

**THREE PROPOSED WIND
TURBINES NEAR MANORBIER,
PEMBROKESHIRE.
HISTORIC ENVIRONMENT
APPRAISAL
2012**



Prepared by Dyfed Archaeological Trust
For: Heulwen Davies



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**TREWARREN FARM, ST ISHMAEL'S,
PEMBROKESHIRE:
ARCHAEOLOGICAL APPRAISAL**

Gan / By

Duncan Schlee

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**THREE PROPOSED WIND TURBINES NEAR MANORBIER, PEMBROKESHIRE
(PAs 12/0346, 12/0296 and 12/0299)**

HISTORIC ENVIRONMENT APPRAISAL

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PEMBROKESHIRE (PAs 12/0346, 12/0296 and 12/0299)**

HISTORIC ENVIRONMENT APPRAISAL

SUMMARY

Dyfed Archaeological Trust Field Services was commissioned by Heulwen Davies of Davies Implements Ltd to provide an Historic Environment Appraisal to provide more information about the potential effects of three proposed wind turbines upon the historic environment.

All three applications (References – 12/0346, 12/0296 and 12/0299) are considered together, to save resources and to enable their combined effects to be effectively considered.

The resulting report will enable the planners to make an informed decision on the effects of the proposals upon the Historic Environment.

The three proposed turbine sites are located on agricultural land to provide power to nearby dwellings. The turbine for Thornhill – Turbine A - (PA12/0296) is located at NGR SS0810 9870. The turbine for Norchard Farm – Turbine B - (PA12/0346) is at NGR SS0817 9944. The third turbine – Turbine C- (PA12/0299) is located at Shipping Hill NGR SS07819998.

The turbine locations all lie within the Manorbier Registered Landscape of Special Historic Interest in Wales (reference: HLW (D) 13). There are also several Scheduled Ancient Monuments, Listed buildings nearby, and numerous other archaeologically significant features (both below and above ground) within a 1km radius of each of the proposed turbine sites.

The proposed turbines are unlikely to have a direct impact on any known sites. However, there is considered to be some potential for previously unrecorded prehistoric archaeological features within the area of Turbine C.

The visual effects of the proposals upon the historic environment are not considered to be significantly negative.

1. INTRODUCTION

1.1 Project Proposals and Commission

- 1.1.1 Dyfed Archaeological Trust Field Services was commissioned by Heulwen Davies of Davies Implements Ltd to provide an Historic Environment Appraisal to provide more information about the potential effects of three proposed wind turbines upon the historic environment. The resulting report would enable the planners to make an informed decision on the proposals. (Planning Application References – 12/0346, 12/0296 and 12/0299).
- 1.1.2 The proposed 5kw wind turbines are 15m tall (to the hub) with a 5.5m diameter turbine. The foundations require a hole 1.1m square x 3m deep. Underground cables will link turbines to nearby dwellings. Access or maintenance tracks will not need to be constructed. Hedgerows will not be breached by the proposals.
- 1.1.3 The Appraisal has been produced in accordance with a generic brief supplied by DAT Planning Advice Section.

1.2 Scope of the project

- 1.2.1 The appraisal is presented in fulfilment of a Written Scheme of Investigation working to a generic brief provided by DAT Planning Services. This appraisal is **not** a full desk-based assessment of the potential historic environment resource. Rather, it is a more rapid piece of work involving readily available information to assess historic environment potential.
- 1.2.2 The results are intended to identify the extent and character of the known and potential archaeological resource, to assess the likely and potential impacts of the scheme on that resource and, if required, to outline a possible programme of further works to mitigate those impacts. The appraisal should be seen only as the first stage of the archaeological process and does not preclude the possibility that further archaeological input may be required prior to, or during, the proposed development.
- 1.2.3 All three turbine locations are within the Pembrokeshire Coast National Park and are also within the Manorbier Registered Landscape of Special Historic Interest in Wales (reference: HLW (D) 13). Some comment will also therefore be made on the likely effects of the proposals upon the character of the historic environment and historic landscape.
- 1.2.4 The desk top survey was limited to the resources held in the regional HER and other on-line resources.
- 1.2.5 Considering the size of the proposed turbines (15m high to the hub), a 1km radius from each turbine location was considered a sufficient area with which to evaluate physical and visual effects.

1.3 Abbreviations used in this report

- 1.3.1 All sites recorded on the regional HER are identified by their Primary Record Number (PRN) and located by their National Grid Reference (NGR). Sites recorded on the National Monument Record (NMR) held by the Royal Commission on the Ancient and Historical Monuments of Wales (RCAHMW) are identified by their National Primary Record Number (NPRN). Scheduled Ancient Monument (SAM). Altitude is expressed to Ordnance Datum (OD). References to cartographic and documentary evidence and published sources will be given in brackets throughout the text, with full details listed in the sources section at the rear of the report.

1.4 Illustrations

- 1.4.1 Photographic images are to be found at back of the report. Printed map extracts are not necessarily reproduced to their original scale.

1.5 Timeline

- 1.5.1 The following timeline is used within this report to give date ranges for the various archaeological periods that may be mentioned within the text (Table 1).

Period	Approximate date	
Palaeolithic –	c.450,000 – 10,000 BC	Prehistoric
Mesolithic –	c. 10,000 – 4400 BC	
Neolithic –	c.4400 – 2300 BC	
Bronze Age –	c.2300 – 700 BC	
Iron Age –	c.700 BC – AD 43	
Roman (Romano-British) Period –	AD 43 – c. AD 410	Historic
Post-Roman / Early Medieval Period –	c. AD 410 – AD 1066	
Medieval Period –	1066 – 1536	
Post-Medieval Period ¹ –	1536 – 1750	
Industrial Period –	1750 – 1899	
Modern –	20th century onwards	

Table 1: Archaeological and Historical Timeline for Wales

¹ The post-medieval and industrial periods are combined as the post-medieval period on the Regional Historic Environment Record as held by Dyfed Archaeological Trust

2. SITE LOCATION AND TOPOGRAPHY

- 2.1 All three proposed turbine locations are within the Pembrokeshire Coast National Park. The proposed locations for the three wind turbines are on enclosed agricultural pasture land. The turbine for Thornhill (PA12 0296) is located at NGR SS0810 9870 and will be referred to as Turbine A in this report. The turbine for Norchard Farm (PA12/0346) is at NGR SS0817 9944 and will be referred to as Turbine B. The third turbine (PA12/0299) is located at Shipping Hill NGR SS07819998 and will be referred to as Turbine C.
- 2.2 Turbine A lies within a large field on open ground sloping down gently to the north towards Norchard Farm. The turbine location is currently a patch of thistles on the edge of a slight east-west ridge formed by underlying geology. The thistles mark an area of very thin topsoil overlying bedrock. There are clear views of the Ridgeway to the north, but views to the south are limited by hedgerows and relatively flat or south-sloping topography towards the coast.
- 2.3 Turbine B lies within a moderately sloping field on the south facing slopes of the Ridgeway, approximately 1km to the north of Turbine A. A plough eroded outcrop of bedrock is exposed along the northern edge of the field. The site overlooks Norchard Farm to the south and the top of the Ridgeway is visible to the north, northwest and northeast.
- 2.4 Turbine C lies approximately 400m northwest from Turbine B. It is located in the northeast corner of a field bounded to the north by The Ridgeway, and to the east and west by lanes running southwards. The top part of the field is where the turbine location is proposed is relatively level.
- 2.5 The underlying geology between The Ridgeway and the A4139 at Lydstep is a series of bands of sedimentary rock ranging from Devonian Conglomerates in the north, through sandstone and mudstone on the south facing slopes of The Ridgeway, to limestone in the south.



Figure 1: Location map showing proposed turbine locations, based on the Ordnance Survey.

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3. METHODOLOGY

3.1 Desk top study

3.1.1 Computer based and other resources within the Regional HER were consulted, including:

- HER records for known sites
- NMR records on line and in the HER
- Listed Building data in the HER
- SAM data in the HER
- Registered Landscape data on line and in the HER
- Landscape characterisation data on line and in the HER
- Mapped evidence in the HER
- GIS based Aerial Photographic evidence in the HER
- Tir Gofal data in the HER

3.1.2 Sufficient information was consulted to inform comment on the goals of this Historic Environment Appraisal. GIS layers were used to illustrate the locations of turbines to known historic environment features and to assess what the likely effects of the proposals upon the historic environment might be.

3.2 Site Walkover Survey

3.2.1 A site visit was undertaken on the 9th August 2012. The visit comprised a walkover of the proposed turbine locations and their immediate environs. In addition, the proposed locations were viewed from two SAM sites both located slightly more than 500m from the nearest proposed turbine site. Photographs were taken and field observations recorded in note form.

3.2.2 Photographs provided by PCNP were used to help assess the visual impacts of the proposals.

4. ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

4.1 Character Area description

- 4.1.1 The following historic landscape descriptions are taken from descriptions of the Norchard-Tarr landscape character. They provide a useful description of the historical development of the area, and how this is represented in the present day landscape. Full descriptions are available from the Historic Landscapes pages of the Dyfed Archaeological Trust Website: www.dyfedarcgaeology.org.uk

Historic Background

- 4.1.2 A relatively large area of modern Pembrokeshire, lying in Manorbier and Penally parishes. During the medieval period, it lay within the Anglo-Norman manor of Manorbier (and Penally) which was a mesne lordship or honorial barony held, by the service of 5 knights, of the Lordship and Earldom of Pembroke, a heavily Anglicised region that was brought under Anglo-Norman control before 1100, re-organised along English manorial lines and never retaken by the Welsh. The barony had been held, since the very early 12th century, by the de Barris and, on their extinction in 1392, was sold to the Dukes of Exeter before reverting to the crown in 1461. From that point onwards it was leased to a succession of individuals before being settled on the Philippses of Picton Castle, with whom it remained until the 20th century. The area comprises a landscape of large, regular enclosures, quite distinct from the strip fields of Manorbier Newton character area to the west.

Description and essential historic landscape components

- 4.1.3 This is a relatively large historic landscape character area that runs from the south Pembrokeshire coastal plain at about 50m above sea level, over the crest of The Ridgeway to the north at over 90m and down towards the Ritec valley to about 30m above sea level. It is an agricultural landscape, characterised by relatively large dispersed farms and large, regular fields. The general north-south trend of these fields suggests that they could have evolved from the north-south aligned strip fields that strongly characterise the landscape character area to the west. Agricultural land-use is approximately 85% improved pasture and 15% arable. There is very little rough ground. To the south of The Ridgeway Atlantic gales have reduced the higher-level, more exposed hedges to straggling lines of bushes, but at lower levels and in the more sheltered northern section hedges are thick and well maintained. Apart from small stands of scrubby deciduous trees in sheltered hollows and planting close to farms, woodland is not a strong component of this landscape. Stone-faced banks topped with hedges are the main boundary type, but occasional mortared limestone walls can be found, particularly alongside roads and tracks and close to farms. Local limestone rubble is the main building material (cement rendered and bare stone), with machine cut slate on the roofs, although a few examples of farm buildings with local stone tiles survive. Substantial houses are present, including some with late medieval elements such as

Norchard, and the stone-vaulted ruins at Whitewell, Carswell and Tarr, with others in the late 18th century and 19th century Georgian tradition. Although these houses in the polite Georgian style dominate, there are examples of smaller later 19th century farmhouses with vernacular elements as well as single storey, double fronted cottages. Most of the larger farms have several ranges of stone-built, mainly mid-to-late 19th century outbuildings, some arranged around a courtyard. Several groups of traditional farm buildings have been converted to non-agricultural use. Most working farms have large, modern steel, concrete and asbestos agricultural buildings. The proximity of Tenby, particularly to the eastern side of this area, has promoted the growth of tourist facilities including campsites, caravan parks, a golf course and buggy trail. Three main east-west routeways pass through the area: The Ridgeway, the A4139 and the Tenby to Pembroke railway line. In addition to the ruined medieval houses, recorded archaeology is rich and varied and includes: prehistoric flint working floors, a bronze age round barrow, an iron age defended settlement, a corn mill and several old limestone quarries and limekilns.

- 4.1.4 Although not dissimilar to some neighbouring areas, the large farmhouses, some with medieval origins, and the large, regular fields characterise this landscape. It is not, however, always possible to define its boundaries with precision, except to the west against strip fields and to the south where it borders the coast zone.

4.2 The archaeological resource

Registered Historic Landscapes

- 4.2.1 All three proposed turbines are located within the Manorbier Registered Historic Landscape, which is valued for the strong surviving links between field systems, buildings and other landscape features, and the historic and prehistoric events and processes that have created them. Although inclusion on the Register does not result in statutory protection, it does highlight and encourage the importance of considering the possible effects of development upon the survival and value of these landscapes.

Scheduled Ancient Monuments

- 4.2.2 There are two Scheduled Ancient Monuments (SAMs) located within a 1km radius of the turbine locations. A group of Bronze Age round barrows (SAM PE470) are located on the south side of The Ridgeway. The closest, Norchard Beacon, is approximately 500m west of Turbine C and 940m from Turbine B. Lydstep Palace (SAM PE403) is located approximately 600m southeast of Turbine A.

SAM No.	Site Name	PRN	NGR	Site Type	Period
PE403	The Old Palace, Lydstep	PRN60034	SS086983	Palace	Medieval
PE470	Bier Hill round barrows	PRN3489	SN070001	Barrow cemetery	Prehistoric

Table 2: Scheduled Ancient Monuments within 1km of turbines

Listed Buildings

4.2.3 There are seven listed buildings within 1km of Turbine A (Figure 2). Lydstep Palace (which is also a SAM), is Grade I listed (Listing No. 18015), and is located approximately 600m from Turbine A.

4.2.4 Norchard, is Grade II* listed (LB. 5986) and is located approximately 800m north of Turbine A. The Corn Mill, Millpond and Farm buildings at Norchard are all Grade II listed (LBs. 18019 and 18020). West Lodge (LB. 20898) is a Grade II listed building in Lydstep approximately 800m to the southeast of Turbine A. The Grange is a Grade II house and farm buildings at Baldwin's Moor (LBs 18015 and 18016) Located approximately 460m southwest of Turbine A.

4.2.5 Palmerslake Farmhouse is a Grade II Listed building approximately 1km east of Turbine B. Turbine B is located approximately 300m north of Norchard.

4.2.6 Manorbier Station is located just over 1km from Turbine C.

PRN	LB No.	Building Name	Grid Reference	Grade
59518	18015	The Grange	SS0786298263	II
59519	18016	The Grange old farmhouse	SS0786298263	II
37642	18019	Norchard Mill	SS08229945	II
59523	18020	Norchard Farm buildings	SS0816699485	II
38323	20898	West Lodge	SS0856098300	II
7282		Middle Hill Building	SS07259834	LB II
7283	5986	Norchard House	SS0818599465	II*
60034	5991	Lydstep Palace	SS0863098375	I
6654	6006	Palmerslake Farmhouse	SN0911700047	II
59525	18021	Manorbier Stationmasters House	SS0697799406	II
59524	18022	Manorbier Railway Station	SS0696599408	II

Table 3: Listed Buildings within 1km of turbines

4.3 The Historic Environment Record

Known Archaeological Remains

4.3.1 The following table lists the features that are recorded in the Regional HER. Features that are recorded in the NMR are only included if they do not feature in the HER. Listed buildings and SAMs are also included.

4.3.2 No new features of archaeological significance were identified during the site visit, or during the desk top survey.

Historic mapping

4.2.7 Scrutiny of 1st and 2nd edition Ordnance Survey mapping tithe maps and aerial photographs of the turbine locations did not reveal any features that have not already been recorded.

Table 4: Regional HER Sites within 1km vicinity of Turbines A, B, and C

PRN	Name	Description	Grid Ref	Period	Status	Turbine Vicinity
3489	NORCHARD BEACON	Beacon	SN07280007	Post-medieval	SAM PE470	B C
3532	NORCHARD BEACON	Round Barrow	SN07280007	Bronze Age	SAM PE470	B C
3533	BIER HILL MOUNDS	Round Barrow	SN07100010	Bronze Age	SAM PE470	C
3534	BIER HILL MOUNDS	Round Barrow	SN07020010	Bronze Age	SAM PE470	C
3535	BIER HILL MOUNDS	Round Barrow	SN06980009	Bronze Age	SAM PE470	C
3536	THE RIDGEWAY	Defended Enclosure	SN07030030	Unknown		C
3537	LA PONTEROSA	Burnt Mound	SN08100035	Prehistoric		B C
3538	WHITE GABLES	Park	SN071006	Medieval		C
4211	THE RIDGEWAY	Round Barrow	SS09169986	Bronze Age		B C
4222	LYDSTEP PALACE	Building	SS08639836	Medieval	SAM PE403	A
4420	LONG STONE	Standing Stone	SN07870081	Bronze Age		C
4426	BLOODY ACRE	Battle Site	SN075009	Unknown		C
6654	PALMERSLAKE FARMHOUSE	Farmhouse	SN0911700047	Medieval	II	B
7282	MIDDLE HILL	Building	SS07259834	Post-medieval	LB II	A
7283	NORCHARD	Building	SS0818599465	Post-medieval	LB II*	A B C
7616	RISING SUN	Hillfort	SN074003	Iron Age		B C
7617	CASTLES;CASTLE PARK	Place-name	SN07610027	Unknown		B C
7618	DRIM CAMP	Findspot	SN07610027	Unknown		B C
7976	BLOODY ACRE	Place-name	SN077008	Unknown		C
8167	CROSS PARK	Place-name	SS078992	Unknown		A B C
8168	LYDSTEP	Round Barrow	SS0859598547	Bronze Age		A
10532	THE BISHOP'S HOUSE	Dwelling c	SS0898	Post-medieval		A
11685	PENALLY	Findspot	SS0899	Mesolithic		A
11837	MANORBIER MANSION	Fortified House	SS072983	Medieval		A
12241	LYDSTEP BAY	Flint Working Site	SS0898	Mesolithic		A
12542	WHITEWELL	Church	SS0899	Medieval		A
12550	ST FLORENCE	Corn Mill	SN0800	Medieval		B C
12551	ST FLORENCE	Fortified House	SN0700	Medieval		C
14243	MANORBIER STATION ENCLOSURE 1	Defended Enclosure	SS074998	Iron Age		B C
14361	MANORBIER STATION ENCLOSURE 2	Defended Enclosure	SS07409967	Iron Age		B C
15744	THE RECTORY	Building	SN08130083	Post-medieval		C
15926	SOUTH LODGE	Lodge	SS08709784	Post-medieval		A
15933		Quarry	SS072993	Post-medieval		C
16540	MANORBIER STATION	Lime Kiln (from maps)	SS0715499012	Post-medieval		A
16736	WHITEWELL FARM	Lime Kiln (from maps)	SS08849933	Post-medieval		A B
16852	MANORBIER STATION	Quarry (from maps)	SS07199902	Post-medieval		A

16951	NORCHARD FARM	Quarry (from maps)	SS081992	Post-medieval		A C
16964	NORCHARD FARM	Quarry (from maps)	SS08459916	Post-medieval		A B C
17993	RIDGEWAY LODGE	Building	SN08440005	Post-medieval		B C
20827	MANORBIER STATION	Railway Station	SS06959944	Post-medieval		C
25494	LYDSTEP	Mining Feature	SS088979	Post-medieval		A
28041	LYDSTEP	Settlement	SS0898	Post-medieval		A
28061	ST FLORENCE	Building	SN0800	Post-medieval		
33717	MIDDLE HILL	Windmill (from maps)	SS07249846	Post-medieval		A
37637	NORCHARD FARM	Shed, Cottage(from maps)	SS08149963	Post-medieval		A B C
37638	NORCHARD FARM	Well, Spring (from maps)	SS08139957	Post-medieval		A B C
37642	NORCHARD FARM	Norchard Mill	SS08229945	Post-medieval	LB II	A
38323	WEST LODGE	Building	SS0856098300	Modern	LB II	A
39064	NORCHARD	Saw Pit	SS08219951	Post-medieval		
39065	NORCHARD	Saw Pit	SS08219951	Post-medieval		
39073	NORCHARD FARM	Farm	SS08159947	Post Medieval		A B
39851	WHITEMOOR FARM	Farm	SS074992	Post-medieval		A B C
42878	ST FLORENCE	Field System	SN07310081	Post-medieval		B C
42879	ST FLORENCE	Farm Building	SN07640050	Post-medieval		B C
42880	ST FLORENCE	Quarry	SN07280078	Post-medieval		C
42881	ST FLORENCE	Quarry	SN07440066	Post-medieval		C
42882	ST FLORENCE	Quarry	SN07440066	Post-medieval		C
42883	ST FLORENCE	Quarry	SN07720058	Post-medieval		B
43272	SLADE	Lime Kiln	SS0757698703	Post-medieval		A
43273	SLADE HOUSE	Lime Kiln	SS0769898699	Post-medieval		A
43278		Lime Kiln	SS0827898607	Post-medieval		A
45940	RED HOUSE KILN	Lime Kiln	SS07329890	Post-medieval		A
47439	BIER HILL MOUNDS	Round Barrow	SN0691400123	Bronze Age	SAM PE470	C
47443	BIER HILL BARROW CEMETERY	Round Barrow Cemetery	SN0708000100	Bronze Age	SAM PE470	C
59518	THE GRANGE	House	SS0786298263	Post-medieval	LB II	A
59519	OLD FARMHOUSE THE GRANGE	House	SS0784498263	Post-medieval	LB II	A
60034	LYDSTEP PALACE	Palace Ruins	SS0863098375	Post-medieval	LB I	A
59523	NORCHARD FARM BUILDINGS	Farm	SS08159947	Post Medieval	LB II	A B
59524	FORMER RAILWAY STATION	Railway Station	SS0696599408	Post-medieval	LB II	C
59525	STATIONMASTER'S HOUSE	House	SS0697799406	Post-medieval	LB II	C
101244	RAF MANORBIER	Airfield	SS07859780	Modern		A
305457	WHITEWELL, MOUND	Mound	SS09019910	Unknown		A
270836	PILLBOX, MANORBIER	Pillbox	SS08219818	Post-medieval		A
270835	PICKETT HAMILTON FORT	Fort	SS08089770	Post-medieval		A
270831	PILLBOX, MANORBIER	Pillbox	SS07489796	Post-medieval		A
270838	PILLBOX, MANORBIER	Pillbox	SS08429807	Post-medieval		A
308873	SHIPPING HILL FARM, CROPMARK	Enclosure	SS07489990	Unknown		B C

Table 4: Regional HER Sites within 1km vicinity of Turbines A, B, and C

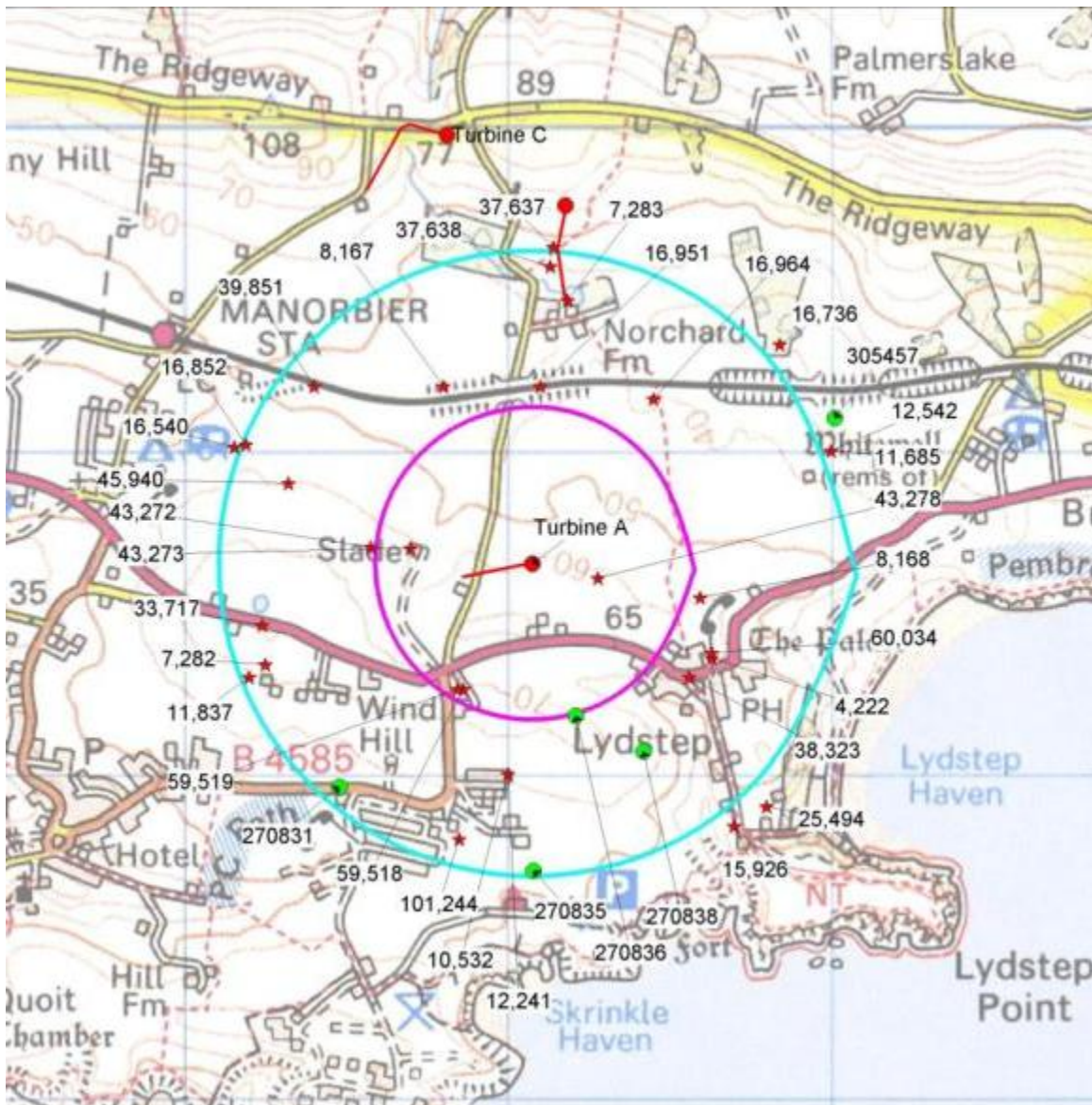


Figure 2: Map showing archaeological features within 1km (blue circle) and 500m (pink circle) of Turbine A.

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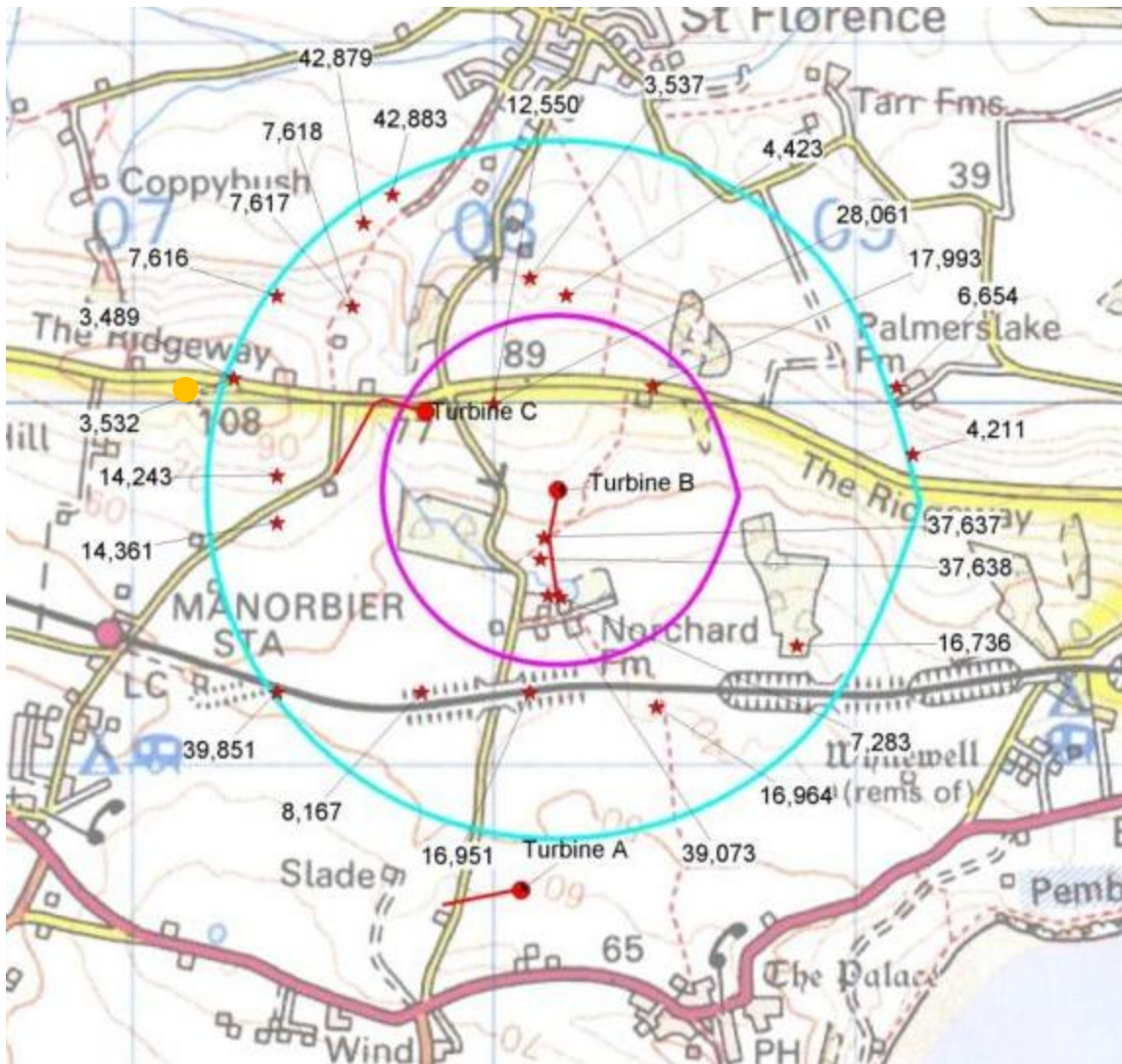


Figure 3: Map showing archaeological features within 1km (blue circle) and 500m (pink circle) of Turbine B.

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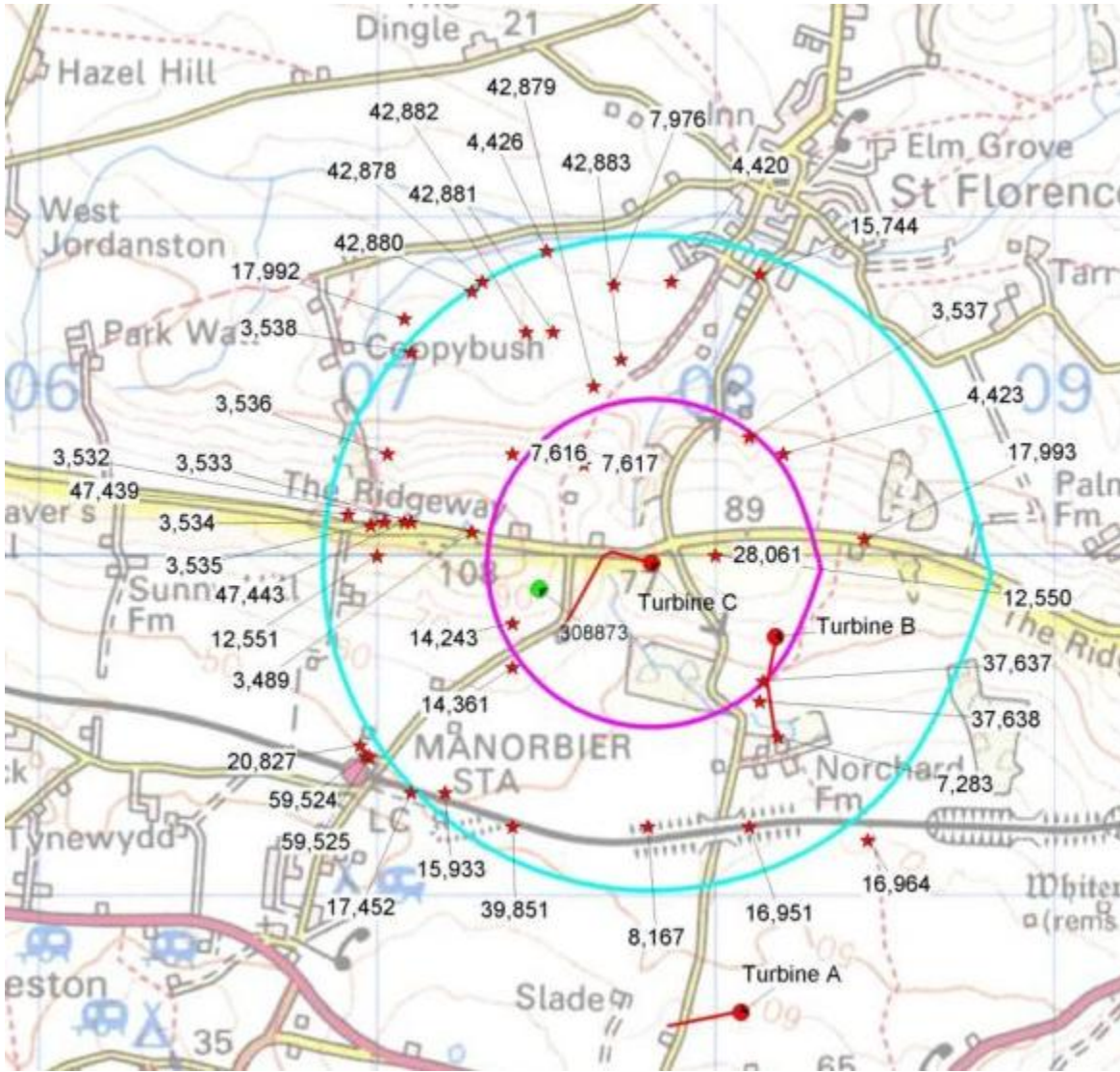


Figure 4: Map showing archaeological features within 1km (blue circle) and 500m (pink circle) of Turbine C.

5. HISTORIC ENVIRONMENT APPRAISAL

5.1 Physical impacts

- 5.1.1 None of the proposed turbine locations will have a physical impact on any known archaeological features (see figures 2, 3 and 4).

5.2 Buried archaeological potential

Turbine A

- 5.2.1 Turbine A does not have an increased potential for the likelihood for buried archaeological features being present compared to other locations. The field has been long cultivated, and the proposed turbine location is in an area of shallow ploughsoil where the underlying limestone bedrock is close to the surface. Survival of any deposits that were at one time present is therefore unlikely.

Turbine B

- 5.2.2 The gently sloping field has been long cultivated, and aerial photographic images do not suggest any potential features are present. The proposed location of Turbine B does not have an increased potential for the likelihood for buried archaeological features being present compared to other locations.

Turbine C

- 5.2.3 The proposed location for turbine C has some increased potential for the likelihood of buried archaeological features being present in the vicinity, based on the proximity of the site to the Bier Hill round barrow group, and the discovery of several scatters of worked flint in various locations along the ridgeway, suggesting it was a focus for prehistoric activities in the past. The turbine location itself is on an area of quite level ground, which might have made it a preferred location for a range of prehistoric activities. However, the extent to which anything that might be present will have survived is unknown.

Hedgerows, field patterns and ancient woodland

- 5.2.4 The scheme will use subsurface directional drilling to avoid impacting on any Hedgerows, field patterns or ancient woodland.

Tir Gofal

- 5.2.5 No features identified in the Tir Gofal assessments for Shipping Hill and Norchard will be impacted upon by the proposals.

5.3

- 5.3.1 None of the proposed turbine site is likely to have any potential to reveal suitable deposits for palaeoenvironmental analysis.

5.4 Visual impacts

Setting

- 5.4.1 The size of the turbines, their proposed locations and their distance from the nearest SAMs make it unlikely that they can be considered to have a detrimental effect upon the setting of either SAMs PE403 and PE470, both of which are over 500m from the proposed turbine locations. Intervening landscape features such as field boundaries are likely to further reduce their visibility from the SAMs (see photos 1 to 5).

- 5.4.2 Likewise none of the settings of the Listed Buildings within 1km of the turbines can be considered to be negatively impacted by the proposals.
- 5.4.3 No other non-statutory buildings of local importance have settings that can be considered to be negatively impacted by the proposals.
- 5.4.4 There are no Registered Parks and Gardens within 1km of the proposed turbine locations.
- 5.4.5 Although all three turbines are located within the Manorbier Registered Historic Landscape, the small scale of the turbines, and their proposed locations, mean that they have a minimal visual impact upon landscape character.

Cumulative visual impacts

- 5.4.6 The small scale of the turbines proposed in these applications, and their proposed domestic function, mean that single domestic turbines have a minimal visual impact upon the general landscape character.
- 5.4.7 Together, the three turbines are sufficiently spaced apart and are sufficiently small in scale for them not to have a significant cumulative effect on the historic landscape.
- 5.4.8 Other wind turbines in the area are sufficiently distant for there not to be a significant cumulative effect on the landscape in relation to the proposals considered in this Appraisal.
- 5.4.6 A separate, more detailed assessment of the visual impacts of the proposals has been undertaken by PCNP to inform the planning process. Some photographs are included in this appraisal to illustrate the limited visibility of the proposals.

6. SUMMARY OF IMPACTS

6.1 Turbine A (Thornhill) – PA12/ 0296 (see Figure 2)

- 6.1.1 Turbine A will have no significant impact upon any known archaeological features, or buildings of any description. There is no particular reason to suppose there is a higher probability of previously unrecorded archaeology surviving below ground within the area of the proposal. In any event, considering the small footprint of the turbine and the cable trench, it is unlikely that the proposals will have a significant impact on anything present.
- 6.1.2 Were any buried features to be discovered during the groundworks, it is unlikely that sufficient evidence could be recovered or recorded, to satisfactorily characterise the features.
- 6.1.3 The proposed turbine will not have a physical impact upon any SAMs or non-scheduled monuments. There will be no impact on any listed buildings or non-listed buildings.
- 6.1.4 The proposed turbine will not have a significant visual impact upon any SAMs or non-scheduled monuments. There will be no impact on any listed buildings or non-listed buildings.
- 6.1.5 The proposals will not have a physical effect upon any Registered Parks and Gardens or their essential settings.
- 6.1.6 Although the proposed turbine is located within the Manorbier Registered Historic landscape, the proposals will have an insignificant physical impact upon the landscape.
- 6.1.7 Although the proposed turbine is located within the Manorbier Registered Historic landscape, due to the small scale of the turbines and the screening effects of existing trees, hedges and other topographic and landscape features, the proposals will have an insignificant visual impact on views towards the ridgeway from the Coastal Path, or from the Ridgeway towards the coast.
- 6.1.8 There will be no physical impacts on Hedgerows or field patterns or ancient woodland. Cables will be 'directionally drilled' beneath hedgerows and roads.

6.2 Turbine B (Norchard Farm) – PA12/0346 (see Figure 3)

- 6.2.1 Turbine A will have no significant impact upon any known archaeological features, or buildings of any description. Despite the historic origins of Norchard Farm, there is no particular reason to suppose there is a higher probability of previously unrecorded archaeology surviving below ground within the area of the proposal. In any event, considering the small footprint of the turbine and the cable trench, it is unlikely that the proposals will have a significant impact on anything present.

- 6.2.2 Were any buried features to be discovered during the groundworks, it is unlikely that sufficient evidence could be recovered or recorded, to satisfactorily characterise the features.
- 6.2.3 The proposed turbine will not have a physical impact upon any SAMs or non-scheduled monuments. There will be no impact on any listed buildings or non-listed buildings.
- 6.2.4 The proposed turbine will not have a significant visual impact upon any SAMs or non-scheduled monuments. There will be no impact on any listed buildings or non-listed buildings.
- 6.2.5 The proposals will not have a physical effect upon any Registered Parks and Gardens or their essential settings.
- 6.2.6 Although the proposed turbines are located within the Manorbier Registered Historic Landscape, the proposals will have an insignificant physical impact upon the landscape.
- 6.2.7 Although the proposed turbine is located within the Manorbier Registered Historic Landscape, due to the small scale of the turbines and the screening effects of existing trees, hedges and other topographic and landscape features, the proposals will have an insignificant visual impact on views towards the ridgeway from the Coastal Path, or from the Ridgeway towards the coast.
- 6.2.8 There will be no physical impacts on Hedgerows or field patterns or ancient woodland. Cables will be 'moled' beneath hedgerows and roads.

6.3 Turbine C (Shipping Hill) – PA12/0299 (see Figure 4)

- 6.3.1 Turbine C will have no significant impact upon any known archaeological features, or buildings of any description. The turbine location itself is on an area of quite level ground, which might have made it a preferred location for a range of prehistoric activities. Based on the proximity of the site to the Bier Hill round barrow group, and the discovery of several scatters of worked flint in various locations along the ridgeway there is therefore some increased potential for buried archaeological features being present in the vicinity. However, the extent to which anything that might be present will have survived is unknown. In any event, considering the small footprint of the turbine and the cable trench, it is unlikely that the proposals will have a significant impact on anything present.
- 6.3.2 Were any buried features to be discovered during the groundworks, it is unlikely that sufficient evidence could be recovered or recorded, to satisfactorily characterise the features.

- 6.3.3 The proposed turbine will not have a physical impact upon any SAMs or non-scheduled monuments. There will be no impact on any listed buildings or non-listed buildings.
- 6.3.4 The proposed turbine will not have a significant visual impact upon any SAMs or non-scheduled monuments. There will be no impact on any listed buildings or non-listed buildings.
- 6.3.5 The proposals will not have a physical effect upon any Registered Parks and Gardens or their essential settings.
- 6.3.6 Although the proposed turbines are located within the Manorbier Registered Historic Landscape, the proposals will have an insignificant physical impact upon the landscape.
- 6.3.7 Although the proposed turbine is located within the Manorbier Registered Historic Landscape, due to the small scale of the turbines and the screening effects of existing trees, hedges and other topographic and landscape features, the proposals will have an insignificant visual impact on views towards the ridgeway from the Coastal Path, or from the Ridgeway towards the coast.
- 6.3.8 There will be no physical impacts on Hedgerows or field patterns or ancient woodland. Cables will be 'directionally drilled' beneath hedgerows and roads.

7. CONCLUSIONS

- 7.1 Considering the small scale of the three turbines and their proposed locations, they are unlikely to have a significant physical impact upon the historic environment either individually or cumulatively. An archaeological watching brief during construction is perhaps most justifiable at the location of Turbine C, since there is a possibility that evidence of prehistoric activity might be revealed in such a location.
- 7.2 Considering the small generating capacity of the turbines, the costs of undertaking an archaeological watching brief on each installation is likely to be unnecessarily costly for the applicants in relation to the likelihood that any significant archaeological deposits will be present, or might be adversely effected.
- 7.3 Considering the small scale of the three turbines and their proposed locations, they are unlikely to have a significant visual impact upon the historic environment either individually or cumulatively. No further assessment of their visual impact is recommended.

7.4 Turbine A

- 7.4.1 Based on the results of this Historic Environment Appraisal, there is no need for further archaeological mitigation in relation to Turbine A.

7.5 Turbine B

- 7.5.1 Based on the results of this Historic Environment Appraisal, there is no need for further archaeological mitigation in relation to Turbine B.

7.6 Turbine C

- 7.6.1 Based on the results of this Historic Environment Appraisal, it may be considered desirable to undertake an archaeological watching brief during the groundworks associated with the installation of Turbine C.

8. SOURCES

Database

Dyfed Archaeological Trust Historic Environment Record, housed with Dyfed Archaeological Trust in The Shire Hall, Llandeilo, Carmarthenshire, SA19 6AF

Dyfed Archaeological Trust on-line resources at www.dyfedarchaeology.org.uk

Cartographic

GIS based Ordnance Survey 2nd edition 1907

GIS based Ordnance Survey 1st edition 1809

PHOTOGRAPHS



Photo 1: View south from Turbine B location towards Turbine A location (a blue cherry-picker (within the red circle) indicates the height and location of Turbine A. The Turbine will not be visible from Norchard Farm.



Photo 2: View north from Norchard Farm towards the proposed location of Turbine B (exact location and scale of turbine not indicated)



Photo 3: View from footpath near Lydstep Palace SAM towards the location of Turbine A. The red circle indicates the location of the cherry-picker representing the scale and location of the turbine



Photo 4: View eastwards from vicinity of Norchard Beacon SAM towards proposed location of Turbine C with scale and location represented by the cherry-picker.



Photo 5: View from Turbine B towards Turbine C (exact location and scale of Turbine C not shown)

THREE PROPOSED WIND TURBINES NEAR MANORBIER, PEMBROKESHIRE HISTORIC ENVIRONMENT APPRAISAL 2012

RHIF YR ADRODDIAD / REPORT NO. 2012/57
RHIF Y PROSIECT / PROJECT RECORD NO. 103587

Awst 2012
August 2012

Paratowyd yr adroddiad hwn gan / This report has been prepared by:
Duncan Schlee

Swydd / Position: **Field Services Project Manager**

Llofnod / Signature  ... Dyddiad / Date 21/08/12

Mae'r adroddiad hwn wedi ei gael yn gywir a derbyn sêl bendith

This report has been checked and approved by:

ar ran Ymddiriedolaeth Archaeolegol Dyfed Cyf.
on behalf of Dyfed Archaeological Trust Ltd.

Swydd / Position:

Llofnod / Signature Dyddiad / Date

*Yn unol â'n nôd i roddi gwasanaeth o ansawdd uchel, croesawn unrhyw sylwadau
sydd gennych ar gynnwys neu strwythur yr adroddiad hwn*

*As part of our desire to provide a quality service we would welcome any comments
you may have on the content or presentation of this report*

