turbines and northwest toward the designated Pen yr Heol round barrow is screened by a strip of mixed woodland.
- 5.66 Given the above considerations, although the sensitivity of this undesignated site of schedulable quality is considered to be High value (of National importance) the indirect visual magnitude of effect is considered to be *Negligible* and it is predicted that the overall significance of effect on the setting of the enclosure will be *Minor* and also temporary for the lifetime of the turbines.

2) Cae Gaer Iron Age Defended Enclosure (PRN: 1396)

Location and Context

- 5.67 This undesignated site is positioned only 980m east-south-east of the proposed turbine locations at a height of approximately 185m AOD.

The Site

- 5.68 A large, circular, hillslope enclosure, known as Cae Gaer. It has an average diameter of 160m and encloses an area of approximately 2 hectares. In 1967 the Ordnance Survey recorded a double bank on the north side separated by a shallow ditch, and a single bank on all other sides with no outer ditch, plus a simple entrance on the west. The outer bank was recorded as being approximately 0.5m in height. As a result of yearly ploughing the defensive banks are now much reduced but the circular outline is still just visible as a slight rise on the ground, although there is no indication of an entrance. The site lies towards the summit of a high area of land on a seaward south-facing slope at 180m above sea level.

Setting

- 5.69 Cae Gaer Defended Enclosure occupies an almost hilltop setting, being that it is settled on the southwestern spur of the hilltop of Allt Cunedda with views out into the wider landscape to the south and west. Being positioned in this location, in the Iron Age, this enclosure would very likely once have had clear views of the former Iron Age hillfort that once stood at the same spot as Llansteffan Castle, which lies directly west-north-west. This defended enclosure today is traversed by a strip of mixed woodland down its north to south centre line.

Assessment of Effects

- 5.70 The proposed turbines will be positioned only 960m west-north-west from the Cae Gaer Defended Enclosure. The ZTV map predicts that the proposed turbines will be visible from this site from its western side. However, given that the turbines are positioned in a lower lying position at only approximately 130m AOD, they will not obscure any possible wider landscape views, especially those views toward Llansteffan Castle, which lies in a direct line of sight to the Cae Gaer Defended Enclosure
- 5.71 Given the above considerations, although the sensitivity of this undesignated site of schedulable quality is considered to be High value (of National importance) the indirect visual magnitude of effect is considered to be *Minor* and it is predicted that the overall significance of effect on the setting of the enclosure will be *Moderate/Minor* and also temporary for the lifetime of the turbines.

5.72 Summary of Indirect Effects on Designated sites within 5km

- 5.73 The assessment concluded that none of the designated sites, SAM, LBs, RPGs, RHLs (HLCAs) and Conservation areas or undesignated will be *significantly* indirectly affected by the proposed turbines on land at Penhill Farm. A summary table giving the results of the assessment is shown in Table 8.

Table 8. Summary of detailed appraisal on Significance of Indirect Effects on Undesignated sites of schedulable quality and Designated Sites within 5km					
Site Ref	Site Name	Site Type	Distance from turbine	Magnitude of effect	Significance of Effect
Scheduled Ancient Monuments (SAMs)					
SAM Ref: CM190	Pen yr Heol	Bronze Age Round Barrow	940m N	Minor	Moderate/Minor (Temporary)
SAM Ref: CM004	Llansteffan Castle	Medieval Castle with Iron Age foundations	4.3km WSW	Negligible	Minor (Temporary)
Listed Buildings (LBs)					
(LB No. 9414/ PRN: 2118)	Llansaint Church	Church (early Medieval foundation)	1.4km SW	Negligible	Minor (Temporary)
Registered Parks & Gardens (RPG)					
(PGW (Dy) 21(CAM))	Llechdwnni	Registered Park & Garden	3.35km ENE	Negligible	Minor (Temporary)
Conservation Areas (CAs)					
-	Llansaint Conservation Area	Conservation Area	1.2km SW	Negligible	Minor (Temporary)
Registered Historic Landscapes (RHLs)					
Tywi Valley RHL	<i>Croesyceilog-Cwmffrwd HLCA</i>	Various	950m NW	Negligible	Negligible/Minor
Taf & Tywi Estuary	<i>Kidwelly and Llansaint Strip Fields HLCA</i>	Various	290m S and SW	Minor	Moderate/Minor
Taf & Tywi Estuary	<i>St. Ishmael HLCA</i>	Various	670m W	Minor	Moderate/Minor
Undesignated Sites of Schedulable Quality					
(PRN: 1394 / 1393 / 42579)	Allt Cunedda Bronze Age Round Barrows	Bronze Age Round Barrows	1.03km and 1.2km E	Negligible	Negligible/Minor
(PRN: 1396)	Cae Gaer Iron Age Defended Enclosure	Iron Age Defended Enclosure	980m ESE	Minor	Moderate/Minor
Other Sites					

All other designated sites within 5km radius where ZTV predicts visibility of proposed turbines	Various	Various	Within 5km radius	Negligible	Minor
All other Medium value sites within 2km radius where ZTV predicts visibility	Various	Various	Within 2km radius	Negligible	Negligible/Minor

5.74 Significance of the remains

5.75 In terms of rarity with regards to sites within the application area, the site visit identified no new visible surface sites or features which were deemed to be of any importance. However, the HER records did reveal that here is a scheduled Bronze Age Round Barrow (CM190) at the far northern end of the red line area, positioned approximately 920m north of the proposed development area and the positions of a number of possible former Bronze Age standing stones in the same area. As well as these significant sites, the cartographic analysis also identified a series of 18th century and early 19th century field boundaries, predominantly hedgebanks. The majority of these boundaries are depicted on both the OS Surveyors drawing of 1830 and the Tithe Map of 1840 and all of the later OS maps. These linear features are all medium value features and none of them will be directly impacted upon by the proposed development in any way.

5.99 Given the presence of the Bronze Age Round Barrow only approximately 920m to the north and the strong possibility that the fields to the north were once home to a number of standing stones, there is a moderate possibility that there are buried remains pertaining to this period in and around the area of the proposed development. However, the field in which the proposed turbines are to be constructed has been heavily ploughed over the decades and the chance of any intact features being exposed is considered to be fairly low.

6 Mitigation

6.1 The best mitigation for the impact of any development on the archaeological resource is to avoid direct physical impacts upon all known archaeologically significant sites and features. Where avoidance is not considered possible or where the existence, exact location or extent of a feature is uncertain, additional mitigation measures may be required. A number of mitigation measures can be undertaken in advance of a planning application that will both inform, and potentially reduce or remove the need for archaeological mitigation at a later date. These options are outlined below:

Preservation In situ

6.2 This is the preferred option for all significant cultural heritage features and can be achieved by avoiding direct physical impact upon known features through careful consideration at the design

stage. In this instance, there are no known heritage assets that will be directly impacted upon by the construction or the decommissioning of the proposed development.

Evaluation

- 6.3 If there is an unavoidable impact upon a known archaeological site, or where it is uncertain if there will be an impact because the existence, exact location or extent of the or any archaeology is not known, then an archaeological evaluation (before the submission of the development scheme for planning approval) may be advisable in order to assess the presence or absence of archaeological features and their vulnerability from the development. The results of the evaluation can then inform decisions as to whether to re-design the scheme in order to avoid the features or to mitigate the development impact through 'preservation by record' (see 'excavation' below). In this instance, there are no known heritage assets that will be directly impacted upon by the construction or the decommissioning of the proposed development.

Excavation

- 6.4 Where previously identified archaeological features cannot be avoided by the development, or are considered to be of insufficient importance to warrant preservation *in situ*, then 'preservation by record' can be undertaken to excavate and record archaeological deposits before development commences. Such mitigation may also be required as a condition of granting planning consent.

Watching brief

- 6.5 Development impact upon minor sites, or where the absence of archaeological features has not been established by other methods, can be mitigated against by undertaking an archaeological watching brief to record any unforeseen archaeological features that may be encountered during construction. This can however, result in delays during construction while archaeological recording is undertaken.
- 6.6 In this instance, the primary HER database records have shown that there is strong evidence of Bronze Age activity in the immediate area of the proposed development, given that the designated round barrow of Pen yr Heol lies only 920m to the north, and that there is also evidence for other former bronze age features and structures that have since been removed by agricultural clearance and ploughing over the centuries. Although the field in which the proposed turbines are to be constructed has been heavily ploughed over the decades and the chance of any intact features being exposed is considered to be fairly low, there is still the chance that Bronze Age finds may be buried beneath the surface of the field. Given these considerations, it is advised that any groundwork undertaken for the construction of the proposed development i.e. the turbine foundations, hard-standings, permanent access track and service cable trench, is undertaken under an archaeological watching brief condition. However, this will not be necessary at the decommissioning phase.

7 Assessment of Cumulative Effects

- 7.1 Within the 5km radius from the proposed application site, there are only five (5) individual cumulative

wind turbine sites. At the time writing four (4) of these sites are now operational and one (1) has been consented.

7.2 For details of each of these cumulative sites see Table 9 below.

Site Name	Number of Turbines	Blade Height	Turbine distance	Planning Stage
Trefforis Fawr Turbine	1	48m	1.3km NW	Proposed
Ty Mawr Wind Turbine	1	24.8m	1.1km SW	Operational
Penlan Isaf wind Turbine,	1	34.3m	1km SE	Operational
Ty Hir Wind Turbine	1	34.2m	4.3km ENE	Operational
Penlan Farm Wind Turbine	1	34.5m	5km NE	Operational

7.3 With regard to individual designated sites, the Trefforis Fawr wind turbine will have a slight cumulative effect, in conjunction with the proposed Penhill Farm wind turbines, on the designated Pen yr Heol Round Barrow and given that this round barrow appears to have originally had an intervisibility relationship with the two round barrows on top of Allt Cunedda to the southeast, this cumulative effect extends into the wider landscape to the southeast. However, this effect will only be slight and it is predicted that the cumulative effect by these turbines will only be of *Negligible* magnitude and therefore of *Minor* significance and also temporary for the lifetime of the turbines.

7.4 The Ty Mawr and proposed Penhill Farm turbines will have a cumulative effect on the Conservation Area (CA) of Llansaint. However, given that the setting of the Llansaint CA is very much focused inwards on the church and churchyard, the area being screened by modern housing on its boundaries, this cumulative effect will be very minimal and as such it is predicted that the cumulative effect on the Llantrisant CA will also be of *Negligible* magnitude and therefore of *Minor* significance and also temporary for the lifetime of the turbines.

7.5 All of the operational and proposed turbines within the 5km radius will have a cumulative effect on all of the sites on the high value undesignated sites (PRN: 1394 / 1393 / 1396) associated with the hilltop known as Allt Cunedda. However, due to distance, apart from the turbine at Penlan Isaf, this effect will only be slight and as such it is predicted that the cumulative effect on the Llantrisant CA will also be of *Negligible* magnitude and therefore of *Minor* significance and also temporary for the lifetime of the turbines.

7.6 Both the Ty Mawr and the Trefforis Fawr turbines in conjunction with the proposed Penhill Farm turbines will have a cumulative effect on both the designated Llansteffan Castle and the Llansteffan Conservation Area. However, again, due to distance and the relatively small scale of the turbines this effect will also be of *Negligible* magnitude and therefore of *Minor* significance and also temporary for

the lifetime of the turbines.

- 7.7 Inevitably, the Ty Mawr and Trefforis Fawr turbines in conjunction with the proposed Penhill Farm turbines will have a cumulative effect on both on the parts of the Registered Historic Landscapes (RHLs) of the Tywi Valley and the Taf & Tywi Estuary. This cumulative effect will be focused particularly on the Historic Landscape Character Areas (HLCAs) of *Croesyceilog-Cwmffrwd HLCA* (Tywi Valley RHL), *Kidwelly and Llansaint Strip Fields HLCA* (Taf & Tywi Estuary RHL) and the *St. Ishmael HLCA* (Taf & Tywi Estuary RHL).
- 7.8 Given the large scale of the *Croesyceilog-Cwmffrwd HLCA* (Tywi Valley RHL), the predicted cumulative effect on this HLCA from the turbines is considered to be of *Negligible* magnitude and therefore of *Minor* significance and also temporary for the lifetime of the turbines. However, due to the considerably smaller scale of the *Kidwelly and Llansaint Strip Fields HLCA* (Taf & Tywi Estuary RHL) and the *St. Ishmael HLCA* (Taf & Tywi Estuary RHL), the predicted cumulative effect from the turbines is considered to be of *Minor* magnitude and therefore of *Moderate/Minor* significance.
- 7.9 However, as a whole, the indirect cumulative effect on both of these Registered Historic Landscapes is considered to be of *Negligible* magnitude and therefore of *Minor* significance and also temporary for the lifetime of the turbines.
- 7.10 Another development that needs to be considered cumulatively that could potentially also have an indirect effect on the *Croesyceilog-Cwmffrwd HLCA* (Tywi Valley RHL), is the proposed Bryngoch Solar Farm, which is proposed to be positioned approximately 1.04km north-north-west of the proposed Penhill Farm wind turbines and approximately 220m northeast of the operational Trefforis wind turbine. This solar farm is proposed to cover over 102 acres in extent

8 Assessment of Residual Effects

- 8.1 The long-term residual effects of the proposed development are considered to be neutral with regard to direct effects on cultural heritage.
- 8.2 There will be no loss of known cultural heritage assets, due to the position of the proposed turbines, permanent access track, hard-standings, cable trench and electrical box.
- 8.3 Taking into account the known baseline and the archaeological mitigation, the residual direct effect on the archaeological resource is assessed to be of a *No Change* magnitude and therefore of *Negligible* significance. In terms of the residual in-direct effect on all of the assessed designated sites, this will inevitably only be temporary and only lasting the lifetime of the wind turbine. As such, the residual effect is considered to be *Negligible* and temporary, therefore of *Minor* significance.

9 Summary of Effects and Conclusions

9.1 Direct Effects and Conclusions

- 9.2 In summary, the desk based assessment and site visit identified no direct physical effects from the proposal on any known heritage asset during either the construction or the decommissioning phase.

9.3 However, the desk based assessment has shown that there is strong evidence for Bronze Age activity in the area to the north of the application site, with a number of former sites seeming to have had their surface remains ploughed away over the centuries. Given the presence of the Bronze Age Round Barrow only approximately 920m to the north and the strong possibility that the fields to the north were once home to a number of standing stones, there is a moderate possibility that there are buried remains pertaining to this period in and around the area of the proposed development. However, the field in which the proposed turbines are to be constructed has been heavily ploughed over the decades and the chance of any intact features being exposed is considered to be fairly low. However, there is a moderate possibility that finds of this period or other periods may well still become exposed during construction work. Given these considerations, it is advised that any groundwork undertaken for the proposed development i.e. the turbine foundations, hard-standings, the permanent access track and service cable trench, is undertaken under a archaeological watching brief condition.

9.4 Indirect Effects and Conclusions

9.5 In summary, the assessment concluded that none of the undesignated sites of schedulable quality and designated sites (Scheduled Ancient Monuments (SAMs), Listed Buildings (LBs), Registered Parks & Gardens (RPGs), Conservation Areas (CAs), or Registered Historic Landscapes will be significantly indirectly affected by the proposed turbines on land at Penhill Farm. The highest effects predicted were those on the *Pen yr Heol Round Barrow* (SAM CM190), the Historic Landscape Character Areas (HLCAs) of *Kidwelly and Llansaint Strip Fields HLCA* and *St. Ishmael HLCA*, both character areas within the *Taf & Tywi Estuary* Registered Historic Landscape, and the undesignated site of *Cae Gaer Defended Enclosure* (PRN: 1396). The predicted indirect effect on the setting of each of these sites was predicted to be of *Minor* Magnitude and therefore of *Moderate/Minor* significance. A summary table giving the results of the assessment is shown in Table 8.

9.6 With regards to the indirect effect on the Registered Historic Landscapes of the *Tywi Valley* and the *Taf & Tywi Estuary* as a whole, the indirect effect is considered to be of Negligible magnitude and therefore of only *Minor* significance.

9.7 With regard to the potential indirect effect on the Registered Park & Garden of *Llechdwnni*, the assessment has concluded that the proposed turbines at Penhill Farm will not have a significant effect on the essential setting nor the significant views of *Llechdwnni* due to both scale and distance of the proposed turbines from the gardens. As well as this, the significant views of *Llechdwnni* are focused primarily along the course of the Gwendraeth Fach Valley and as such the proposed turbines will only become distant peripheral components in the wider landscape to the west-south-west.

9.8 With regards to the indirect effect on the Registered Historic Landscapes of the *Tywi Valley* and the *Taf & Tywi Estuary* as a whole, the indirect effect is considered to be of Negligible magnitude and therefore of only *Minor* significance.

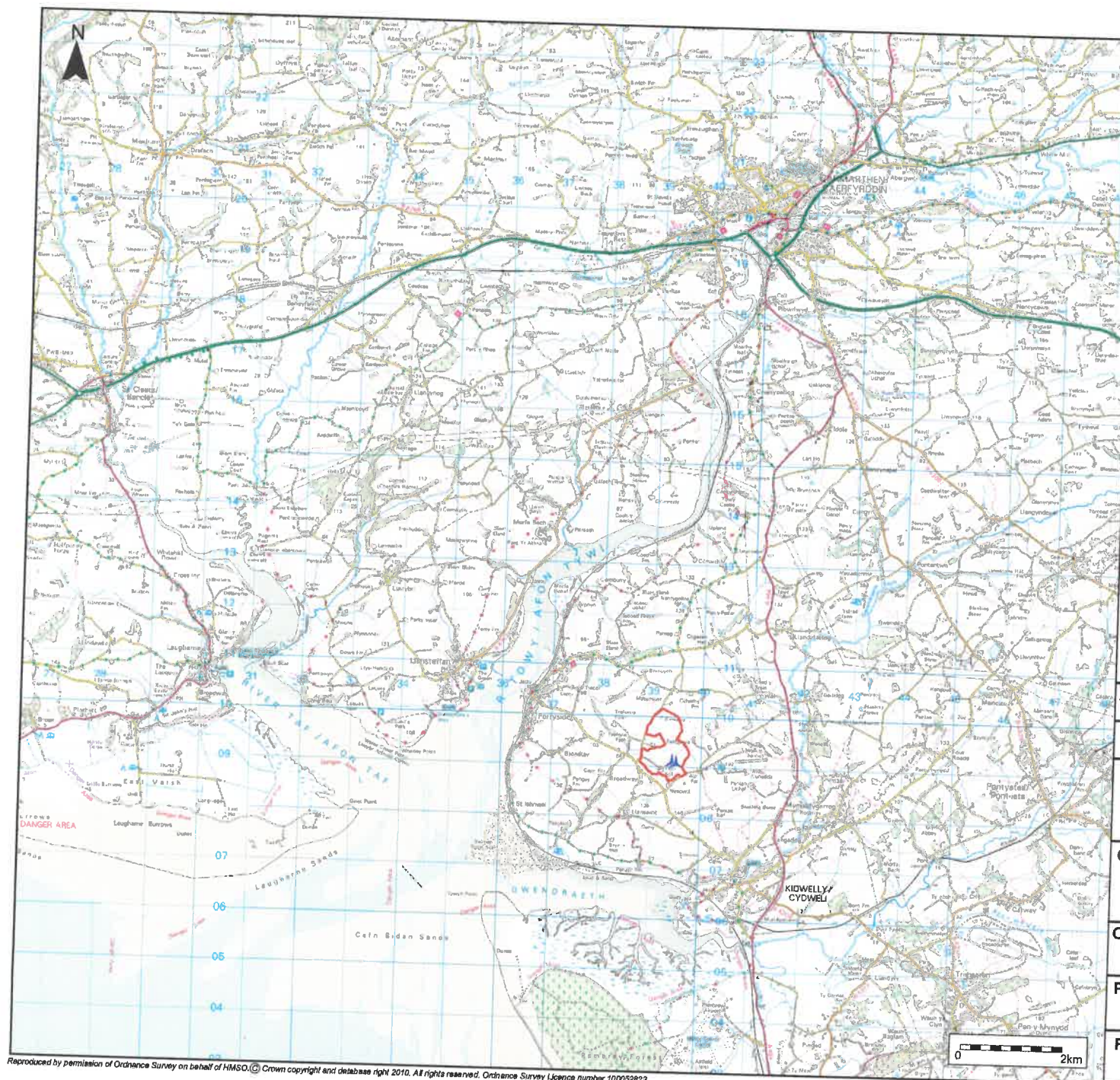
- 9.9 With regards to potential cumulative effects, the assessment has predicted that no designated or undesignated heritage assets will be significantly affected by the proposed turbines in conjunction with other cumulative turbines. The assessment predicted that the highest cumulative effect will occur on the *Kidwelly and Llansaint Strip Fields HLCA* (Taf & Tywi Estuary RHL) and the *St. Ishmael HLCA* (Taf & Tywi Estuary RHL), which will be of *Minor* magnitude and therefore of *Moderate/Minor* significance.
- 9.10 However, as a whole, the indirect cumulative effect on both of these Registered Historic Landscapes was assessed to be of *Negligible* magnitude and therefore of *Minor* significance and also temporary for the lifetime of the turbines.

10 References

- Ref 1 Welsh Office Circular 60/96 (Planning and the Historic Environment: Archaeology)
- Ref 2 *Design Manual for Roads and Bridges* (DMRB, Volume 11, Section 3, part 2 HA 208/07)
- Ref 3 *Planning Policy Statement 5 (PPS5)*, March 2010, *Planning for the Historic Environment: Historic Environment Planning Practice Guide (2010)*
- Ref 4 Colcutt, S 1999, *The setting of Cultural Heritage Features*.
- Ref 5 Carmarthenshire LANDMAP Historic Landscape
- Ref 6 *The Setting of Heritage Assets (2012)*. English Heritage

APPENDIX I:

Figures



Legend

- Study Area
- Proposed turbine locations

Approximate Scale (@ A4): 1:60,000

Date: November 2015

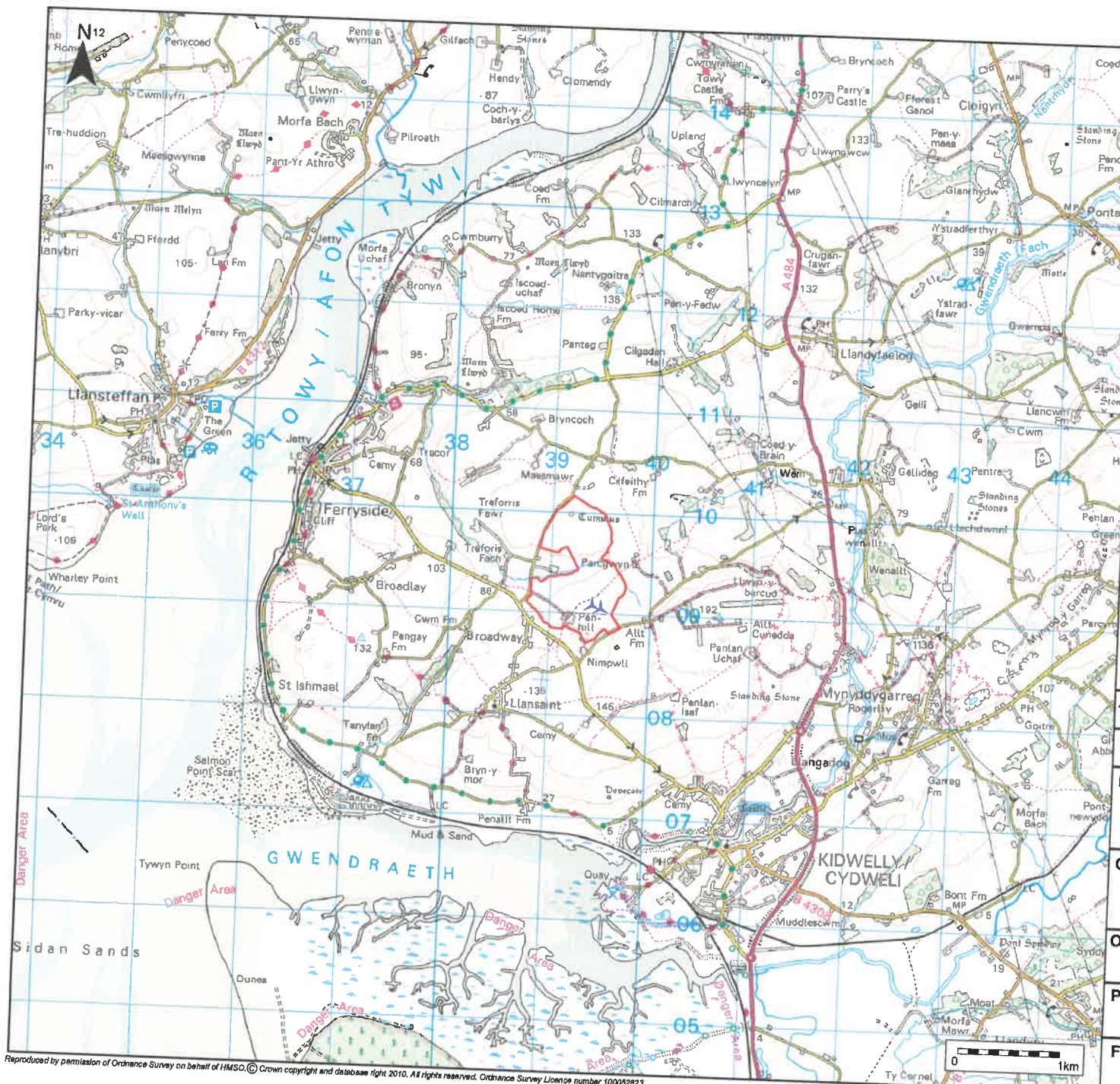
Prepared by:
Heritage
Recording Services Wales

Client:


On behalf of:
Norvento Wind Energy UK Ltd.

Project Title:
Penhill Farm Wind Turbines

Figure 1.
Site Location



Legend

- Study Area
- Proposed turbine locations

Approximate Scale (@ A4): 1:40,000

Date: November 2015

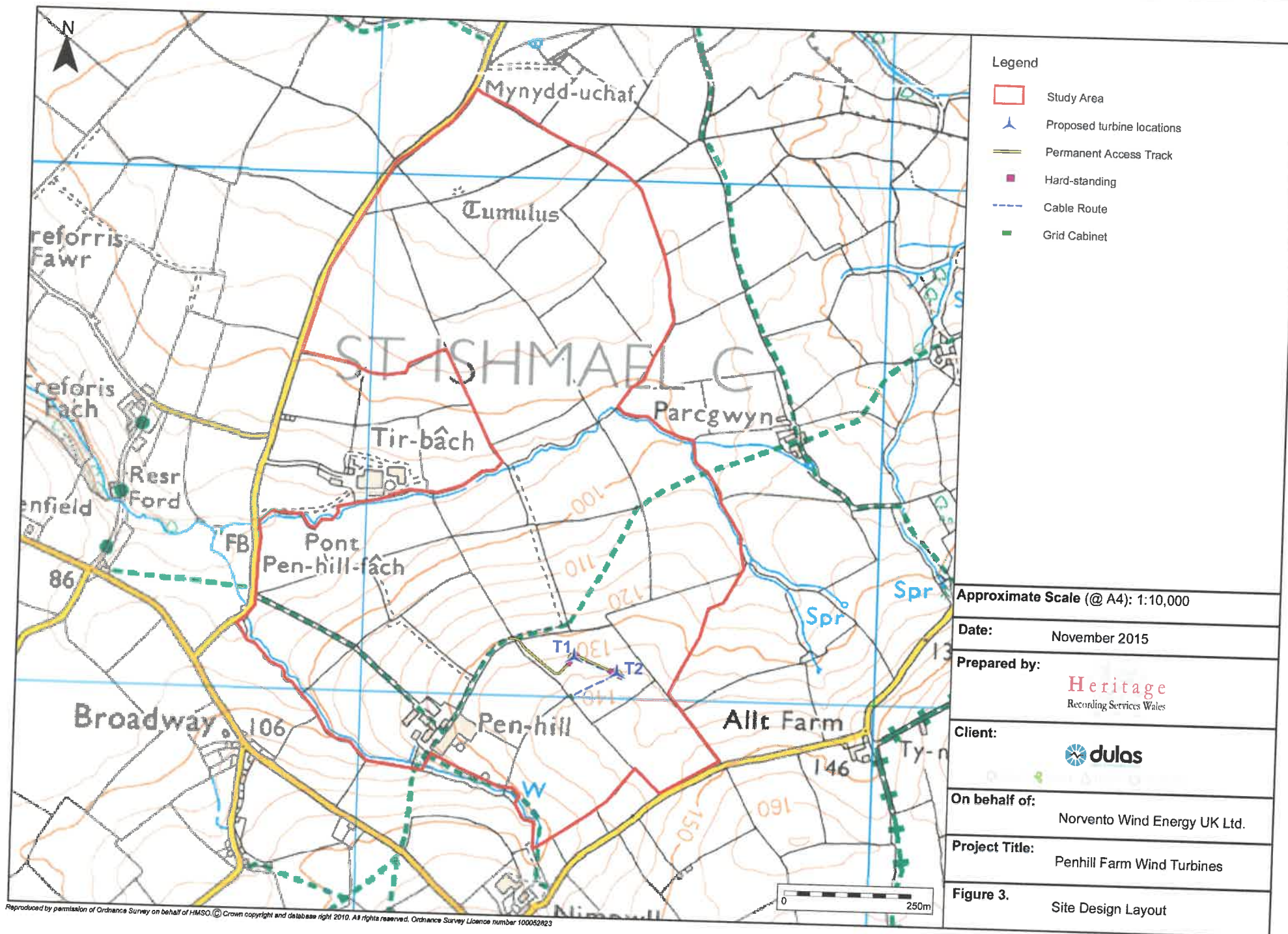
Prepared by:
Heritage
Recording Services Wales

Client:
dulas

On behalf of:
Norvento Wind Energy UK Ltd.

Project Title:
Penhll Farm Wind Turbines

Figure 2.
Site Location






Legend

- Study Area
- ✈ Proposed turbine locations
- Permanent Access Track
- Hard-standing
- Cable Route
- Grid Cabinet

Approximate Scale (@ A4): 1:6,000

Date: November 2015

Prepared by:


Client:


On behalf of:
 Norvento Wind Energy UK Ltd.

Project Title:
 Penhill Farm Wind Turbines

Figure 4. OS Aerial Photo (2014) in conjunction with proposed development.




Legend

Study Area

Approximate Scale (@ A4): 1:30,000

Date: November 2015

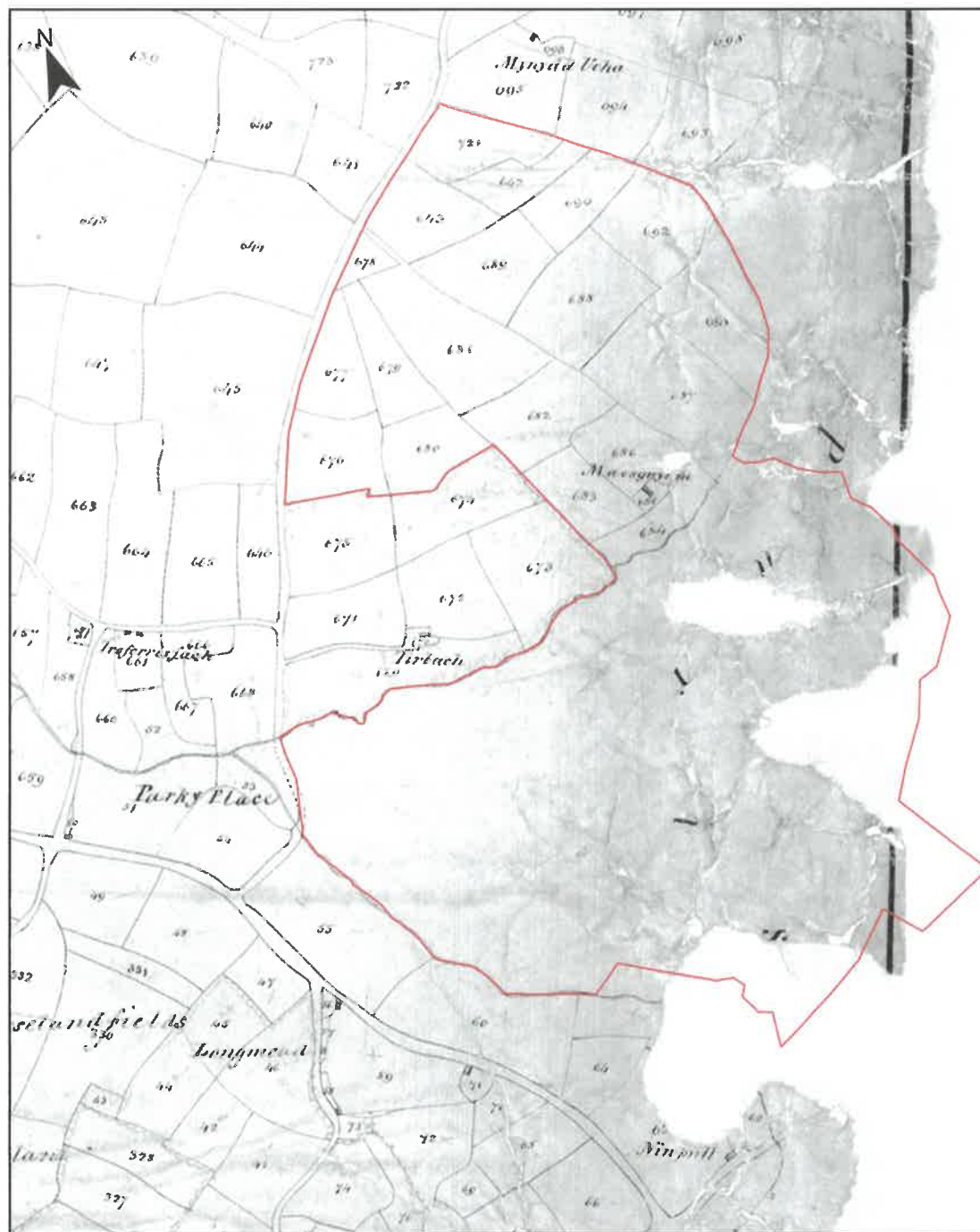
Prepared by:


Client:


On behalf of:
 Norvento Wind Energy UK Ltd.

Project Title:
 Penhill Farm Wind Turbines

Figure 5. OS Surveyors Drawing (1830)



Legend

Study Area

Approximate Scale (@ A4): 1:8,000

Date: November 2015

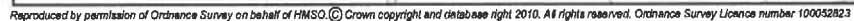
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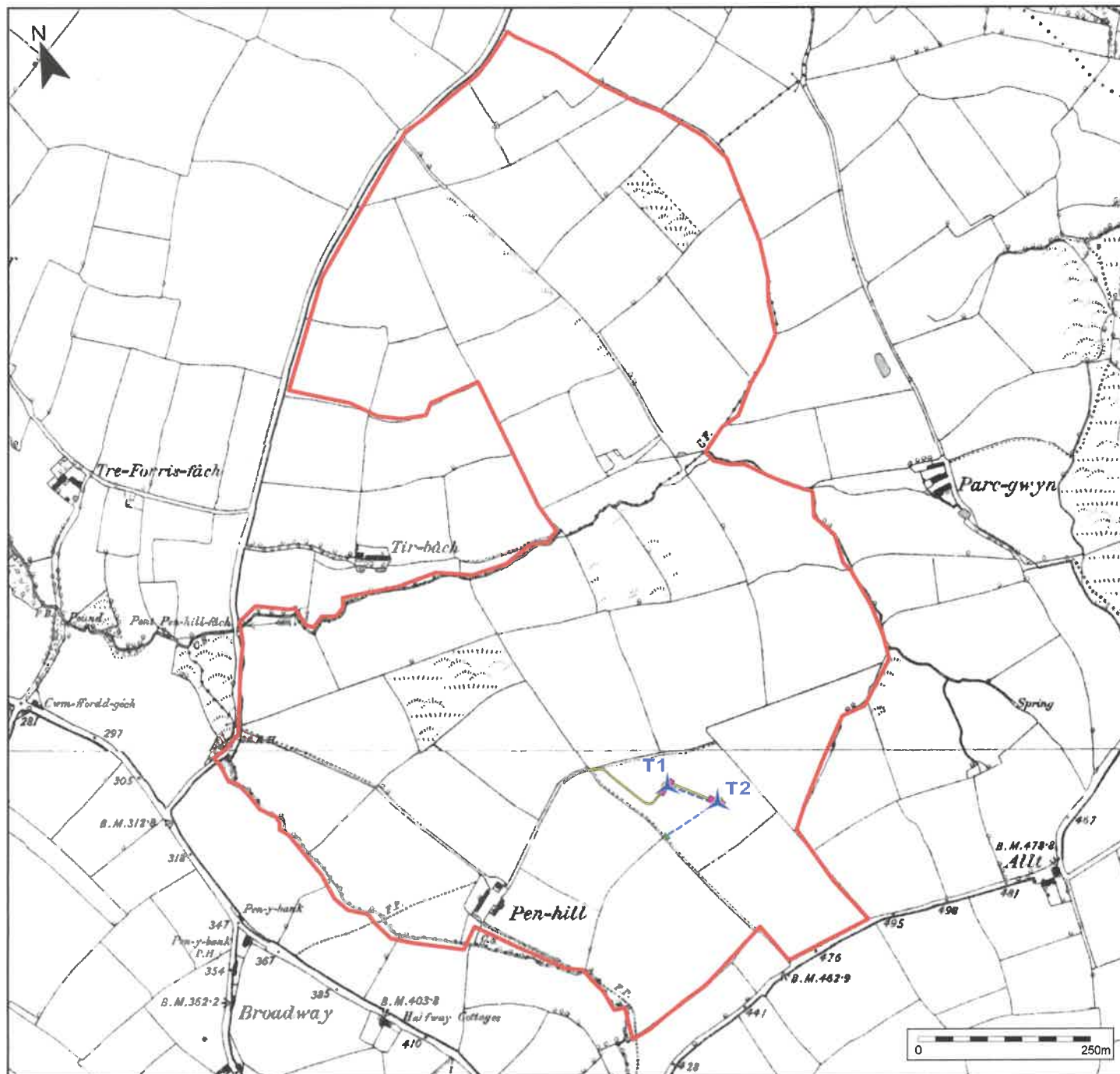

Client:


On behalf of:
 Norvento Wind Energy UK Ltd.

Project Title:
 Penhill Farm Wind Turbines

Figure 6. Tithe Map for St. Ishmael Parish (1840)





Legend

- Study Area
- ▲ Proposed turbine locations
- Permanent Access Track
- Hard-standing
- Cable Route
- Grid Cabinet

Approximate Scale (@ A4): 1:6,000

Date: November 2015

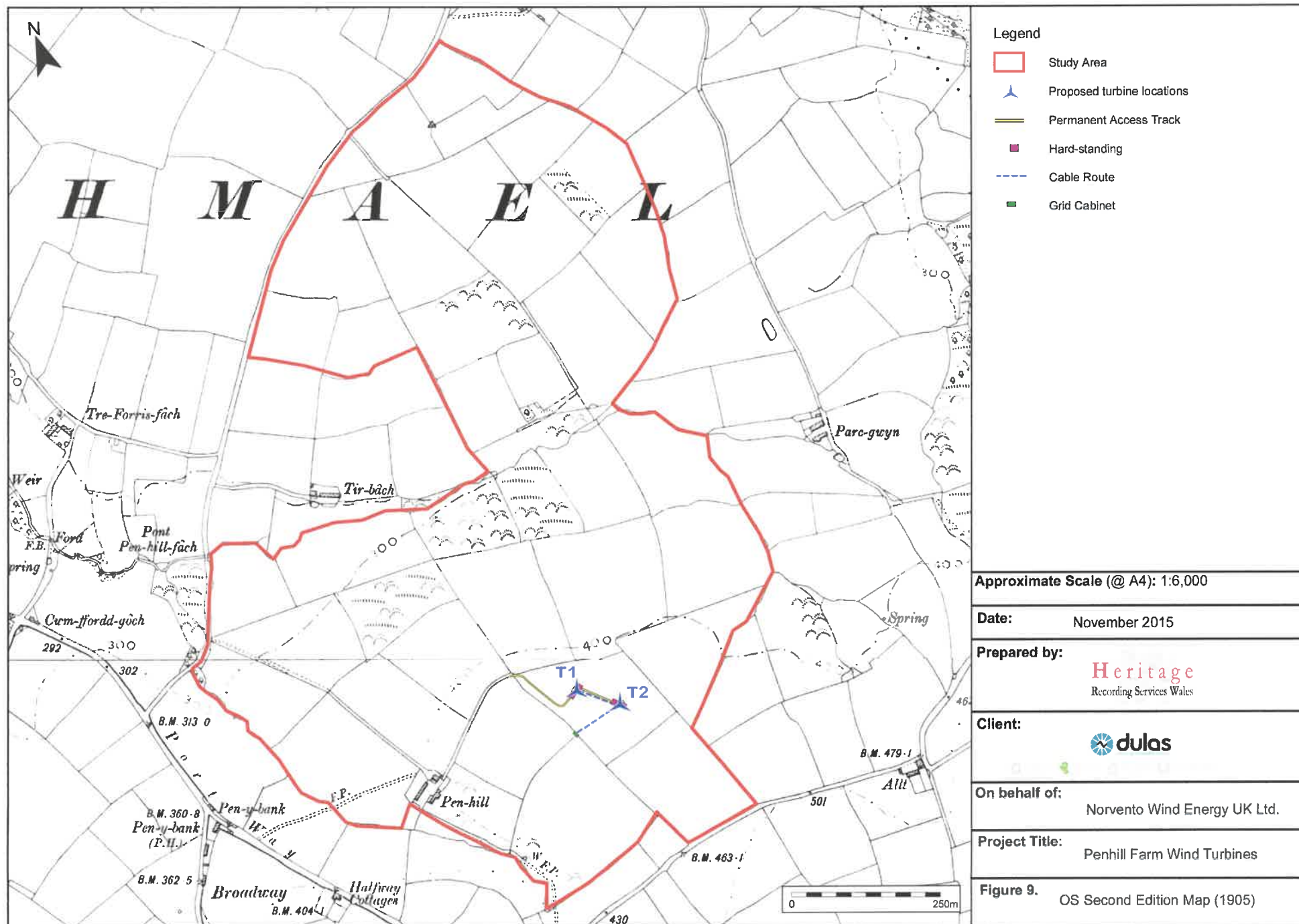
Prepared by:
Heritage
 Recording Services Wales

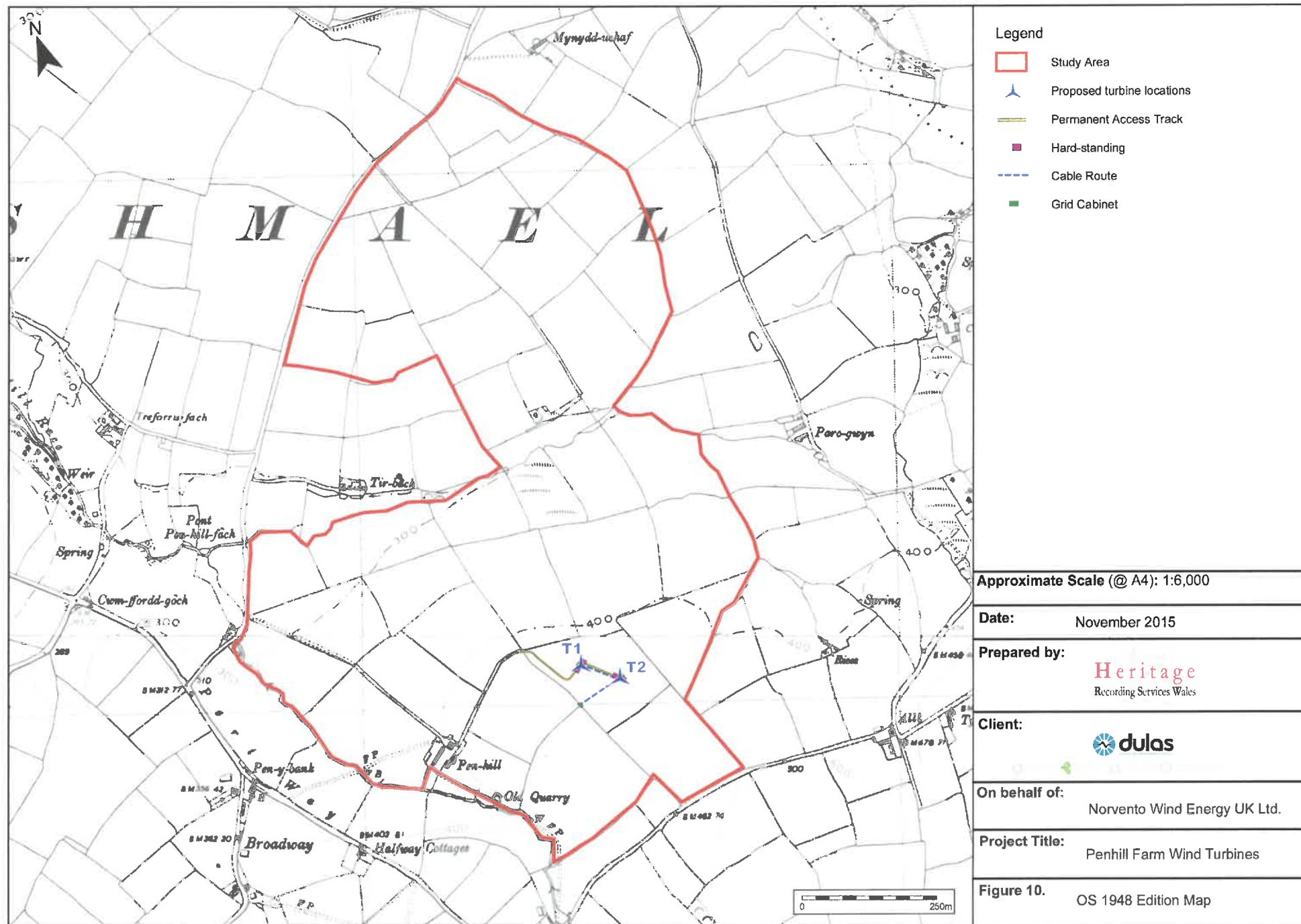
Client:
dulas

On behalf of:
 Norvento Wind Energy UK Ltd.

Project Title:
 Penhill Farm Wind Turbines



Figure 8.
 OS First Edition Map (1887)







Legend

-  Study Area
-  Proposed turbine locations

Approximate Scale (@ A4): 1:10,000

Date: November 2015

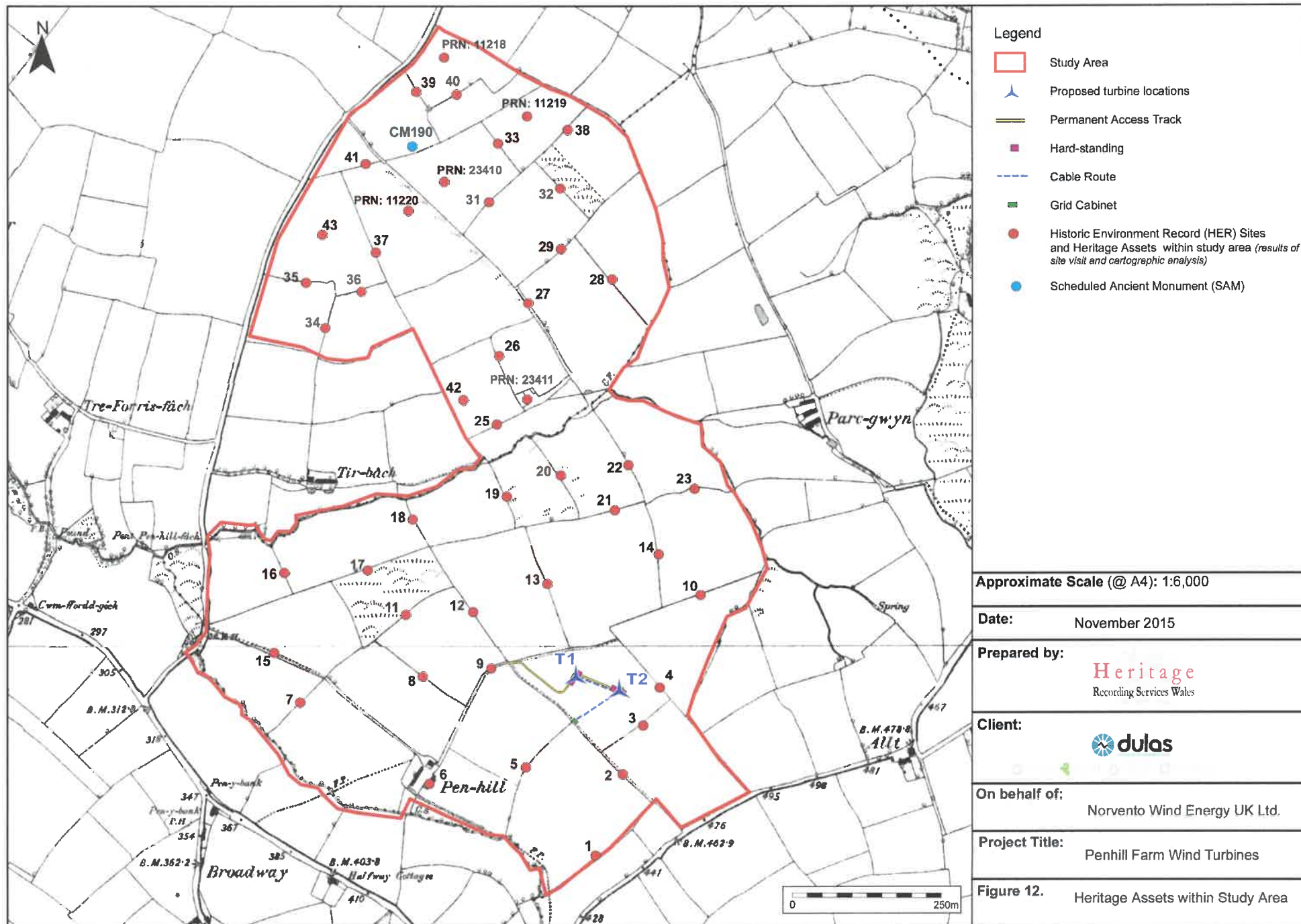
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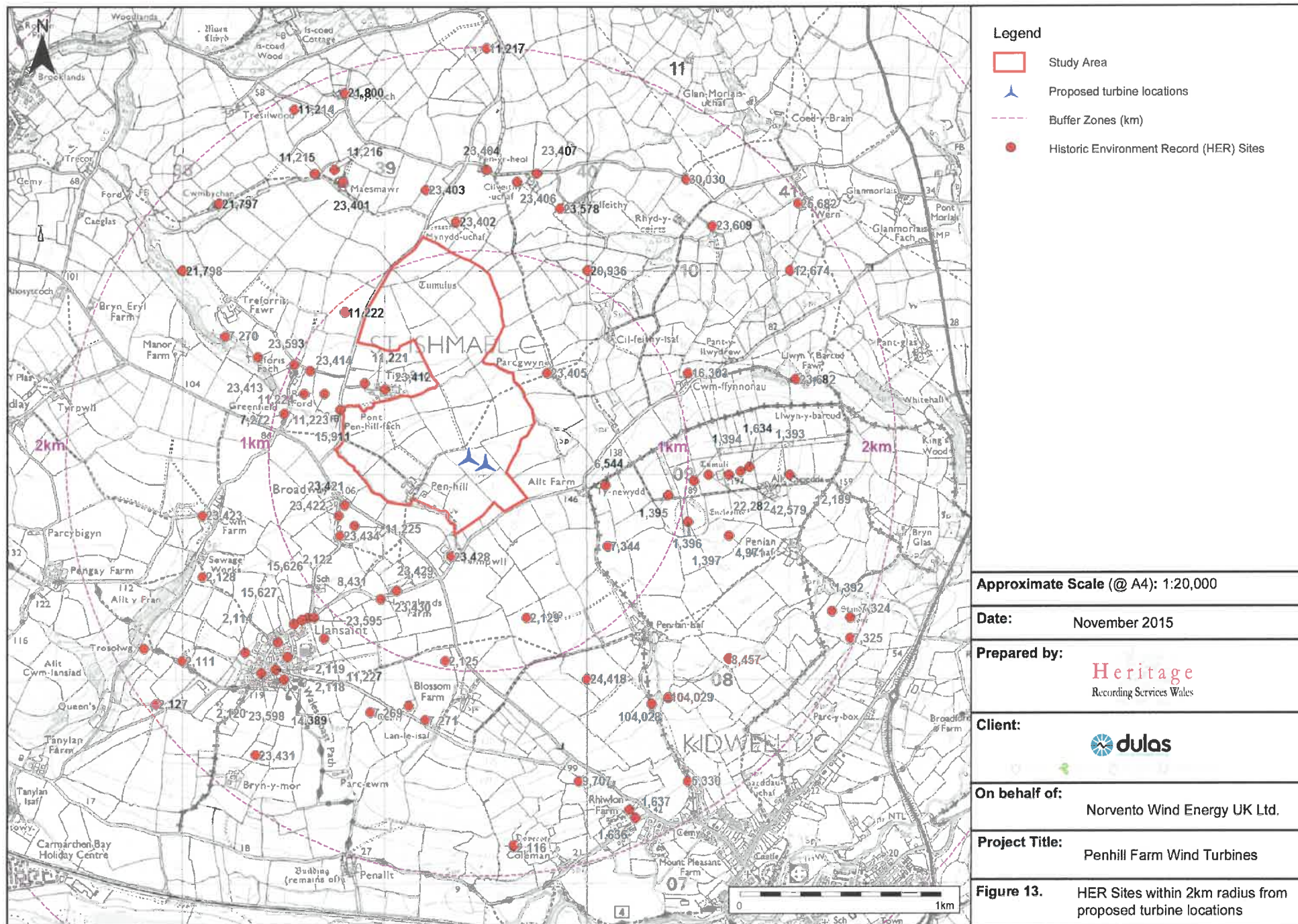

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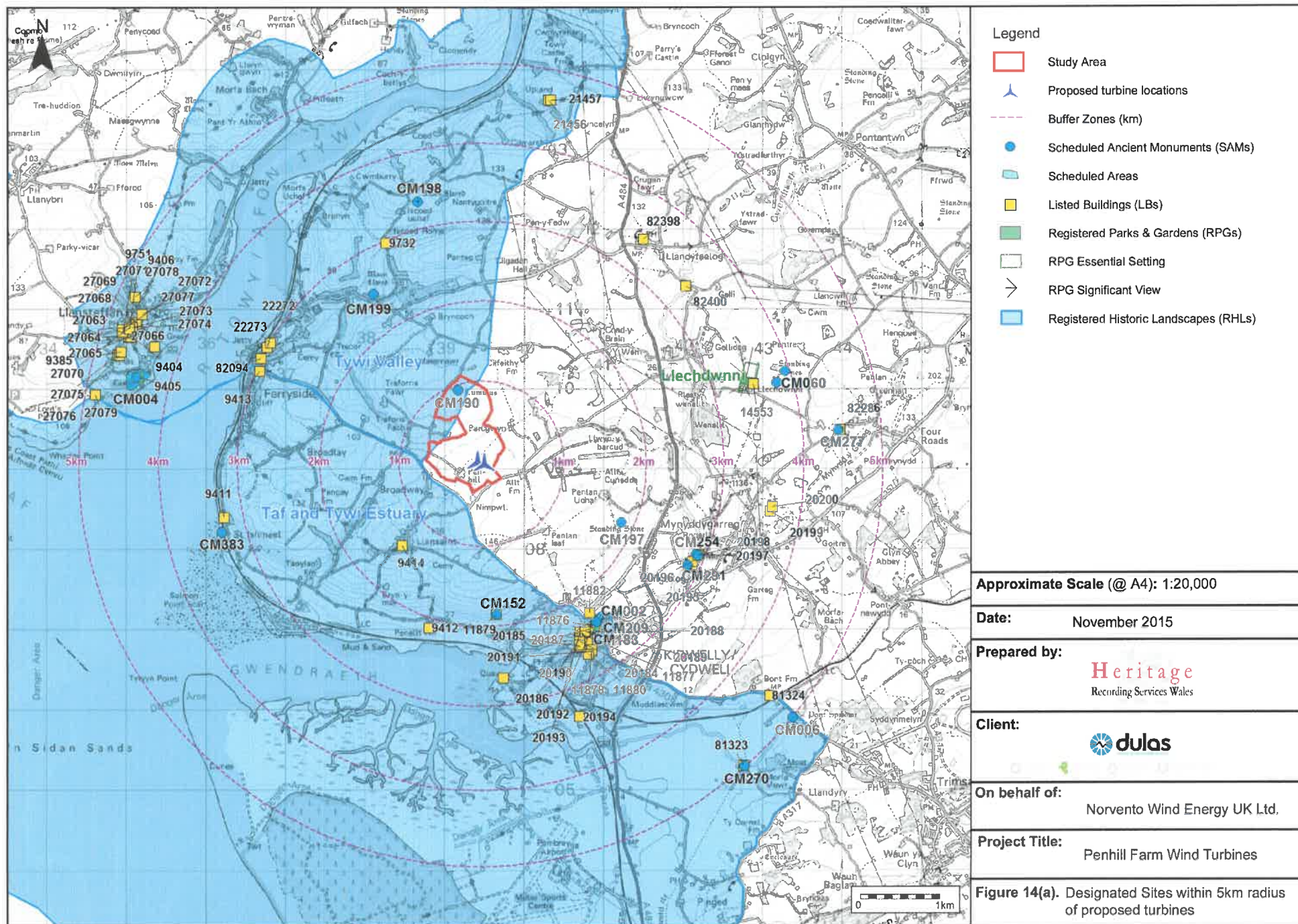

On behalf of: Norvento Wind Energy UK Ltd.

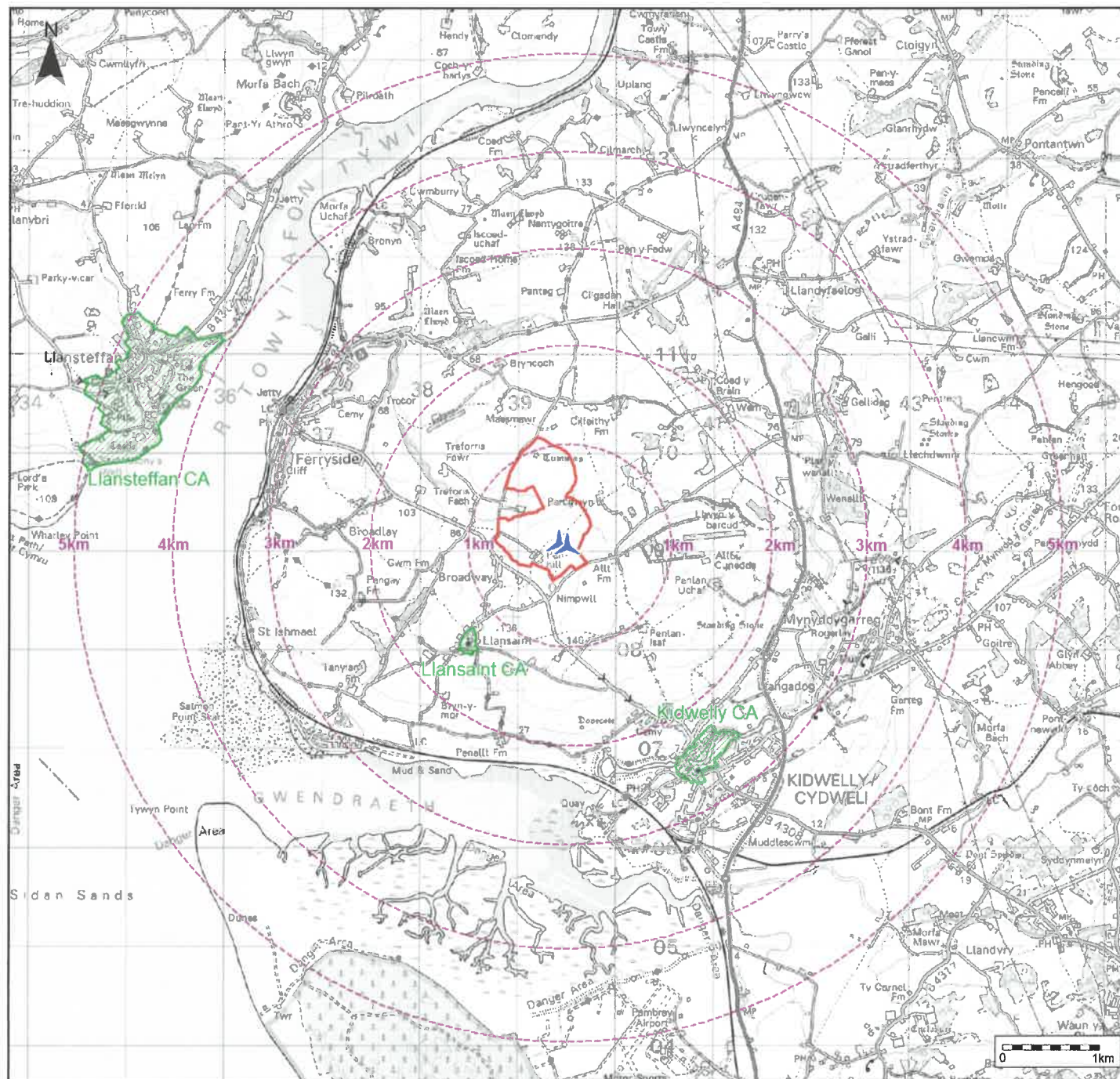
Project Title: Penhill Farm Wind Turbines

Figure 11. RAF Vertical Aerial Photo (1946)









Legend

- Study Area
- ▲ Proposed turbine locations
- Buffer Zones (km)
- Conservation Areas (CAs)

Approximate Scale (@ A4): 1:40,000

Date: November 2015

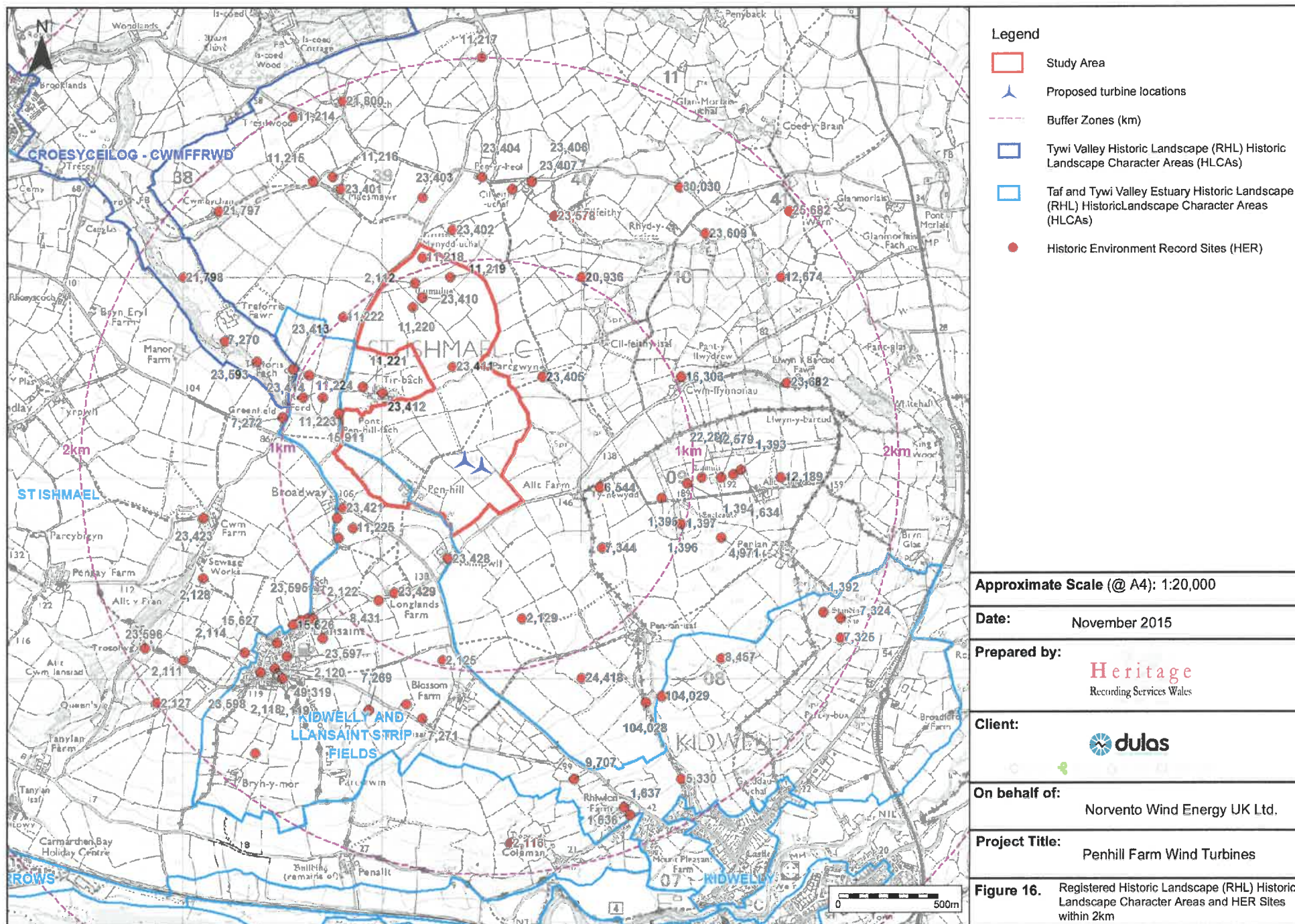
Prepared by:
Heritage
 Recording Services Wales

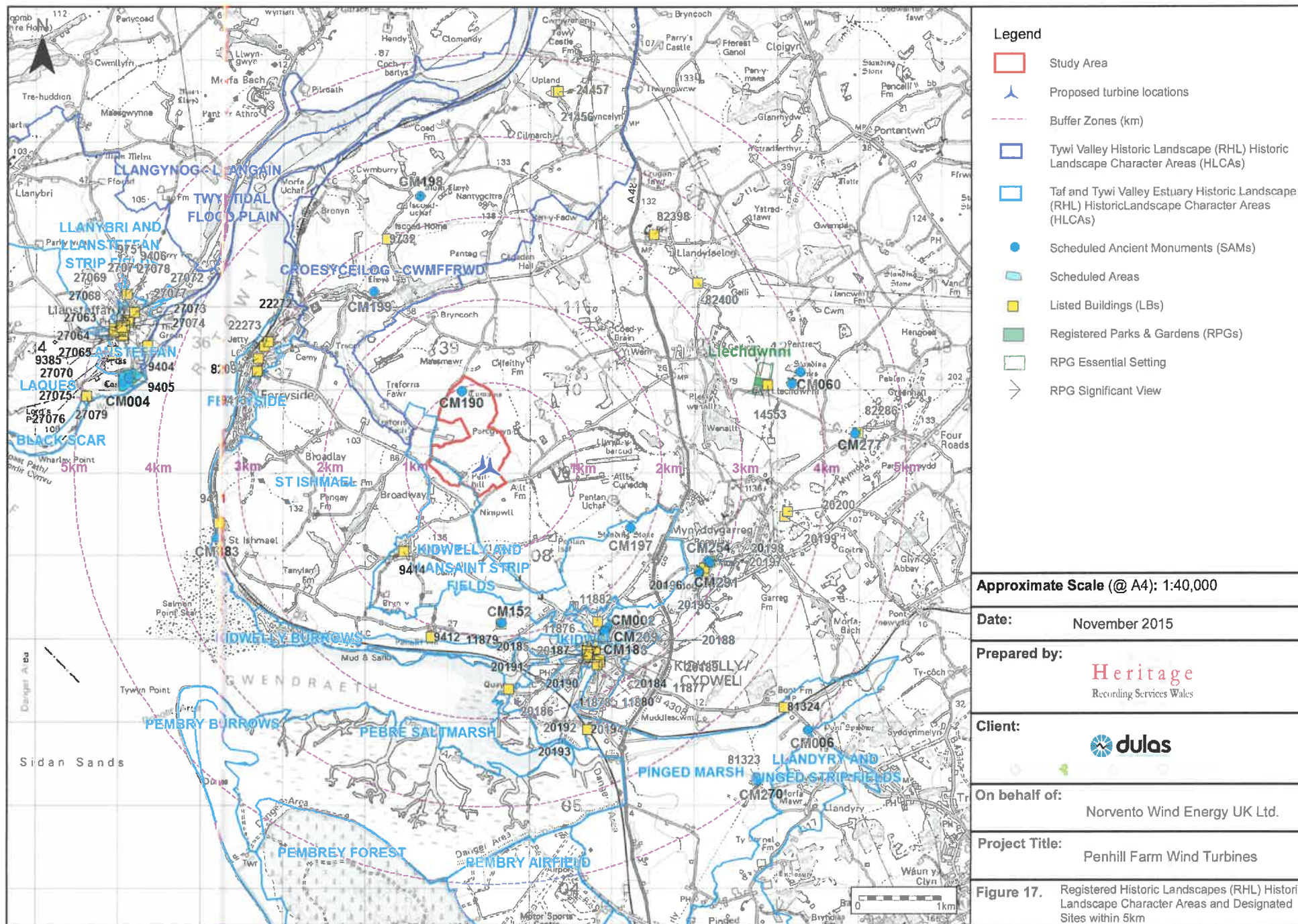
Client:
dulas

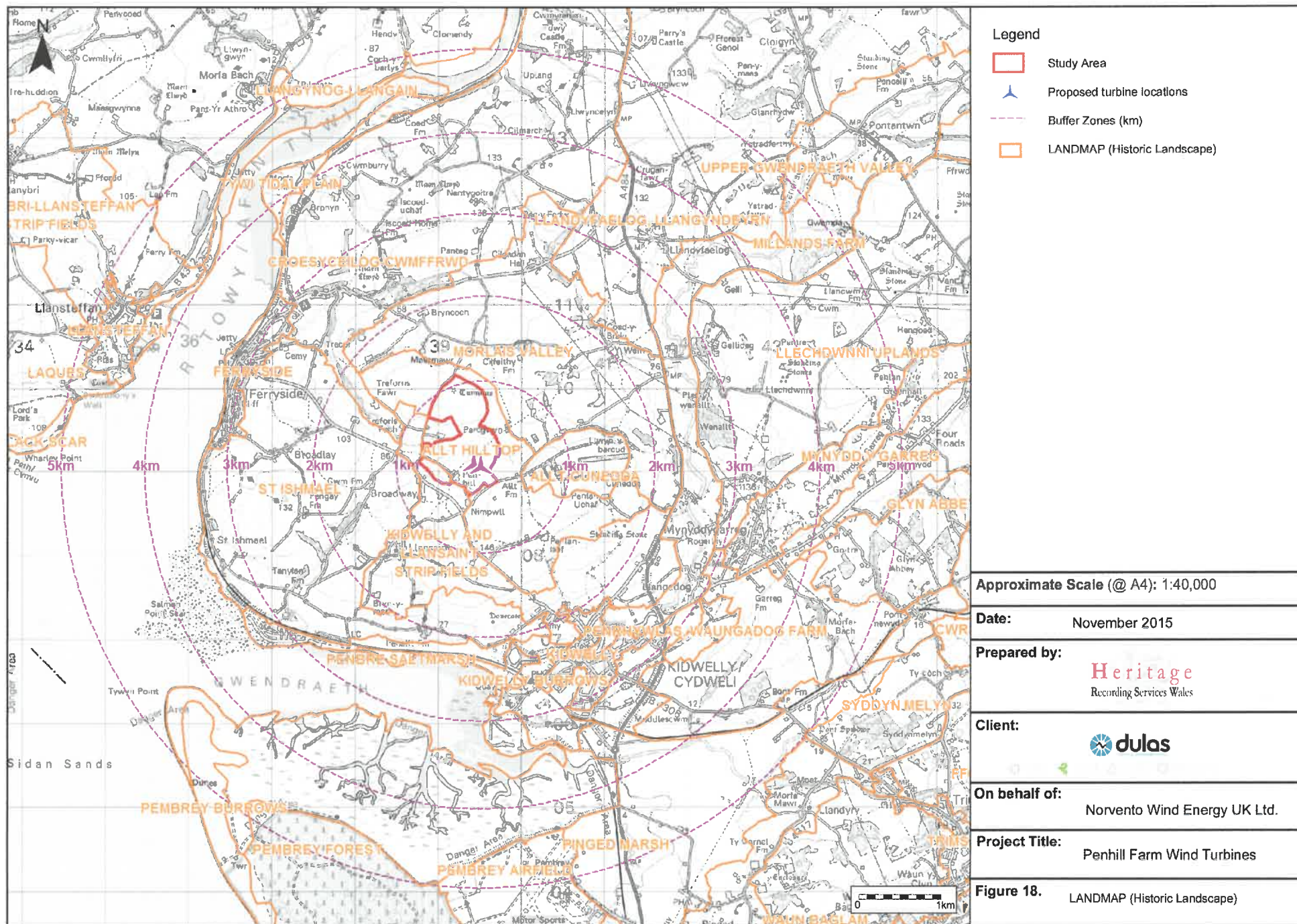
On behalf of:
 Norvento Wind Energy UK Ltd.

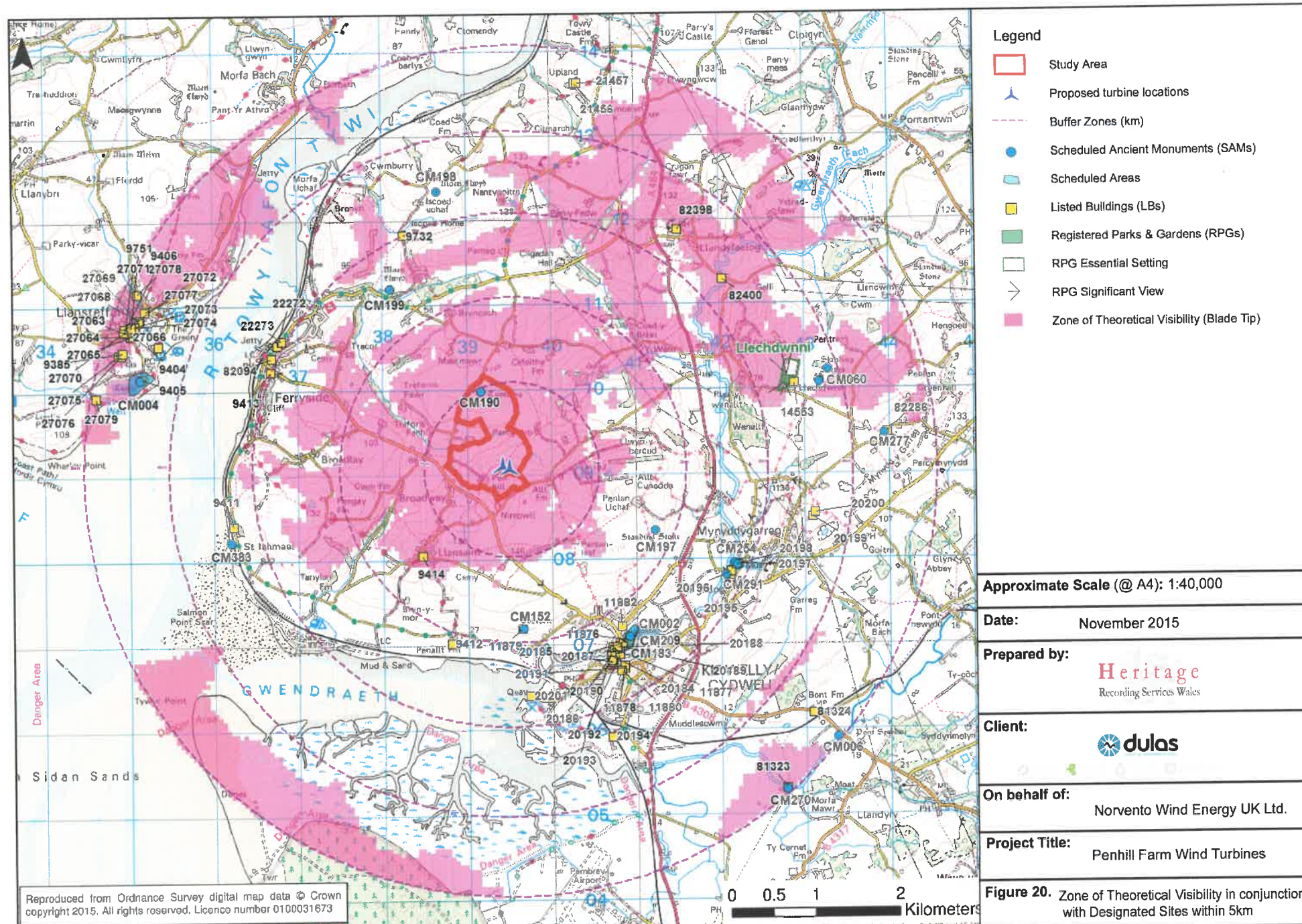
Project Title:
 Penhill Farm Wind Turbines

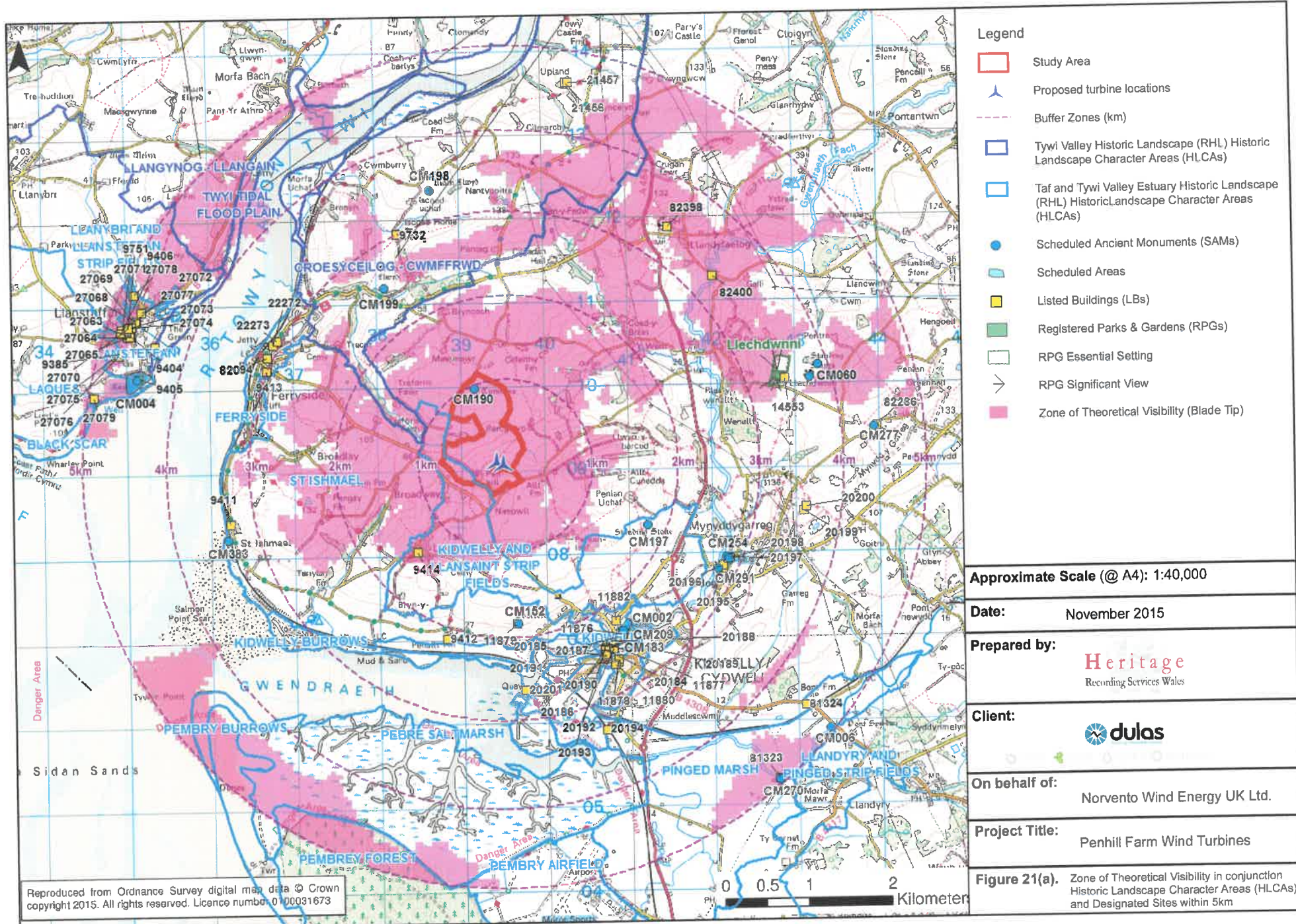
Figure 14(b). Conservation Areas within 5km radius of proposed turbines

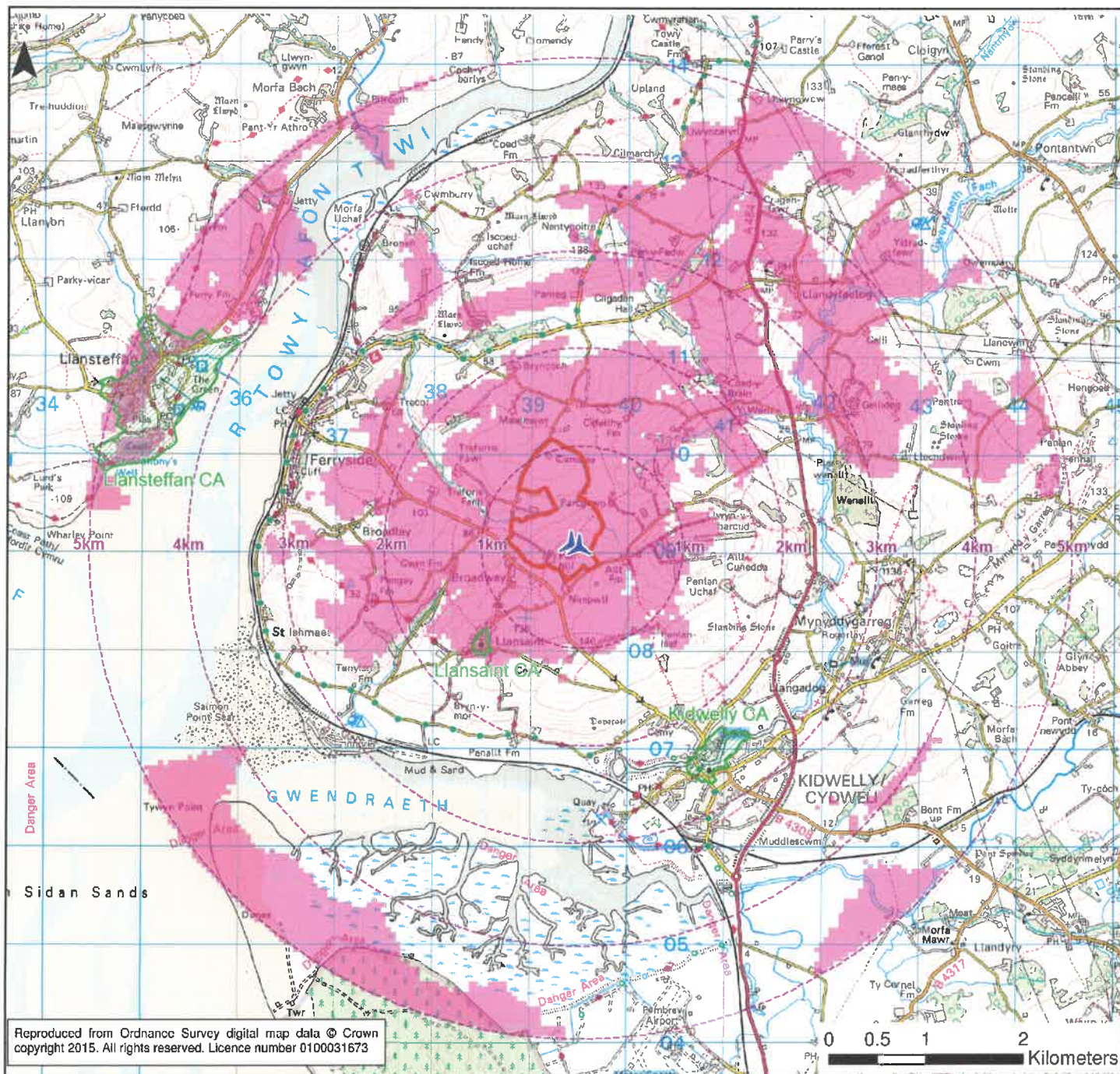












Legend

- Study Area
- ✦ Proposed turbine locations
- Buffer Zones (km)
- Conservation Areas (CAs)
- Zone of Theoretical Visibility (ZTV)

Approximate Scale (@ A4): 1:40,000

Date: November 2015

Prepared by:
Heritage
Recording Services Wales

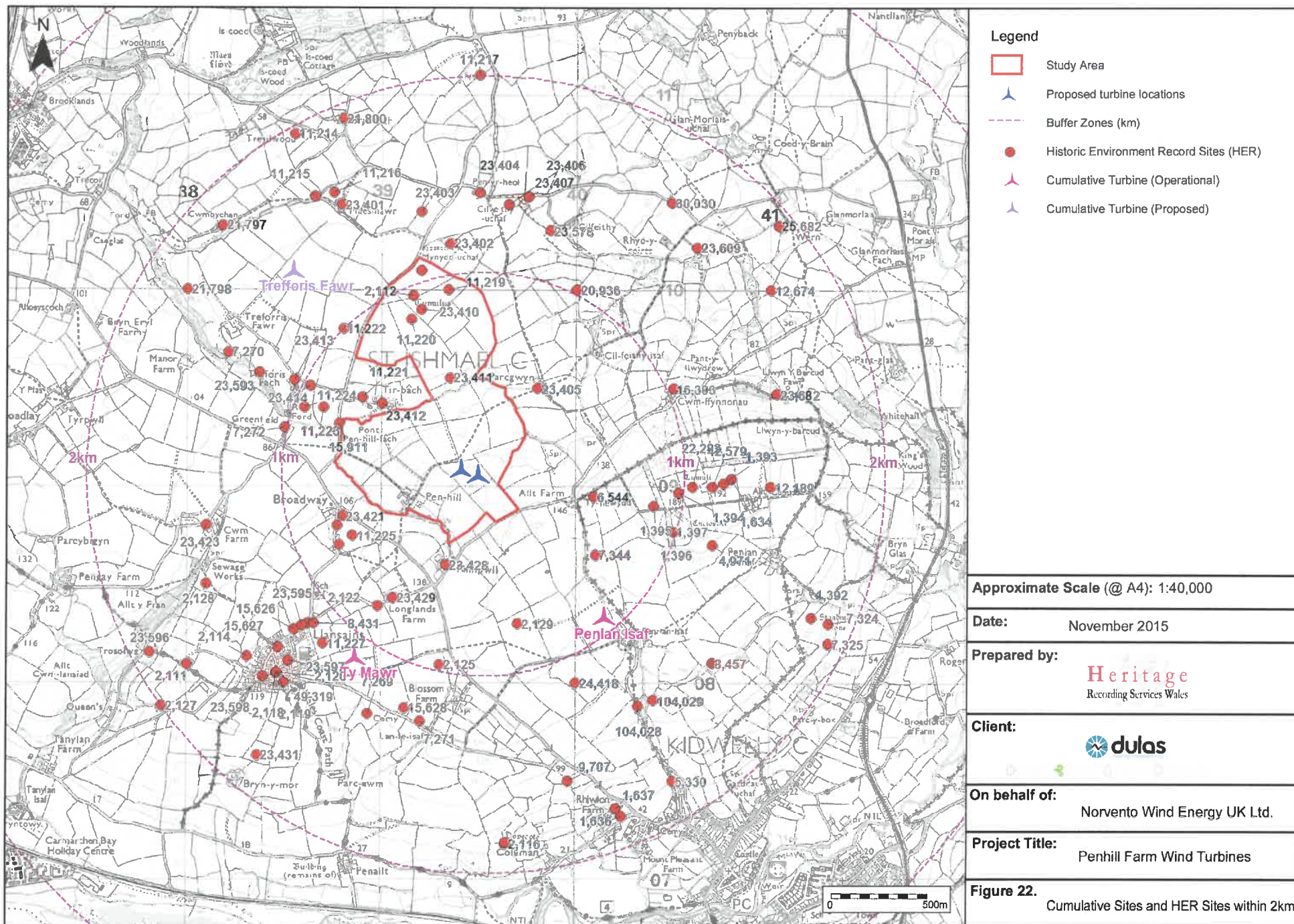
Client:
dulas

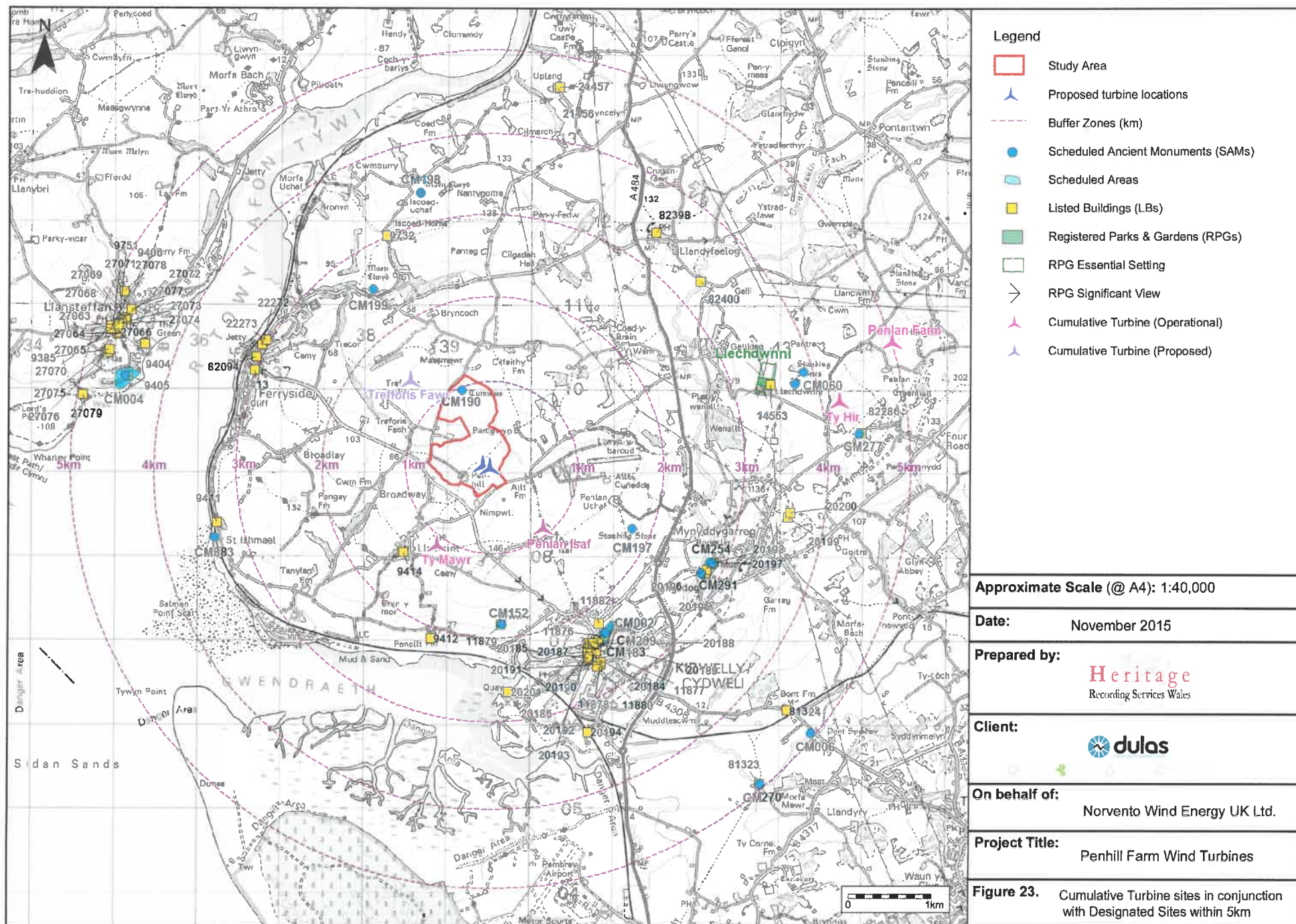
On behalf of:
Norvento Wind Energy UK Ltd.

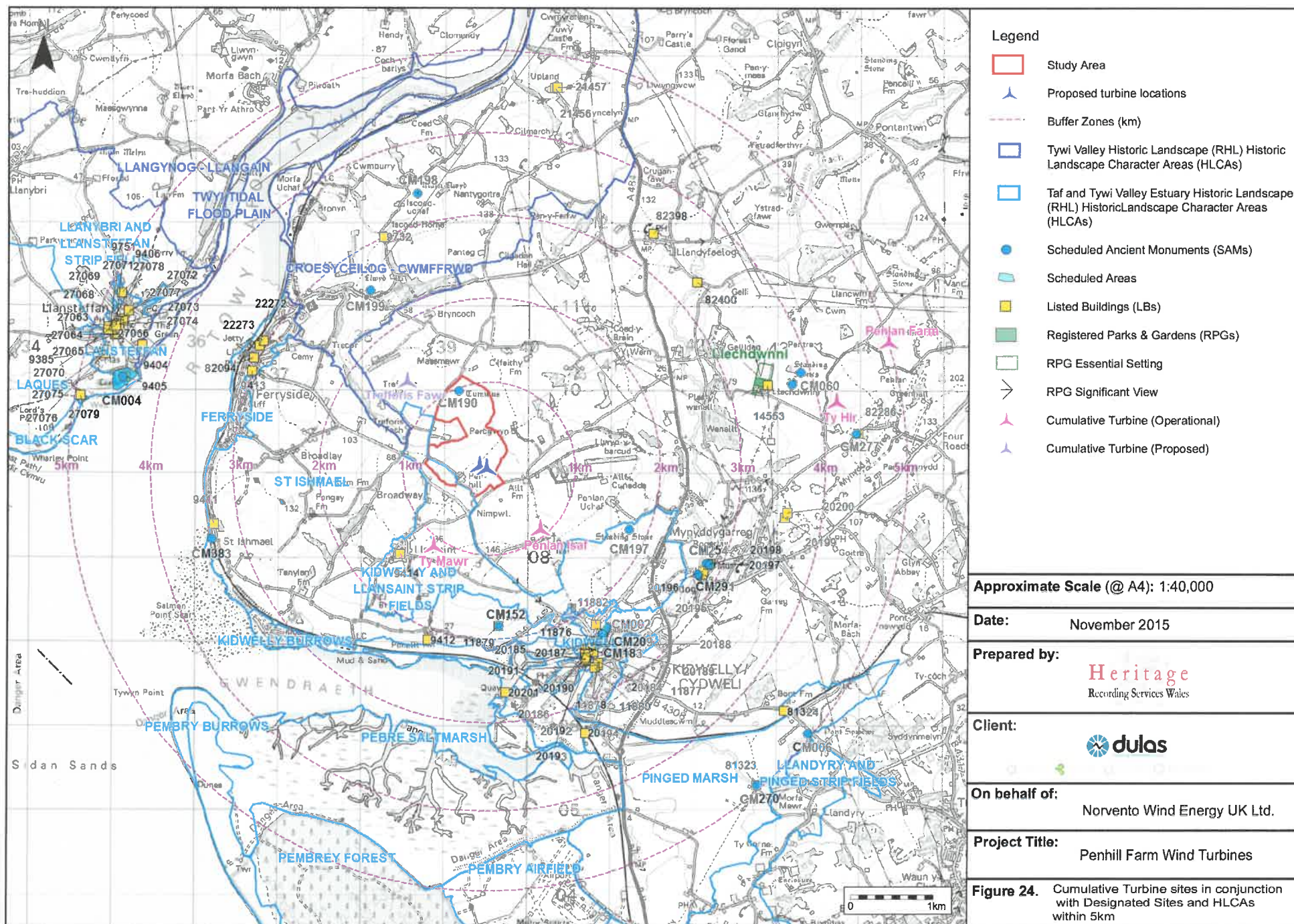
Project Title:
Penhill Farm Wind Turbines

Figure 21(b). ZTV Map and Conservation Areas within 5km radius of proposed turbines

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APPENDIX II:

Photo plates

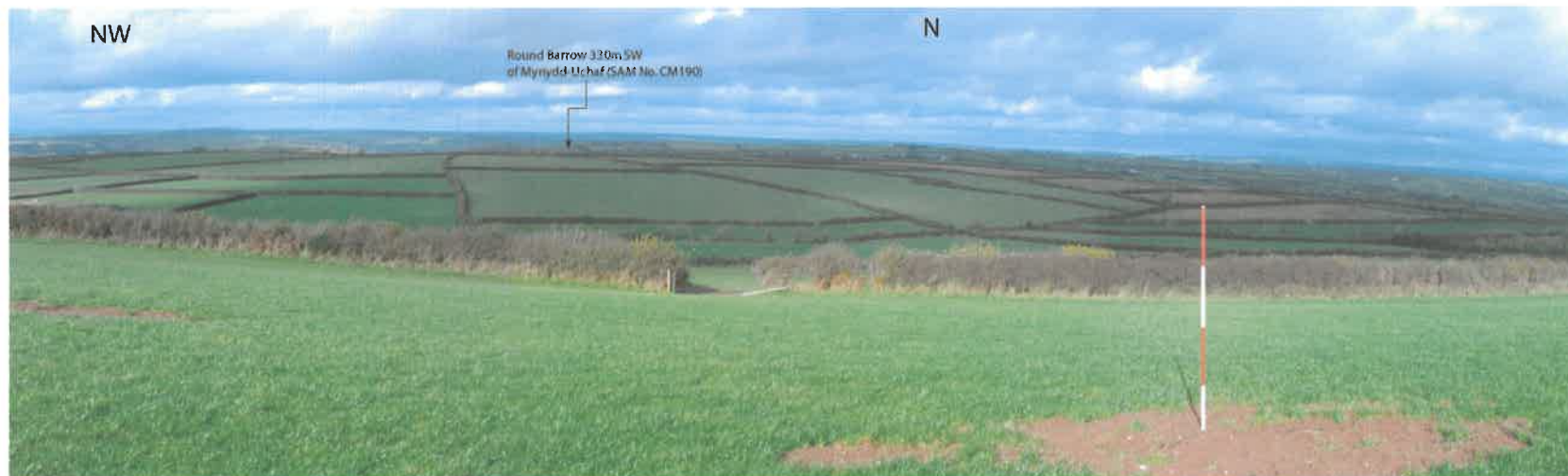


Plate 1. Spliced view from area of Turbine 1. Position of SAM No. CM190 shown. Looking northeast to north.



Plate 2. Spliced view from proposed Turbine 1 location. Looking North to Northeast.

Project Title:	Penhill Farm Wind Turbines	Photo Plates No. 1 and 2	
Date taken:	November 2015		
Photographer:	Richard Scott Jones		



Plate 3. Spliced view from proposed Turbine 1 location. Looking Northeast to East.



Plate 4. Spliced view from proposed Turbine 1 location. Looking Southeast to South.

Project Title:	Penhill Farm Wind Turbines	Photo Plates No. 3 and 4	
Date taken:	November 2015		
Photographer:	Richard Scott Jones		



Plate 5. Spliced view from proposed Turbine 1 location. South to West.



Plate 6. Spliced view from proposed Turbine 1 location. Position of Llansteffan Castle (SAM No. CM004) shown. Looking Southwest to West.

Project Title:	Penhill Farm Wind Turbines	Photo Plates No. 5 and 6	Heritage Recording Services Wales
Date taken:	November 2015		
Photographer:	Richard Scott Jones		



Plate 7. Spliced view from proposed Turbine 1 location. Position of Llansteffan Castle (SAM No. CM004) shown. Looking West to Northwest.



Plate 8. Spliced view from proposed Turbine 2 location. Looking North to Northeast.

Project Title:	Penhill Farm Wind Turbines	Photo Plates No. 7 and 8	
Date taken:	November 2015		
Photographer:	Richard Scott Jones		



Plate 9. Spliced view from proposed Turbine 2 location. Looking Northeast to East.



Plate 10. Spliced view from proposed Turbine 2 location. Looking Southeast to South

Project Title:	Penhill Farm Wind Turbines	Photo Plate No's. 9 and 10	
Date taken:	November 2015		
Photographer:	Richard Scott Jones		



Plate 11. Spliced view from proposed Turbine 2 location. Looking South to Southwest..



Plate 12. Spliced view from proposed Turbine 2 location. Looking Southwest to West with position of Llansteffan Castle (SAM No. CM004) shown.

Project Title: Penhill Farm Wind Turbines

Date taken: November 2015

Photographer: Richard Scott Jones

Photo Plate No's. 11 and 12

Heritage
Recording Services Wales



Plate 13. Spliced view from proposed Turbine 2 location. Looking West to Northwest with position of Llansteffan Castle (SAM No. CM004) shown.



Plate 14. Spliced view of field where proposed turbines are to be positioned. Looking eastwards from access track entrance.

Project Title: Penhill Farm Wind Turbines

Date taken: November 2015

Photographer: Richard Scott Jones

Photo Plate No's. 13 and 14

Heritage
Recording Services Wales



Plate 15. View of access track entrance. Looking westwards.



Plate 16. View of access primary agricultural access track. Looking NE.

Project Title:	Penhill Farm Wind Turbines	Photo Plate No's. 15 and 16	
Date taken:	November 2015		
Photographer:	Richard Scott Jones		



Plate 17. View eastwards across Taf estuary from viewing area of Llansteffan Castle. Position of proposed Penhill Turbine shown.

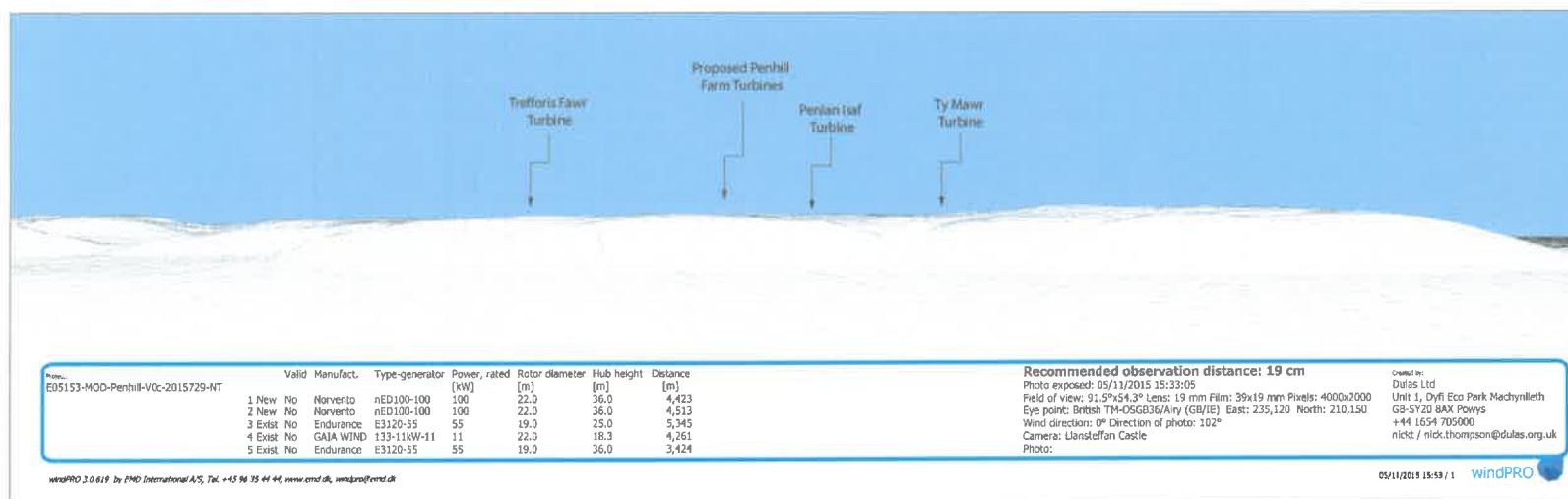


Plate 18. Generated Wireframe view of predicted visibility of proposed Penhill Farm turbines and cumulative turbines from viewing area at NGR: SN 35110 10140 (Llansteffan Castle).

Project Title:	Penhill Farm Wind Turbines	Photo Plate No's. 17 and 18	
Date taken:	November 2015		
Photographer:	Richard Scott Jones		

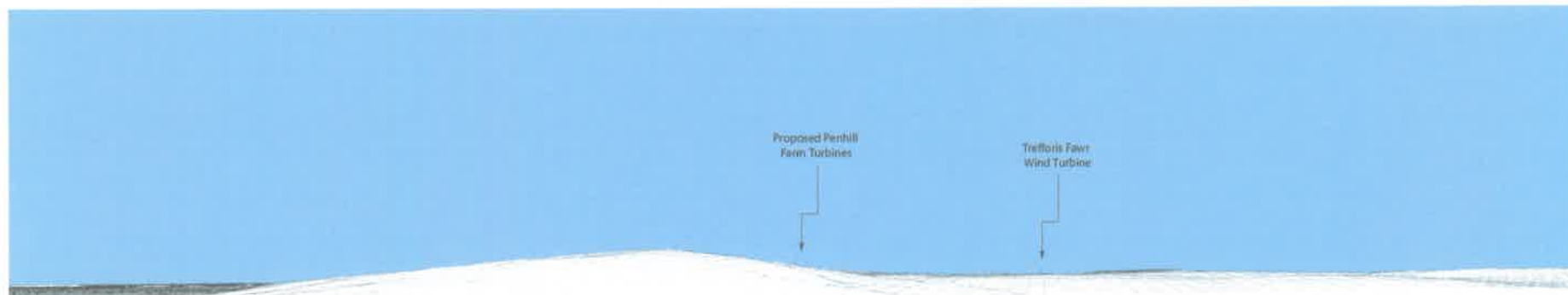


Plate 19. View of remains of Pen yr Heol Round Barrow 330m SW of Mynydd-Uchaf (SAM No. CM190). Looking southeast toward round barrows on top of Allt Cunedda.



Plate 20. View south from top of Pen yr Heol Round Barrow 330m SW of Mynydd-Uchaf (SAM No. CM190), looking toward proposed turbine locations.

Project Title:	Penhill Farm Wind Turbines	Photo Plate No's. 19 and 20	
Date taken:	November 2015		
Photographer:	Richard Scott Jones		



Project:		Valid	Manufact.	Type-generator	Power, rated [kW]	Rotor diameter [m]	Hub height [m]	Distance [m]
E05153-MCD-Penhill-V0D-20151105-NT								
	1 New	No	Norvento	nED100-100	100	22.0	36.0	3,491
	2 New	No	Norvento	nED100-100	100	22.0	36.0	3,418
	3 Exist	No	Endurance	E3120-55	55	19.0	25.0	3,150
	4 Exist	No	GAIA WIND	133-11kW-11	11	22.0	18.3	4,359
	5 Exist	No	Endurance	E3120-55	55	19.0	36.0	4,205

Recommended observation distance: 19 cm

Photo exposed: 11/11/2015 14:48:13
 Field of view: 91.5°x54.3° Lens: 19 mm Film: 39x19 mm Pixels: 4000x2000
 Eye point: British TM-OSGB36/Airy (GB/IE) East: 242,750 North: 210,100
 Wind direction: 0° Direction of photo: 250°
 Camera: Llechdwnni Park and Garden
 Photo:

Created by:
 Dulas Ltd
 Unit 1, Dyfi Eco Park Machynlleth
 GB-SY20 8AX Powys
 +44 1654 705000
 nickt / nick.thompson@dulas.org.uk

windPRO 3.0.619 by EMD International AG, Tel. +43 96 35 44 44, www.emd.at, windpro@emd.at

11/11/2015 16:07 / 2 windPRO

Plate 21. Wireframe View of proposed Penhill Farm turbines from western region of designated Llechdwnni gardens (RPG). Looking west-south-west.

Project Title:	Penhill Farm Wind Turbines	Photo Plate No 21	Heritage Recording Services Wales
Date taken:	November 2015		
Photographer:			



Project	Valid	Manufact.	Type-generator	Power, rated [kW]	Rotor diameter [m]	Hub height [m]	Distance [m]
E05153-MOD-Penhill-V0d-20151105-NT							
1 New	No	Norvento	nED100-100	100	22.0	36.0	1,229
2 New	No	Norvento	nED100-100	100	22.0	36.0	1,272
3 Exist	No	Endurance	E3120-S5	55	19.0	25.0	1,619

Recommended observation distance: 19 cm

Photo exposed: 11/11/2015 14:49:22
 Field of view: 91.5°x54.3° Lens: 19 mm Film: 39x19 mm Pixels: 4000x2000
 Eye point: British TM-OSGB36/Airy (GB/IE) East: 238,530 North: 208,220
 Wind direction: 0° Direction of photo: 46°
 Camera: Llansaint Conservation Area
 Photo:

Created by:
 Dulas Ltd
 Unit 1, Dyff Eco Park Machynlleth
 G8-SY20 BAX Powys
 +44 1654 705000
 nickt / nick.thompson@dulas.org.uk

windPRO 3.0.619 by EPD International A/S, Tel: +45 96 35 44 44, www.epd.dk, windpro@epd.dk

11/11/2015 16:07 / 3 windPRO

Plate 22. Wireframe View of proposed Penhill Farm turbines from northern part of Llansaint Conservation Area. Looking northeast.

Project Title: Penhill Farm Wind Turbines

Date taken: November 2015

Photographer:

Photo Plate No.

22

Heritage
 Recording Services Wales

APPENDIX III:

Site Gazetteer

APPENDIX III

Site Gazetteer

of

Historic Environment Record (HER) Sites within 2km from turbine locations

&

Scheduled Ancient Monuments (SAMs) and Listed Buildings (LBs) within 5km radius

A) Historic Environment Record (HER) Sites within 2km from turbine location

PRN: 1392 **Type:** Standing Stone **Period:** Bronze Age **NGR:** SN41210833
Pair, Standing Stone
Name: MEINI HIRION; CAE GARREG FAWR; PEN-LAN-UCHAF

Summary:

Status: scheduled
ancient
monument

Grade:

Community: Kidwelly

PRN: 1393 **Type:** Round Barrow **Period:** Bronze Age **NGR:** SN4075909017
Name: ALLT CUNEDDA

Summary: A visibly circular and severely denuded round barrow located on top of a ridge running WSW-ENE, which when originally built would have had commanding views out over the landscape as well as itself being potentially visible from afar. The field has been ploughed over the decades.

Status:

Grade:

Community: St Ishmael

PRN: 1394 **Type:** Round Barrow **Period:** Bronze Age **NGR:** SN40530897
Name: ALLT CUNEDDA

Summary: This round barrow, the mound today severely denuded, is still just discernible as a circular mound truncated on its NE edge by a field boundary separating it from its 'twin' barrow PRN 1393.

Status:

Grade:

Community: St Ishmael

PRN: 1395 **Type:** Findspot **Period:** Bronze Age **NGR:** SN404089
Name: ALLT CUNEDDA

Summary: A stone axe-hammer supposedly recovered during excavation of two Bronze Age round barrows (PRNs 1393 and 1394) on Allt Cunedda Farm in 1850, although there is no mention of it in the original excavation report. NAP 2004.

Status:

Grade:

Community: St Ishmael

PRN: 1396 **Type:** Defended Enclosure **Period:** Iron Age **NGR:** SN40500877
Name: CAE GAER

Summary: A large, circular, hillslope enclosure, known as Cae Gaer. It has an average diameter of 160m and encloses an area of approximately 2 hectares. In 1967 the Ordnance Survey recorded a double bank on the north side separated by a shallow ditch.

Status: **Grade:** **Community:** St Ishmael

PRN: 1397 **Type:** Motte **Period:** Medieval **NGR:** SN40500877
Name: CAE GAER

Summary:

Status: **Grade:** **Community:** St Ishmael

PRN: 1634 **Type:** Boundary **Period:** Medieval **NGR:** SN40800904
Name: ALLT CUNEDDA
Mound,Boundary Cross

Summary:

Status: **Grade:** **Community:** St Ishmael

PRN: 1636 **Type:** Holy Well **Period:** Medieval **NGR:** SN40240732
Name: COBWELL;FFYNNON STOCKWELL?

Summary: A possible holy well site from the medieval period, Ffynnon Stockwell, formerly called "Cobwell", is recorded in 1917 to be situated on the slope of a hill called 'the Arles' and was visited on Palm Sunday as recently as 1911.

Status: **Grade:** **Community:** Kidwelly

PRN: 1637 **Type:** Spring,Holy Well **Period:** Not **NGR:** SN40210736
Name: FFYNNON STOCKWELL?
Applicable,Medieval

Summary: A well shown on Rees' 14th century map, a short distance to the north of possible holy well PRN 1636, although there are no further records of this site (M.Ings, 2011).

Status: **Grade:** **Community:** Kidwelly

PRN: 2111 **Type:** Standing Stone **Period:** Bronze Age **NGR:** SN38000809
Name: PARC MAEN LLWYD

Summary:

Status: **Grade:** **Community:** St Ishmael

PRN: 2112 **Type:** Round Barrow **Period:** Bronze Age **NGR:** SN39160997
Name: PEN YR HEOL

Summary:

Status: scheduled **Grade:** **Community:** St Ishmael
ancient

monument

PRN: 2114 **Type:** Unknown,Cropmark **Period:** Unknown **NGR:** SN38310813
Name: TIR BACH

Summary:

Status: **Grade:** **Community:** St Ishmael

PRN: 2116 **Type:** Dovecote **Period:** Post-Medieval,Medieval **NGR:** SN39640718
Name: COLEMAN

Summary:

Status: scheduled
ancient
monument **Grade:** **Community:** Kidwelly

PRN: 2118 **Type:** Church **Period:** Post-Medieval,Medieval **NGR:** SN3845908050
Name: LLANSAINTE CHAPEL;ALL SAINTS

Summary: Medieval chapelry to St Ishmaels parish, still in St Ishmaels. Medium sized church, comprising chancel, nave, and west tower. The north transept and vestry were added in 1862.

Status: listed building **Grade:** II **Community:** St Ishmael

PRN: 2119 **Type:** Inscribed Stone **Period:** Early Medieval **NGR:** SN38460805
Name: VENNISETLI STONE;LLANSAINTE CHAPEL

Summary: Fragmentary Group I ECM (Latin-inscribed stone) of probable 5th-early 6th century date, built into the exterior of the nave south wall at Llansaint Chapel PRN 2118, below the east window. It was first recorded in 1875, in its present position.

Status: **Grade:** **Community:** St Ishmael

PRN: 2120 **Type:** Inscribed Stone **Period:** Early Medieval **NGR:** SN38460805
Name: CIMESETLI STONE;LLANSAINTE CHAPEL

Summary: Fragmentary Group I ECM (Latin-inscribed stone) of probable 5th-early 6th century date, built into the exterior of the nave south wall at Llansaint Chapel PRN 2118, to the west of ECM PRN 2119. It was first recorded in 1906, in its present position.

Status: **Grade:** **Community:** St Ishmael

PRN: 2122 **Type:** Holy Well **Period:** Medieval **NGR:** SN38620830
Name: FFYNNON SAINT

Summary: Recorded site (RCAHM, 1912) of a well, close to Tabor Chapel, believed to have been dedicated to St Ishmael, covered over and a pump placed over (M.Ings, 2011).

Status: **Grade:** **Community:** St Ishmael

PRN: 2125 **Type:** Standing Stone **Period:** Bronze Age **NGR:** SN39300809
Name: MAEN LLWYD

Summary: No archaeological traces of a monument exist in the area indicated by the grid reference, nor in the immediately surrounding area. Site destroyed. NB. 2001.

Status: **Grade:** **Community:** St Ishmael
PRN: 2127 **Type:** Well,Holy Well **Period:** Unknown,Medieval **NGR:** SN37870788
Name: PARC-MAEN-LLWYD

Summary: A well shown on Rees' 1932 map and described in 1967 as a natural spring and basin. A well is shown on historic Ordnance Survey maps and on modern mapping. There are no recorded traditions associated with the site to suggest that it is a holy well (M.Ings 2011).

Status: **Grade:** **Community:** St Ishmael
PRN: 2128 **Type:** Defended Enclosure? **Period:** Iron Age **NGR:** SN381085
Name: PARC Y CASTELL

Summary: The RCAHM in 1917 noted that this field is called Parc y Castell. They noted some 'slight indications in the soil, and some vague traditions, of the former existence of an earthwork.' Savory, 1954-6 recorded an almost obliterated single-banked hillslope.

Status: **Grade:** **Community:** St Ishmael
PRN: 2129 **Type:** Round Barrow **Period:** Bronze Age **NGR:** SN397083
Name: PENLAN ISAF

Summary: No trace of the barrow in this well-ploughed field in the area indicated by the grid reference, nor in the immediately surrounding area. Site destroyed. NB. 2001.

Status: **Grade:** **Community:** St Ishmael
PRN: 4971 **Type:** Unknown,Cropmark **Period:** Unknown **NGR:** SN407087
Name: PENLAN UCHAF

Summary:

Status: **Grade:** **Community:** St Ishmael
PRN: 5330 **Type:** Well **Period:** Unknown **NGR:** SN405075
Name: FFYNNON SUL

Summary:

Status: **Grade:** **Community:** Kidwelly
PRN: 6544 **Type:** Cottage **Period:** Post-Medieval **NGR:** SN40090895
Name: TY-NEWYDD

Summary: Described in 1983 as being in a state of disrepair and possibly a longhouse. Present condition unknown. RPS August 2001

Status: **Grade:** **Community:** St Ishmael
PRN: 7269 **Type:** Monastic Land **Period:** Medieval **NGR:** SN38930784
Name: PARC Y PRIOR

Summary:

Status: **Grade:** **Community:** St Ishmael

PRN: 7270 **Type:** Bridge
Name: TREFORRIS BRIDGE

Period: Post-Medieval

NGR: SN38210968

Summary:

Status:

Grade:

Community: St Ishmael

PRN: 7271 **Type:** Road
Name: PORTWAY

Period: Medieval

NGR: SN39200780

Summary:

Status:

Grade:

Community: St Ishmael

PRN: 7272 **Type:** Pound
Name: CWMFFORDDGOCH

Period: Post-Medieval

NGR: SN3850009300

Summary:

Status:

Grade:

Community: St Ishmael

PRN: 7324 **Type:** Henge,Defended
Enclosure

Period: Prehistoric?;Iron
ge?;Neolithic;bronze
ge;iron Age

NGR: SN41300830

Name: PENLAN UCHA

Summary: On Penlan Uchaf farm there exists a univallate circular enclosure on a south east facing slope at 100m above sea level. The field in which the enclosure lies has been heavily ploughed.

Status:

Grade:

Community: Kidwelly

PRN: 7325 **Type:** Field System
Name: PENLAN UCHA

Period: Prehistoric

NGR: SN413082

Summary:

Status:

Grade:

Community: Kidwelly

PRN: 7340 **Type:** Field System
Name: RHIWLON

Period: Unknown

NGR: SN405075

Summary:

Status:

Grade:

Community: Kidwelly

PRN: 7344 **Type:** Cist
Name: PENLAN ISAF

Period: Bronze Age

NGR: SN40100865

Summary: Cist no longer extant but a large stone cleared to the hedgebank may originally have come from the monument. NB. 2001.

Status:

Grade:

Community: St Ishmael

PRN: 8431 **Type:** Blacksmiths Workshop
Name: LLANSAINT SMITHY

Period: Post-Medieval,Medieval

NGR: SN38650830

Summary:

Status: **Grade:** **Community:** St Ishmael
PRN: 8457 **Type:** Defended Enclosure **Period:** Prehistoric?;Iron
ge? **NGR:** SN40660816

Name: PENLAN ISAF

Summary: This site is best observed using aerial photographs. One distinct univallate circular enclosure is visible plus other undulations that may represent hut platforms or annexes, or perhaps another enclosure.

Status: **Grade:** **Community:** Kidwelly
PRN: 9707 **Type:** Platform **Period:** Medieval **NGR:** SN39960750
Name: LOOK OVER

Summary: Described as a platform by Ward in 1974. RPS July 2001; Not accessed in 2003. RPS January 2004

Status: **Grade:** **Community:** Kidwelly
PRN: 11214 **Type:** Standing Stone **Period:** Bronze Age **NGR:** SN38551080
Name: PARK Y MAEN

Summary:

Status: **Grade:** **Community:** St Ishmael
PRN: 11215 **Type:** Unknown **Period:** Unknown **NGR:** SN38651048
Name: BAILY GLAS

Summary:

Status: **Grade:** **Community:** St Ishmael
PRN: 11216 **Type:** Standing Stone **Period:** Bronze Age **NGR:** SN38751050
Name: PARK MAIN DAN UDLAN

Summary:

Status: **Grade:** **Community:** St Ishmael
PRN: 11217 **Type:** Monastic Land **Period:** Post-Medieval,Medieval **NGR:** SN395111
Name: PARK TY ABBEY;WAY TY ABBEY

Summary:

Status: **Grade:** **Community:** St Ishmael
PRN: 11218 **Type:** Round Barrow **Period:** Bronze Age **NGR:** SN392101
Name: PARK CRIG BACH

Summary:

Status: **Grade:** **Community:** St Ishmael

NGR: SN39341000

Summary:

Status:

Grade:

Community: St Ishmael

NGR: SN39150985

Summary:

Status:

Grade:

Community: St Ishmael

NGR: SN38900945

Summary:

Status:

Grade:

Community: St Ishmael

NGR: SN388098

Summary:

Status:

Grade:

Community: St Ishmael

NGR: SN387094

Summary:

Status:

Grade:

Community: St Ishmael

NGR: SN386094

Summary: Very large mound in approximate vicinity of Llain Garn visible in present field - an amalgam of many smaller earlier fields. Natural feature? However, the size of Pen Yr Heol barrow (close by) goes in its favour. Mound at SN 38700938.

Status:

Grade:

Community: St Ishmael

NGR: SN38850875

Summary:

Status:

Grade:

Community: St Ishmael

NGR: SN387082

Summary:

Status:

Grade:

Community: St Ishmael

PRN: 12189 **Type:** Crown Land
Name: KINGS WOOD

Period: Post-Medieval,Medieval

NGR: SN4109

Summary:

Status:

Grade:

Community: Kidwelly

PRN: 12674 **Type:** Water Mill
Name: MORLES MILL

Period: Medieval

NGR: SN4110

Summary:

Status:

Grade:

Community: Llandyfaelog

PRN: 14389 **Type:** Village
Name: LLANSAINST;HAWTON;HALKIN

Period: Post-Medieval,Medieval

NGR: SN385080

Summary:

Status:

Grade:

Community: St Ishmael

PRN: 15626 **Type:** Chapel
Name:

Period: Post-Medieval

NGR: SN38550827

Summary:

Status:

Grade:

Community: St Ishmael

PRN: 15627 **Type:** Chapel
Name: CAPEL SEION

Period: Post-Medieval

NGR: SN38470818

Summary:

Status:

Grade:

Community: St Ishmael

PRN: 15628 **Type:** Cemetery
Name:

Period: Post-Medieval

NGR: SN39120787

Summary:

Status:

Grade:

Community: St Ishmael

PRN: 15911 **Type:** Bridge
Name: PONT PEN-HILL-FACH

Period: Post-Medieval

NGR: SN38780932

Summary:

Status:

Grade:

Community: St Ishmael

PRN: 16303 **Type:** Well
Name: CWM-FFYNNONAU

Period: Post-Medieval

NGR: SN405095

Summary:

Status:

Grade:

Community: St Ishmael

PRN: 20936 **Type:** Fish Weir **Period:** Post-Medieval **NGR:** SN4010
Name: CILMARCH;CILMARGH

Summary:

Status: **Grade:** **Community:** Llandyfaelog

PRN: 21797 **Type:** Farmstead **Period:** Post-Medieval **NGR:** SN38181033
Name: CWMBYCHAN

Summary: Farmstead complex shown on parish tithe map. Appears on 1998 OS Explorer map. RPS August 2001

Status: **Grade:** **Community:** St Ishmael

PRN: 21798 **Type:** Church Land **Period:** Post-Medieval **NGR:** SN3810
Name: CAER LAN ETC

Summary:

Status: **Grade:** **Community:** St Ishmael

PRN: 21800 **Type:** Farmstead **Period:** Post-Medieval **NGR:** SN38801088
Name: BRYNCOCH

Summary: Farmstead complex shown on parish tithe map. Appears on 1998 OS Explorer map. RPS August 2001

Status: **Grade:** **Community:** St Ishmael

PRN: 22282 **Type:** Racecourse **Period:** Post-Medieval **NGR:** SN406090
Name: ALLT CUNEDDA

Summary:

Status: **Grade:** **Community:** St Ishmael

PRN: 23125 **Type:** Church Land **Period:** Post-Medieval **NGR:** SN4010
Name: PARK Y LLAN

Summary:

Status: **Grade:** **Community:** Llandyfaelog

PRN: 23157 **Type:** Quarry **Period:** Post-Medieval **NGR:** SN4010
Name: WAUN Y QUARRY

Summary:

Status: **Grade:** **Community:** Llandyfaelog

PRN: 23401 **Type:** Farmstead **Period:** Post-Medieval **NGR:** SN38791044
Name: MAESMAWR

Summary: Farmstead shown on 1840 parish tithe map. A farmstead complex of this name still exists. RPS September 2001

Status: **Grade:** **Community:** St Ishmael
PRN: 23402 **Type:** Farmstead **Period:** Post-Medieval **NGR:** SN39351024
Name: MYNYDD UCHA

Summary: Farmstead shown on 1840 parish tithe map. A farmstead of this name still exists. RPS September 2001

Status: **Grade:** **Community:** St Ishmael
PRN: 23403 **Type:** Dwelling **Period:** Post-Medieval **NGR:** SN392104
Name: PARK YR HENDY

Summary: Hendy place-name recorded on 1840 parish tithe map. Significance unknown. RPS September 2001; Parcel no.720 on the St Ishmael Parish tithe map, (which is smaller than the modern field here), is called Parc yr Hendy in the tithe map apportionment.

Status: **Grade:** **Community:** St Ishmael
PRN: 23404 **Type:** Farmstead **Period:** Post-Medieval **NGR:** SN39501050
Name: PENRHEOL

Summary: Farmstead shown on 1840 parish tithe map. A farmstead of this name still exists. RPS September 2001

Status: **Grade:** **Community:** St Ishmael
PRN: 23405 **Type:** Road **Period:** Post-Medieval **NGR:** SN398095
Name:

Summary:

Status: **Grade:** **Community:** St Ishmael
PRN: 23406 **Type:** Pound **Period:** Post-Medieval **NGR:** SN39651044
Name: PARKEY POUND

Summary:

Status: **Grade:** **Community:** St Ishmael
PRN: 23407 **Type:** Farmstead **Period:** Post-Medieval **NGR:** SN39751048
Name: CILFEITHI;CILVITHE TOMMY

Summary: Farmstead shown on 1840 parish tithe map. A farmstead of this name still exists. RPS September 2001

Status: **Grade:** **Community:** St Ishmael
PRN: 23410 **Type:** Church Land **Period:** Post-Medieval **NGR:** SN392099
Name: PARK Y LAN

Summary:

Status: **Grade:** **Community:** St Ishmael

PRN: 23411 **Type:** Farmstead **Period:** Post-Medieval **NGR:** SN39350955
Name: MAESGWYNNE

Summary: Farmstead shown on 1840 parish tithe map. Present condition not known, but there are no buildings shown at this location on 1998 1:25000 OS Explorer Series map. RPS September 2001.

Status: **Grade:** **Community:** St Ishmael

PRN: 23412 **Type:** Farmstead **Period:** Post-Medieval **NGR:** SN39000942
Name: TIR BACH

Summary: Farmstead shown on 1840 parish tithe map. A farmstead of this name still exists. RPS September 2001

Status: **Grade:** **Community:** St Ishmael

PRN: 23413 **Type:** Farmstead **Period:** Post-Medieval **NGR:** SN38550954
Name: TREFORRIS BACH

Summary: Farmstead shown on 1840 parish tithe map. A farmstead of this name still exists. RPS September 2001

Status: **Grade:** **Community:** St Ishmael

PRN: 23414 **Type:** Cottage **Period:** Post-Medieval **NGR:** SN38630951
Name: TREFORRIS FAWR COTTAGE

Summary: Cottage shown on 1840 parish tithe map. Present condition not known, but there are no buildings shown at this location on 1998 1:25000 OS Explorer Series map. RPS September 2001

Status: **Grade:** **Community:** St Ishmael

PRN: 23421 **Type:** Public House **Period:** Post-Medieval **NGR:** SN38800885
Name: PENBANK;PEN-Y-BANK

Summary:

Status: **Grade:** **Community:** St Ishmael

PRN: 23422 **Type:** Blacksmiths Workshop **Period:** Post-Medieval **NGR:** SN38770880
Name:

Summary:

Status: **Grade:** **Community:** St Ishmael

PRN: 23423 **Type:** Farmstead **Period:** Post-Medieval **NGR:** SN381088
Name: CWM

Summary: Farmstead shown on 1840 parish tithe map. A farmstead of this name still exists. RPS September 2001

Status: **Grade:** **Community:** St Ishmael

PRN: 23428 **Type:** Farmstead **Period:** Post-Medieval **NGR:** SN39330860

Name: NINPWLL;NIMPWLL

Summary: Farmstead shown on 1840 parish tithe map. A farmstead of this name still exists. RPS September 2001

Status: **Grade:** **Community:** St Ishmael
Period: Post-Medieval **NGR:** SN39060843

PRN: 23429 **Type:** Farmstead
Name: LONGLAND

Summary: Farmstead shown on 1840 parish tithe map. A farmstead of this name still exists. RPS September 2001

Status: **Grade:** **Community:** St Ishmael
Period: Post-Medieval **NGR:** SN38980839

PRN: 23430 **Type:** Quarry
Name: PARK QUARRY ISSA

Summary:

Status: **Grade:** **Community:** St Ishmael
Period: Post-Medieval **NGR:** SN3836207630

PRN: 23431 **Type:** Pound
Name: PARK Y POUND

Summary:

Status: **Grade:** **Community:** St Ishmael
Period: Post-Medieval **NGR:** SN38780870

PRN: 23434 **Type:** Cottage
Name: BROADWAY COTTAGE

Summary: Cottage shown on 1840 parish tithe map. A cottage of this name still exists. RPS September 2001

Status: **Grade:** **Community:** St Ishmael
Period: Post-Medieval **NGR:** SN3986310307

PRN: 23578 **Type:** Cottage
Name: WHITE THORN COTTAGE

Summary: Cottage shown on 1907 6" OS map. Present condition unknown, but there are no buildings shown at this location on 1998 1:25000 OS Explorer Series map. RPS September 2001

Status: **Grade:** **Community:** Llandyfaelog
Period: Post-Medieval **NGR:** SN3837109578

PRN: 23593 **Type:** Mill Race
Name: TREFORIS

Summary:

Status: **Grade:** **Community:** St Ishmael
Period: Post-Medieval **NGR:** SN38590829

PRN: 23595 **Type:** Cottage
Name: FFYNON SAINT

Summary: Cottage shown on 1907 6" OS map. Present condition unknown. RPS September 2001

Status: **Grade:** **Community:** St Ishmael
PRN: 23596 **Type:** Cottage **Period:** Post-Medieval **NGR:** SN37810815
Name: TY-NEWYDD
Summary: Cottage shown on 1907 6" OS map. Present condition unknown. RPS September 2001

Status: **Grade:** **Community:** St Ishmael
PRN: 23597 **Type:** Blacksmiths Workshop **Period:** Post-Medieval **NGR:** SN38520811
Name:
Summary:

Status: **Grade:** **Community:** St Ishmael
PRN: 23598 **Type:** School **Period:** Post-Medieval **NGR:** SN38390803
Name:
Summary:

Status: **Grade:** **Community:** St Ishmael
PRN: 23609 **Type:** Cottage **Period:** Post-Medieval **NGR:** SN40621022
Name: LLETTY-PEN-HEN
Summary: Cottage shown on 1907 6" OS map. Present condition unknown. RPS September 2001

Status: **Grade:** **Community:** Llandyfaelog
PRN: 23682 **Type:** Cottage **Period:** Post-Medieval **NGR:** SN41030947
Name: PLAS-BACH
Summary: Cottage shown on 1907 6" OS map. Present condition unknown. RPS September 2001

Status: **Grade:** **Community:** St Ishmael
PRN: 24418 **Type:** Parliamentary Field **Period:** Post-Medieval **NGR:** SN4008
Name: ALLTCYNADDA;ALLT CUNEDDA
Summary:

Status: **Grade:** **Community:** St Ishmael
PRN: 25682 **Type:** Dwelling **Period:** Post-Medieval **NGR:** SN41041033
Name: WERN
Summary: Historic home described by Francis Jones in 1987. RPS September 2001

Status: **Grade:** **Community:** Llandyfaelog
PRN: 30030 **Type:** Flood Defence **Period:** Post-Medieval **NGR:** SN40491045
Name: TAWELAN BROOK
Summary: A flood defence bank on the South side of Tawelan Brook. The bank commences by the Towy and follows the Brook upstream towards Johnstown School. A. Gale Feb. 1995.

Status: **Grade:** **Community:** Carmarthen

PRN: 42579 **Type:** Round Barrow Pair **Period:** Bronze Age **NGR:** SN40700900
Name: ALLT CUNEDDA

Summary: Although not strictly speaking a barrow pair, as the two barrows are more than 100m apart, these two barrows (1393 & 1394) have nonetheless been given a group PRN because of their clear inter-relationship on top of this particular ridge.

Status: **Grade:** **Community:** St Ishmael

PRN: 49319 **Type:** Churchyard **Period:** Post-Medieval,Early edieval **NGR:** SN38460805
Name: LLANSAINT CHAPEL;ALL SAINTS

Summary: Early medieval B site, ie. medium-probability early medieval origins. Churchyard occupied by the medieval Llansaint Chapel PRN 2118, which was a chapelry to St Ishmaels parish. It probably occupied a large 'parochium'.

Status: **Grade:** **Community:** St Ishmael

PRN: 60833 **Type:** Dovecote **Period:** Post-Medieval **NGR:** SN3964107187
Name: DOVECOTE NW OF COLEMAN FARM

Summary: Grade II* listed dovecote

Status: listed building **Grade:** II* **Community:** Kidwelly

PRN: 104028 **Type:** Building **Period:** Post-Medieval **NGR:** SN40320788
Name:

Summary: Building recorded on the historic Ordnance Survey maps but shown only in partial outline on mastermap, presumed ruinous.

Status: **Grade:** **Community:** St Ishmael

PRN: 104029 **Type:** Building **Period:** Post-Medieval **NGR:** SN40400791
Name:

Summary: Building recorded on the historic Ordnance Survey maps but not shown on mastermap.

Status: **Grade:** **Community:** St Ishmael

B) Listed Buildings (LBs) within 5km radius from proposed turbine location.

LB No. 11876 **Name:** Kidwelly Castle **Eastings:** 240897 **Northings:** 207049
Location: Situated on a bluff above W bank of Gwendraeth Fach, across river from modern town centre.

Community: Kidwelly **Grade:** I

LB No. 11877 **Name:** The Town Gate **Eastings:** 240724 **Northings:** 206941

Location: Situated at SW end of Castle Street, some 130m WSW of Kidwelly Castle.

Community: Kidwelly

Grade: II*

LB No. 11878 **Name:** Church of Saint Mary **Eastings:** 240842 **Northings:** 206750
Location: Situated in centre of Kidwelly in large walled churchyard.

Community: Kidwelly

Grade: I

LB No. 11879 **Name:** Dovecote NW of Coleman Farm **Eastings:** 239641 **Northings:** 207187
Location: Situated in patch of scrub woodland at intersection of four fields on hillside some 300m NW of Coleman Farm, which is on the lower road from Kidwelly to Ferryside via St Ishmael.

Community: Kidwelly

Grade: II*

LB No. 11880 **Name:** Kidwelly Town Hall **Eastings:** 240805 **Northings:** 206691
Location: Situated in centre of Kidwelly on corner of Lady Street and Causeway Street.

Community: Kidwelly

Grade: II

LB No. 11882 **Name:** The Masons Arms **Eastings:** 240816 **Northings:** 207213
Location: Situated on W side of main road (A 484) N of centre of Kidwelly, in terraced row, some 120m N of Ferry Road junction.

Community: Kidwelly

Grade: II

LB No. 14553 **Name:** Old house at Llechdwnni **Eastings:** 242873 **Northings:** 210063
Location: Llechdwnni Farm is 2.2km SE of Llandyfaelog, reached by a short farm road on the N side of a minor road. The old house is on the N side of the new farmhouse.

Community: Llandyfaelog

Grade: II

LB No. 20184 **Name:** Kidwelly Bridge/Pont Cydweli **Eastings:** 240689 **Northings:** 206855
Location: Situated on main road (A 484) crossing Gwendraeth Fach, between Bridge Street and New Street.

Community: Kidwelly

Grade: II

LB No. 20185 **Name:** No 16 (Morfa House) **Eastings:** 240703 **Northings:** 206792
Location: Situated in terraced row on main road (A 484) some 40m S of Kidwelly Bridge.

Community: Kidwelly

Grade: II

LB No. 20186 **Name:** Capel Sul **Eastings:** 240691 **Northings:** 206812
Location: Situated on W side of main road (A 484) prominently overlooking Kidwelly Bridge.

Community: Kidwelly

Grade: II

LB No. 20187 **Name:** The Old Moat House **Eastings:** 240826 **Northings:** 207004
Location: Situated close to entrance to Kidwelly Castle, at corner of Castle Street and Castle Road.

Community: Kidwelly

Grade: II

LB No. 20188 **Name:** Castle School and School house **Eastings:** 240759 **Northings:** 206969
Location: Situated just within medieval town gateway, at junction of Castle Street and Bailey Street.

Community: Kidwelly

Grade: II

- LB No. 20189** **Name:** No 6 **Eastings:** 240784 **Northings:** 206975
Location: Situated on N side of Castle Street, just E of former Castle School.
Community: Kidwelly **Grade:** II
- LB No. 20190** **Name:** Ruined Warehouse By Kidwelly Bridge **Eastings:** 240694 **Northings:** 206883
Location: Situated on E side of main road (A 484) overlooking NE end of Kidwelly Bridge.
Community: Kidwelly **Grade:** II
- LB No. 20191** **Name:** Wall along S side of churchyard **Eastings:** 240847 **Northings:** 206724
Location: Situated on N side of Lady Street, between Parish Room and track to No 17 Lady Street.
Community: Kidwelly **Grade:** II
- LB No. 20192** **Name:** Castle Mill **Eastings:** 240787 **Northings:** 206877
Location: Situated on N bank of Gwendraeth Fach, some 100m E of Kidwelly Bridge, reached by lane running S from medieval town gatehouse.
Community: Kidwelly **Grade:** II
- LB No. 20193** **Name:** The War Memorial and railings **Eastings:** 240701 **Northings:** 206971
Location: Situated on side of main road (A 484) some 100m NE of Kidwelly Bridge.
Community: Kidwelly **Grade:** II
- LB No. 20194** **Name:** Cae Newydd Railway Bridge **Eastings:** 240693 **Northings:** 205913
Location: Situated some 200m off main road (A 484), approached by footpath past Cae Newydd Farm some 100m NE of Kidwelly Bridge. Bridge is some 800m SE of Kidwelly station.
Community: Kidwelly **Grade:** II
- LB No. 20195** **Name:** Boxing Room at former Kidwelly Tinplate Works **Eastings:** 242098 **Northings:** 207810
Location: Situated in Kidwelly Industrial Museum, some 2km NE of the town in the Gwendraeth Fach valley. Boxing Room is the southern half of the red brick range just within museum site.
Community: Kidwelly **Grade:** II
- LB No. 20196** **Name:** Assorting Room at former Kidwelly Tinplate Works **Eastings:** 242107 **Northings:** 207851
Location: Situated in Kidwelly Industrial Museum, some 2km NE of the town in the Gwendraeth Fach valley. Sorting Room is the northern half of the red brick range just within museum site.
Community: Kidwelly **Grade:** II
- LB No. 20197** **Name:** Cold-roll Engine-house at former Kidwelly Tinplate Works **Eastings:** 242191 **Northings:** 207937
Location: Situated at NE end of Kidwelly Industrial Museum site, which is some 2km NE of Kidwelly, in Gwendraeth Fach valley.
Community: Kidwelly **Grade:** II*
- LB No. 20198** **Name:** Chimney at former Kidwelly Tinplate Works **Eastings:** 242174 **Northings:** 207928
Location: Situated towards upper end of museum site, which lies some 2km NE of Kidwelly.
Community: Kidwelly **Grade:** II

- LB No. 20199** **Name:** Lime-kiln facing W, on ridge E of Capel Horeb **Eastings:** 243084 **Northings:** 208481
Location: Situated in overgrown scrub some 700m NNE of Mynyddgarreg School, reached by lane, then footpath, and situated to E of footpath. Kiln is in earth-banked small indent, some 60m E of path, facing W. Second kiln is some 100m NNW in similar indent facing W.
Community: Kidwelly **Grade:** II
- LB No. 20200** **Name:** Lime-kiln facing S, on ridge E of Capel Horeb **Eastings:** 243111 **Northings:** 208537
Location: Situated in overgrown scrub some 700m NNE of Mynyddgarreg School, reached by lane from school, then footpath. Situated to E of footpath, kiln is in earth-banked small indent, facing S. Second kiln is some 100m SSE in similar indent facing W.
Community: Kidwelly **Grade:** II
- LB No. 20201** **Name:** Kidwelly Quay **Eastings:** 239730 **Northings:** 206399
Location: On the Gwendraeth Fach. Reached along a by-road running W from level crossing to SW of town centre.
Community: Kidwelly **Grade:** II
- LB No. 21456** **Name:** Upland **Eastings:** 240300 **Northings:** 213617
Location: Approximately 2.2km NW of Llandyfaelog village, reached by private drive off a minor road W of the A484.
Community: Llandyfaelog **Grade:** II
- LB No. 21457** **Name:** Former stables at Upland **Eastings:** 240328 **Northings:** 213620
Location: To rear (NE) of house, facing SW.
Community: Llandyfaelog **Grade:** II
- LB No. 22272** **Name:** Salem Baptist Chapel **Eastings:** 236756 **Northings:** 210527
Location: Situated in Ferryside on the E side of Carmarthen Road some 250m NE of the railway station.
Community: St Ishmael **Grade:** II
- LB No. 22273** **Name:** Bethania Welsh Presbyterian Church **Eastings:** 236803 **Northings:** 210579
Location: Situated in Ferryside on the E side of Carmarthen Road some 320m NE of the railway station.
Community: St Ishmael **Grade:** II
- LB No. 27063** **Name:** Cyncoed, including area railings. **Eastings:** 235057 **Northings:** 210664
Location: On the E side of Church Street, immediately N of and attached to Osbourne House
Community: Llansteffan **Grade:** II
- LB No. 27064** **Name:** Osbourne House, including area railings. **Eastings:** 235058 **Northings:** 210659
Location: Midway along Church Street, on the E side, the house is immediately S of, and attached to Cyncoed.
Community: Llansteffan **Grade:** II
- LB No. 27065** **Name:** Plas-y-Coed **Eastings:** 235018 **Northings:** 210650
Location: Set well back from the street, situated beyond a lawned forecourt with decorative railings, immediately S of Park Villa.

Community: Llansteffan

Grade: II

LB No. 27066 **Name:** Park Villa

Eastings: 235016 **Northings:** 210664

Location: Set back from the street within a lawned forecourt, immediately N of Plas-y-Coed.

Community: Llansteffan

Grade: II

LB No. 27067 **Name:** Railings and area walls at Plas-y-Coed and Park Villa.

Eastings: 235042 **Northings:** 210660

Location: Situated at the side of the pavement on the W side of Church Street, E of Plas-Y-Coed and Park Villa.

Community: Llansteffan

Grade: II

LB No. 27068 **Name:** Nolands, including forecourt railings.

Eastings: 235128 **Northings:** 210839

Location: On S side of the street, opposite the entrance to The Laurels.

Community: Llansteffan

Grade: II

LB No. 27069 **Name:** Albion House, including forecourt railings

Eastings: 235110 **Northings:** 210816

Location: Situated at the S side of the High Street, at W end of a terraced row, opposite The Brackens

Community: Llansteffan

Grade: II

LB No. 27070 **Name:** The Sticks Hotel

Eastings: 235030 **Northings:** 210774

Location: Situated directly N of the junction with Church Street, on the street line immediately E of Red Lion House.

Community: Llansteffan

Grade: II

LB No. 27071 **Name:** Ffynnon Fair

Eastings: 234953 **Northings:** 210734

Location: At E end of the retaining wall of Ffynnon Fair house, set into the wall by the roadside.

Community: Llansteffan

Grade: II

LB No. 27072 **Name:** Ffynnon Fair House

Eastings: 234940 **Northings:** 210745

Location: Set back from the street, on the N side of the road, within a walled, lawned forecourt.

Community: Llansteffan

Grade: II

LB No. 27073 **Name:** The Stores

Eastings: 235058 **Northings:** 210772

Location: On the SE corner of the junction of High Street and Church Street, between Post Office and Cartref.

Community: Llansteffan

Grade: II

LB No. 27074 **Name:** Cartref

Eastings: 235063 **Northings:** 210776

Location: Situated immediately E of the attached shop, at the W end of a terraced row.

Community: Llansteffan

Grade: II

LB No. 27075 **Name:** Coach House and Stable Range at Y Plas

Eastings: 234879 **Northings:** 210432

Location: Located SW of Plas mansion, at the end of a private access road leading S from Llansteffan village.

Community: Llansteffan

Grade: II*

LB No. 27076 **Name:** Wall and gatepiers to stable court at Y Plas **Eastings:** 234902 **Northings:** 210428

Location: Located S of the domestic range of the Plas Mansion, and E of the Coach House and Stables, at the end of a private access road.

Community: Llansteffan

Grade: II

LB No. 27077 **Name:** Milestone **Eastings:** 235182 **Northings:** 210938

Location: Set in retaining wall at the NW side of High Street, opposite Melrose House.

Community: Llansteffan

Grade: II

LB No. 27078 **Name:** Well Cottage with forecourt railings and gate **Eastings:** 235097 **Northings:** 211155

Location: Situated at right angle to the road, on the junction with a private access leading to Mill Pond Cottage

Community: Llansteffan

Grade: II

LB No. 27079 **Name:** St Anthony's Well **Eastings:** 234603 **Northings:** 209930

Location: Located within a modern walled enclosure on the W side of a narrow access lane leading to St Anthony's Cottage.

Community: Llansteffan

Grade: II

LB No. 81323 **Name:** Former Kidwelly & Llanelly Canal aqueduct **Eastings:** 242757 **Northings:** 205300

(also known as Glanstony Aqueduct)

Location: Spanning the Afon Gwendraeth Fawr NW of Morfa Mawr Farm, approximately 600m NW of Llandry church.

Community: Trimsaran

Grade: II*

LB No. 81324 **Name:** Milepost on B4308 at Bont Cottages **Eastings:** 243083 **Northings:** 206177

Location: Approximately 2.7km NW of Trimsaran village.

Community: Trimsaran

Grade: II

LB No. 82094 **Name:** Church of St Thomas **Eastings:** 236684 **Northings:** 210382

Location: Near the centre of Ferryside E of the railway station.

Community: St Ishmael

Grade: II

LB No. 82286 **Name:** Lime kilns at Penymynydd **Eastings:** 243965 **Northings:** 209488

Location: On the S side of a minor road approximately 800m WNW of the crossroads in Heol Pedair.

Community: Llangydeyrn

Grade: II

LB No. 82398 **Name:** Church of St Maelog **Eastings:** 241491 **Northings:** 211877

Location: In a large churchyard on the N side of the main road through the village.

Community: Llandyfaelog

Grade: II

LB No. 82400 **Name:** Pont Rhydyronnen **Eastings:** 242023 **Northings:** 211288

Location: Spanning the Gwendraeth Fach on a minor road between Llandyfaelog and Gellideg, approximately 700m SE of the village.

- Community:** Llandyfaelog **Grade:** II
- LB No.** 9385 **Name:** Y Plas **Eastings:** 234921 **Northings:** 210466
Location: At the end of a private access road leading S from Llansteffan village.
- Community:** Llansteffan **Grade:** II*
- LB No.** 9404 **Name:** Church of St Ystyffan **Eastings:** 235009 **Northings:** 210708
Location: Within a stone walled cemetery, on the SW corner of the junction of High Street and Church Street.
- Community:** Llansteffan **Grade:** II*
- LB No.** 9405 **Name:** Llansteffan Castle **Eastings:** 235141 **Northings:** 210148
Location: Prominently situated on a rocky promontory, overlooking the mouth of the Tywi.
- Community:** Llansteffan **Grade:** I
- LB No.** 9406 **Name:** Vale View **Eastings:** 234936 **Northings:** 210704
Location: Set slightly back from the street, on the S side of the road, within a small railed forecourt, immediately W of Brook Cottages.
- Community:** Llansteffan **Grade:** II*
- LB No.** 9411 **Name:** Church of St Ishmael **Eastings:** 236219 **Northings:** 208401
Location: An isolated church approximately 2km SSW of Ferryside, in a large churchyard on the E side of the Ferryside to Kidwelly road.
- Community:** St Ishmael **Grade:** II
- LB No.** 9412 **Name:** Remains of monastic grange at Penallt Farm **Eastings:** 238794 **Northings:** 207023
Location: On the SW side of the farm. Penallt is 1km SSE of Llansaint and on the S side of the Ferryside to Kidwelly road.
- Community:** St Ishmael **Grade:** II
- LB No.** 9413 **Name:** Robert's Rest **Eastings:** 236669 **Northings:** 210225
Location: Near the centre of Ferryside to the S of Portway.
- Community:** St Ishmael **Grade:** II
- LB No.** 9414 **Name:** Church of All Saints **Eastings:** 238459 **Northings:** 208050
Location: In a walled churchyard in the centre of the village.
- Community:** St Ishmael **Grade:** II
- LB No.** 9732 **Name:** Iscoed **Eastings:** 238251 **Northings:** 211826
Location: Approximately 2km NE of Ferryside, on the W side of a private road N of the Ferryside to Carmarthen Road.
- Community:** St Ishmael **Grade:** II
- LB No.** 9751 **Name:** Telephone Call-box outside the Old Pound. **Eastings:** 235029 **Northings:** 210757
Location: At the junction of High Street and Church Street. Immediately beside The Old Pound, NE of the churchyard of the parish Church of St Ystyffan and opposite The Sticks PH.

Community: Llansteffan

Grade: II

LB No. 9752 **Name:** Telephone Call-box **Eastings:** 235343 **Northings:** 210533
Location: Prominently sited near the N corner of the car park which lies at the end of the road that runs along the foreshore. Below the bank forming a sea-wall with the beach beyond. Broad views towards Llansteffan Castle.

Community: Llansteffan

Grade: II

C) Scheduled Ancient Monuments (SAMs) within 5km radius

SAM No. CM002 **Site Type:** Castle **Period:** Medieval **NGR:** SN409070
SAM Name: Kidwelly Castle
Community: Kidwelly

SAM No. CM183 **Site Type:** Gatehouse **Period:** Medieval **NGR:** SN408069
SAM Name: Kidwelly Town Gate & Defences
Community: Kidwelly

SAM No. CM209 **Site Type:** Town **Period:** Medieval **NGR:** SN408070
SAM Name: Kidwelly Medieval Town (Part of)
Community: Kidwelly

SAM No. CM291 **Site Type:** Tinplate Works **Period:** Post-Medieval/Modern **NGR:** SN420077
SAM Name: Kidwelly Old Tinplate Works and Dam
Community: Kidwelly

SAM No. CM270 **Site Type:** Aqueduct **Period:** Post-Medieval/Modern **NGR:** SN427053
SAM Name: Glanston Aqueduct, Trimsaran
Community: Trimsaran

SAM No. CM277 **Site Type:** Limekiln **Period:** Post-Medieval/Modern **NGR:** SN439094
SAM Name: Limekilns at Penymynydd, Pedair Heol
Community: Llangyndeyrn

SAM No. CM198 **Site Type:** Standing stone **Period:** Prehistoric **NGR:** SN386123
SAM Name: Is-Coed-Uchaf Standing Stone
Community: Llandyfaelog

SAM No. CM060 **Site Type:** Standing stone **Period:** Prehistoric **NGR:** SN431101
SAM Name: Group of Standing Stones NE of Llechdwnni
Community: Llandyfaelog

SAM No. CM006 **Site Type:** Bridge **Period:** Medieval **NGR:** SN433058
SAM Name: Spudder's Bridge

Community: Trimsaran

SAM No. CM152 **Site Type:** Dovecote **Period:** Post-Medieval/Modern **NGR:** SN396071
SAM Name: Coleman Dovecot
Community: Kidwelly

SAM No. CM254 **Site Type:** Industrial monument **Period:** Post-Medieval/Modern **NGR:** SN421079
SAM Name: Hot & Cold Rolling Mills, Kidwelly Tinplate Works
Community: Kidwelly

SAM No. CM190 **Site Type:** Round barrow **Period:** Prehistoric **NGR:** SN391099
SAM Name: Round Barrow 330m SW of Mynydd-Uchaf
Community: St Ishmael

SAM No. CM199 **Site Type:** Standing stone **Period:** Prehistoric **NGR:** SN380111
SAM Name: Is-Coed Standing Stone
Community: St Ishmael

SAM No. CM197 **Site Type:** Standing stone **Period:** Prehistoric **NGR:** SN412083
SAM Name: Pen-Lan-Uchaf Standing Stone
Community: Kidwelly

SAM No. CM004 **Site Type:** Castle **Period:** Medieval **NGR:** SN351101
SAM Name: Llansteffan Castle
Community: Llansteffan

SAM No. CM383 **Site Type:** Gun house **Period:** Post-Medieval/Modern **NGR:** SN361082
SAM Name: St Ishmael's Scar Beach Defence Gun House
Community: St Ishmael

APPENDIX IV:
Archive Cover Sheet

ARCHIVE COVER SHEET
Penhill Farm Wind Turbines
Ferryside, Carmarthen, Carmarthenshire.

ARCHIVE DESTINATION – HRS Wales

Site Name:	Penhill Farm Wind Turbines
Site Code:	PHF/2015/DBA
PRN	
NPRN:	N/A
SAM:	N/A
Other Ref No:	HRSW Report No. 169
NGR	SN 3945 0906
Site Type:	Varied landscape
Project Type:	Desk Based Assessment
Project Manager:	Richard Scott Jones
Project Dates:	November 2015
Categories Present:	N/A
Location of Original Archive:	HRSWales
Location of duplicate Archives:	Dyfed Archaeological Trust
Number of Finds Boxes:	
Location of Finds:	
Museum Reference:	
Copyright:	HRSWales
Restrictions to access	None