



Polshea Farm, St Tudy

Archaeological assessment of proposed wind turbine



Historic Environment Projects

Polshea Farm, St Tudy, Cornwall

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The viewshed mapping was carried out by Megan Val Baker.

The views and recommendations expressed in this report are those of Historic Environment Projects and are presented in good faith on the basis of professional judgement and on information currently available.

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Cover illustration

View west towards the proposed turbine site from Rough Tor.

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Abbreviations

ADS	Archaeological Data Service
BGS	British Geological Survey
CC	Cornwall Council
DBA	Desk-based Assessment
DTM	Digital Terrain Model
EH	English Heritage
EIA	Environmental Impact Assessment
GIS	Geographical Information Systems
HBSMR	Historic Buildings Sites and Monuments Record
HER	Cornwall and the Isles of Scilly Historic Environment Record
HE	Historic Environment, Cornwall Council
HEPAO	Historic Environment Planning Advice Officer
IfA	Institute for Archaeologists
LB	Listed Building
LPA	Local Planning Authority
MoRPHE	Management of Research Projects in the Historic Environment
NGR	National Grid Reference
NMP	National Mapping Programme
NPPF	National Planning Policy Framework
NRHE	National Records for the Historic Environment
OASIS	Online Access to the Index of Archaeological Investigations
OD	Ordnance Datum
OS	Ordnance Survey
SAM	Scheduled Ancient Monument
WHS	World Heritage Site
WSI	Written Scheme of Investigation
ZTV	Zone of Theoretical Visibility

1 Summary

Historic Environment Projects, Cornwall Council, was approached by Mark Dyson of Mark Dyson Surveyors Ltd in December 2013 with a request to provide costs for an archaeological assessment of the potential impacts of the construction of a wind turbine at Polshea Farm, St Tudy, as part of a proposed planning application.

The proposal is for a 500kw wind turbine with a hub height of 40m and a maximum blade tip height of 67m, to be sited on agricultural land at Polshea Farm, to the north of St Tudy village, in the parish of St Tudy at SX 06989 77681 (NGR [Figure 1](#)~~Figure 1~~). The wind turbine is to be sited at a height of approximately 134m OD on the northern side of a hillcrest ([Figure 2](#)~~Figure 2~~). The area immediately surrounding the site proposed for the turbine is recorded as Anciently Enclosed Land (farmland medieval, [Figure 10](#)~~Figure 10~~).

The assessment consisted of a desk-based assessment, viewshed analysis out to 10km from the proposed turbine location, and a walkover survey. A geophysical survey of the site of the turbine and its cable connection will be commissioned separately.

Given the location chosen for the wind turbine, it was anticipated that there was some potential for negative impacts on the settings of a number of important Scheduled Monuments, Listed Buildings, Registered Parks and Gardens and two Conservation Areas within a 10km radius ([Figure 17](#)~~Figure 17~~). Visibility of the site was particularly good from some of the ridge-tops that characterise the area. The intervening valleys were often narrow and substantially vegetated, inhibiting views back to the proposed turbine site. Many of the most sensitive heritage assets were located to the northeast and would experience a minor negative visual impact on their settings from at least the top of the turbine. Cumulative impacts were also assessed as a result of the number of existing and proposed turbines in the surrounding area.

Overall the potential impacts of the proposed wind turbine on the identified heritage assets are rated as minor.

A report summarising the results of the assessment and its conclusions was prepared for the client.

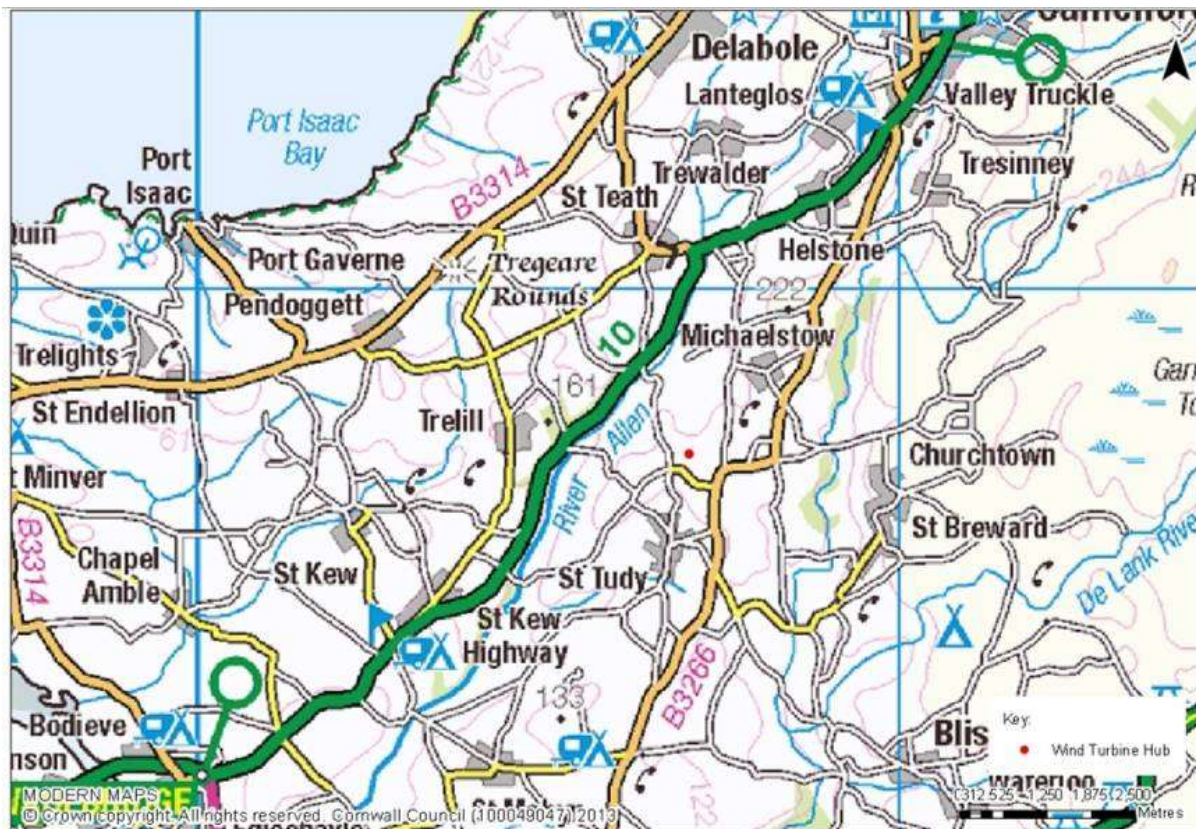


Figure 1 Location of proposed wind turbine and Polshea Farm.

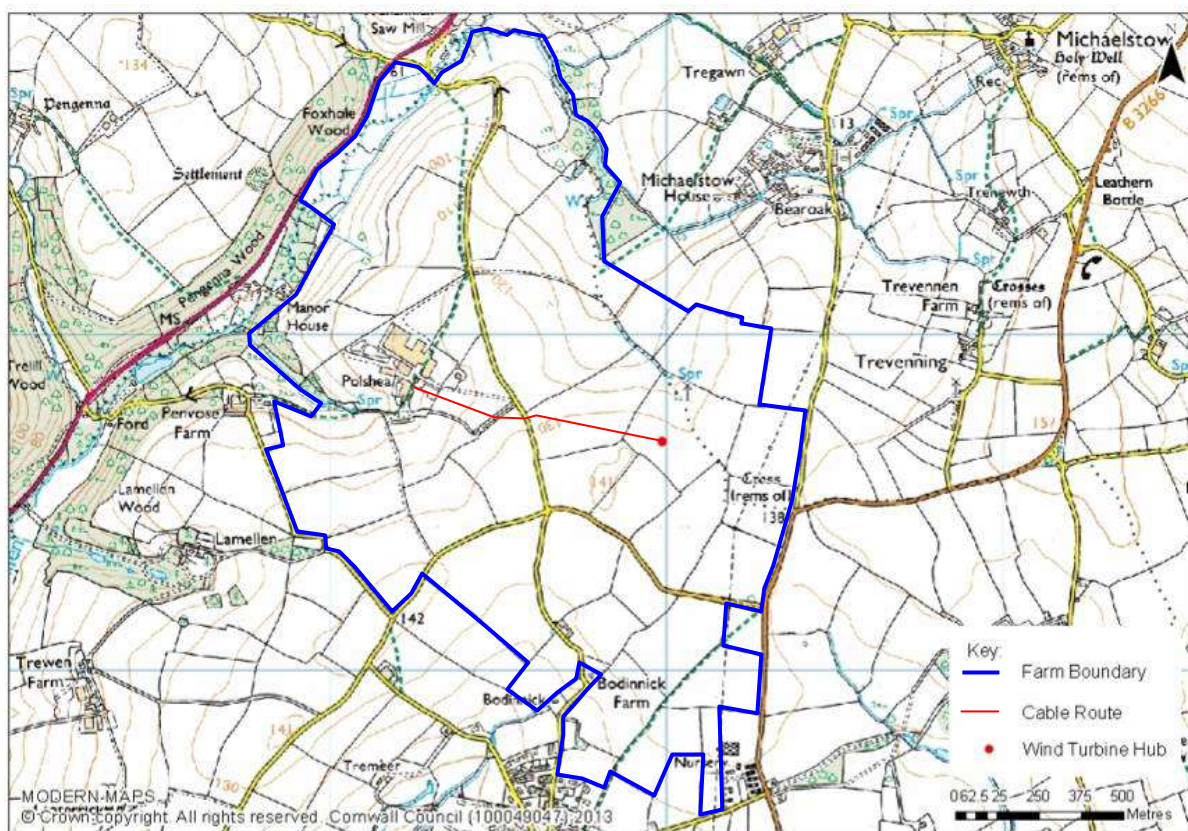


Figure 2 Location of proposed wind turbine within Polshea Farm.

2 Introduction

2.1 Project background

Historic Environment Projects, Cornwall Council, were approached by Mark Dyson of Mark Dyson Surveyors Ltd in December 2013 with a request to provide costs for an archaeological assessment of a proposed wind turbine planning application. The proposal is for a 500kw wind turbine with a hub height of 40m and a maximum blade tip height of 67m.

The site chosen for the wind turbine is currently agricultural land at an elevation of 134m OD at the southern end of a narrow plateau at SX 06989 77681. The site lies at the eastern side of Polshea Farm, in the parish of St Tudy (~~Figure 1~~~~Figure 1~~; ~~Figure 2~~~~Figure 2~~). The area immediately surrounding the site proposed for the turbine is recorded as Anciently Enclosed Land (farmland medieval ~~Figure 10~~~~Figure 10~~).

Pre-application screening of planning application PA13/09867 for a 500kw turbine and associated infrastructure determined that the application was considered to be an EIA Development within the meaning of the EIA Regulations.

A model brief prepared by Mr Phil Copleston, Historic Environment Planning Advice Officer (East), Cornwall Council, was used to guide this archaeological assessment. The brief states:

An assessment of the archaeological potential of the site and the potential impacts of the development on surrounding historic assets will be required to provide information in support of a planning application for the proposed development in accordance with the requirements of National Planning Policy Framework paragraph 128.

Cornwall Council Historic Environment Service believes high quality design should play a key role in minimising any adverse effects of renewable energy projects, whether this is directed at the disposition of wind turbines and energy crops in the landscape or the positioning of photo-voltaic cells on historic buildings or within the countryside. Fundamental to achieving high quality design will be a sound understanding of the character and importance of the historic asset involved, whether at the scale of individual buildings and sites or more extensive historic areas and landscapes.

The Cornwall Council Historic Environment Planning Officer's consultation response dated 21/10/2013 to an environmental impact assessment supplied with the original turbine application considered that its chapter 7 (historic environment) was inadequate to assess potential impacts on the historic environment and recommended that a revised application be made accompanied by a full archaeological assessment and geophysical survey, together with a landscape and visual impact assessment specifically addressing impacts on historic assets within defined catchment areas.

The current Cornwall Council guidance (agreed with EH & Planning) for 61 to 99m turbines is:

- *All proposals will require an archaeological assessment. Those in 'Anciently Enclosed Land' with HER sites within 500m will also require a geophysical survey.*
- *An assessment of the settings of designated heritage assets will be required when Scheduled Monuments, Listed Buildings, Conservation Areas, the World Heritage Site, Registered Battlefields or Registered Parks and Gardens lie within 10km (60m to tip) or 15km (100m to tip).*

The assessment consisted of a desk-based assessment, viewshed analysis out to 10km from the turbine location and a walkover survey of the location and site visits intended to determine setting impacts on designated sites within the surrounding landscape. The potential for cumulative impacts was considered. Given the location of the proposed wind turbine, the potential for negative impacts upon important heritage assets or their settings as a result of erecting the wind turbine was anticipated. Of those identified, the

prehistoric Scheduled Monuments and potentially tall structures such as the Church towers have the most sensitive settings.

2.2 Aims and objectives

The principal aim of the study is to gain a better understanding of the archaeological impacts which would result from the construction of a wind turbine at Polshea Farm, St Tudy.

The site specific aims were to:

- Establish viewsheds of the proposal site.
- Draw together existing historical and archaeological information about the site and its landscape setting from published and unpublished sources and information on designated and undesignated assets from national and local Historic Asset registers (such as the CSHER, NMR, Heritage Gateway, etc).
- Review and analyse historic map evidence for the site.
- Summarise the findings of a geophysical survey to be commissioned for a one Hectare area around the site of the wind turbine and 300m wide along its cable connection route.
- Undertake a site walkover survey.
- Produce 'statements of significance' for all designated historic assets, that are identified as potentially impacted on by the current proposals following the initial filtering of the ZTV. Where currently undesignated assets are identified their likely significance will be indicated i.e. 'national', 'regional' or 'local'.
- Commission photomontages taken from key heritage receptors whose settings are likely to be impacted upon by the wind turbine.
- Inform whether archaeological recording of any extant remains is required.
- Inform whether an archaeological evaluation or further archaeological recording of any potential buried remains is required.
- Inform whether palaeoenvironmental sampling would be required.
- Identify the construction, use and 'end of life' impacts of the current proposals on designated heritage assets (as listed in the NPPF, but including the Outstanding Universal Value of the World Heritage Site) and on undesignated historic assets as described in PPS5.
- Follow English Heritage Guidance 'The Setting of Heritage Assets' (2011) to produce assessments of the significance of setting of affected assets and the impacts of the proposals on those settings.

The objective of the project is to produce a report setting out the likely range of impacts (both direct and on settings) of the development on heritage assets within the site or the surrounding locality, as defined above.

2.3 Methods

2.3.1 Desk-based assessment

As part of the desk-based assessment (DBA), historical databases and archives were consulted in order to obtain information about the history of the site and its surroundings, and the structures and features recorded within the site boundaries. The main sources consulted were as follows:

- Published sources available in the Cornwall and Scilly HER.
- Historic maps including
 - Norden's Map of Cornwall (printed in 1728 but mapped *circa* 1600)
 - Joel Gascoyne's map of Cornwall (1699)
 - Thomas Martyn's map of Cornwall (1748),
 - OS 1 inch survey (*circa* 1810)
 - St Tudy Tithe Map (*circa* 1840),
 - 1st and 2nd Editions of the OS 25 inch maps (*circa* 1880 and *circa* 1907).

- Modern maps.
- National Mapping Programme transcripts from aerial photographs.
- Other aerial photographs in the Cornwall and Scilly HER.
- Historic Landscape Characterisation mapping.
- Cornwall and Scilly Historic Buildings, Sites and Monuments Record (HBSMR).
- Information held as GIS themes as part of the Cornwall and Scilly HER.

The historical and landscape context of the site was also considered during this stage of the assessment in order to establish the nature of the heritage assets which are located within the area surrounding the proposed wind turbine.

2.3.2 Viewshed analysis

An assessment of the impacts of the proposals was made from the surrounding area using the guidelines and methodological approaches set out in English Heritage's recent consultation draft guidance on the setting of heritage assets. The methodology employs ArcGIS software and a Digital Terrain Model (DTM), which ignores potentially temporary surface features such as buildings, woodland, vegetation, etc. to provide a surface model of potential intervisibility between the proposed wind turbine and key heritage assets within the surrounding landscape. A viewshed or ZTV (Zone of Theoretical Visibility) was generated for an 'observer point' based on the location of the proposed wind turbine.

When performing viewshed analyses, several variables are used to limit or adjust the calculation including offset values, limitations on horizontal and vertical viewing angles (azimuth) and distance parameters (radius) for each observer point. For the proposed wind turbine at Polshea Farm, the viewshed was based on an 'overall observer elevation value' made up of the 'elevation value' or height above sea level of the ground at the observer viewpoint, with added to this additional offset of 40m to represent the height of the turbine hub and 67m to represent that of the blades.

This viewshed was checked on the ground, given that vegetation and other factors may substantially block views to and from key sites. Significant heritage assets within the theoretical viewsheds were visited (where access was possible) and the landscape within which they sit was considered to determine likely intervisibility with the proposed development site, inclusion within key views, and the natures of their settings, both locally and at a distance. This informed the likely scales and types of any visual impacts which might affect their settings, as required by English Heritage (2011). Viewshed radii of 10km, 3km, or 5km were used to determine potential impacts on designated heritage assets (as appropriate); a radius of 1km was used for undesignated heritage assets ([Figure 12](#)~~Figure 12~~ - [Figure 18](#)~~Figure 18~~).

Sites identified through intersection of the ZTV modelling with GIS layers containing designated and undesignated heritage assets produced data sub-sets which were further filtered according to their intersection with zones representing 1km, 3km, 5km and 10km from the site, as required by the HEPAO model brief and English Heritage guidance.

The site types within these data sets were then analysed to determine their likely sensitivity to impacts on settings. Those site types which had no setting (documented sites) were excluded from further analysis, as were those which by their nature have very localised settings (for example, milestones, wayside crosses and fingerposts) except where in very close proximity to the application site. The resultant site lists were further filtered by close examination of the ZTV data and a 2005 vertical aerial photograph GIS layer to remove from the lists those sites where mature vegetation or proximal buildings would almost certainly block intervisibility and where intrusion into key views was unlikely. Designated sites with limited settings and those with inherently local settings which were more than 2km from the application site tended to be excluded from assessment at this stage unless specific reasons, such as wholly unimpeded intervisibility, were identified to justify their retention.

The resultant site list consisted of a mixture of designated assets having substantial intervisibility with the proposal site, Scheduled Monuments whose original settings were intended to include large areas of the surrounding landscape (for example, prominent hilltop barrows, hillforts, and rounds), or which were designed to function as part of intervisible elements of larger groups with landscape settings (for instance barrow cemeteries), other high grade designated historic structures which were intended when built to be highly prominent within the landscape (predominantly church towers), and upstanding undesignated sites in close proximity to the development site. This filtered group of sites was assessed to determine impact.

2.3.3 Fieldwork

In order to check the validity of the Zone of Theoretical Visibility (ZTV) indicated by the viewshed analysis, and thus the potential impacts on key heritage assets within the ZTV, site visits were made to both the site proposed for the wind turbine, and to selected key locations within the surrounding landscape. A visual check and photographic record was made of intervisibility (or the lack of it) between the proposed development site and heritage assets indicated by the ZTV mapping as being likely to be within the viewshed and whose settings were assessed as vulnerable to impacts from the development where public access was available. Where this was not the case, the nearest possible vantage point was utilised, preferably one in which the proposed development site formed the backdrop to a view of the designated heritage site or was within the same view.

A walkover survey of the site proposed for the wind turbine and for its cabling was also undertaken to examine the site for upstanding archaeology and to record the nature of the boundary types which might be impacted upon during the development.

2.3.4 Post-fieldwork

On completion of the project and following review with the HE Project Manager the results of the study were collated as an archive in accordance with: *Management of Research Projects in the Historic Environment (MoRPHE) English Heritage 2006*. The site archive will initially be stored at ReStore, with the eventual aim of deposition at Cornwall Record Office.

An archive report (this report) has been produced and supplied to the Client. This report will be lodged with the Cornwall and Scilly Historic Environment Record (HER) and made available for public consultation once a planning application for the site has been made. A copy of the report will be supplied to the National Record of the Historic Environment (NRHE) in Swindon, to the Courtney Library of the Royal Cornwall Museum and to the Cornish Studies Library. All digital records will be filed on the Cornwall Council network.

An English Heritage/ADS online access to the index of archaeological investigations (OASIS) record has been made covering this assessment project.

3 Location and setting

The site is located approximately 134m OD at SX 06989 77681 (NGR). It is approximately 10km north of Bodmin and 0.5km north-northeast of the village of St Tudy ([Figure 1](#)~~Figure 1~~; [Figure 2](#)~~Figure 2~~). Topographically the site is on the northern side of a hillcrest that falls steeply down to the north and more gradually towards the River Allen on the northwest side.

The topography predominantly defines the setting of and views to and from the site. Agricultural activities characterise the landscape surrounding the site whilst pockets of mixed woodland extend upslope from narrow valleys. Polshea Farm occupies part of the hilltop plateau, the turbine being proposed to be located on the eastern side of the farm. The majority of the farm consists of open fields, and there are substantial farm buildings and several dwellings at Polshea.

From ground level, the views to the west and southwest are the most restricted due to the crest of the hill and 2-3m high hedges. The views to the north and east are quite

open and extensive, stretching as far as the North Cornish coast and Bodmin Moor (Figure 19; Figure 20).

The bedrock geology in this location consists of siltstones and slates of the Trevoze Formation and Rosenum Formation (BGS data). This is sedimentary bedrock formed 375-398 million years ago in the Devonian Period in a deep sea environment. The soils in the field proposed for the development are recorded as Denbigh 2 loams over shale (British Geological Survey website).

The Historic Landscape Characterisation of the turbine site is recorded as Anciently Enclosed Land (farmland medieval). This is agricultural heartland with farming settlements documented before the 17th Century, probably with Medieval or Prehistoric origins. The field patterns are morphologically distinct from the generally straight-sided fields of later enclosure (Figure 10).

4 Project extent

The archaeological assessment focussed on those heritage assets (whether designated or not) which might be physically impacted upon by activities associated with the erection of the wind turbine, including cable trenching, siting of temporary compounds, cranes or other equipment and with any associated semi-permanent infrastructure.

The assessment also takes into account and quantifies impacts on the settings of heritage assets (both designated and undesignated) within the viewshed and selected radii of the proposed turbine sites in line with paragraph 129 of the 2012 National Planning Policy Framework (NPPF), sections 16(2) and 66(1) of the Planning (Listed Buildings and Conservations Areas) Act 1990 Chapter 9, and English Heritage guidance relating to the setting of historic assets (2011) and on wind energy and the historic environment (2005). These impacts were assessed out to the following distances:

- Non-designated heritage assets – 1km radius.
- Conservation Areas – 3km radius.
- Grade II Listed Buildings – 5km radius.
- Registered Parks and Gardens – 10km radius.
- World Heritage Sites – 10km
- Scheduled Monuments, Grade I and Grade II* Listed Buildings – 10km radius.

5 Designations

The table below cross-references the designated and undesignated assets with the radial distance of their locations from the study area (Figure 19). The distances used refer to the English Heritage guidance relating to the setting assessments of potentially impacted heritage assets. Where assets cross over between two distances, the closest distance to the study area has been used to account for that asset. The first number in each box refers to the total number of assets within that radius, the second refers to those which fall within the ZTV.

Designation	Within 1km/ viewshed	1-3km/ viewshed	3-5km/ viewshed	5-10km/ viewshed	Total/ viewshed
Undesignated Sites (Regional/ Local)	24/23	-	-	-	24/23
Conservation Areas (National)	-	2/2	-	-	2/2
Parks and Gardens (National)	-	1/1	-	1/1	2/2
Grade II Listed Buildings (National)	8/7	184/103	153/50	-	333/170

Grade I & II* Listed Buildings (National)	-	9/3	5/2	26/2	40/7
Scheduled Monuments (National)	-	5/5	33/15	107/31	145/51
World Heritage Sites (International)	-	-	-	-	0/0

Table 1 Quantification of sites within 10km of the study area and those which fall within the viewsheds.

5.1 Rights of Way

No rights of way traverse the site proposed for the wind turbine, or the remainder of the area required for sub-surface cabling. This area is not registered as open access land under the CROW Act 2005.

6 Results of desk-based assessment

The majority of this north-east to south-west aligned block of landscape to the west of Bodmin Moor, bounded to the west by the Allen Valley and to the east by the valley of the River Camel is long-established farmland, enclosed since at least the medieval period and surrounding the churchtown at St. Tudy.

So thorough was this medieval reorganisation of the landscape, that almost all traces of pre-existing, prehistoric landscapes have been over-written. A Bronze Age barrow site at Hengar (MCO2812) to the south-east together with a findspot of Bronze Age axes at Tregarrick (MCO36192) to the east provide some indications of earlier prehistoric activity, and it is likely that this relatively fertile off-moor land would have been extensively settled and farmed during the Bronze Age and into the Iron Age. Transhumance agriculture may well have been practiced by these farmers, family members taking stock up onto the nearby flanks of Bodmin Moor, where there are substantial Prehistoric settlements, field systems and standing stones, to make use of available summer grazing. During the Iron Age, the substantial hillforts at Castle Killibury to the south-west, Tregeare Rounds to the north-west and Helsbury Castle to the north-east would have been important local centres.

Evidence for late prehistoric settlement is much more readily available, with enclosed farmsteads (rounds) of the Iron Age and Romano-British periods being documented within the 5km radius of the site in the Cornwall and Scilly HER at Lanterrick (MCO57400) to the south west, Hengar (MCO24730) to the east, Bear Oak (MCO37362) to the east north east, Pengenna Wood (MCO8322) to the north, Tamsquite (MCO37429), Bodinnick (MCO7591), Polglaze (MCO36902) and Tinten (MC8537) to the south, and Trequite (MCO8712) to the west. Other enclosed farms dating to this period would probably have occupied apparently blank areas of the late prehistoric landscape.

Most of the farmsteads within this area have names which incorporate elements in Cornish suggesting pre-Conquest origins, though first documented references to them are almost always later. As an example, Polishea (from the Cornish *Pol* meaning stream or pool and *Segh* meaning dry) was first recorded in 1306. Several local manors were mentioned in the Domesday Survey including Tinten, St. Tudy, Trewen, Lamellen and Polroad. The house at Lamellen, originally built in 1698 for Samuel Furness was almost entirely rebuilt in the Elizabethan style in 1849 by J.P. Magor, is Grade II* Listed and is surrounded by a Grade II Registered Park and Garden.

With the exception of some of the more exposed hilltops, all land between the Camel and the Allen rivers would have been enclosed for agriculture during the earlier part of the medieval period, and most field boundaries here would have been laid out at this time. To the south of Michaelstow, narrow, elongated fields with parallel boundaries betray the former existence of a network of medieval strip fields, as also to the east of Lamellen. Elsewhere around St. Tudy, relatively recent boundary removal and reorganisation to

make the farming of this landscape more economic and amenable to the use of modern machinery has removed much of the Medieval character of the agricultural landscape, though in places this is still evident in the form of the cropmarks mapped by the National Mapping Programme (NMP).

The first mapping depicting this area dates to the 17th century, when Joel Gascoyne produced his map of Cornwall ([Figure 3](#)). Gascoyne depicted the churchtown at St. Tudy (as St. Udy), but omitted Polshea Farm, showing this landscape as characterised by a scatter of relatively dispersed farmsteads.

John Norden's map dating to 1728 but drawn up *circa* 1699 ([Figure 4](#)) depicted the Hundred of Trigg, showing the landscape around St. Tudy, again characterised by a scatter of farms. Polshea was not named on this source, but may be one of the farms depicted. Martyn's Map of 1746 ([Figure 5](#)) includes Polshea Farm, using a circle symbol, rather than that of a small building.

The 1st Edition of the Ordnance Survey 1" to a mile mapping ([Figure 6](#)), dating to the first decade of the 19th century, again shows this landscape with its network of roads and lanes linking churchtowns and farms. The mapping seems to suggest that all of the landscape surrounding the application site was already enclosed farmland by the beginning of the 19th century.

The *circa* 1841 St. Tudy Tithe Map ([Figure 7](#)) shows an agricultural landscape very much like that existing today. Unfortunately the quality of the writing on the map and apportionment makes it very difficult to be certain about the ownership and function of this land parcel. The most appropriate possibility is that it was part of Lower Polshea, owned by Lady Grenville, occupied by Edward Simmons and used as arable farmland.

By the late 19th century and into the first decade of the 20th century it can be seen from the 1st and 2nd Editions of the Ordnance Survey 25" to a mile mapping that this was a landscape of large fields and fairly dispersed farms, much as it is today ([Figure 8](#); [Figure 9](#)). Some boundary removal and rationalisation evidently took place during the 20th century, as can be seen by comparing this mapping to the modern OS MasterMap ([Figure 2](#)). Polshea Farm now includes a number of substantial modern animal sheds set amongst large fields given over to grass crops. Polshea is farmed by Mr. Mark Button (Sharpe, 2012).

7 Results of viewshed analysis

See [Figure 12](#) and [Figure 13](#)

Given the topography of the site, its surroundings and the height of the turbine, the viewshed analysis suggests that it is likely to be visible over a fairly large proportion of the surrounding countryside. In line with the requirements of English Heritage guidance, a Zone of Theoretical Visibility (ZTV) has been mapped to a distance of 10km from the proposed site. The visibility of the turbine will diminish with distance, and will, at many local sites, be blocked by the local terrain, by intervening buildings within settlements or farmsteads, or by high hedgerows and mature groups of trees. However vegetation, particularly deciduous trees, changes seasonally and may be subject to cutting back or complete removal, which could significantly change the degree of intervisibility between a historic asset and the proposed turbine site.

7.1 1 km radius ZTV

See [Figure 14](#), [Figure 16](#)

The ZTV suggests that the turbine mast or blades could potentially be visible from almost the entirety of this zone, except for very small pockets to the north close to Michaelstow House and to the west behind Polshea. The zone includes the Grade II Listed Buildings of Bear Oak, Trevean and Bodinnick and 25 undesignated monuments varying in character from post Medieval quarries to milestones.

7.2 1km to 3km radius ZTV

See [Figure 13](#)~~Figure 13~~, [Figure 15](#)~~Figure 15~~

Parts of the wind turbine could potentially be visible from a high proportion of locations within the 1km to 3km radius area around it. This area is characterised by northeast-southwest ridge-tops which influence the theoretical intervisibility.

Within this zone, and potentially intervisible with the proposed turbine are the Conservation Areas of St Teath and St Tudy. These contain a large number of Listed Buildings of Grades I, II* and II. To the southwest of the turbine site is the Registered Park and Garden of Lamellen which only partially intersects with the zone of theoretical visibility. There is greater potential intervisibility with the proposed site from the Scheduled Monument of Helsbury Castle.

7.3 3km to 5km radius ZTV

See [Figure 16](#)~~Figure 16~~, [Figure 18](#)~~Figure 18~~

Intervisibility with the proposed wind turbine is significantly affected by the topography within this zone. The steep narrow valleys within the 3-5km zone are generally not intervisible whilst the hill crests and slopes facing the proposed site have a much higher degree of theoretical intervisibility. The majority of the designated sites will be intervisible with the turbine, according to the ZTV mapping. These notably include the Scheduled Monuments of Tregear Round and the hut circles at Harpur's Down. The Listed Buildings are generally farmhouses or associated agricultural buildings and most will be intervisible to some degree, with the exceptions of those in the settlements of St Kew and Helstone.

7.4 5km to 10km radius ZTV

See [Figure 12](#)~~Figure 12~~, [Figure 17](#)~~Figure 17~~

This radius extends to Treknow in the north, Bodmin to the south and Wadebridge to the west. The visibility of the proposed wind turbine site within this zone is likely to be minimal and the ZTV identifies large areas, particularly to the east on Bodmin Moor and north-west along the coastline as not being intervisible with the site. Any impact on the settings of many of the more distant sites will be moderated by the relatively considerable distance of these sites from that of the proposed wind turbine. The zone does contain a substantial number of Scheduled Monuments such as the multi-period sites on Bodmin Moor of Garrow Tor and Rough Tor, the majority in locations partially falling within the ZTV. To the south, Pencarrow is a Grade II* Registered Park and Garden, and would be partially intervisible.

7.5 Scheduled Monuments within the 10km radius ZTV

See [Figure 17](#)~~Figure 17~~, [Figure 18](#)~~Figure 18~~

There are 145 Scheduled Monuments within 10km of the proposed wind turbine site, 51 falling within the ZTV, as follows:

Note – some of these sites have multiple entries in the Schedule of Monuments.

Reference	Name
1007965	TREVENNING CROSS AND POST MEDIEVAL GUIDE POST, 700M SOUTHWEST OF TREVENNING VILLAGE
1003085	LONG STONE SW OF MOORGATE
1004217	HUT CIRCLES NEAR NEW HALL
1004218	HUT CIRCLE VILLAGE AND FIELD SYSTEM SE OF HARPURS DOWNS
1004222	HUT CIRCLE 440YDS (400M) SW OF CANDRA

1004223	TUMULUS ON TRESWALLOCK DOWNS 330YDS (300M) NW OF CANDRA
1004273	ROUND 500YDS (460M) E OF DELINUTH
1004274	CASTLE GOFF SE OF DELINUTH
1004417	ANCIENT VILLAGE, WATERGATE
1004424	DUNMERE CAMP
1004425	PENHARGARD CASTLE
1004484	TREWORNAN BRIDGE
1004488	PENCARROW RINGS
1004648	CROSS IN GROUNDS OF PENCARROW
1004652	CONDOLDEN BARROW
1005430	HOLY WELL NEAR ST JAMES' CHAPEL
1005458	BARROW GROUP ON GREENBARROW DOWNS
1005469	STONE CROSS IN THE GARDEN AT HIGHER LANK
1005470	HUT CIRCLE ON TRESWALLOCK DOWNS 500YDS (460M) NNW OF CANDRA
1005471	CAIRN ON ALEX TOR 660YDS (600M) NE OF WHITE MEADOW
1006661	TREVINNICK CAMP
1006662	TREGEARE ROUNDS (CAMP)
1006707	HELSBURY CASTLE
1007764	STANNON STONE CIRCLE, PREHISTORIC FIELD SYSTEM, HUT CIRCLE SETTLEMENT, CAIRNS, CIST, LINEAR BOUNDARIES AND MEDIEVAL BUILDING NORTH OF DINNEVER HILL
1007765	PREHISTORIC STONE SETTING 62M NORTH-WEST OF THE STANNON STONE CIRCLE
1007768	PREHISTORIC EMBANKED PLATFORM CAIRN AND LINEAR BOUNDARY WITH SUPERIMPOSED MEDIEVAL BOUNDARY AND ADJACENT CLEARANCE CAIRN ON DINNEVER HILL
1007769	MEDIEVAL TENEMENT BOUNDARY WITH ADJACENT MEDIEVAL FIELD NORTH OF DINNEVER HILL
1008120	PREHISTORIC ROUND CAIRN WITH INNER AND OUTER KERBS AND A CENTRAL CIST 485M WNW OF SHOWERY TOR
1008123	ROUGHTOR HOLY WELL, 333M SOUTH-WEST OF SHOWERY TOR
1008165	JOB'S CROSS, MEDIEVAL WAYSIDE CROSS 500M NORTH EAST OF TREWETHERN
1008187	PREHISTORIC LINEAR BOUNDARY, ADJACENT IRREGULAR AGGREGATE FIELD SYSTEM AND HUT CIRCLES, INCORPORATED CAIRNS AND MEDIEVAL GRAVE ON NORTH-WEST ROUGHTOR
1008331	THE LOUDEN STONE CIRCLE, 950M ENE OF CAMPERDOWN FARM
1010439	KILLIBURY CASTLE LATER PREHISTORIC HILLFORT
1010846	PREHISTORIC STANDING STONE, MEDIEVAL WAYSIDE CROSS AND CROSS BASE AND POST-MEDIEVAL GUIDE POST AT LONGSTONE

1011214	ROUND CAIRN 567M NORTH-WEST OF SHOWERY TOR
1011388	ROUND CAIRN 312M NORTH-WEST OF SHOWERY TOR
1011459	ROUND CAIRN 417M NORTH-WEST OF SHOWERY TOR
1011501	PREHISTORIC EMBANKED AVENUE WITH INCORPORATED FUNERARY CIST 210M WNW OF SHOWERY TOR
1011542	ROUND CAIRN 625M NORTH-WEST OF SHOWERY TOR
1011544	TOR CAIRN ON SHOWERY TOR
1011577	PREHISTORIC IRREGULAR FIELD SYSTEM AND ENCLOSURES WITH INCORPORATED STONE HUT CIRCLE AND INCORPORATED AND ADJACENT CAIRNS 558M NORTH-WEST OF SHOWERY TOR
1014018	MEDIEVAL CHURCHYARD CROSS IN MICHAELSTOW CHURCHYARD
1016155	CHURCHYARD CROSS IN THE CEMETERY AT ST TEATH, 60M NORTH WEST OF THE CHURCH
1016366	HOLY WELL IN MICHAELSTOW CHURCHYARD
1019171	PREHISTORIC HUT CIRCLE AND FIELD SYSTEM 440M SOUTH WEST OF TRESWALLOCK COTTAGE
1019172	PREHISTORIC TO POST-MEDIEVAL SETTLEMENT, AND RELIGIOUS AND FUNERARY REMAINS ON THE MIDDLE AND LOWER SLOPES WEST AND SOUTH OF ROUGHTOR
1019172	PREHISTORIC TO POST-MEDIEVAL SETTLEMENT, AND RELIGIOUS AND FUNERARY REMAINS ON THE MIDDLE AND LOWER SLOPES WEST AND SOUTH OF ROUGHTOR
1019172	PREHISTORIC TO POST-MEDIEVAL SETTLEMENT, AND RELIGIOUS AND FUNERARY REMAINS ON THE MIDDLE AND LOWER SLOPES WEST AND SOUTH OF ROUGHTOR
1019478	EARLIER PREHISTORIC HILLFORT WITH INCORPORATED AND ADJACENT CAIRNS, CHAMBER AND MEDIEVAL CHAPEL ON THE SUMMIT RIDGE OF ROUGH TOR AND LITTLE ROUGH TOR
1019885	PREHISTORIC TO POST-MEDIEVAL FUNERARY, RITUAL AND SETTLEMENT REMAINS ON AND AROUND LOUDEN HILL
1021445	PREHISTORIC AND MEDIEVAL SETTLEMENTS WITH FIELDS AND ENCLOSURES TOGETHER WITH BRONZE AGE CAIRNS AND MEDIEVAL ALLUVIAL STREAMWORK AT GARROW TOR.

Table 2 Scheduled Monuments within the 10km radius ZTV

Some of these potentially intervisible Scheduled Monuments consist of structures such as wayside crosses, churchyard crosses and chapels whose settings are inherently very local. None are close to the site proposed for the wind turbine and in line with English Heritage guidance, no assessment of impacts on their settings therefore needs to be made.

Hillforts, barrows, standing stones and stone circles, in contrast, were intended, when constructed, to have far-ranging settings. Many of the Scheduled Monuments within the 10km viewshed consist of monuments of these types, and assessments of impacts on the settings of a number of these were judged to be required where they lay relatively close to the site proposed for the wind turbine, where substantial intervisibility was likely, where they were judged to have sensitive settings, or where impacts on or intrusion into key views of the sites appeared likely to occur.

7.6 Registered Parks and Gardens within the 10km radius ZTV

See [Figure 17](#)~~Figure 17~~, [Figure 18](#)~~Figure 18~~

There are two Registered Parks and Gardens potentially intervisible with the proposed wind turbine site. The topography and density of vegetation within the parks reduces the likelihood of intervisibility. Pencarrow is sufficiently far from the wind turbine site for setting impacts to be unlikely. Lamellen, in contrast, lies just to the west of Polshea Farm, and is likely to be more vulnerable in this respect.

Reference	Name	Grade
1000650	LAMELLEN	II
1000652	PENCARROW	II*

7.7 Areas of the Cornish Mining World Heritage Site within the 10km radius ZTV

There are no areas of the Cornish Mining World Heritage Site within 10km radius of the proposed turbine site.

7.8 Grade 1 and II* Listed Buildings within the 10km radius ZTV

See [Figure 17](#)~~Figure 17~~, [Figure 18](#)~~Figure 18~~

There are 41 Grade I or II* Listed Buildings within 10km of the proposed wind turbine site, 7 of these falling within the ZTV.

Reference	Name	Grade
1124739	TREWORNAN INCLUDING WALL TO REAR OF COURTYARD	II*
1129869	TRETAWN	II*
1142729	CHURCH OF ST JULITTA	I
1158085	CHURCH OF ST MICHAEL	I
1158789	COMMUNITY CENTRE TO NORTH WEST OF CHURCH OF ST TETHA	II*
1162144	CHURCH OF ST UDA	I
1327931	CHURCH OF ST HELENA	II*

Table 3 Grade I and II* Listed Buildings within the 10km radius ZTV

St Uda's Church and St Michael's Church are the closest of these at only 1.5km from the proposed site. St Julitta's Church is almost 5km away and set on the side of a valley whilst St Helena is approximately 7km away. All are potentially significant landmarks in addition to their inherent historical importance.

7.9 Grade II Listed Buildings within the 5km radius ZTV

See [Figure 16](#)~~Figure 16~~

Within the 5km zone there are 333 Grade II Listed Buildings. Of these, 171 are within the ZTV:

Reference	Name	Grade
1290932	GREAT BRIGHTER FARMHOUSE	II
1129862	HIGHER TREWIGGETT	II
1327688	TREGREENWELL FARMHOUSE, BARNs ADJOINING TO SOUTH, OUTBUILDINGS ADJOINING TO WEST AND GARDEN WALL TO	II

	NORTH EAST	
1327683	CHURCHYARD CROSS 2.5 METRES TO SOUTH WEST OF WEST TOWER OF CHURCH OF ST MICHAEL	II
1162302	IVY COTTAGE	II
1327711	HOUSE DIRECTLY TO NORTH WEST OF THE WHITE HART INN	II
1311509	LOWER SUFFENTON FARMHOUSE	II
1143137	DISUSED COTTAGE 10 METRES TO SOUTH EAST OF HIGHER LANK FARMHOUSE	II
1311196	FARMHOUSE ON WEST SIDE OF SETTLEMENT AT PENPONT	II
1327958	CHAPEL ROW	II
1157993	REMAINS OF ST SYTH'S CHAPEL	II
1311614	GATEPIERS 200 METRES TO EAST OF MICHAELSTOW HOUSE	II
1143135	WHIM BEARING WALLS, APPROXIMATELY 150 METRES TO NORTH OF CHURCHTOWN	II
1309696	GARLANDS	II
1142983	SUNNY CORNER	II
1162327	BUTTS PARK AND SLATE GARDEN WALL AND GATE PIERS TO WEST	II
1158813	AARONS	II
1143508	ST TEATH COUNTY PRIMARY SCHOOL	II
1143532	POST 10 METRES TO SOUTH WEST OF CHURCH OF ST MICHAEL	II
1143531	HEADSTONE OF MARY SNAWDON 10 METRES TO NORTH EAST OF CHURCH OF ST MICHAEL	II
1143021	FORMER CHAPEL 40 METRES TO SOUTH EAST TINTEN MANOR	II
1327937	TINTEN MANOR FARMHOUSE	II
1327681	THE STABLES	II
1327682	OLD HALL	II
1327664	OUTBUILDING 3 METRES TO SOUTH WEST OF LEATHERN BOTTLE	II
1162304	CAVALIER COTTAGE	II
1158796	PENVORDER	II
1309919	HENGAR	II
1327961	HEADSTONE OF WILLIAM OKE 6 METRES TO SOUTH OF SOUTH AISLE OF CHURCH OF ST UDA	II
1142989	TOMBCHEST OF J BLIGH 6 METRES TO SOUTH WEST CORNER OF SOUTH AISLE OF CHURCH OF ST UDA	II
1142987	TOMBCHEST OF JOHN LOCKWOOD ET ALIA 5 METRES TO NORTH OF NAVE OF CHURCH OF ST UDA	II
1309755	HEADSTONE OF JOHN HAWKE 2 METRES NORTH OF NORTH TRANSEPT OF CHURCH OF ST UDA	II

1143006	GUIDEPOST AT LONGSTONE	II
1327880	DE LANK FARMHOUSE	II
1309699	THE SMITHY	II
1327973	WALLED KITCHEN GARDEN TO NORTH EAST OF LAMELLEN	II
1327957	OAK COTTAGE	II
1143534	SCHOOL HOUSE AND SCHOOL	II
1143526		II
1327964	HOUSE DIRECTLY TO WEST OF ST TUDY VOLUNTARY PRIMARY SCHOOL	II
1158779	THE VICARAGE	II
1143537	METHODIST CHAPEL	II
1143013	BODINNICK	II
1143536	BEAROAK	II
1327959	OUTBUILDING 5 METRES TO EAST OF FRADD'S MEADOW	II
1142984	FRADD'S MEADOW	II
1143136	CROSS AND RESET DRESSED STONE IN GARDEN TO SOUTH OF HIGHER LANK FARMHOUSE	II
1143533	LYCHGATE TO WEST OF CHURCH OF ST MICHAEL	II
1327881	RIVERSIDE	II
1143557	HOUSE ADJOINING TO SOUTH WEST OF ANTOINE COTTAGE	II
1158477	DISUSED FARMHOUSE 50 METRES TO NORTH EAST OF TREVEANS FARMHOUSE	II
1158493	ARCH IN WALL TO SOUTH WEST OF HOUSE AT TREWENNAN	II
1311209	DISUSED FARMHOUSE AT HIGHER PENQUITE, SHIPPENS DIRECTLY TO EAST AND ADJOINING WALL ON NORTH	II
1142374	BARN DIRECTLY TO NORTH WEST OF EAST PENDRIFT HOUSE	II
1327689	TREVENNING COTTAGE	II
1327936	POOLPARK	II
1143104	THE OLD FARMHOUSE	II
1311231	OUTBUILDING 10 METRES TO NORTH WEST OF HIGHER LANK FARMHOUSE	II
1142997	ELM COTTAGE	II
1311582	BARN WITH WATERWHEEL 10 METRES TO NORTH EAST OF BEAROAK	II
1311351	HEADSTONE OF JOHN BONEY 37 METRES TO WEST OF TOWER OF CHURCH OF ST TETHA	II
1143535	GATE PIERS, FLANKING WALLS AND TERMINAL PIERS 200 METRES TO NORTH EAST OF MICHAELSTOW HOUSE	II
1159070	FOOTBRIDGE TO NORTH EAST OF RIVERSIDE	II

1142721	TREWINT	II
1158053	TRENEWTH HOUSE	II
1143545	GRANARY 30 METRES TO EAST OF TREHANNICK FARMHOUSE	II
1143139	LITTLE BESIDE	II
1142994	HEADSTONE OF J ANDREW 10 METRES TO NORTH WEST OF TOWER OF CHURCH OF ST UDA	II
1328269	LOWER PENDRIFT FARMHOUSE	II
1142985	WALLED GARDEN AND BEE BOLES TO WEST OF FRADD'S MEADOW	II
1142375	BARN DIRECTLY TO NORTH EAST OF EAST PENDRIFT FARMHOUSE	II
1158016	SHIPPON, THRESHING FLOOR, HORSE ENGINE HOUSE, SHIPPONS, STABLE AND CARTSHED TO WEST AND NORTH WEST OF TREDARRUP	II
1143568	TREDARRUP	II
1143014	GUIDEPOST 400 METRES TO SOUTH WEST OF BRAVERY	II
1311337	MILESTONE AT SX 082758, 580 METRES TO NORTH WEST OF BRIDGE AT WENFORD BRIDGE	II
1142995	QUIES COTTAGE	II
1142378	BARN, CARTSHED AND HORSE ENGINE HOUSE, TREGENNA FARM	II
1146507	TREWALDER METHODIST CHAPEL AND SCHOOL ROOM	II
1327877	PENDAVY FARMHOUSE	II
1129868	TREGILDREN FARMHOUES	II
1143520	HEADSTONE OF W SWEET 37 METRES TO WEST OF WEST TOWER OF CHURCH OF ST TETHA	II
1162212	TOMBCHEST OF RICHARD BREWER 5 METRES TO NORTH WEST OF TOWER OF CHURCH OF ST UDA	II
1162253	HEADSTONE OF C ROUNSEVELL 10 METRES TO NORTH OF NAVE OF CHURCH OF ST UDA	II
1162234	HEADSTONE OF JOHN AND JENEFER RUNNALLS 7 METRES TO NORTH OF NAVE OF CHURCH OF ST UDA	II
1327685	GROUP OF 4 TOMBCHESTS OF C ALLEE, J LOWER, J LOWER AND W RENDLE 11 METRES TO NORTH EAST OF CHURCH OF ST MICHAEL	II
1327956	GARDEN WALL TO SOUTH WEST OF TREMEER	II
1143015	PAIR OF GATE-PIERS AND FLANKING WALL AT NORTH EAST ENTRANCE TO HENGAR	II
1137792	MILESTONE 100 METRES TO NORTH EAST OF KNIGHTSMILL BRIDGE	II
1142986	METHODIST CHAPEL, SCHOOL ROOM AND GARDEN WALLS TO WEST	II

1143538	TREVEAN	II
1327687	RECTORY AND GARDEN WALL TO EAST	II
1327684	2 HEADSTONES OF ANN POPE AND ANN SYMONS 6.5 METRES TO EAST OF CHANCEL OF CHURCH OF ST MICHAEL	II
1143529	HEADSTONE OF W AND P HOCKEN 2.5 METRES TO SOUTH OF EAST END OF CHANCEL OF CHURCH OF ST MICHAEL	II
1158841	BARN 30 METRES TO SOUTH WEST OF OLD HALL	II
1162270	THE CLINK	II
1327718	HEADSTONE OF MARY THOMAS 25 METRES TO NORTH OF NORTH AISLE OF CHURCH OF ST TETHA	II
1310037	POLGLAZE FARMHOUSE	II
1394335	B3266 Guidestone 400m NE of Tregooden	II
1143521	CHURCHYARD CROSS	II
1158501	VICARAGE FARMHOUSE	II
1311253	HIGHER LANK FARMHOUSE AND GARDEN WALL TO FRONT	II
1327965		II
1142996	THE GREEN VIEW AND CHURCHTOWN	II
1158406	NEWHALL MILL	II
1158179	EAST PENDRIFT FARMHOUSE AND GARDEN WALL TO FRONT	II
1327963	SPARE HILL HOUSE	II
1159062	FOOTBRIDGE TO NORTH OF LITTLE BESIDE	II
1142993	HEADSTONE OF REGINALD BILLING 8 METRES TO NORTH EAST OF NORTH TRANSEPT OF CHURCH OF ST UDA	II
1158254	BARN 5 METRES TO WEST OF TREGREENWELL FARMHOUSE	II
1311524	HIGHER HENDRA FARMHOUSE	II
1143540	OUTBUILDING 5 METRES TO SOUTH WEST OF HIGHER HENDRA FARMHOUSE	II
1158169	LODGE TO MICHAELSTOW HOUSE	II
1162201	HEADSTONE OF REBECCA BILLING 6 METRES TO EAST OF NORTH TRANSEPT OF CHURCH OF ST UDA	II
1143539	BULL'S HOUSE TO SOUTH EAST OF CARKEEN FARMHOUSE	II
1161838	GUIDEPOST 320 METRES TO NORTH OF BODINNICK FARM	II
1158708	HEADSTONE OF MARY HOCKEN 12 METRES TO NORTH OF WEST TOWER OF CHURCH OF ST TETHA	II
1159089	2 COTTAGES AND STABLE ADJOINING TO SOUTH WEST OF LIMEHEAD COTTAGE	II
1137699	FARMBUILDINGS INCLUDING GRANARY, BARN AND SHIPPONS 20 METRES TO NORTH WEST OF TREWINT FARMHOUSE	II
1162132	OUTBUILDING 15 METRES TO EAST OF FRADD'S MEADOW	II
1162309	SOUTH VIEW AND STORE ADJOINING ON NORTH	II

1142992	TOMBCHEST OF ROBERT BILLING 8 METRES TO EAST OF CHANCEL OF CHURCH OF ST UDA	II
1327960	TOMBCHEST OF REV. G. ALLANSON DIRECTLY TO EAST OF CHANCEL OF CHURCH OF ST UDA	II
1394328	Milestone SE of Trehannick Farm	II
1143518	HEADSTONE OF DIANA INCH 23 METRES TO WEST OF WEST TOWER OF CHURCH OF ST TETHA	II
1161570	HAYWOOD FARMHOUSE	II
1142980	TREMEER AND TERRACES IN GARDEN TO EAST	II
1143530	TOMBCHEST TO WEST OF HEADSTONE OF JOHN BASTARD 4 METRES TO SOUTH OF SOUTH AISLE OF CHURCH OF ST MICHAEL	II
1143570	HEADSTONE OF JANE BASTARD 2 METRES TO SOUTH OF SOUTH AISLE OF CHURCH OF ST MICHAEL	II
1143516	TOMBCHEST OF THOMAS KEMPTHORNE 10 METRES TO WEST OF TOWER OF CHURCH OF ST TETHA	II
1327691	TREWENNAN	II
1309902	PAIR OF GATE-PIERS AND FLANKING WALLS AT SOUTH WEST ENTRANCE TO HENGAR	II
1311348	HEADSTONE OF H INCH 31 METRES TO WEST OF WEST TOWER OF CHURCH OF ST TETHA	II
1143140	THE MILL HOUSE	II
1161990	MILESTONE 210 METRES TO SOUTH WEST OF BRAVERY	II
1158287	2 CROSSHEADS 5 METRES TO WEST OF TREVENNEN FARMHOUSE	II
1146530	FARMBUILDING 30 METRES TO NORTH WEST OF TREWALDER FARMHOUSE	II
1327663	TREWALDER FARMHOUSE	II
1309735	2 HEADSTONES OF E PHILP AND J KENDALL 6-7 METRES TO SOUTH OF SOUTH PORCH OF CHURCH OF ST UDA	II
1129866	MILESTONE 250 METRES TO SOUTH WEST OF POLROAD COTTAGES	II
1143019	MILESTONE 400 METRES TO NORTH EAST OF TREGOODEN	II
1143525	CLOCK TOWER	II
1159000	HIGHER LANK HOUSE	II
1143138	BARN 10 METRES TO SOUTH WEST OF HIGHER LANK HOUSE	II
1143547	GATEPIERS 20 METRES TO SOUTH OF TREWENNAN	II
1143569	TREGAWN	II
1158674	HEADSTONE OF C SLOGGETT 10 METRES TO NORTH OF WEST TOWER OF CHURCH OF ST TETHA	II
1158684	HEADSTONE OF EDWARD HOCKEN 12 METRES TO NORTH OF WEST TOWER OF CHURCH OF ST TETHA	II

1157980	COTTAGE DIRECTLY TO NORTH OF LEATHERN BOTTLE	II
1142988	TOMBCHEST 5 METRES TO SOUTH OF SOUTH AISLE OF CHURCH OF ST UDA	II
1311549	CARKEEN FARMHOUSE	II
1327913	HOLY WELL AT CHAPEL FARM	II
1309712	HEADSTONE OF J GATLY 13 METRES TO NORTH OF NAVE OF CHURCH OF ST UDA	II
1327717	HEADSTONE OF JOHN BROWN 14 METRES TO NORTH OF WEST TOWER OF CHURCH OF ST TETHA	II
1311849	HOUSE NEXT DOOR BUT ONE SOUTH WEST (RIGHT) OF ANTOINE COTTAGE	II
1327992	STABLES AND OUTBUILDING EAST OF BUTTS PARC	II
1137765	CROSSWATERS	II
1143005	WHEELHEAD CROSS AT LONGSTONE	II
1327686	HOLY WELL TO SOUTH OF THE CHURCH OF ST MICHAEL	II
1143542	NEWHALL MANOR FARMHOUSE	II
1311494	TREHANNICK FARMHOUSE AND SERVICE BUIDINGS TO REAR	II
1143567	GUIDEPOST 900 METRES TO SOUTH OF BEAROAK	II
1142390	JUBILEE ROCK	II
1143487	ST TEATH METHODIST CHURCH	II
1142998	PUMP AND TROUGH 40 METRES TO NORTH EAST OF CHURCH OF ST UDA	II
1143018	MILESTONE 220 METRES TO WEST OF BRAVERY	II
1394332	B3266 Milestone east of Michaelstow junction	II
1142990	GROUP OF 3 HEADSTONES OF A & T SLEEMAN AND P AUTRIDGE 6-12 METRES TO NORTH OF NORTH TRANSEPT OF CHURCH OF ST UDA	II
1142991	HEADSTONE OF P KENDALL 7 METRES TO SOUTH OF SOUTH PORCH OF CHURCH OF ST UDA	II
1162246	HEADSTONE OF E AND T KENDALL 7.5 METRES TO SOUTH OF SOUTH PORCH OF CHURCH OF ST UDA	II
1327962	GROUP OF 3 HEADSTONES OF J SLEEMAN, J SLEEMAN AND A JORY 17 METRES TO SOUTH WEST OF TOWER OF CHURCH OF ST UDA	II

Table 4 Grade II Listed Buildings within the 5km radius ZTV

Impacts on the settings of all of these feature types are very unlikely unless they are in very close proximity to the proposed wind turbine. They include structures such as guideposts, milestones, stiles, churchyard walls, lych gates, etc., headstones or chest tombs, crosses, bridges and village halls, all of which have very localised settings. Others such as houses, farmhouses and manors have potentially more extensive settings; but in terms of their designation as heritage assets these are still likely to be limited in extent. Few if any of these structures are likely to have been constructed with the historic aim of being dominant in the landscape, or intended to be viewed from a distance, or with

designed vistas. On the other hand, several of the assets were probably designed to be 'ornaments' to the adjacent area, often to be viewed from an adjacent approach.

7.10 Conservation Areas within the 3km radius ZTV

Two Conservation Areas fall within the 3km radius ZTV and include many of the Listed Buildings within this zone. Their relative proximity to the proposed site imbues potential greater severity to any impacts (Figure 15Figure 15).

Reference	Name
DCO133	ST TEATH
DCO134	ST TUDY

7.11 Undesignated historic assets within the 1km ZTV

See Figure 14Figure 14

The ZTV mapping suggests that almost all of the landscape within a 1km radius of the site will be intervisible with all or part of the proposed wind turbine. Within this zone, the Cornwall and Scilly Historic Environment Record (HER) records 24 potentially intervisible sites:

Reference	Name
MCO10983	TREVENNING - Post Medieval house
MCO13436	BODINNICK - Medieval settlement
MCO16416	POLSHEA - Medieval settlement
MCO16812	SOWDENS - Post Medieval settlement
MCO17896	TREVENNING - Early Medieval settlement, Medieval settlement
MCO24730	HENGAR - Iron Age fort, Romano British fort
MCO2812	HENGAR - Bronze Age barrow
MCO37361	LOWER TREGAWN - Early Medieval watercourse
MCO37362	BEAROAK - Prehistoric round, Iron Age round, Romano British round
MCO37363	BEAROAK - Post Medieval quarry
MCO37364	BEAROAK - Early Medieval field system, Medieval field system
MCO37366	BEAROAK - Post Medieval quarry
MCO37386	POLSHEA - Post Medieval quarry
MCO37389	POLSHEA - Early Medieval field system, Medieval field system
MCO37391	LAMELLAN - Early Medieval field system, Medieval field system
MCO37409	ST TUDY - Early Medieval ridge and furrow, Medieval ridge and furrow
MCO37433	BODINNICK - Early Medieval field boundary, Medieval field boundary
MCO37436	BODINNICK - Post Medieval quarry
MCO37438	HENGAR - Post Medieval quarry
MCO37439	HENGAR - Early Medieval field system, Medieval field system
MCO53297	TREVENNING - Post Medieval milestone
MCO54462	BODINNICK - Post Medieval signpost
MCO6125	TREVENNING - Medieval cross

MCO7591	BODINNICK - Iron Age round, Romano British round
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Table 5 Undesignated historic assets within the 1km radius ZTV

The severity of impacts on undesignated assets will depend on the degree of their survival, the type of monument and the natures of their settings. Many are undesignated because they are no longer upstanding and exist only as documented sites, therefore having no landscape settings. Others such as crosses and signposts have very immediate settings, whilst workshops or chapels have specific settlement-related settings, likely to be less sensitive to the visual impacts implied by the ZTV.

8 Results of site walkover

See [Figure 19](#)~~Figure 19~~, [Figure 20](#)~~Figure 20~~

A site walkover was undertaken on 16th December 2013. The weather was warm but wet with reduced visibility due to mist. The proposed turbine location is a currently fallow agricultural field and was quite waterlogged at the time of the site visit. The southern half is almost flat before a steep slope to a slight valley leading to the northwest corner. The southeastern and southwestern boundaries are Cornish hedges with some considerable animal erosion and areas of granite, slate or absent stone facing. These hedges are well vegetated with grass, gorse, fern and blackthorn or hawthorn and had recently been trimmed to a height of 2-3m. The boundaries to the north-east and northwest were post and wire fences with a short extent of Cornish hedge on the northeastern boundary. Nearby road traffic is audible and very occasionally visible. Five existing turbines were visible from the site within the surrounding landscape. It is likely more would have been visible from the site at greater distances from it had the weather been better.

9 Field verification of ZTV

See [Figure 19](#)~~Figure 19~~, [Figure 27](#)~~Figure 27~~

Sites of archaeological significance identified using ZTV analysis and within the 10km radius from the proposed site are located on the fieldwork table ([Table 9](#)~~Table 9~~), and were numbered from 1-19 working from those sites closest to the turbine site outwards in an approximately clockwise order.

The significance of each site is graded as follows:

- WHS- World Heritage Site
- S Scheduled Monument
- L Listed Building or Registered Park and Garden
- A Site of National Importance
- B Site of Regional Importance
- C Site of Local Importance
- D Natural Feature or non-antiquity

The condition of each site was assessed where possible during the walkover survey and is graded from 1-4:

- 1 No surviving remains evident above ground
- 2 Poor preservation
- 3 Fair preservation
- 4 Good preservation

The sites have been given one of five Overall Impact grades; from Very Large which approximates to damage and loss of the site's integrity and which represents a key factor in the decision-making process, to neutral which equates to no perceptible effects. The full scale is:

Impact Category	Typical Descriptors of Effect
Very Large	Only adverse effects are normally assigned this level of

	significance. They represent key factors in the decision-making process. These effects are generally, but not exclusively, associated with sites or features of international, national or regional importance that are likely to suffer a most damaging impact and loss of resource integrity. However, a major change in a site or feature of local importance may also enter this category.
Large	These beneficial or adverse effects are considered to be very important considerations and are likely to be material in the decision-making process.
Moderate	These beneficial or adverse effects may be important, but are not likely to be key decision-making factors. The cumulative effects of such factors may influence decision-making if they lead to an increase in the overall adverse effect on a particular resource or receptor.
Minor	These beneficial or adverse effects may be raised as local factors. They are unlikely to be critical in the decision-making process, but may be important in influencing the subsequent design of the project.
Neutral	No effects or those that are beneath levels of perception, within normal bounds of variation or within the margin of forecasting error.

Table 6 Overall Impact descriptors

In addition to the above descriptors the Overall Impact is determined using the combined result of a Sensitivity rating and Magnitude of Impact rating (DMRB Vol.11; 2/1-5).

The Sensitivity ratings are:

Sensitivity Rating	Typical Descriptors
Very High	Very high importance and rarity, international scale and very limited potential for substitution.
High	High importance and rarity, national scale and limited potential for substitution.
Medium	High or medium importance and rarity, regional scale, limited potential for substitution.
Low	Low or medium importance and rarity, local scale.
Negligible	Very low importance and rarity, local scale.

Table 7 Sensitivity Rating descriptors

The Magnitude of Impact ratings are:

Magnitude of Impact rating	Typical Descriptors
Major	Loss of resource and/or quality and integrity of resource; severe damage to key characteristics, features or elements.
Moderate	Loss of resource, but not adversely affecting the integrity; partial loss of/damage to key characteristics, features or elements.
Minor	Some measurable change in attributes, quality or vulnerability; minor loss of, or alteration to, one (maybe more) key characteristics, features or elements.
Negligible	Very minor loss or detrimental alteration to one or more characteristics, features or elements.
No Change	No loss or alteration of characteristics, features or elements; no observable impact in either direction.

Table 8 Magnitude of Impact Rating descriptors

The viewshed mapping and potential impacts were where possible (given constraints on public access and the general topography of the area) ground checked from a number of locations. The fieldwork results and impact assessment are detailed in the table below. Due to the clustered nature of some assets, particularly Listed Buildings, or where sites came under the umbrella designation of a Conservation Area, these were not assessed individually but as part of the settlement in which they were located. In the table below these are simply referred to by the name of this settlement. Full listings of sites and their references within the ZTV can be found in the tables in Section 7 above.

9.1 Fieldwork results and impact assessment

No	Site Name & Reference	Grid Ref. (SX)	Description	Probable Date	Significance	Condition	Sensitivity	Magnitude of Impact	Overall Impact
1	Polshea 50498	06236 77880	Apart from the farmhouse there were no visibly historic remains. The site is now populated with modern bungalows and farm buildings located in a slight hollow so only the roofs were visible from the turbine site. The farm also has approximately 2m high Cornish hedges surrounding it. It is likely a substantial quantity of the turbine will be visible and audible.	Medieval	C	2	Low	Minor	Minor
2	Lamellen 1000650	05368 77327	The site has approximately 3m high hedges in the intervening space to the proposed turbine site. The garden has a significant quantity of tall, mature trees close to the boundary although the majority of the site seems quite open. It is probable that at least the top of the turbine will be visible from parts of the garden.	18 th -20 th Century	L Grade II	4	High	Minor	Moderate
3	Bodinnick MCO13436	06699 76897	No visible or accessible remains. The majority of the area is now modern housing extending from St Tudy. Multiple mature trees and tall hedgerows shield the area from the proposed turbine site but it is possible that some of the turbine will be visible from parts of Bodinnick.	Prehistoric -Medieval	C	1	Low	Negligible	Minor
4	St Tudy DCO134 Figure 22	06623 76299	The village retains a considerable quantity of its historic character and buildings surrounding and facing in towards the church. The church is a landmark within the village but is not particularly prominent within the wider	Norman Church, Medieval-Post Medieval buildings	B	4	Medium	Minor	Minor

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No	Site Name & Reference	Grid Ref. (SX)	Description	Probable Date	Significance	Condition	Sensitivity	Magnitude of Impact	Overall Impact
			landscape. The village is surrounded by a significant number of deciduous and evergreen trees, especially to the north which will shield views of the wind turbine. It is possible that the upper parts of the turbine may be visible from some areas of the village. Additionally views to the village may be interrupted by the presence of the wind turbine.						
5	Tinten Manor Farmhouse 1327937 Figure 23	06846 75441	The house is on private land located in a slight hollow with open views up hill to the north towards the proposed wind turbine. The mature trees are unlikely to provide much of a screen and most of the turbine will probably be visible. The farmhouse is located close to a busy road.	Post Medieval	L Grade II	3	High	Minor	Minor
6	Higher Lank	08976 75609	Private house within a sparsely wooded area but on a slope facing the proposed site. Depending on the vegetation it is likely a large part of the turbine will be visible.	Post Medieval	L Grade II	3	High	Minor	Minor
7	St Breward Figure 24	09582 76598	The village is located high up on the edge of a slope facing the turbine site at some distance from it. It is likely all of the turbine will be visible though at some distance.	Norman Church, Medieval and Post Medieval buildings	L Church Grade I, buildings Grade II	3	High	Minor	Minor
8	Hengar 1309919	08105 76969	The area is now a country park with holiday accommodation. It is surrounded by deciduous woodland. The undesignated Bronze Age barrow was not visible or accessible. The turbine field is not visible but the top of the turbine	Prehistoric remains, 20 th Century house	L Grade II	3	High	Negligible	Minor

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No	Site Name & Reference	Grid Ref. (SX)	Description	Probable Date	Significance	Condition	Sensitivity	Magnitude of Impact	Overall Impact
			may be visible from some areas.						
9	Trevenning 50249	07915 77966	Quite high, 2-3m Cornish hedges in the vicinity but otherwise quite an open landscape likely to have a good view of at least the top of the turbine.	Medieval	C	3	Low	Minor	Minor
10	Michaelstow 158169 <u>Figure 25</u>	08084 78859/ 07326 78514	The Churchtown is in a slight hollow though geographically overlooks the turbine site. The small cottages are clustered together and surrounded by 5-10m trees, the majority of the sites here will not be able to see the turbine. The Church tower is not very tall but the Church is set on a slight terrace overlooking the village. The turbine maybe visible from some areas of the Church or Churchyard. The Lodge to Michaelstow House is unlikely to be intervisible with the proposed turbine as it is low-lying and surrounded by trees. This area has also been developed into a holiday park.	13 th Century Church, Post Medieval buildings	L Church Grade I, buildings Grade II	3	High	Negligible	Minor
11	Helsbury Castle and Syth's Chapel 1006707 <u>Figure 26</u>	08357 79570	Located on private land behind a 3m high Cornish hedge but on open farmland overlooking the turbine field. A banked and overgrown area attests to its upstanding survival. The turbine is likely to be highly visible but at a distance.	Late Bronze Age-Early Iron Age Castle and Medieval Chapel	S	3	High	Minor	Minor
12	Hut Circles Near New Hall 1004217	10938 80652	Hut remains are not visible in the field but are located on high ground sloping slightly towards the proposed turbine site. The landscape is much more visibly of a moorland character with low stone dividing walls and scrub grassland. The	Prehistoric	S	1	High	Negligible	Minor

No	Site Name & Reference	Grid Ref. (SX)	Description	Probable Date	Significance	Condition	Sensitivity	Magnitude of Impact	Overall Impact
			turbine will likely be visible though at a significant distance. There is also minor traffic noise at this location.						
13	Ancient village, Watergate 1004417	11763 81427	Access to assess the views and survival very restricted. This site does face the proposed site and should have a view of at least the top of the turbine though at quite a distance and with some intervening woodland.	Bronze Age	S	3	High	Negligible	Minor
14	Bodmin Moor sites	13573 79701 (centre)	The promontories of Rough Tor and Garrow Tor are intervisible with the turbine site though at a significant distance. In clear weather the turbine should be visible. From the Tors the landscape view is dominated by the moorland features.	Prehistoric -Post Medieval	S	3	High	No change	Neutral
15	St Teath DCO133	06408 80593	This is quite a densely populated village surrounding the Church. The Church is a small structure and is not a landscape feature. The majority of the village will not be intervisible with the turbine though the southern parts, which are mainly modern housing, may be.	Post Medieval	B	3	Medium	No change	Neutral
16	Tregeare Rounds (camp) 1006662	03327 80038	Located in an open landscape with only Cornish hedges as screens. It is highly likely at least the top of the turbine will be visible, though in the distance.	Iron Age	S	3	High	Negligible	Minor
17	Trevinnick Camp 1006661	00793 78733	Located in an open landscape with only Cornish hedges as screens. It is highly likely at least the top of the turbine will be visible from the site, though again at a distance from it.	Iron Age	S	2	High	Negligible	Minor

No	Site Name & Reference	Grid Ref. (SX)	Description	Probable Date	Significance	Condition	Sensitivity	Magnitude of Impact	Overall Impact
18	Killibury Castle 1010439 <u>Figure 27</u>	01858 73698	Located in an open landscape with Cornish hedges and some trees screening the intervening landscape to the turbine site. Killibury Castle is also situated close to the very busy and noisy A39 road. It is probable that at least the top of the turbine will be visible, though at a distance.	Iron Age	S	3	High	Negligible	Minor
19	Pencarrow 1000652	03946 71117	Private estate within quite dense deciduous woodland with further wooded areas between Pencarrow and the proposed turbine site. The turbine may be visible from some aspects, though will be a distant feature and not dominant in views.	Post Medieval	L Grade II*	4	High	Negligible	Minor

Table 9 Fieldwork Impact Assessment Results

At each accessible designated heritage asset listed in the table above, the potential visibility of the proposed wind turbine was considered and views out from the proposed site towards key heritage assets were checked. Though true levels of intervisibility were impossible to determine from ground level given that the proposed turbine has not yet been constructed, the general degree of openness of the views out from the sites could be assessed.

Where possible, photographs were taken from the proposed site towards the filtered heritage assets and from the assets back to the proposed site. In practice, this process of capturing the historic asset and view towards the proposed site in the same photograph was hampered due to the practicality of finding a safe place to stop with a suitable viewpoint nearby. However every effort was made to get as close as possible to the historic assets and to take photographs at least representative of the view where the asset itself could not be included. Within settlements, groups of buildings and mature trees and shrubs also blocked many views back to the site. The visibility cut-off imposed by the local topography suggested by the viewshed mapping was confirmed, though from ground level several areas of suggested intervisibility were closed up by woods and hedgerows and the topography.

Field verification tended to confirm the viewshed mapping; the turbine will be visible to some extent from many ridge-tops and to a lesser extent as the viewer descends into the generally wooded valleys. At distances of around 5km from the proposed site, visual impact may occur but will become diminished. There are at least five existing wind turbines in this area, and more are proposed. It will also become harder to distinguish individual turbines and cumulative impact will become relevant.

10 Statements of Significance

Many of the sites have already had their significance assessed by Scheduling or Listing. Where sites are Scheduled or Listed they have not been considered under the Sites and Monuments Records category below, even though they usually feature on that list, to avoid duplication. Subsurface and associated remains are likely to be of equal significance to the sites identified below.

10.1 Scheduled Monuments (Sites 11, 12, 13, 14, 16, 17, 18)

Scheduled Monuments have Statutory Protection under the Ancient Monuments and Archaeological Areas Act 1979. These are sites that have been identified by English Heritage, the Government's archaeological advisory body, as being of national importance, and are included in the County Lists maintained by the Secretary of State for Culture, Media and Sport. A schedule has been kept since 1882 of monuments whose preservation is given priority over other land uses. The current legislation, the Ancient Monuments and Archaeological Areas Act 1979, supports a formal system of Scheduled Monument Consent for any work to a designated monument (English Heritage Website).

10.2 Registered Parks and Gardens (Sites 2, 19)

Registered Parks and Gardens are described and defined by English Heritage as (English Heritage Website):

The English Heritage 'Register of Historic Parks and Gardens of special historic interest in England', established in 1983, currently identifies over 1,600 sites assessed to be of national importance. The emphasis of the Register is ... on 'designed' landscapes; ... gardens, grounds and other planned open spaces, such as town squares ... rather than on planting or botanical importance.

Historic parks and gardens are a fragile and finite resource: they can easily be damaged beyond repair or lost forever ... The main purpose of this Register is to celebrate designed landscapes of note, and encourage appropriate protection. It is hoped that, by drawing attention to sites in this way, English Heritage will increase awareness of their value and encourage those who own them, or who

otherwise have a role in their protection and their future, to treat these special places with due care.

Registration is a 'material consideration' in the planning process, meaning that planning authorities must consider the impact of any proposed development on the landscapes' special character.

10.3 Listed Buildings (Sites 5, 6, 7, 8, 10)

Sites are Listed to mark their special architectural and historical interest; they are protected by law and Listed Building Consent must be granted for any alterations to the building. Grade I Listed buildings must be of 'exceptional interest, sometimes considered to be internationally important,' Grade II* status means that buildings are considered 'particularly important...of more than special interest.' The sites designated as Grade II Listed are considered 'nationally important and of special interest' (English Heritage Website).

10.4 Conservation Areas (Sites 4, 15)

Conservation areas are designated for their special architectural and historic interest. They are designated by the local planning authority and comply with national standards. Designations of Conservation Areas were first made in 1967 and typically include town or city centres, fishing and mining villages, historic estates, housing and transport links (English Heritage Website).

10.5 Local Significance (Sites 1, 3, 9)

These remains are considered of local significance because of their rarity, importance to their localised setting and upstanding evidence but are otherwise undesignated assets.

11 Likely impacts of the proposed development

11.1 Construction Phase Impacts

The construction of the turbine, specifically the excavations for the foundations and cable run will have major direct, physical and irreversible impacts upon any archaeology in these locations. Provision of a works compound, additional access routes or any widening of the existing gateways will also have a moderate physical and irreversible impact on any archaeology in these locations.

Construction will also create some minor visual and audible disturbance though as these are temporary and reversible they are considered as negligible impacts only.

11.2 Operational Phase Impacts

During the operational phase only the visual and audible impacts will apply. These will vary according to the weather, season, distance from, and intervisibility with, the proposed site and sensitivity of the heritage asset. Such impacts are temporary and reversible and will vary in overall magnitude according to receptor distance from the turbine, degree of intervisibility or intrusion of the turbine within key views of them and the sensitivity of their settings.

11.3 End of Use Phase Impacts

Assuming the proposed turbine is not re-powered or replaced, the end of use impacts will be as a result of machinery to remove the turbine components. These will be minor audible and visual impacts but temporary and reversible. Should the foundations also be entirely removed there maybe further significant, physical and irreversible impacts on any surrounding subsurface archaeology.

11.4 Impacts on Scheduled Monuments

No Scheduled Monuments will be physically impacted upon by the proposal. All the Scheduled Monuments within the ZTV may experience minor audible and visual impacts during all three phases. Those sites in closer proximity to the proposed turbine site, such as Helsbury Castle, Castle Goff and Watergate, will be visually impacted to a negligible or minor extent depending on how much of the proposed turbine will be visible and how sensitive each heritage asset and its setting is (~~Figure 17~~~~Figure 17~~; ~~Figure 18~~~~Figure 18~~; ~~Figure 26~~~~Figure 26~~; ~~Figure 27~~~~Figure 27~~). Depending on the wind direction, the remaining Scheduled Monuments outside of the ZTV may experience an audible impact however this is likely to be very negligible. Overall, however, the impacts on these sites can be rated as minor.

11.5 Impacts on Listed Buildings – Grade I and II*

The wind turbine will have no impact on those Listed Buildings which do not fall within the viewshed. There will be a negligible or minor visual impact for all the churches during all three phases, impacts associated with the operational phase being assessed as minor (~~Figure 17~~~~Figure 17~~; ~~Figure 18~~~~Figure 18~~; ~~Figure 22~~~~Figure 22~~; ~~Figure 25~~~~Figure 25~~). However the churches will probably not experience audible disturbance and are surrounded by trees. The towers/spires do not comprise such prominent landmarks that visual competition would arise from the construction of the proposed turbine. Therefore the overall impact on these sites is assessed as minor.

11.6 Impacts on Listed Buildings – Grade II

No Listed Buildings will be physically impacted upon and only those within the viewshed will experience a visual impact during all three phases (~~Figure 16~~~~Figure 16~~). It is highly unlikely any will experience any moderate or greater audible impact. However the close proximity of Hengar, Michaelstow, Tinten and Bear Oak to the site makes it highly likely that there will be an audible impact during all three phases. The overall impact for the Listed Buildings is assessed as minor.

11.7 Impacts on Conservation Areas

The topography and setting of St Tudy and St Teath Conservation Areas makes it likely that some elements of them will experience a minor visual impact during the operational, construction and end of use phases. However the proximity of the St Tudy Conservation Area with the proposed site may mean the turbine will be more visible if vegetation is removed and will most likely be audible to some extent during all three phases (~~Figure 15~~~~Figure 15~~). Views of St Tudy within its agricultural setting may be interrupted by the addition of the rotating blades and modern appearance of a wind turbine. Only very limited areas of St Teath will be visually impacted and its location to the north of the proposed turbine site means that it is less likely to experience an audible impact carried by the prevailing southwesterly wind. The overall impact is therefore assessed as neutral to minor.

11.8 Impacts on Registered Parks and Gardens

Visual impacts will be limited by the density of vegetation making up these designated landscapes, and the turbine will not be visible from the majority of Lamellen or Pencarrow (~~Figure 17~~~~Figure 17~~; ~~Figure 18~~~~Figure 18~~). The proposed turbine will theoretically be intervisible from the edge of the Gardens though intervening vegetation will render this negligible during all phases. The proximity of Lamellen may well impact on its setting – that is, the appreciation of the park as a feature within the local landscape, and may mean there will be an audible impact during all three phases, dependent on weather conditions. No audible impact will be experienced at Pencarrow. The overall impact is assessed as minor although Lamellen is assessed to potentially experience moderate negative impacts.

11.9 Impacts on Undesignated Historic Assets

All undesignated sites within the 1km radius of the proposed site are potentially susceptible to an audible impact though this will be dependant on weather and wind direction (~~Figure 14~~~~Figure 14~~). All sites within the viewshed will be visually impacted to some extent during all three phases, though at worst this has been rated as minor for the more prominently positioned or closest sites such as Polshea and Bodinnick. These have inherently limited settings, however.

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11.10 Impacts on Historic Landscape Character

The landscape surrounding the proposed wind turbine has been categorised as Anciently Enclosed Land, Farmland Medieval (land enclosed during the Medieval period) (~~Figure 10~~~~Figure 10~~). It was part of a formerly very extensive block of land enclosed at this time around the parish centre of St. Tudy, and extending to the edge of the Allen Valley. Elements may survive of a much earlier landscape which has been continuously farmed and settled since at least the Medieval period, and in some places long before. This Medieval reorganisation of the landscape was so thorough that almost all above-ground traces of pre-existing, prehistoric landscapes have been over-written. It is likely that this relatively fertile off-moor land would have been extensively settled and farmed during the Bronze Age and into the Iron Age. Transhumance agriculture may well have been practiced by these farmers, family members taking stock up onto the nearby flanks of Bodmin Moor to make use of available summer grazing.

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In the last few years, a number of factors have favoured the construction of individual wind turbines of varying heights within this landscape. The area is also increasingly favoured for solar farm installations, with at least one visible from the turbine site and others currently under construction within 10km radius of Polshea. Erosion of the coherency and legibility of the former historic landscape, farmland and moorland character of this area has inevitably resulted, and substantial parts of it are now perceived as a landscape of both agricultural activity and power generation.

In relation to the application for a wind turbine at Polshea, the judgement of this report is that the construction of an additional wind turbine at this location would not materially change the character of the local landscape, given the number of existing turbines which are already visible in proximity to its site.

12 Cumulative impacts

Recent English Heritage guidance requires assessments of applications for renewable energy installations to consider the cumulative impacts of installations in addition to specific impacts. The area surrounding Polshea is already populated with wind turbines, indicating a high potential for cumulative impacts.

From the proposed turbine site at Polshea Farm, at least five operational turbines are visible. From the majority of sites visited, at least one turbine was visible to some extent. The view from Rough Tor included four clustered turbines.

Many of the sites highlighted in this assessment are not tall landmarks, and even the church towers are not particularly prominent within the surrounding landscape. The majority of sites with sensitive settings consist of prehistoric rounds or enclosures which occupy prominent hilltop locations and command significant landscape views; they also have a high degree of intervisibility with other approximately contemporary sites. The distraction created by the rotating blades of the proposed wind turbine at Polshea Farm could be, or at least could become, detrimental to the appreciation and understanding of the setting of these monuments, especially where they are within landscapes which already contain a number of operational wind turbines, and within which others are currently proposed.

The majority of the remaining sites considered consist of Listed Buildings within settlements, and although their settings are quite localised, many of these settlements command significant landscape views, and have a degree of visual prominence within the

surrounding agricultural landscape. The setting of some of these, such as sites within St Breward and St. Tudy in particular, may be adversely affected to a minor degree by the visual distraction of the proposed wind turbine, and the cumulative effects of the multiple additional turbines in the landscape around them.

It should be noted that assessments of setting relate to the heritage significance of historic assets and the landscapes within which they are appreciated. Individuals' perceptions of setting, the values which they place on different site types, and their perception of the impacts of one or multiple wind turbines within the landscape will differ.

Such adverse visual impacts are, given the 25 year lifetime of any specific wind turbine, judged to be temporary in nature (though long-lived) and would be reversed on the dismantling of a turbine. Therefore, any mitigated impacts associated with their construction and operation are not permanent, though they may impact on the settings of designated sites and in the ways in which these sites and this landscape are perceived and appreciated. For those sites with local or limited settings with small-scale and/or limited number of turbines within the surrounding landscape, impacts are likely to be minor in most cases. For those sites with sensitive settings, where the construction of additional wind turbines is considered likely to result in a significant alteration to the historic character of the surrounding landscape, cumulative impacts may well be significantly greater.

13 Policies and guidance

The following section brings together policies and guidance (or extracts from these) used in the development of the assessment and its methodology.

13.1 National Planning Policy Framework 2012

The following paragraphs within the above document frame planning policy relating to the Historic Environment and are germane to this assessment:

128. *In determining applications, local planning authorities should require an applicant to describe the significance of any heritage assets affected, including any contribution made by their setting. The level of detail should be proportionate to the assets' importance and no more than is sufficient to understand the potential impact of the proposal on their significance. As a minimum the relevant historic environment record should have been consulted and the heritage assets assessed using appropriate expertise where necessary. Where a site on which development is proposed includes or has the potential to include heritage assets with archaeological interest, local planning authorities should require developers to submit an appropriate desk-based assessment and, where necessary, a field evaluation.*

129. *Local planning authorities should identify and assess the particular significance of any heritage asset that may be affected by a proposal (including by development affecting the setting of a heritage asset) taking account of the available evidence and any necessary expertise. They should take this assessment into account when considering the impact of a proposal on a heritage asset, to avoid or minimise conflict between the heritage asset's conservation and any aspect of the proposal.*

132. *When considering the impact of a proposed development on the significance of a designated heritage asset, great weight should be given to the asset's conservation. The more important the asset, the greater the weight should be. Significance can be harmed or lost through alteration or destruction of the heritage asset or development within its setting. As heritage assets are irreplaceable, any harm or loss should require clear and convincing justification. Substantial harm to or loss of a grade II listed building, park or garden should be exceptional. Substantial harm to or loss of designated heritage assets of the highest significance, notably scheduled monuments, protected wreck sites, battlefields, grade I and II* listed buildings, grade I and II* registered parks and gardens, and World Heritage Sites, should be wholly exceptional.*

133. *Where a proposed development will lead to substantial harm to or total loss of significance of a designated heritage asset, local planning authorities should refuse consent, unless it can be demonstrated that the substantial harm or loss is necessary to achieve substantial public benefits that outweigh that harm or loss, or all of the following apply:*

- *the nature of the heritage asset prevents all reasonable uses of the site; and*
- *no viable use of the heritage asset itself can be found in the medium term through appropriate marketing that will enable its conservation; and*
- *conservation by grant-funding or some form of charitable or public ownership is demonstrably not possible; and*
- *the harm or loss is outweighed by the benefit of bringing the site back into use.*

134. *Where a development proposal will lead to less than substantial harm to the significance of a designated heritage asset, this harm should be weighed against the public benefits of the proposal, including securing its optimum viable use.*

135. *The effect of an application on the significance of a non-designated heritage asset should be taken into account in determining the application. In weighing applications that affect directly or indirectly non designated heritage assets, a balanced judgement will be required having regard to the scale of any harm or loss and the significance of the heritage asset.*

139. *Non-designated heritage assets of archaeological interest that are demonstrably of equivalent significance to scheduled monuments, should be considered subject to the policies for designated heritage assets.*

13.2 Hedgerow Regulations

Under the current, 1997 Hedgerow Regulations, owners wishing to remove all or part of a hedgerow considered to be historically important must notify the Local Planning Authority (LPA). Criteria determining importance include whether the hedge marks a pre-1850 boundary, and whether it incorporates an archaeological feature. The LPA may issue a hedgerow retention notice prohibiting removal.

14 Mitigation Strategy

A range of means to mitigate the potential impacts identified in this assessment may be considered by the Historic Environment Planning Advice Officer, who may choose to recommend one or more of the following.

14.1 Site redesign

Mitigating any potential impacts on the settings of heritage assets might be possible through a degree of relocation of the wind turbine to reduce setting impacts on sensitive assets within the landscape surrounding the turbine site. However given the topography, the height of the turbine and the nature of the surrounding vegetation screens, this would seem unlikely to result in any substantial diminution of impact. English Heritage may require the production of photomontages demonstrating that any submitted proposal could achieve this aim.

14.2 Geophysics

A geophysics survey used to aid this assessment was commissioned in order to better determine potential sub-surface impacts. All areas which might be physically impacted upon by the proposals will be covered by this survey, which will extend to an area of 1Ha centred on the turbine location and 30m wide corridors along cabling routes, and areas (such as temporary or permanent roadways) which would be affected by groundworks required for its construction and use.

14.3 Archaeological recording

In a case where the finalised site design would seem likely to result in unavoidable physical impacts on likely sub-surface features, a brief for work to mitigate these impacts would be prepared by Cornwall Council's Historic Environment Advice Officer (East), setting out its scope. A Written Scheme of Investigation (WSI) to meet the brief would need to be prepared and agreed to establish and direct a programme of mitigating archaeological work.

The Historic Environment Planning Advice Officer may require further archaeological evaluation or recording to provide a level of information sufficient to determine the potential and scale of sub-surface impacts on archaeological features identified by the geophysics before a recommendation for the granting of planning permission could be made.

Subsequent archaeological recording works could include a watching brief (observation by an archaeologist during mechanical ground reduction activities) or excavation and recording prior to construction works. This could target areas where significant features had been identified through geophysical survey, or where the balance of probability suggests that sub-surface archaeology might survive. This approach provides for preservation by record of buried archaeological features or artefacts and reduces any impacts on the archaeology of the sites to moderate with some benefits in the form of increased knowledge and awareness of the heritage assets.

It should be noted that the form of any mitigation applied to the site would be determined by the HEPAO, who might require studies additional to those identified within this assessment in order to determine his recommendations.

15 Conclusion

Significant prehistoric archaeology was identified within a 10km radius of the proposed wind turbine site including Rough Tor, Garrow Tor and Helsbury and Killibury Castles, all Scheduled Monuments. However, the impacts upon these designated sites has been rated as neutral or minor, predominantly due to their relative distance from the proposed turbine site. Some reversible visual and possibly audible impacts may occur upon their settings. The adoption of a site redesign mitigation strategy suggested above is unlikely to achieve any positive change in these impacts. Impacts on other heritage assets, including Listed Buildings, Registered Parks and Gardens, the Conservation Areas and those within 1km, will be limited to visual and audible and are likely to be only minor, except, perhaps, in the case of the setting of the Grade II Registered Park and Garden at Lamellen where it is likely to be moderate.

Further archaeological investigation into the existence and nature of any subsurface archaeology in the proposed turbine field and along the cable connection route may enhance our understanding of the archaeology of this site and surrounding area.

The impact of existing and new turbines on the settings of archaeological sites within this part of Cornwall is likely to be cumulative. Whilst this proposal is for a single turbine with minimal and minor associated impacts, multiple similar proposals would have increasingly negative impacts on the identified heritage assets and their settings, and would further erode the historic landscape character of this landscape.

Although there are significant archaeological remains in the vicinity, the impacts upon identified heritage assets are all reversible and may well be considered as not outweighing the environmental benefits associated with the installation of a wind turbine on this occasion.

16 References

16.1 Primary sources

Cornwall County Council 2005 aerial mapping of Cornwall.

Joel Gascoyne's 1699 Map of Cornwall

Martyn's 1748 Map of Cornwall

Ordnance Survey, 1809, *1 inch mapping* First Edition (licensed digital copy at HE)

Ordnance Survey, c1880. *25 Inch Map* First Edition (licensed digital copy at HE)

Ordnance Survey, c1907. *25 Inch Map* Second Edition (licensed digital copy at HE)

Ordnance Survey, 2007. *Mastermap Digital Mapping*

Tithe Map c1840 and Apportionment, c1841. *Parish of St Tudy* (digital copy available from CRO)

16.2 Publications

English Heritage 2005, *Wind energy and the Historic Environment*

English Heritage 2011, *The setting of Heritage assets: English Heritage guidance*

Gover, J.E.B. 1948, *Place-names of Cornwall*

HMSO. 2008. *Design Manual for Roads and Bridges: Volume 11, Environmental Assessment Part 5 HA205/08. Assessment and Management of Environmental Effects*. Highways Agency

Norden, J. 1724, *Map of Cornwall*, reprinted University of Exeter 1972

Padel, O.J. 1985, *Cornish Place-name Elements*, Penzance

Padel, O.J. 1988, *Cornish place-names*, Penzance

Thorn, C. and Thorn, F. (eds.) 1979, *Domesday Book, 10: Cornwall*, Chichester

Copleston, P. 2013, *Brief for Archaeological Assessment of Proposed Wind Turbine at Polyshea Farm, St Tudy*. Unpublished document for Cornwall Council.

Sharpe, A. 2012, *Polyshea Farm, St Tudy, Cornwall. Archaeological Assessment of Proposed Wind Turbines*. Unpublished report for Historic Environment Projects, Cornwall Council

Sharpe, A. 2013, *Polyshea Farm, St Tudy, proposed wind turbine: Written Scheme of Investigation for archaeological assessment*. Unpublished document for Historic Environment Projects, Cornwall Council

16.3 Websites

<http://www.bgsgeologyviewer.ac.uk> 19/12/2013 British Geological Survey

<http://www.english-heritage.org.uk/caring/listing/> 18/12/2013 English Heritage designation information

<http://www.english-heritage.org.uk/publications> 18/12/2013 English Heritage guidance

<http://www.eng-h.gov.uk/reports/callestick> 18/12/2013 Geophysics report

<http://www.heritagegateway.org.uk/gateway/> English Heritage's online database of Sites and Monuments Records, and Listed Buildings. 19/12/2013

<http://www.legislation.gov.uk> 26/09/2013 Government documents, Acts and legislation

17 Project archive

The HE project number is 146327

The project's documentary, photographic and drawn archive is housed at the offices of Historic Environment, Cornwall Council, Fal Building, New County Hall, Truro, TR1 3AY. The contents of this archive are as listed below:

1. A project file containing site records and notes, project correspondence and administration.
2. Digital photographs stored in the directory R:\Historic Environment (Images)\SITES.M-P\Sites P\Polshea Farm Wind Turbine 2013 146327
3. English Heritage/ADS OASIS online reference: cornwall2-167253
4. This report text is held in digital form as: G:\TWE\Waste & Env\Strat Waste & Land\Historic Environment\Projects\Sites\Sites P\Polshea Farm Wind Turbine Assessment 2013 146327



Figure 3: The proposed turbine site at Polshea Farm as shown on John Norden's Map of Cornwall.

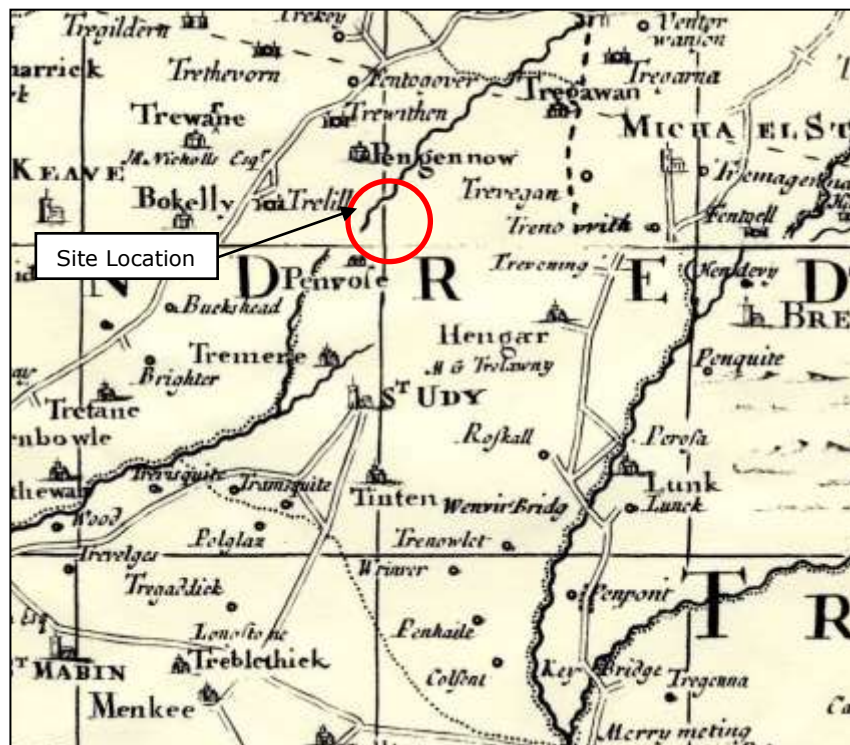


Figure 4: The proposed turbine site at Polshea Farm as shown on Joel Gascoyne's 1699 Map of Cornwall.

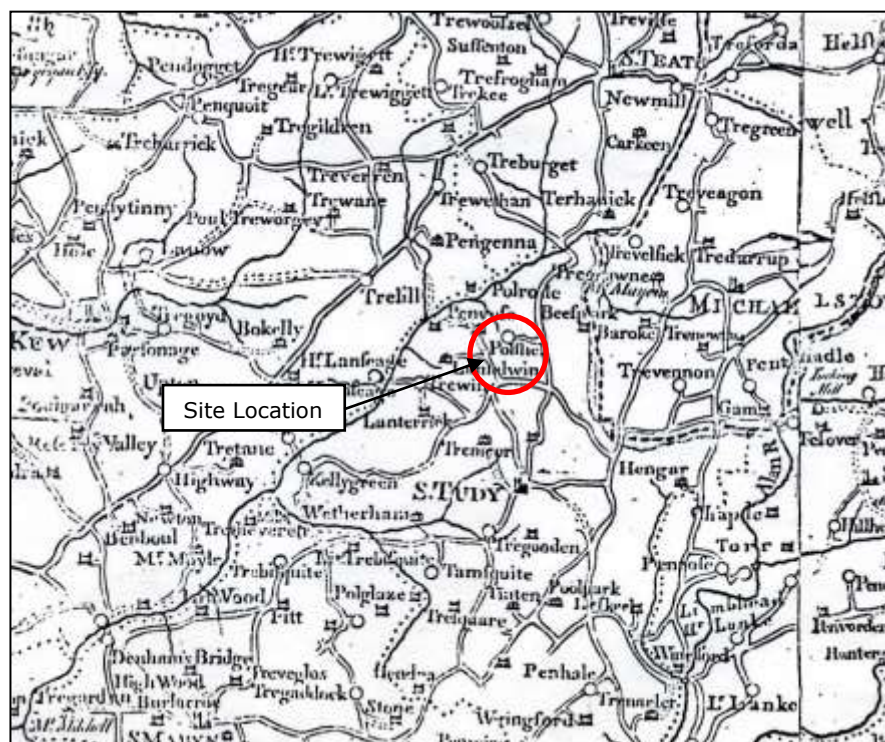


Figure 5: The proposed turbine site as depicted on Martyn's Map of Cornwall 1748.



Figure 6: The proposed turbine site as depicted on the 1807 OS 1 inch Map.

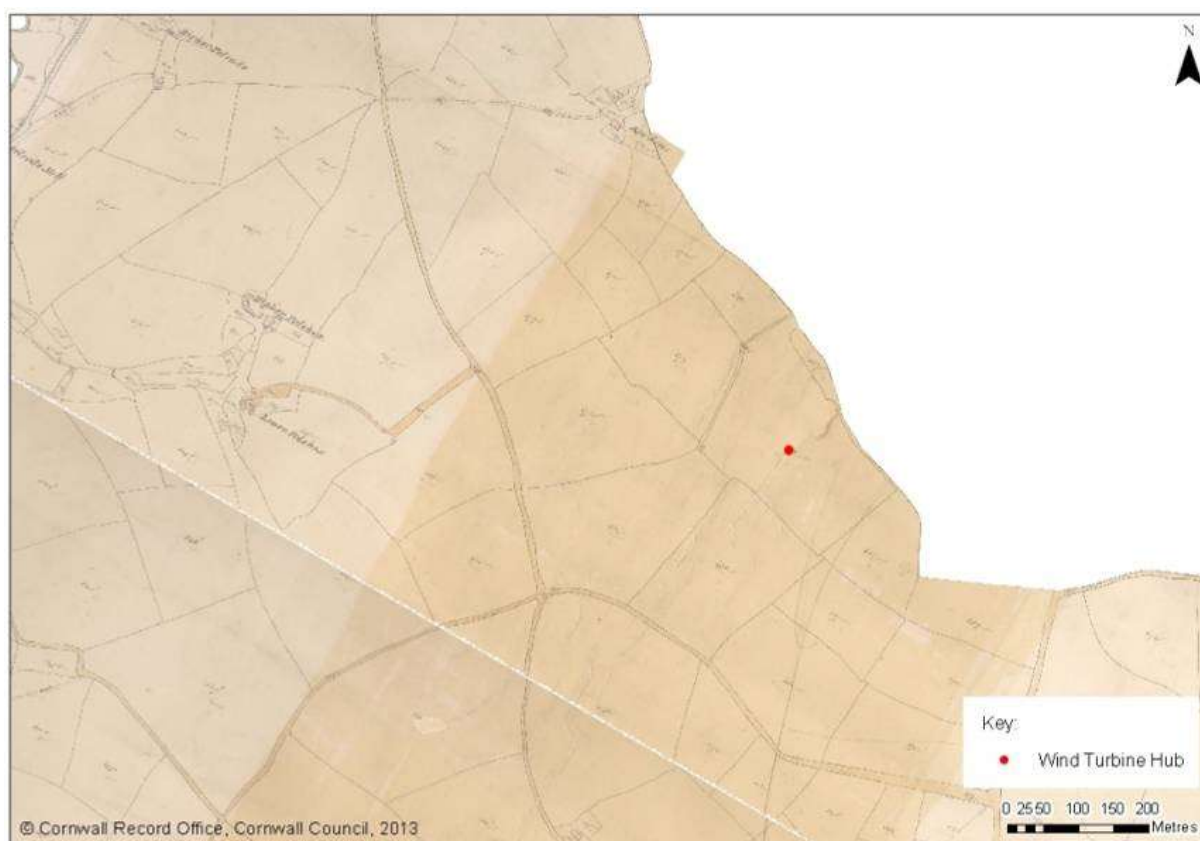


Figure 7: The proposed wind turbine location superimposed on the c1841 Tithe Map for the parish of St Tudy.

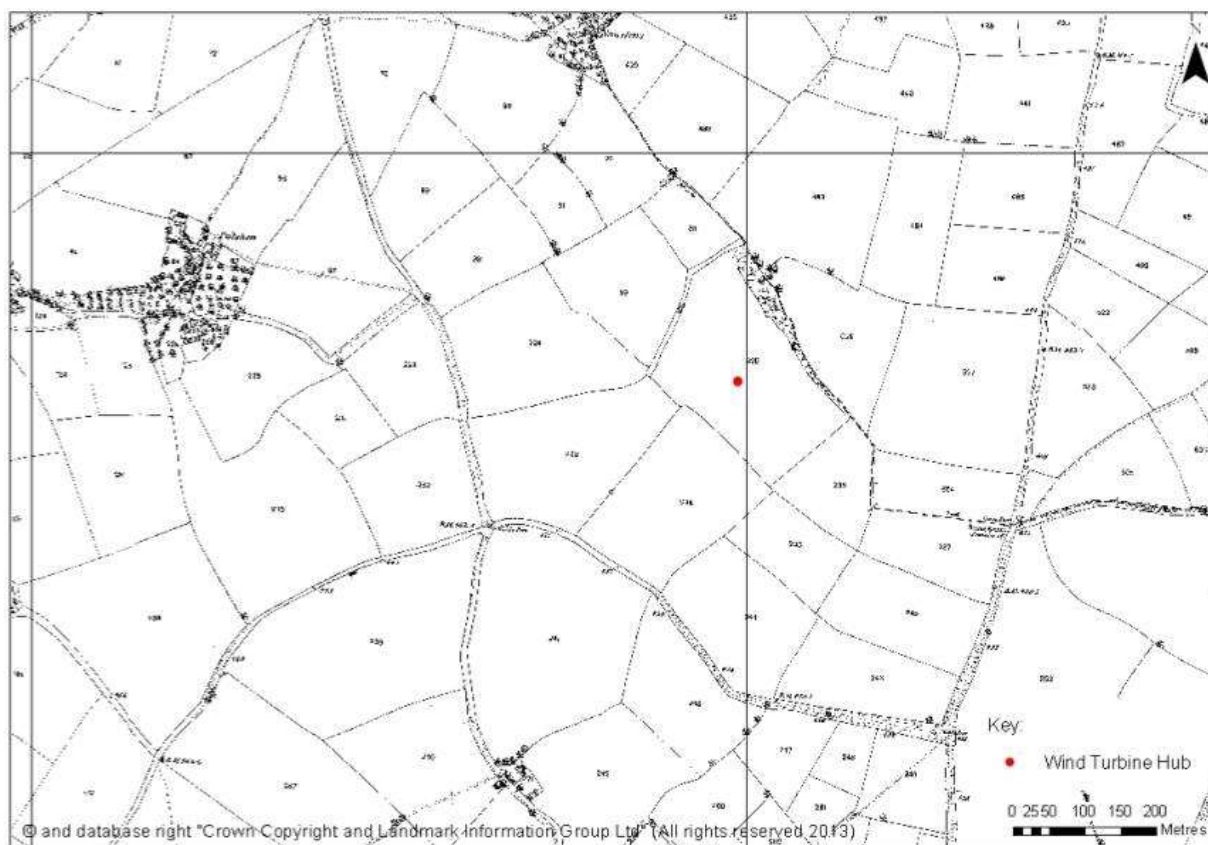


Figure 8: The proposed turbine site superimposed on the OS c1875 25" map.

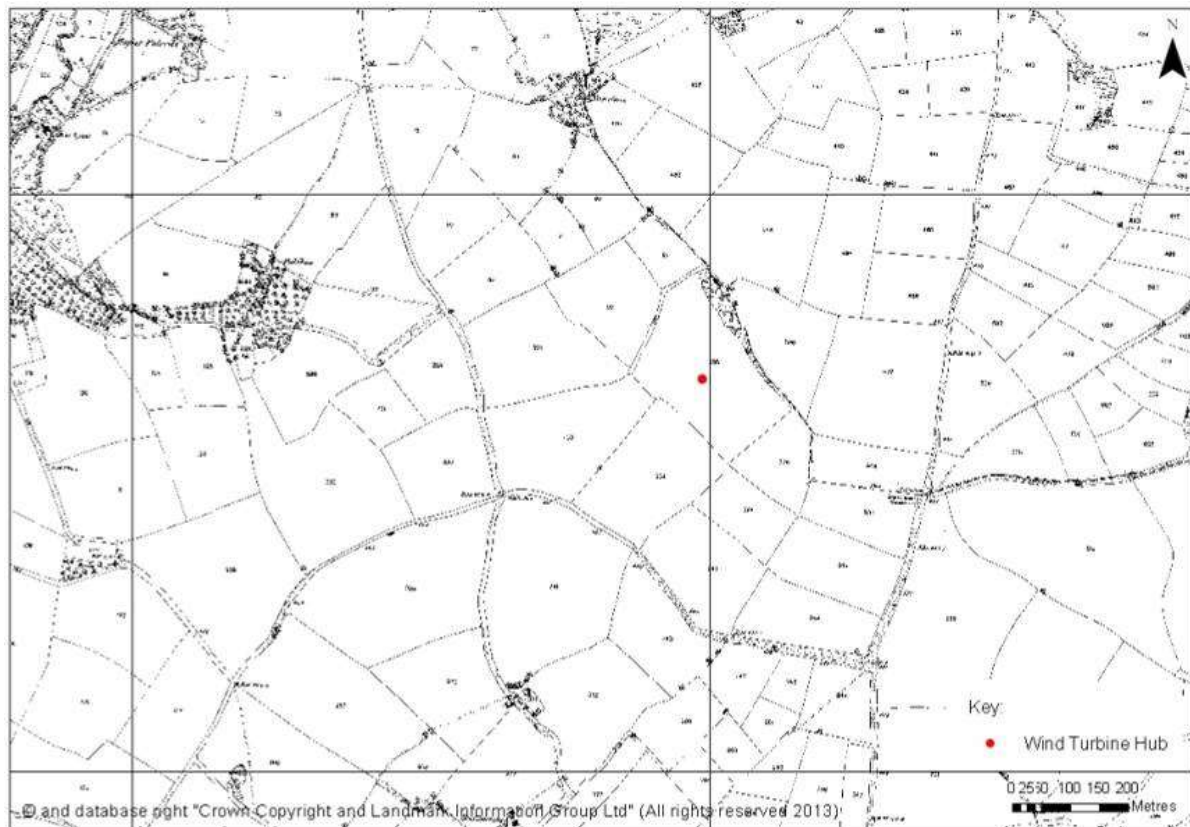


Figure 9: The proposed turbine site located over the OS c1908 25" map.

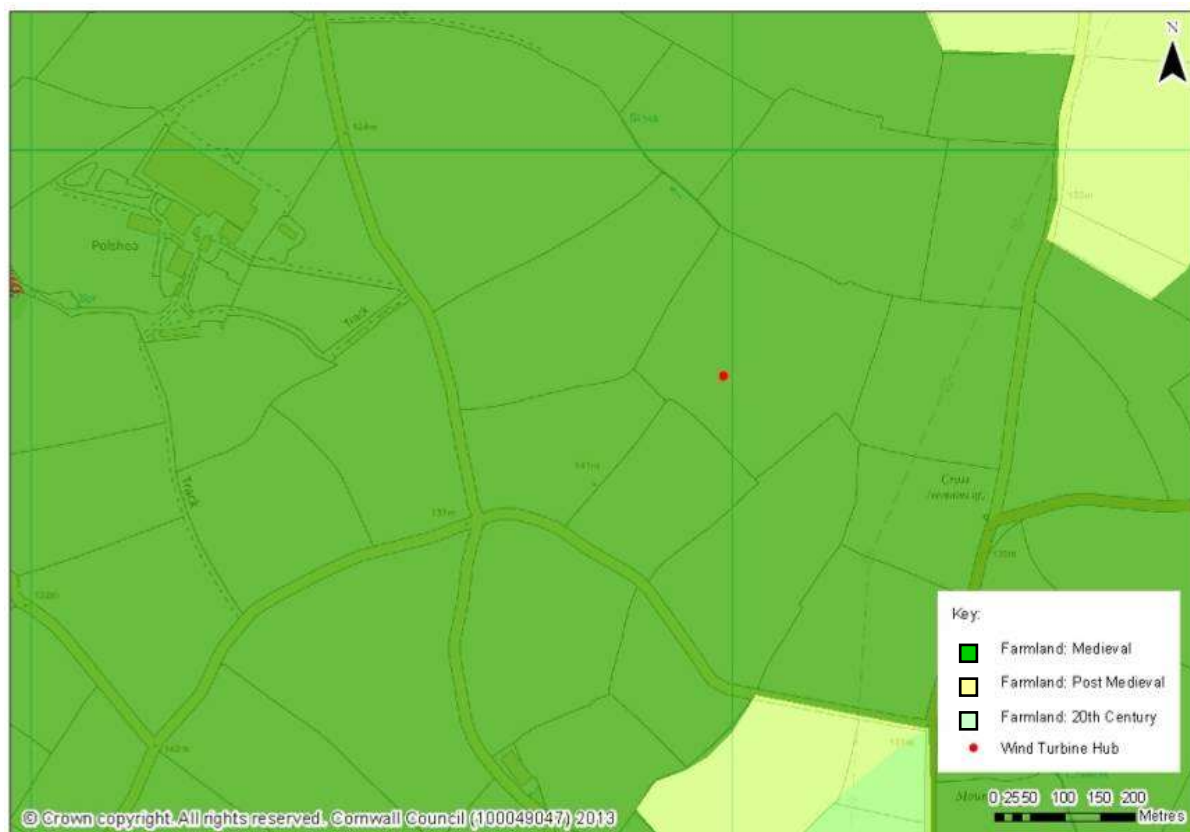


Figure 10: Historic Landscape Characterisation of the area surrounding the proposed turbine site.

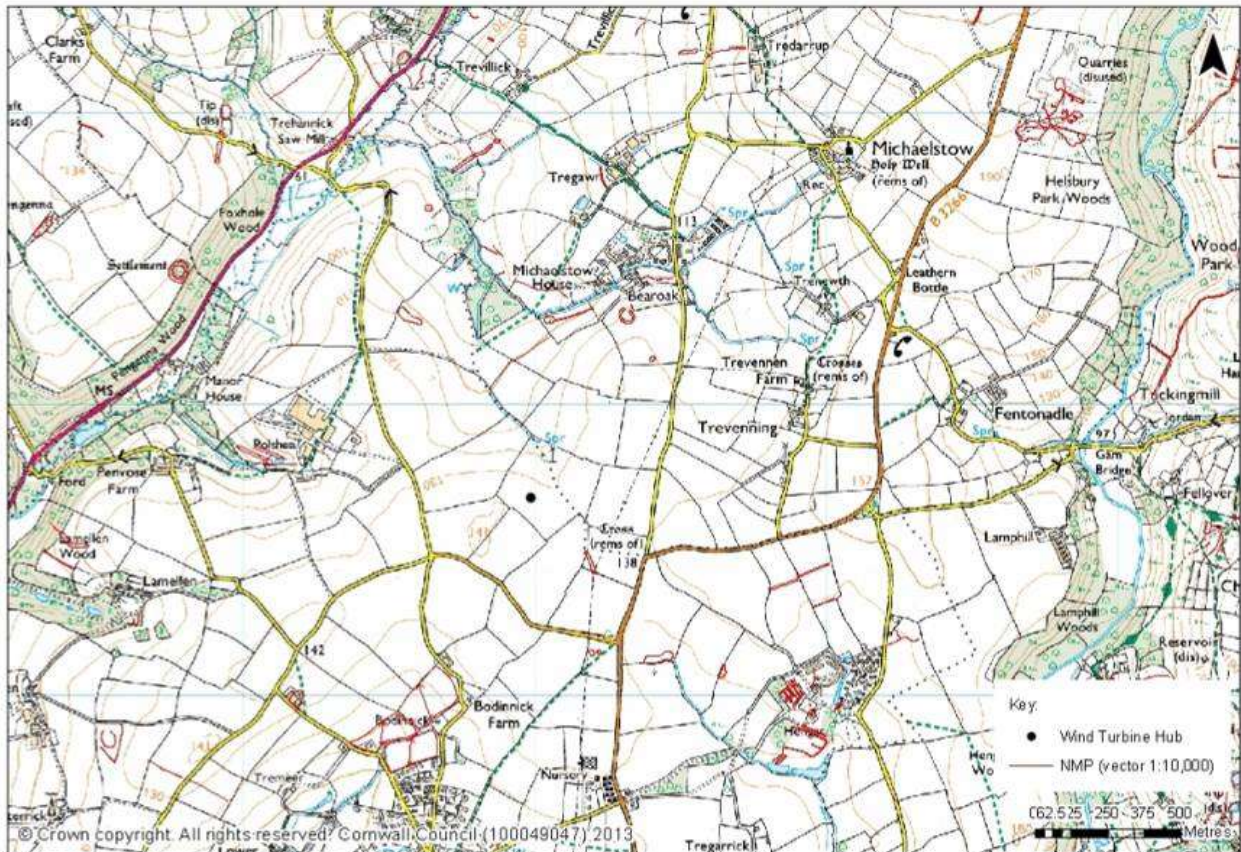


Figure 11: NMP data for the proposed site and surrounding area.

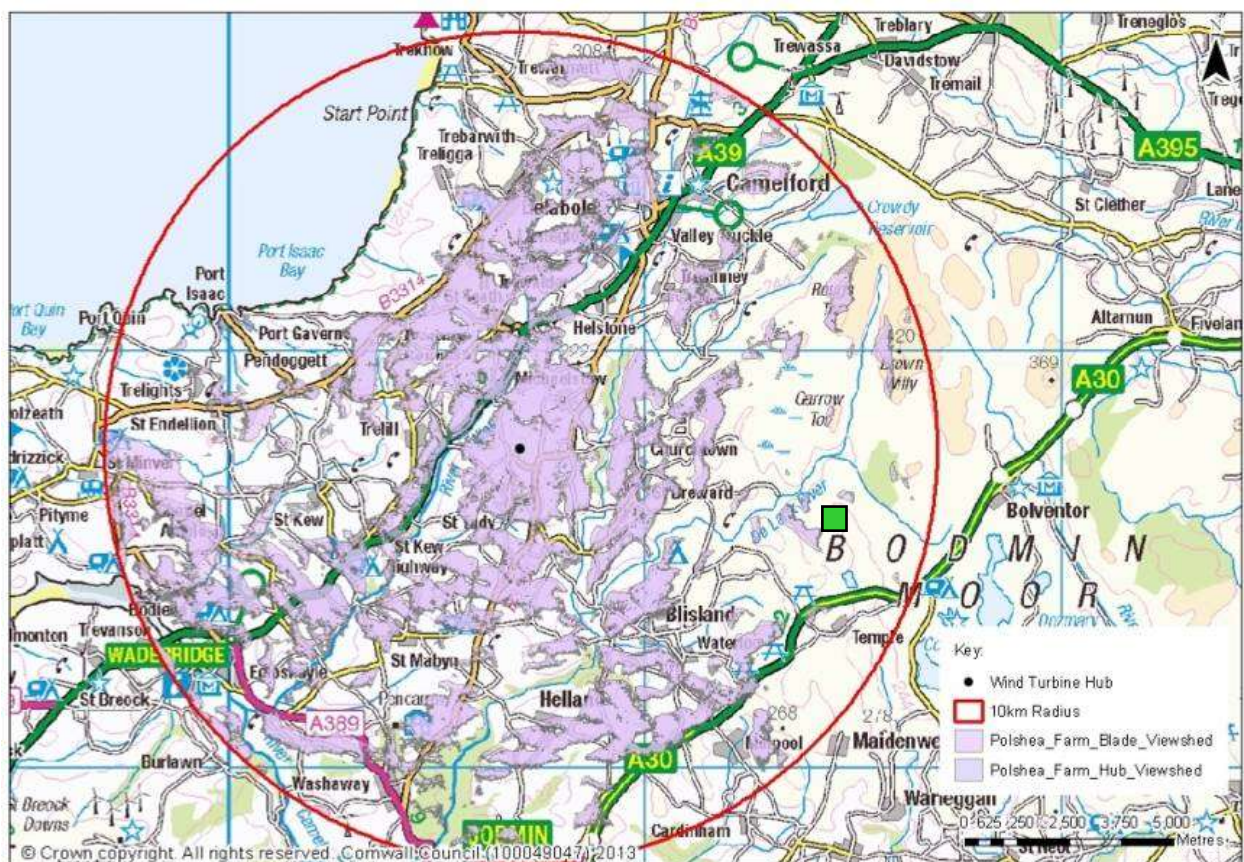


Figure 12: Viewshed mapping for the 10km radial area surrounding the proposed turbine site.

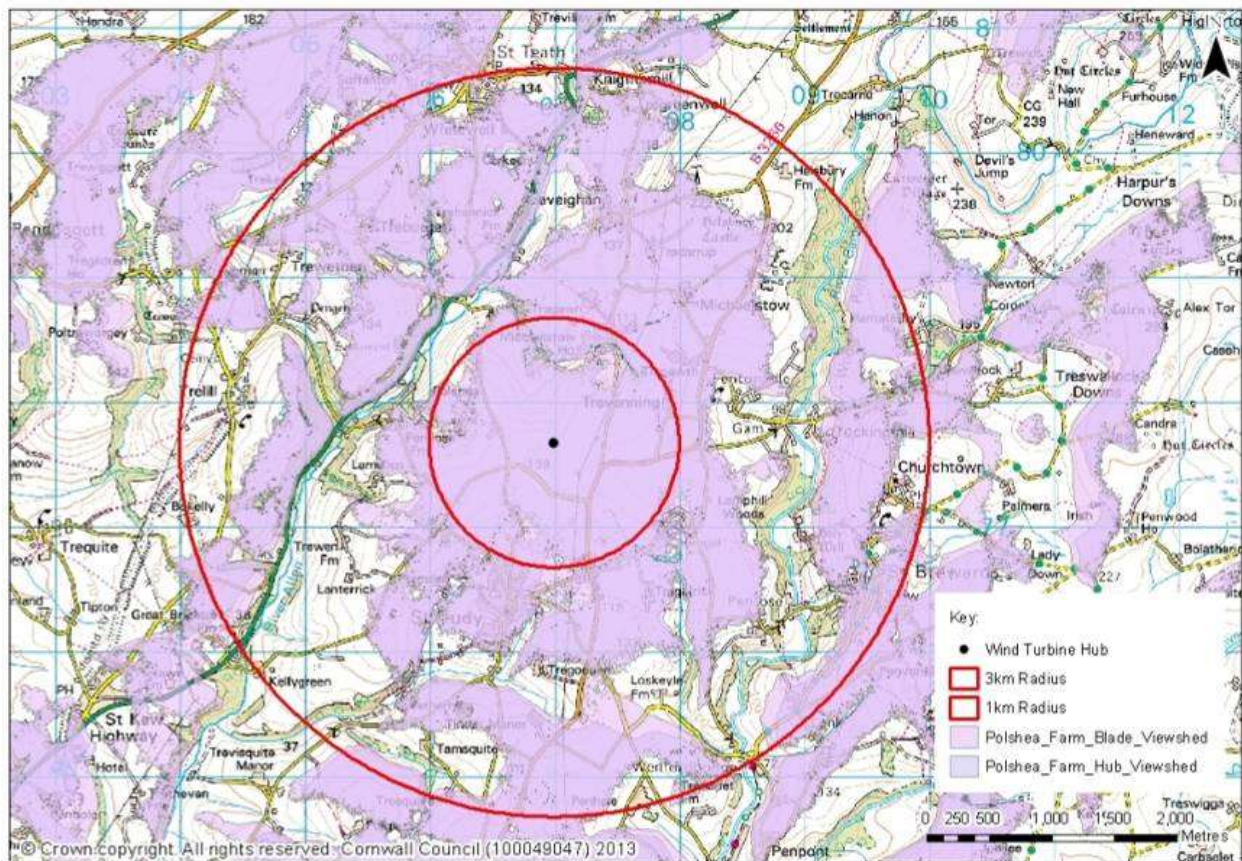


Figure 13: Viewshed mapping for the 3km radial area surrounding the proposed site.

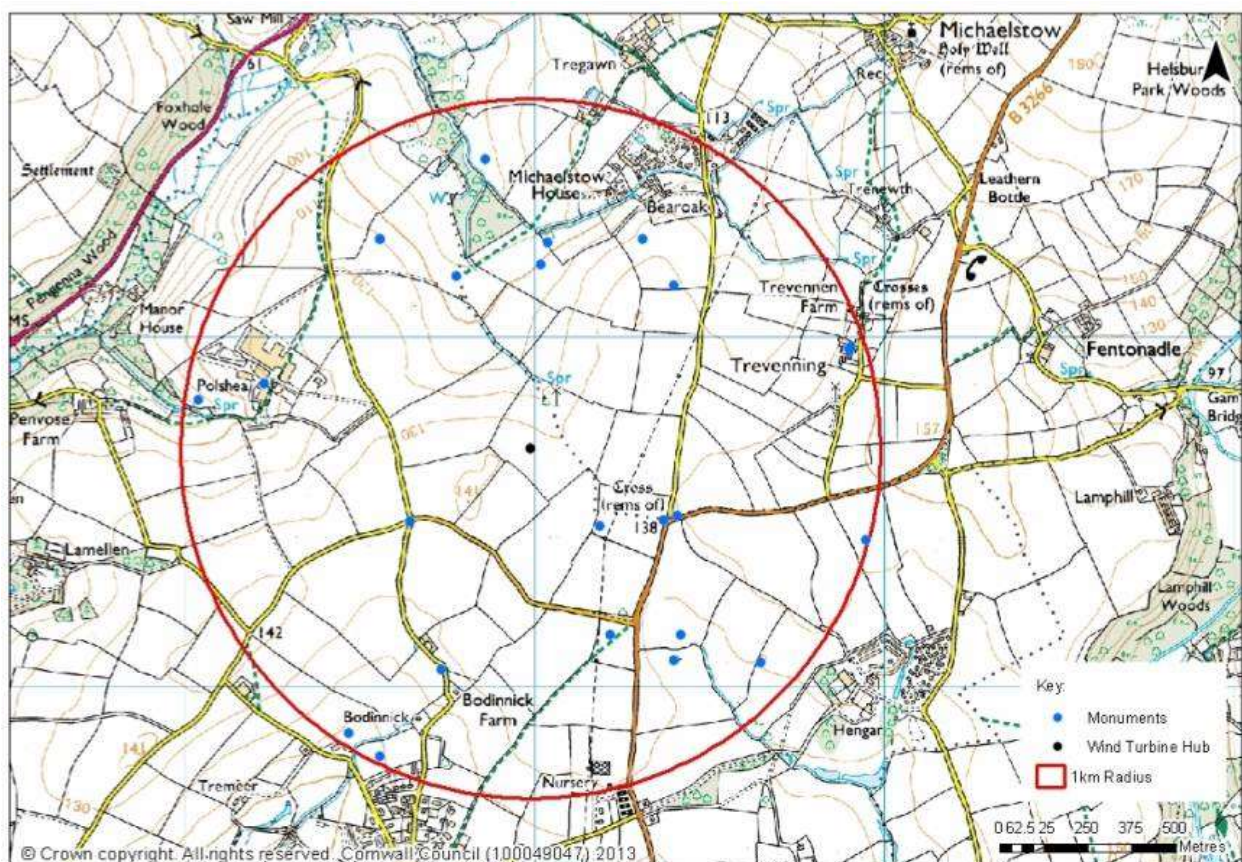


Figure 14: The 1km radius around the proposed site showing undesignated assets, all are within the viewshed.

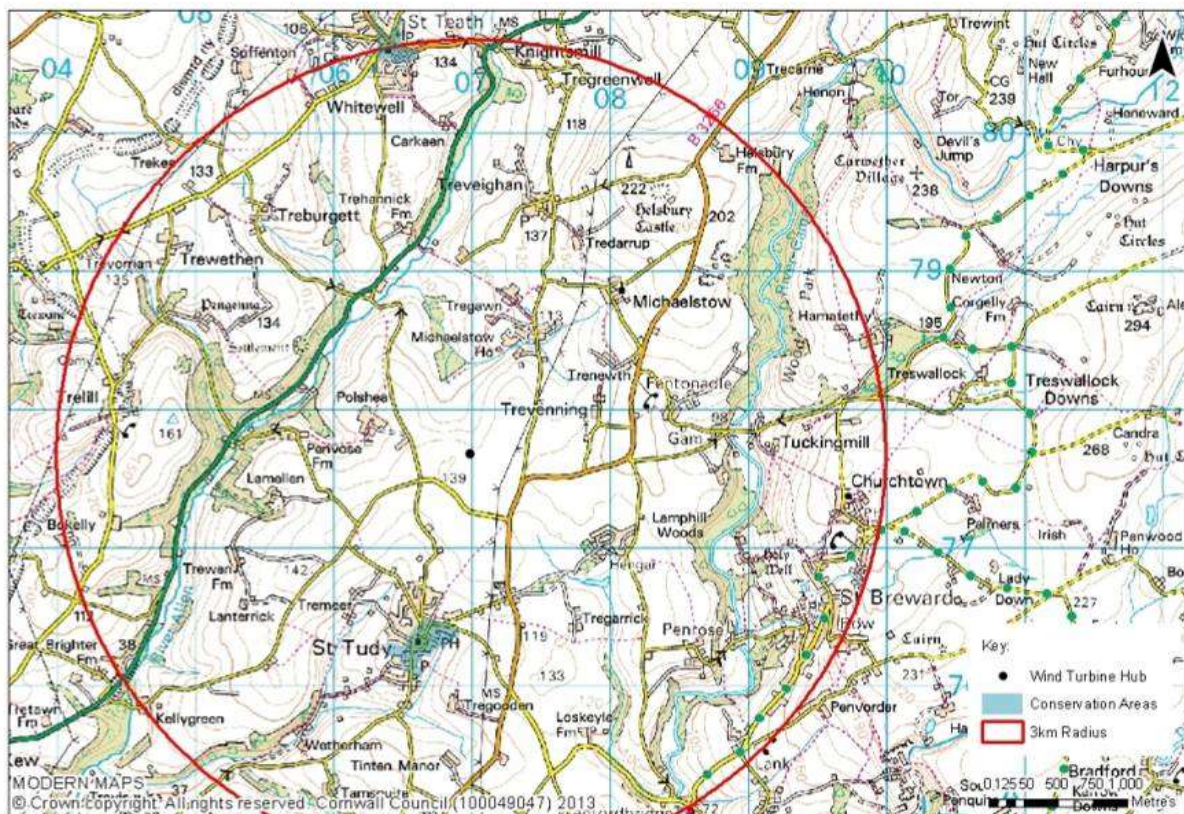


Figure 15: Map illustrating the proposed turbine site and its proximity to the St Tudy and St Teath Conservation Areas.

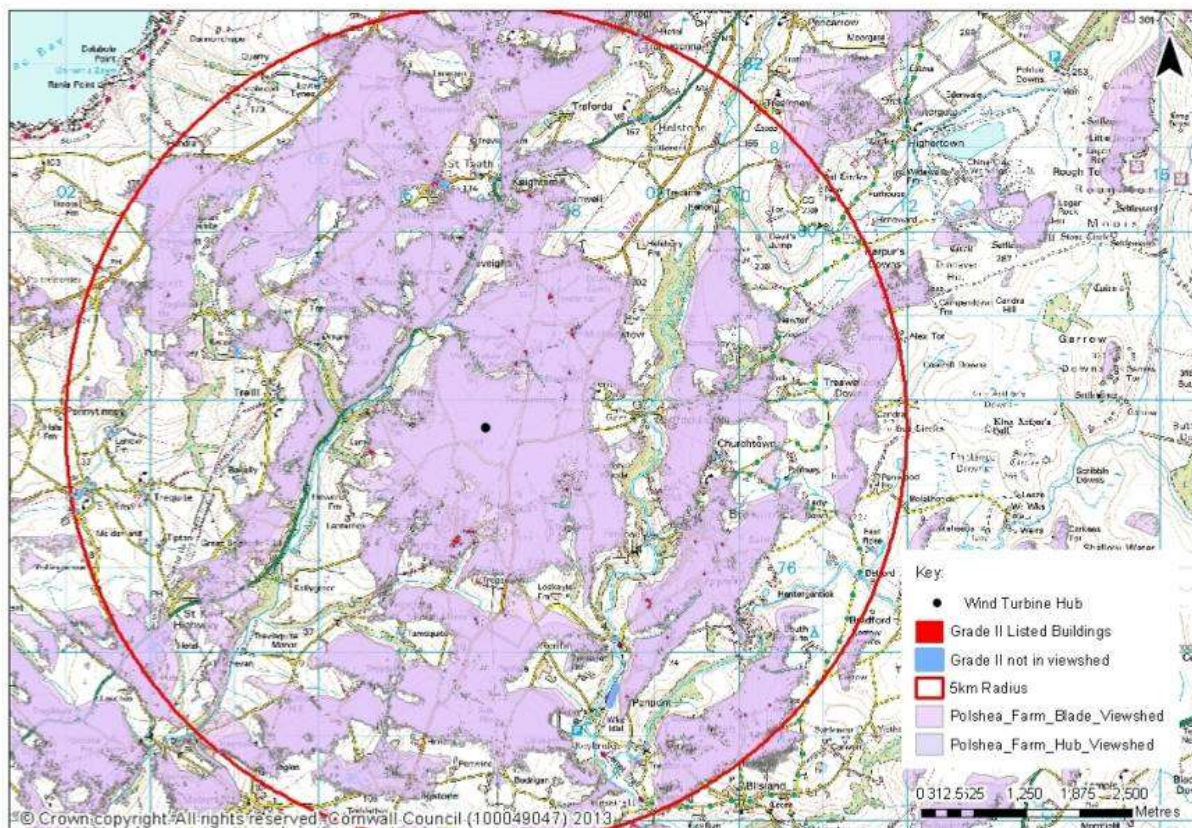


Figure 16: The 5km radius showing Grade II Listed Buildings within and outside of the viewshed.

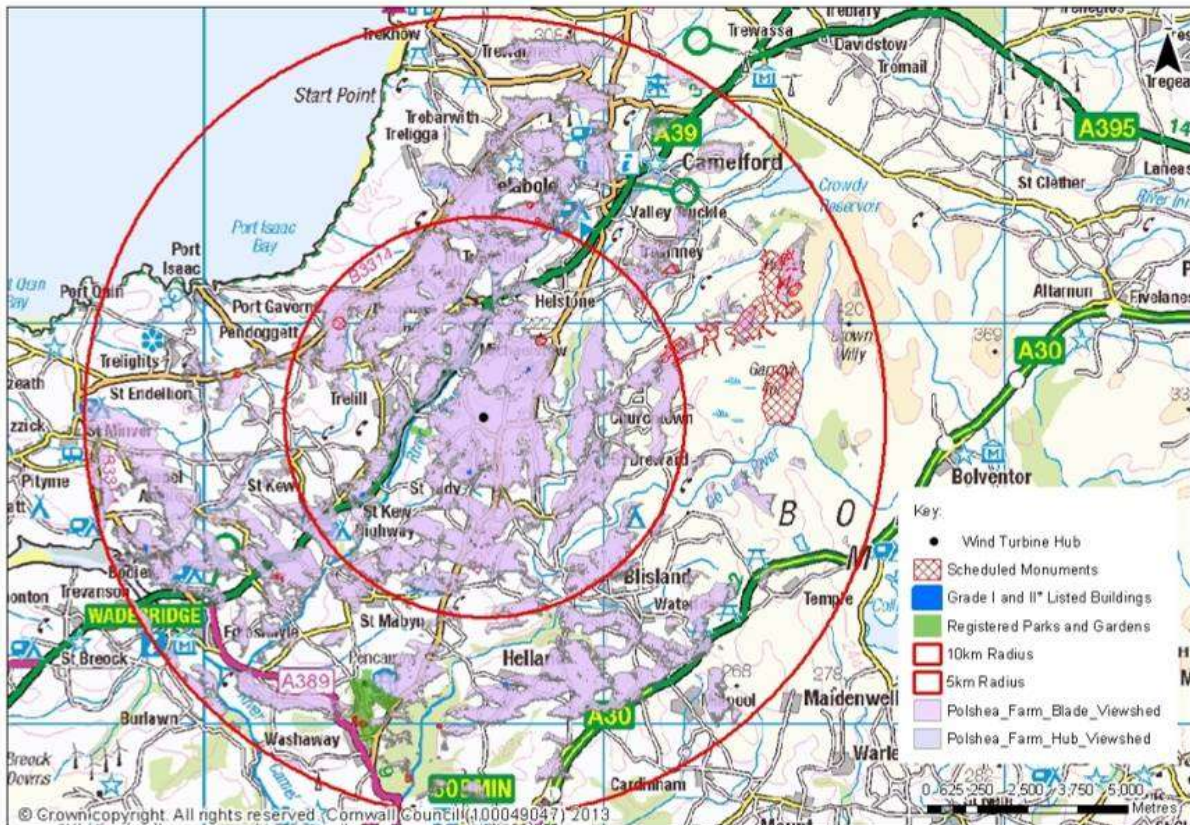


Figure 17: The 10km radius showing Scheduled Monuments, Grade I and II* Listed Buildings and Registered Parks and Gardens within the viewshed.

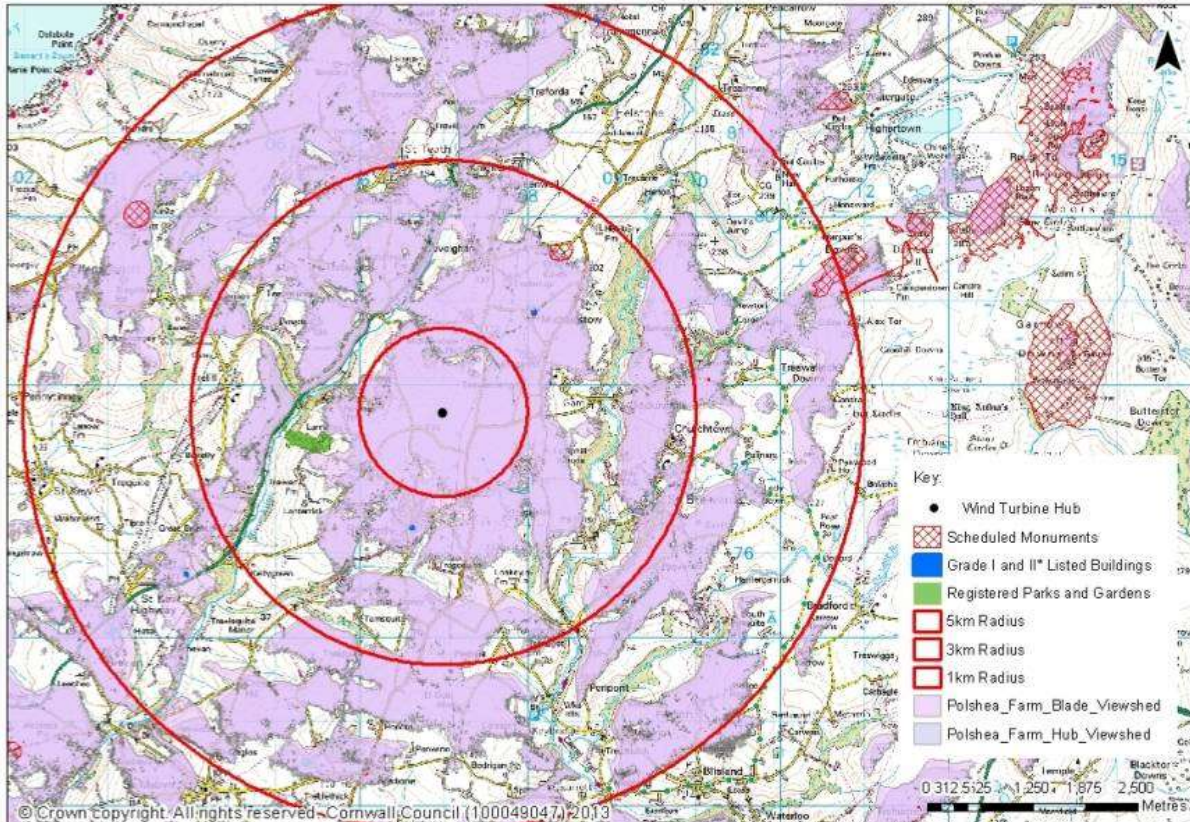


Figure 18: The 5km radius showing Scheduled Monuments, Grade I and II* Listed Buildings and Registered Parks and Gardens within the viewshed.



Figure 19: The view east from approximately the proposed turbine location with Helsbury Castle on the skyline to the left of the image.



Figure 20: The more restricted view to the south from approximately the proposed turbine location.



Figure 21: Looking northeast from the proposed turbine site, towards the existing wind turbines at Delabole in the distance and a solar park in the middle ground.



Figure 22: The village and Conservation Area of St Tudy, looking north from a central location to the north of the Church.



Figure 23: Looking northwest towards the proposed turbine site from the eastern edge of Tinten access track. The turbine will be located just over the crest of the hill.



Figure 24: The view west towards the proposed turbine site from the north of St Breward village.



Figure 25: View southwest towards the proposed site from above Michaelstow Church and village. Note the deciduous trees and enclosed environment of the Church.



Figure 26: View southwest from a location adjacent to Helsbury Castle. Note the wooded valleys and solar farm. The proposed turbine site is to the extreme left edge of this view in the middle distance.



Figure 27: View from the north of Killibury Castle looking northeast towards the proposed turbine site.