



Higher Churchtown Farm, Tresmeer, Cornwall

Archaeological assessment of proposed wind turbine



Historic Environment Projects

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The viewshed mapping was carried out by Krysia Truscoe, Cornwall Council Historic Environment Projects.

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

The view north from the proposed wind turbine site to (centre of photograph) the Grade I Listed church of St Winwalo, Tremaine, 800m distant, and, to the right, the Grade II Listed Grove Cottage, 570m distant.

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Contents

1	Summary	1
2	Introduction	3
2.1	Aims and objectives	4
2.2	Methods	4
2.2.1	Desk-based assessment	4
2.2.2	Viewshed analysis	5
2.2.3	Fieldwork	6
2.2.4	Post-fieldwork	6
3	Location and setting	7
4	Project extent	7
5	Designations	8
5.1	National	8
5.2	Regional/county	8
5.3	Local	8
5.4	Rights of Way	8
6	Results of the desk-based assessment	8
7	Geophysical survey	11
7.1	Results	12
7.2	Interpretation	13
8	Results of site walkover	13
9	Results of viewshed analysis	14
9.1	1 km radius ZTV	14
9.2	1-5 km radius ZTV	15
9.3	5-10 km radius ZTV	17
9.4	10-15 km radius ZTV	18
9.5	Scheduled Monuments within the 10 km radius ZTV	18
9.6	Registered Parks and Gardens and Registered Battlefields within the 10 km radius ZTV	22
9.7	Grade 1 and II* Listed Buildings within the 10 km radius ZTV	23
9.8	Conservation Areas within the 5 km radius ZTV	23
9.9	Grade II Listed Buildings within the 5 km radius ZTV	23
9.10	Undesignated sites within the 1 km ZTV	25
9.11	Designated sites within the 10-15km zone	26
10	Field verification of the ZTV	28
11	Cumulative impacts	29
12	Synthesis	29
13	Policies and guidance	30

13.1	National Planning Policy Framework 2012	30
13.2	PPS5 English Heritage guidance	31
13.3	Former Cornwall Structure Plan	31
13.3.1	Policy 1	31
13.3.2	Policy 2	32
13.4	Former North Cornwall District Council Local Plan	32
13.5	Hedgerow Regulations	33
14	Probable impacts of the proposed development	33
14.1	Types and scale of impact	33
14.1.1	Types of impact, construction phase	33
14.1.2	Types of impact, operational phase	33
14.1.3	Scale and duration of impact	33
14.1.4	Potential and residual impacts	34
14.2	Assessment of impact	34
14.2.1	Impacts on archaeological sites within the development area	34
14.2.2	Impacts on the settings of key heritage assets	34
14.2.3	Designated heritage assets within the 10 km radius viewshed	35
14.2.4	Designated heritage assets within the 5 km radius ZTV	37
14.2.5	Undesignated heritage assets within the 1 km radius ZTV	38
14.2.6	Impacts on Historic Landscape Character	38
15	Mitigation strategy	39
15.1	Archaeological recording	39
16	References	40
16.1	Primary sources	40
16.2	Publications	40
16.3	Websites	41
17	Project archive	41

List of figures

Fig 1. Location: Higher Churchtown Farm, Tresmeer.

Fig 2. Location of the proposed wind turbine at Higher Churchtown Farm, Tresmeer.

Fig 3. The project area and wider surroundings on Norden's early seventeenth century map of Cornwall.

Fig 4. The Tresmeer area on Ogilby's route map of 1675 (White 2005, 76).

Fig 5. The project area and wider surroundings on Joel Gascoyne's 1699 map of Cornwall.

Fig 6. The proposed turbine site and its wider surroundings shown on Thomas Martyn's 1748 map of Cornwall.

Fig 7. The project area, turbine location (black dot) and surroundings shown on the 1st edition Ordnance Survey 1in map of c 1813.

Fig 8. The project area shown on the Tresmeer tithe map of 1839.

Fig 9. The project area and turbine location on Ordnance Survey 1st ed 25in: 1 mile mapping of c 1880.

Fig 10. The project area and turbine location on Ordnance Survey 2nd ed 25in: 1 mile mapping of c 1906.

Fig 11. The project area and turbine location on a 2005 CCC aerial photograph.

Fig 12. Historic Landscape Character mapping for the area around the proposed wind turbine.

Fig 13. Sites recorded in the Cornwall and Scilly Historic Environment Record in the vicinity of the proposed turbine site, together with archaeological features mapped from air photographs.

Fig 14. Contour data for the area immediately surrounding the proposed wind turbine.

Fig 15. Access designations and Rights of Way (none) in the vicinity of the project area.

Fig 16. Geophysics data for the northern part of the project area (ArchaeoPhysica Ltd).

Fig 17. Geophysics data for the southern part of the project area (ArchaeoPhysica Ltd).

Fig 18. Interpretation of the geophysical data for the northern part of the project area (ArchaeoPhysica Ltd).

Fig 19. Interpretation of the geophysical data for the southern part of the project area (ArchaeoPhysica Ltd).

Fig 20. The ZTV, indicating potentially intervisible sites recorded in the HER within a 1 km radius of the site proposed for the wind turbine.

Fig 21. The ZTV within a 5 km radius of the proposed wind turbine site, showing potentially intervisible Listed Buildings (all grades).

Fig 22. The Cornwall AONB within a 10 km radius ZTV of the site of the proposed wind turbine

Fig 23. Areas of Great Historical Value (AGHV) within a 10 km radius ZTV of the site for the proposed wind turbine.

Fig 24. Registered Parks and Gardens within 10 km of the site proposed for the wind turbine.

Fig 25. Scheduled Monuments within the 10 km ZTV of the site proposed for the wind turbine.

Fig 26. Potentially intervisible Listed Buildings (all grades) within the 10 km ZTV of the site proposed for the wind turbine.

Fig 27. The 15 km ZTV for the proposed wind turbine at Higher Churchtown Farm, Tresmeer, showing potential intervisibility with designated areas and sites.

Fig 28. The view west-north-west from the proposed turbine site to Warbstowbury hillfort (centre, on the skyline) and two adjacent wind turbines, and to Warbstow church and village.

Fig 29. The view north from the proposed turbine site to the church of St Winwalo, Tremaine (Listed Building Grade I) and, to the right, Grove Cottage (Grade II).

Fig 30. The view west from the proposed site towards North Tregear.

Fig 31. The view north towards Westcott.

Fig 32. The view east from the proposed turbine site. The roof of the Grade II Listed farmhouse at Trehummer is just visible over the surface of the field in the foreground. A row of pines the middle distance is on the drive to Penheale Manor (Grade II Registered Park and Garden) and woods on higher ground beyond are plantations to the west of Werrington Park.

Fig 33. Looking north east from Well Cottage (Listed Grade II) in Three Hammers.

Fig 34. The view south from the churchyard of the church of St Winwalo, Tremaine (Listed Grade I) to the proposed turbine site 800m distant in the stubble field just below the skyline (centre).

Fig 35. The view south towards the proposed turbine site from the south porch of the church of St Winwalo, Tremaine.

Fig 36. The view south east towards the proposed turbine site (centre, below the skyline above the right-hand end of the gate in the foreground) from the perimeter of the churchyard of the church of St Werburgha, Warbstow.

Fig 37. The view from the interior of Warbstowbury hillfort towards the proposed turbine site (centre).

Fig 38. The view from the inner rampart of Warbstowbury south towards a recently installed wind turbine near Trewonnard, and to the Cold Northcott wind farm on the skyline.

Fig 39. The view west from the inner rampart at Warbstowbury to two nearby wind turbines.

Fig 40. The view east towards the proposed turbine site from the perimeter of the churchyard of the church of St Gregory, Treneglos (Listed Grade II).*

Fig 41. The view south west to the proposed turbine site from immediately adjacent to the Listed (Grade II) house at Winnacott.*

Fig 42. The Scheduled and Listed (Grade II) High Hall cross on Laneast Down. Views north to the proposed wind turbine site are currently blocked by a small plantation of evergreens.

Fig 43. Looking south from High Hall cross to the newly-erected wind turbine at Lidcott.

Fig 44. The view north east towards the proposed wind turbine site in September 2012 from the northern slope of Bray Down, close to the Scheduled cairn group and enclosed settlement.

Abbreviations

EH	English Heritage
HER	Cornwall and the Isles of Scilly Historic Environment Record
HE	Historic Environment, Cornwall Council
NGR	National Grid Reference
OS	Ordnance Survey
ZTV	Zone of Theoretical Visibility

1 Summary

Historic Environment Projects, Cornwall Council, were approached by Chloe Bines of Mi-Grid Ltd on 15 August 2012 with a request to provide costs for the provision of an archaeological assessment of a proposed wind turbine at Higher Churchtown Farm, Tresmeer, as part of a proposed planning application. A cost schedule for this work was approved on 18 September 2012.

The proposal is for a 500 kW wind turbine with maximum blade tip height of 77m, to be sited on farmland at Higher Churchtown Farm, in Tresmeer parish, at NGR SX 23333 88269. The site chosen for the wind turbine lies on the upper northern slopes of a north-east trending ridge north of Tresmeer churchtown in an area of farmland which was enclosed from former downland in the later nineteenth century.

The assessment consisted of a desk-based assessment, viewshed analysis out to 15 km from the site, a walkover survey and interpretation of geophysics results.

The desk-based assessment identified the proposed turbine site as former rough ground, enclosed in the nineteenth century. The geophysics indicated traces of former boundaries and cultivation but offered no indication of more significant archaeological remains. The walkover survey also found no suggestions of standing or buried archaeology on the site likely to be significantly damaged by the proposed works.

The site visit and Zone of Theoretical Visibility mapping identified moderately wide views from the proposed wind turbine site, particularly in the northern quadrant. It was concluded from the study that impacts would be likely to result on the settings of several designated and undesignated sites within the viewshed of the site, particularly the Grade I Listed church of St Winwalo, Tremaine, to the north and two nearby Grade II structures, Grove Cottage and Trehummer farmhouse. At greater distance there is potential for impact on the settings of the Grade II* Listed church of St Gregory at Treneglos and Winnacott farmhouse and the Scheduled Monuments of Warbstowbury and Tregeare Camp. The proposed turbine would be skylined or partially so from each of these locations and would intervene in views between the two Scheduled Monuments. Impacts on the Historic Landscape Character of the landscape surrounding the proposed wind turbine can be expected and on the character of adjacent areas from which it is visible.

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

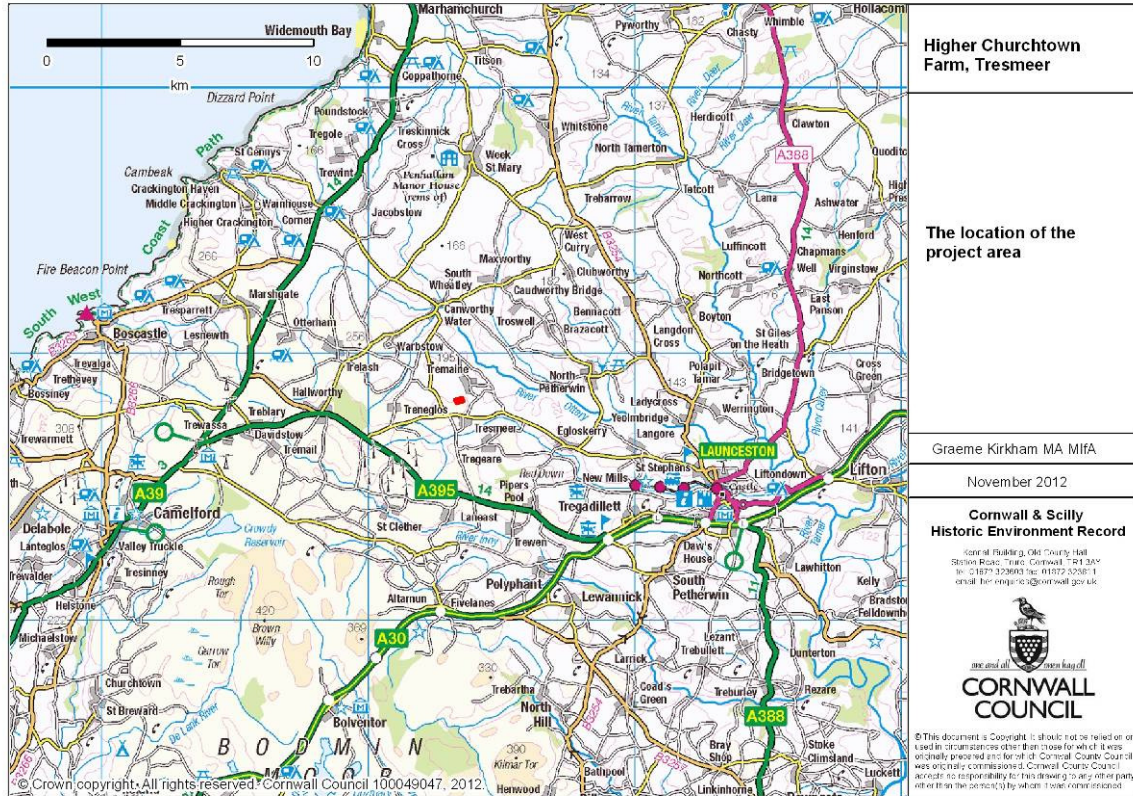


Fig 1 Location: Higher Churchtown Farm, Tresmeer.

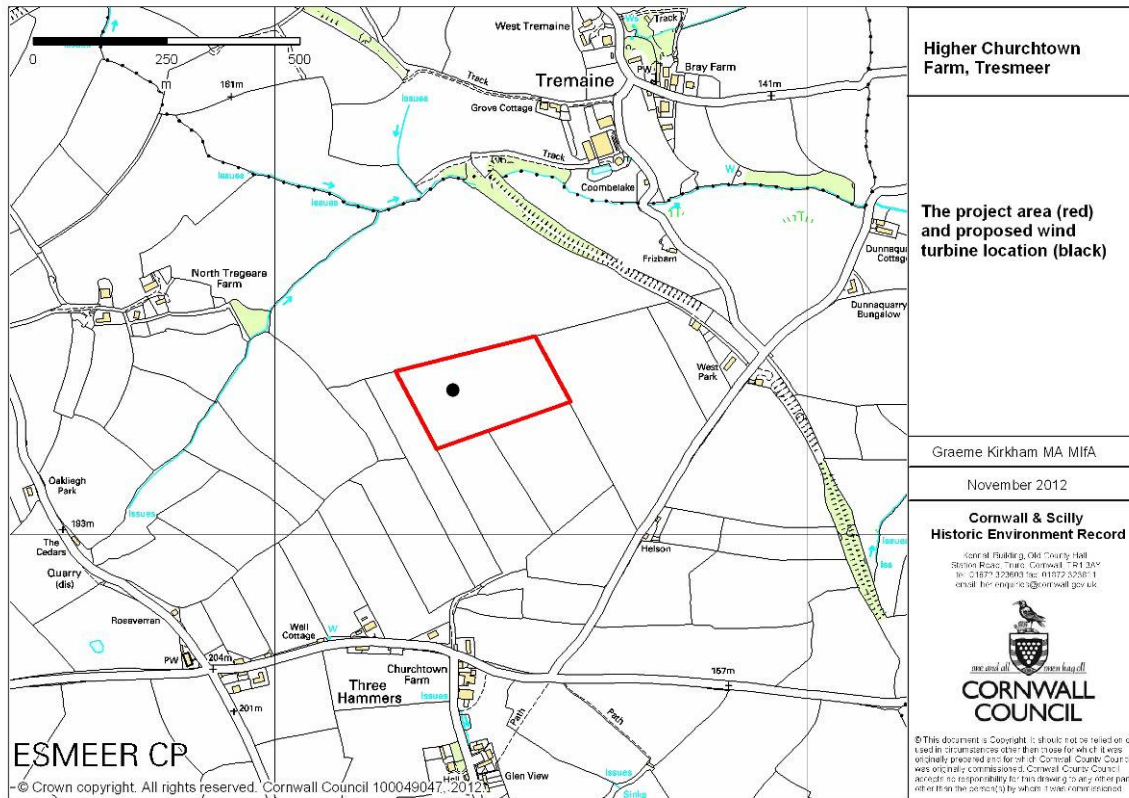


Fig 2. Location of the project area (red outline) and proposed wind turbine (black dot) at Higher Churchtown Farm, Tresmeer.

2 Introduction

Historic Environment Projects, Cornwall Council, was approached by Chloe Bines of Mi-Grid Ltd on 15 August 2012 with a request to provide costs for the provision of an archaeological assessment of a proposed wind turbine at Higher Churchtown Farm, Tresmeer, as part of a proposed planning application. A cost schedule for this work was approved on 18 September 2012.

The assessment was to consist of a desk-based assessment, viewshed analysis out to 15 km from the site, a walkover survey and interpretation of geophysics results. The geophysical survey was carried out in October 2012. The walkover survey and viewshed check were undertaken on 21 November 2012.

A model brief agreed by Mr Phil Copleston, Historic Environment Planning Advice Officer, Cornwall Council, was used to guide the archaeological assessment, in conjunction with the advice on assessing the impacts of such developments on the settings of designated sites provided by English Heritage (2011).

The proposal is for a 500 kW wind turbine with a maximum blade tip height of 77m, to be sited on farmland at Higher Churchtown Farm, Tresmeer, at NGR SX 23333 88269 (Figs 1 and 2). The site chosen for the wind turbine lies on the northern slope of a prominent spur trending north east from the south side of the valley of the River Ottery. It is located in an area of farmland enclosed from rough ground in the nineteenth century.

An initial planning assessment (number PA12/01690/Preapp) was being progressed under a Planning Performance Agreement (PPA) for a single 500 kW turbine at Higher Churchtown Farm, Tresmeer. The Cornwall Council Development Officer (Adam Carlyon), in an initial planning assessment dated 6 August 2012, considered that a planning application would be worth pursuing for a wind turbine at this site. However, he drew the applicant's attention to the comments made by the Historic Environment Planning Advice Officer re the proximity of the site to a possible Bronze Age barrow, and the potential for cumulative impacts given that there are a number of other wind energy developments in the wider area. These were identified as follows:

- The nearest wind turbine of the operational development at Cold Northcott is located approximately 2.8km to the south-west. This development comprises 22 turbines with maximum blade tip heights of 42m;
- A planning application is under consideration for the erection of a single wind turbine, with a maximum blade tip height of 40m, at Ashgrove Farm, approximately 500m to the north north west;
- A planning application is under consideration for the erection of a single wind turbine, with a maximum blade tip height of 39.6m, at Lidcott, approximately 3 km to the south [installation of this turbine was completed on the day of the site visit];
- A planning application is under consideration for the erection of a single wind turbine, with a maximum blade tip height of 45.45m, at Westdownend, approximately 3.5km to the south east;
- A planning application is under consideration for the erection of a single wind turbine, with a maximum blade tip height of 34.2m, at Youlstone Farm, approximately 3.9 km to the north west;
- A negative screening opinion (EIA not required) has been issued for the erection of a single wind turbine, with a maximum blade tip height of 74m, at Tregulland Farm, approximately 3.9 km to the south west.

According to the submitted Zone of Theoretical Visibility (ZTV) plan, the hub/blade tip of the proposed wind turbine would, in theory, be visible from some of the turbines at Cold Northcott and the turbines at Lidcott, Westdownend and Youlstone Farm. The hub of the proposed wind turbine would, in theory, be visible from the turbine at Tregulland

Farm and the tower base would, in theory, be visible from the turbine at Ashgrove Farm. However, the Officer added that:

'Although some part of the proposed wind turbine would, in theory, be visible from all of the aforementioned developments, it is considered that cumulation would not be an overly significant issue, at present, for the following reasons:-

- The nearest operational development is located almost 3 km from the site and the proposed wind turbine would not, in theory, be visible from all of the turbines comprising this development.
- Although the nearest 'in-planning' development is located approximately 500m away, it is considerably smaller than the proposed wind turbine and would be located further down from the ridgeline. Therefore, it is considered that it would not be widely visible in the same context as the proposed turbine, particularly towards the south.
- The other 'in-planning' and EIA-screened developments are located approximately 3 km away, at least.
- Although 'possible further windfarms' and 'proliferation of other vertical elements such as masts' are characterised as being 'pressures' on the Delabole Plateau LCA, the 2011 Land Use Consultants report entitled, 'An Assessment of the Landscape Sensitivity to On-Shore Wind Energy and Large Scale Photovoltaic Development in Cornwall', states that the LCA has a 'low-moderate' sensitivity to such development, outside of the AONB.

2.1 Aims and objectives

The principal aim of the study is to gain a better understanding of the impacts which would result from the construction of a wind turbine on land on Higher Churchtown Farm, Tresmeer.

The overall project aims are to:

- Draw together historical and archaeological information about the development site and its surroundings, including relevant information held within the Cornwall Historic Environment Record.
- Review and analyse historic map evidence for the site.
- Follow the approach outlined in section 3 of the English Heritage guidance on setting.
- Identify the construction, use and 'end of life' impacts of the current proposals on the significance of the setting of these assets and on the proposal site.

The site-specific project aims are to:

- Produce a report containing the desk-based assessment and survey in interpreted form.
- Inform whether an archaeological evaluation or further archaeological recording of any potential buried remains or other mitigation is recommended.

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.

2.2 Methods

2.2.1 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, c 1600 (published 1728)
 - Ogilby's map of roads through Cornwall (1675)
 - Joel Gascoyne's map of Cornwall (1699)
 - Thomas Martyn's map of Cornwall (1748),
 - OS 1 inch survey (c 1813)
 - Tresmere [sic] tithe map (1839),
 - 1st and 2nd editions of the OS 25-inch maps (c 1880 and c 1907).
- Modern digital mapping.
- National Mapping Programme transcriptions 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.

2.2.2 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. This was based on GIS-based viewshed mapping produced using a model of theoretical inter-visibility between the wind turbine proposed for the site and significant heritage assets within the surrounding landscape; the viewshed (ZTV or Zone of Theoretical Visibility) was generated using ArcGIS software. The methodology employs 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 was generated for an 'observer point' based on the location of the proposed wind turbine.

When performing a viewshed analysis, 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 Higher Churchtown 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 an additional offset of 77m to represent the maximum height of the turbine 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 viewshed were visited (where access was possible) and the landscape within which they sit considered to determine intervisibility with the proposed development site 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). A viewshed radius of either 10 km or 5 km was used to determine potential impacts on

designated heritage assets and a radius of 1 km for undesignated heritage assets (Figs 20-27). High-level designated heritage sites within the 10 km and 15 km radius zone of the ZTV were identified but not assessed for impact. These are listed in tables contained in this report.

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 ZTV zones representing 1 km, 5 km, 10 km and 15 km radii from the site, as required by model HEPAO briefs 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 (documentary sites) were excluded from further analysis, as were those which by their nature have very localised settings (for example, milestones, wayside crosses, fingerposts, ledger stones and chest tombs), 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 identify those sites where mature vegetation or proximal buildings would almost certainly block intervisibility and where intrusion of the proposed turbine into key views was unlikely. Designated sites with limited settings (most Grade II Listed Buildings) and those with local settings such as associated urban development which were more than 2 km from the application site tended to be excluded from assessment at this stage unless specific reasons were identified for their retention. Registered Parks and Gardens were also closely considered but it was evident in the current case that the two instances within 10 km were both very unlikely to be impacted.

The resultant site list consisted of Scheduled Monuments whose original settings were intended to include large areas of the landscape (for example, prominent hilltop sites such as hillforts) and other high-grade designated historic structures which were intended when built to be highly prominent within the landscape (predominantly church towers and spires and substantial country houses). This filtered group of sites was assessed to determine impact (below).

2.2.3 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 the site proposed for the wind turbine, and to selected key locations within the surrounding landscape. A visual check and photographic record were made of intervisibility (or the lack of it) between the proposed development site and (where public access was available) 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 there was no public access, the nearest possible vantage point was utilised from which there were views including both the heritage asset and the development proposal site, preferably one in which the proposed development site formed the backdrop to a view of the designated heritage site. Photographs for the project were taken using a Canon EOS 350D digital SLR camera with a lens setting equivalent to 70mm on a non-digital 35mm camera.

A walkover survey of the site proposed for the wind turbine and the associated 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. Sites visited are noted in section 10 of this report.

2.2.4 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 Monuments Record (NMR) in Swindon, to the Courtney Library of the Royal Institution of Cornwall, Truro, and to the Cornish Studies Library, Redruth. 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 proposed for the wind turbine is at NGR SX 23333 88269, approximately 800m north of Tresmeer churchtown. It lies at a little under 195m OD on the northern slopes of a spur projecting north east between the valley of the River Kensey to the south and that of a tributary of the River Ottery to the north (Figs 1, 2 and 11).

The site has open views around the northern quadrant, with distant views extending as far as Dartmoor to the east and Morwenstow to the north. Views to the west are limited by the ridge occupied by Warbstowbury hillfort, which is skylined from the proposed turbine location.

The Historic Landscape Character of the project area is characterised in the Cornwall and Scilly Historic Environment Record (HER) as Post-medieval Enclosed (Recently Enclosed Land); that is, land which was enclosed from rough ground (typically downland or common) during the period 1600-1900 (Fig 12). To the north is an area considerably modified from its historic character by removal of historic boundaries in the twentieth century. Beyond this around Tremaine, and to the south around Tresmeer, the historic character of the landscape is Anciently Enclosed Land, essentially the medieval agricultural heartland of Cornwall (Herring 1998).

The parent bedrock underlying the application site consist of mudstones, siltstones and sandstones of the Holsworthy Group, with soils characterised as Denbigh 2 loams over slate and slate rubble (British Geological Survey 2008; National Soil Resources Institute Soil Systems Group 2004). No superficial (drift) deposits are recorded by the British Geological Survey. The agricultural classification of this land is Grade 3 (GIS dataset held by Cornwall Council).

4 Project extent

The archaeological assessment was 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 of the proposed turbine site, in line with Policy HE6 in PPS5, sections 16(2) and 66(1) of the Planning (Listed Buildings and Conservation 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), namely:

- Non-designated heritage assets – 1 km radius.
- Grade II Listed Buildings, World Heritage Site Areas and Conservation Areas – 5 km radius.

- Scheduled Monuments, Grade I and II* Listed Buildings, Registered Battlefields and Registered Parks and Gardens – 10 km radius (these also being noted out to 15 km).

5 Designations

5.1 National

No national designations apply to the site proposed for the development.

The 15 km radius viewshed zone includes 99 potentially intervisible Scheduled Monuments (Fig 27).

The 15 km radius viewshed includes six Grade I Listed Buildings and nine Grade II* Listed Buildings (Fig 27).

The 15 km radius viewshed incorporates or intersects two Registered Parks and Gardens (Fig 27).

The 5 km radius viewshed mapping indicates that there is no intervisibility between the proposed wind turbine and Conservation Areas, parts of the Cornwall AONB, landscape designated as Area of Great Historic Value or the Cornish Mining World Heritage Site (Figs 22 and 23). (**NB.** There are no Conservation Areas or portions of the World Heritage Site within 5 km of the proposed site.)

Within the 5 km radius viewshed, the wind turbine would be theoretically intervisible to some degree with 174 Grade II Listed Buildings (or groups of Grade II Listed Buildings) (Fig 21).

5.2 Regional/county

No regional or county designations relate to the sites proposed for the wind turbine.

5.3 Local

No local designations apply to the site proposed for the development.

5.4 Rights of Way

No rights of way traverse or pass near the site proposed for the wind turbine, nor the remainder of the area across which the cabling will be undergrounded. A small triangular area, formerly a quarry, now the site of Tresmeer Village Hall, is recorded as open access land on Cornwall Council access mapping.

6 Results of the desk-based assessment

The site lies on the northern flank of a prominent spur rising to 210m (Fig 14) which forms part of the watershed between the catchments of the River Ottery to the north and the River Kensey to the south. The prominence of the landform may have made it attractive in prehistory as a location for ceremonial and funerary activities: a barrow is shown on the 1st edition Ordnance Survey 1in : 1 mile map of c 1813 (Fig 7) and Lake noted in the later nineteenth century that '[O]n Tresmere [*sic*] Down there is an ancient *tumulus*' (Lake 1872, IV, 246). Barrows typically date to the Early Bronze Age (approximately 2500-1600 cal BC). The early nineteenth century mapping is at too small a scale to give a precise location for the barrow but its depiction immediately adjacent to the edge of enclosed land on the north-west side of the Downs coincides broadly with a feature identified as a possible barrow from air photographs, recorded in the Cornwall and Scilly Historic Environment Record (HER) as PRN 2428, MCO 3767 (Fig 13). This in turn coincides with a small triangular area of coarse pasture depicted in the corner of a field on the 1st edition Ordnance Survey 25in : 1 mile map of c 1880 (Fig 9); the fact that the field boundary diverts around it suggests that it was a standing

feature at the time that Tresmere [now Tresmeer] Down was enclosed in the mid nineteenth century (below).

The HER records another feature approximately 575m to the south west of the proposed turbine site as a possible barrow (HER PRN 58389) but in that instance it appears more probable that the mound visible on air photographs is spoil from an adjacent pond. Barrows do, however, frequently occur in groups and clusters and it is certainly possible that other barrows formerly existed on the ridge.

In the historic period the ridge formed part of an area of rough ground known as Tresmeer Down. From at least the early medieval period and probably since prehistory this would have provided nearby landholdings with a variety of resources held in common. These probably included rough grazing for animals, furze (gorse) and possibly turf (peat) for fuel, heather and bracken for animal bedding and stone for constructing buildings and boundaries. It is also likely to have been a place for hunting, trapping and collecting wild foods, and, as the highest ground in the wider area, probably also for seasonal ceremonies such as midsummer bonfires and perhaps also the parish beacon.

The earliest map available, Norden's, surveyed c 1600, provides no detail in the area of Tresmeer Down (Fig 3). Ogilby's map of 1675 (White 2005) (Fig 4) and Gascoyne's of 1699 (Fig 5) both show the historic east – west route which runs along the former southern edge of the downs to the north of Tresmeer churchtown. This is now the minor road running west from Egloskerry through the small settlement of Three Hammers. This route, depicted and described in Ogilby's *Britannia* in 1675 (White 2005, 76-7), was one of the principal roads through Cornwall in the seventeenth and eighteenth centuries. It ran from Launceston and Newport through Egloskerry, 'then by Tresmere church on the left' (*ibid*) and on via Halworthy and around the northern side of Bodmin Moor to Camelford and on to the west. Ogilby's map (Fig 4) shows side turnings from this route in the vicinity of Tresmeer towards 'Warpestow' (Warbstow), 'Nuneast' (probably Laneast Downs), 'Tresmaire' (Tresmeer) and 'Tremere' (Tremaine) (*ibid*, 76), each of which coincides with the modern roads in the area. Both it and Gascoyne's 1699 map, however, also show a side turning to the north opposite the road to Tresmeer churchtown, indicating the route onto Tresmeer Down. The significance of this is made clearer by Martyn's map of 1748 (Fig 6), which shows a fan of tracks running from the east – west route onto Tresmeer Down. That this was unenclosed rough ground is indicated by the dashed lines used in Martyn's depiction to indicate the tracks passing across it.

One of the tracks shown passing across the Down on Martyn's map ran towards Tremaine churchtown to the north; another more easterly route was probably ultimately aligned on a crossing point on the River Ottery, passing thence into Devon. Tresmeer Down at this period was therefore traversed by both long-distance and more local routes. In the mid eighteenth century, at the time of this map, traffic on these routes would have been predominantly horses and pack animals rather than wheeled vehicles, together with droves of cattle and sheep. These routes across the Down would not have been metalled and would have taken the form of a series of braided and partly hollowed tracks through the rough ground vegetation. Air photographs show several linear features extending north-east from the vicinity of Well Cottage in Three Hammers onto the former Down and it seems probable that these represent ploughed-out holloways. (These features were not plotted by the National Mapping Project and are therefore not currently included on the HER.)

The 1st edition Ordnance Survey 1in : 1 mile map of c 1813 (Fig 7) also shows a network of tracks crossing what is labelled as 'Tresmere Down', broadly similar to those shown by Martyn in the mid eighteenth century. With the exception of a small enclosed area in the south-east corner (below), the Down was depicted as unenclosed rough ground.

The Tresmeer tithe map of 1839 (Fig 8) provides the first large-scale depiction of the site area. It again shows a track running north from the crossroads north of Tresmeer

churchtown and then turning north east to pass over a large unenclosed area. This was identified by the plot number 477 and recorded on the accompanying tithe apportionment as 'Tresmeer Down', 108 acres 2 roods 11 perches (approximately 43 ha) in extent. The 'state of cultivation' was noted as arable.

The preamble to the Tresmeer apportionment noted that there were 94 acres of common land in the parish with a further 14 acres of woodland, the two together almost certainly making up the 108 acres of the Downs. The apportionment does not separately identify the area of woodland but it probably lay on the lower slopes of the Down to the north and east. The common land was held in 1839 by

'the Several Proprietors thereof in certain ascertained proportions and is cultivated by them severally as Arable Land accordingly and is subject to Common Right of Depasturage by and Between such Proprietors according to their proportionate rights and interests therein'.

It is clear, therefore, that in the period between the early nineteenth century, when the Down was depicted as undivided rough ground, and the tithe survey of 1839, it had been agreed by those holding rights on the common to bring the former rough ground permanently into the regularly cultivated lands of the parish, with each of the commoners taking a proportionate share. Once crops were harvested each year the area would be grazed in common. This agreement probably took place after 1824, when an advertisement for the sale of a 27-acre holding known as the 'Church Town Tenement' in Tresmeer also referred to 'about 7 acres of very good Common on Tresmeer Down' (*Royal Cornwall Gazette*, 17 July 1824). Documents held in Cornwall Record Office (not consulted for the purposes of this assessment) suggest that a formal legal agreement to subdivide and enclose the Down was finalised in the late 1840s (Cornwall Record Office QS/PDA 24; P 232/26/1; PCTRES/1; X112/317). An advertisement in 1853 for a joint lease on the farms of Treburtle and Stalks in Tresmeer parish referred to them having an 'Allotment on Tresmeer Downs' (*Royal Cornwall Gazette*, 16 September 1853).

The 1st edition Ordnance Survey 25in : 1 mile map (Fig 9), published in 1884 for this area but surveyed a few years earlier, showed the new enclosures in place, subdividing the Down with ruler-straight boundaries. (An area of 14 acres (roughly 6 ha) along the northern fringe was presumably the location of the woodland recorded by the tithe survey, although it is not depicted as such on the later map and may have been cleared by that period.) Most of the enclosed area was shown as improved but one field and two smaller patches within enclosures (one of them the possible barrow site mentioned above) were shown as coarse pasture. By the time the 2nd edition 25in map (Fig 10) was made in the early twentieth century all of the former Down was shown as improved. No paths or other routes are shown crossing the area on these two large-scale maps and it is almost certain that the process of enclosure had extinguished the former tracks across the rough ground.

Encroachment of agriculture on the former rough ground north of Tresmeer churchtown had evidently been in progress over some longer period. The tithe survey provides further detail of the small enclosed area depicted in the south-east corner of Tresmeer Down on the 1st edition 1 in map (Fig 7). In 1839 this was shown divided into a number of long, narrow enclosures (HER PRN 2423). The tithe apportionment recorded each of these fields as held individually as part of a holding elsewhere in the parish. It seems probable, therefore, that this area, with a similar extension to the east, represents one or more earlier joint agreements by those holding commoning rights to divide part of the rough ground and cultivate parcels of it. The long, narrow form of these enclosures almost certainly fossilises groups of cultivation ridges. Instances of temporary cultivation of blocks of rough ground by those holding commoning rights have been recorded elsewhere in Cornwall and in Devon, some dating to the medieval period but others occurring as late as the Napoleonic period, when high prices for farm produce encouraged cultivation of even relatively marginal land (Herring 2011). In this

instance it appears that these divisions had by 1839 become permanently enclosed and cultivated.

Other encroachments include the smallholding named Helson on the east side of the Down; this holding was recorded by the tithe survey but the name was first recorded in 1606 (HER PRN 2442). Ogilby's map of 1675 (Fig 4) shows a roadside building on the south-east corner of the crossroads north of Tresmeer churchtown. However, the small roadside settlement to the west named Three Hammers was first shown (although not named) on the Ordnance Survey surveyors' drawings of 1808 (British Library, online), made in preparation for the first 1 in map. The name 'Three Hammers' may derive from the coat of arms of the Company of Blacksmiths and suggests the presence of a smithy or possibly an alehouse with that name here.

The Listed Well Cottage (National Heritage List entry no 1142863), which forms part of this settlement, is described in the List description as 'probably late eighteenth century' and the settlement had therefore presumably started to develop by that period. The tithe survey of 1839 recorded several small dwellings with long narrow gardens extending along the sides of the road. This is a pattern which has been recognised elsewhere alongside routes passing over downs and wastes (for example, Lawson-Jones and Kirkham 2009-10, 177). It probably resulted initially from 'squatter' occupation along the edges of what had previously been a wide zone occupied by a shifting track or routeway over rough ground, these roadside areas becoming available once a more defined and narrower 'road' was created by improved surfacing.

By the late nineteenth century the roadside settlement included a school, built in 1879 (HER PRN 177498), a smithy and a Bible Christian chapel, burial ground and Sunday school (HER PRN 138525) (Fig 9). A quarry was also opened adjacent to the road on the edge of the Down. This is shown on both the 1st and 2nd edition 25in: 1 mile maps but was recorded as disused on Ordnance Survey mapping in the 1960s (HER PRN 2460). The quarry site is now occupied by Tresmeer Village Hall.

The 1st edition 25in map published in 1884 (Fig 9) marked a well on the roadway on the east side of Well Cottage. This fed a leat running eastward, apparently passing under the enclosure in which the school was located and then paralleling the boundary forming the southern side of the enclosed fields on the former Tresmeer Down before passing under it and crossing what is now the modern access track. The leat is shown continuing over a distance of about 400m; it may have led to a small structure shown on the 1st edition map at SX 23472 87909. Only a small length of the eastern part of the leat was shown as extant on the 2nd edition map of 1906 (Fig 10) and it had presumably gone out of use by that time.

The most recent major element in the landscape adjacent to the proposed turbine site was the North Cornwall Railway (HER MCO 55714), which curved around the north-east portion of the former Tresmeer Down. This was constructed in the period 1892-99 and is shown on the 2nd edition 25in map (Fig 10). The line was closed in 1966-67 and the trackbed is now overgrown.

During the twentieth century – that is, between the 2nd edition 25in map and modern Ordnance Survey mapping – there has been some removal of field boundaries in the fields immediately east of the development site. This process has been more extensive to the north, beyond the former rough ground, where the pattern of medieval boundaries recorded on historic maps has been largely erased (Figs 7-10).

7 Geophysical survey

A geophysical survey was carried out in October 2012 by Archaeophysica Ltd on the site of the proposed turbine and along the proposed cabling route (Roseveare 2012). The magnetic survey was conducted using an array of Geometrics G858 Magmapper caesium magnetometers with a resolution of 1m between lines and a 0.3m mean along line intervals. The summary interpretation by the surveyor noted that '[L]ittle was

found, however; there is good evidence for a differently-aligned former field system and also a small number of enclosure ditches. It is possible that there are relatively non-magnetic features at this site that may therefore not have been detected by the survey' (*ibid*, i).

7.1 Results

The Archaeophysica survey produced the catalogue of features listed in the table below, the locations of which are shown on Figs 18 and 19.

Feature	Anomaly type	Feature type	Description	Easting	Northing
1	Area - texture	Natural	At the highest point of the field the soil is apparently thinner and the surface magnetic field more strongly influenced by geological sources than elsewhere.	223349.1	88322.2
2	Area - reduced field	Fill?	The natural magnetic texture of the soil is disrupted along a band approximately 6m wide continuing the northern alignment of fill [3] and therefore presumably related, perhaps part of a former field boundary.	223361.1	88303.1
3	Linear - enhanced dipolar field	Fill - Ditch	A strongly dipolar linear anomaly typical of a strongly magnetic ditch fill. This might suggest the presence of heated soil or a similar artificially enhanced susceptibility material, however, it is possible that natural processes are the cause.	223365.2	88274.4
4	Linear - reduced dipolar field?	Fill - Ditch	This strongly dipolar anomaly is inverted relative to a normal northern hemisphere anomaly produced by the induced magnetic field in the absence of remanent magnetisation. The reason for this is not evident but it is striking that this is strongly magnetic like [3] with only the dipole orientation being different.	223307.3	88262.5
5	Linear - reduced dipolar field?	Fill - Ditch	See [4].	223307.9	88233.8
6	Linear - enhanced field (group)	Fills - Ditches?	Two weak anomalies appear to mark linear fills, perhaps enclosure ditches, perhaps connected with [5].	223287.6	88231.4
7	Area - enhanced field	Natural?	This and [8] seem likely to be natural and reflect jointing or similar lateral discontinuities in the bedrock.	223291.8	88295.3
8	Area - enhanced field	Natural?	See [7].	223293.6	88254.1

Feature	Anomaly type	Feature type	Description	Easting	Northing
9	Area – texture	Cultivation	There would appear to be relict cultivation furrows showing as weak linear anomalies at an angle to the existing field system.	223404.7	88234.4
10	Area – texture	Cultivation?	In similar fashion to [9], there may be relict cultivation furrows in this field, but at a different angle. The wider magnetic texture is typical of a mildly magnetic soil evidently deeper here than further north.	223470.4	88108.3

7.2 Interpretation

The geophysical survey results (Figs 16-19) indicate the presence of a broadly rectilinear pattern of anomalies [(2), (3), (7), (8)], some of which are interpreted as ditch fills, others as possible natural geological jointing. Linear anomalies (4), (5) and (6) appear to have a slightly different alignment. None of these features conforms with the alignment of the present enclosure pattern on the former Downs. Area anomalies (9) and (10) are interpreted as relict cultivation furrows, and follow similar alignments to the linears. Traces of what is almost certainly modern ploughing are also visible, running parallel to the northern and southern boundaries of the current field.

The historic documentation of the site certainly indicates cultivation of the rough ground of Tresmeer Down prior to the creation of the present system of enclosures in the mid nineteenth century. It seems probable that the relict cultivation furrows noted as feature (10) and other similar traces on a comparable alignment close to the eastern end of feature (8) do derive from these pre-enclosure episodes of cultivation. Feature (9) may be of similar origin but it is also conceivable that this represents traces of the former trackways which passed across the Down on approximately this alignment (above) and which would have taken the form of a series of irregular but broadly parallel linear features.

The linear anomalies interpreted as ditch fills could conceivably represent drainage ditches created as part of the process of improving the Downs, although the strong magnetic responses would be more likely to derive from silted fills than from stones used to construct the drains (Martin Roseveare, pers comm). However, of these only (2) and (4)-(5) would have run downslope, the others more nearly paralleling the contours. Alternatively, these features may simply represent ditched sub-divisions within the former areas of cultivation on the Downs.

8 Results of site walkover

A site walkover was undertaken on 21 November 2012. The weather was variable, with moderate cloud cover and occasional showers during the morning and clearer spells during the afternoon. The patchy cloud cover and highly dissected landscape made consistent long-distance observations (beyond about 7 km) difficult.

The field in which the proposed wind turbine site lies was under stubble at the time of survey. It slopes moderately to the north and is bounded by earth banks up to 1.8m high with some low vegetation and stone facing at gateways. No archaeological features were detected within the field. The field to the south through which the proposed cabling trench and access route passes showed a pronounced linear undulation lying approximately north east – south west, centred about 150-160m to the south of the southern side of the project area. This may be geological in origin but

could perhaps represent extensive hollowing created by former trackways across Tresmeer Down (above).

The historic route of the leat noted in the site history (above; Fig 9) crosses the access track to the site from Three Hammers at SX 23432 87923. No above ground traces were visible – ground conditions were extremely wet – but buried remains of the feature may survive in this vicinity.

Views from ground level at the site of the proposed turbine extend from the east round through the northern quadrant to the west (Figs 28-32). Views are for the most part relatively local or of relatively distant elements of the landscape; at intermediate distances the dissected character of the topography means that there are few extensive areas in view. All views from ground level around the southern quadrant are blocked by the ridge on the northern face of which the site lies. Views extend to the north as far as the military communication dishes at Cleave, Morwenstow, 24 km distant. Dartmoor is visible as an undifferentiated mass roughly 30 km to the east but the dissection of the landscape in this direction generally makes identification of features and localities difficult. Views to the west and north west are shorter, limited by the ridge approximately 4-4.5 km distant on which Warbstowbury hillfort lies.

In the near vicinity the designated sites of the church of St Winwalo, Tremaine (Listed Building Grade I), and Grove Cottage (Grade II) face the proposed wind turbine site across the intervening valley and are in full view (Fig 29). Buildings can be seen within the farm complexes in which the Grade II assets at North Tregear and Westcott lie, although in both cases views to the designated features themselves are masked by trees (Figs 30 and 31). The roof of the Listed (Grade II) Trehummer farmhouse and other buildings within the complex are visible over the intervening ground (Fig 32).

9 Results of viewshed analysis

Figs 20 to 27.

The viewshed analysis indicates that the Zone of Theoretical Visibility (ZTV) will extend in a relatively small number of places to the full 15 km distance mapped in line with English Heritage guidance. The area of coverage at this distance is limited, however, and the visibility of the turbine will diminish considerably with distance; it will, at many local sites, be blocked by intervening buildings within settlements or farmsteads or by mature groups of trees (albeit on a temporary basis, should such trees subsequently be felled).

9.1 1 km radius ZTV

Fig 20.

Given the nature of the local topography and the elevations of the proposed wind turbine, the ZTV suggests that the turbine mast or blades will be visible from well over 90 per cent of this zone, which extends to Tresmeer and Tremaine churchtowns, the settlement of Three Hammers and a number of farms. Views from the south will be partly blocked by the rising ground beyond which the proposed turbine would lie and in Tresmeer churchtown buildings and vegetation will block views from most habitations, including designated assets. However, the upper part of the turbine at least will be widely visible from routes approaching and passing through the area.

As noted, the Listed Grade I Church of St Winwalo at Tremaine (National Heritage List no 1142888) and Grove Cottage (Grade II) are both located immediately across the intervening valley from the proposed wind turbine site and would be in full view of the mast and blades (Fig 29). For the church, 800m from the proposed location, there would be a significant impact on views out: the turbine location would be in full view when exiting the church by the south porch and from within the southern part of the *Iann* enclosure around the building (Figs 34-35); the enclosure is bordered by trees but there are open views between their trunks at ground level. With the exception of a

small number of telegraph poles, the vista to the south from the church is currently uninterrupted by any element more recent than the mid nineteenth-century field boundaries of the enclosed Tresmeer Down and vegetation growing along the line of the abandoned North Cornwall Railway. There would also potentially be an impact on the setting in terms of views to the church site from elsewhere within the wider landscape: the church, set on a local high point, is currently the most significant historic focal point within the adjacent area and it is considered probable that the size and movement of the turbine blades would represent a potentially distracting element in local views.

The Grade II* Church of St Nicholas (National Heritage List no 1161299) at Tresmeer is within the ZTV but views from the church enclosure are currently effectively blocked by trees and buildings immediately to the north and it is unlikely that the setting would be significantly affected.

Intervisibility with at least the upper part of the turbine is probable from the Grade II Listed Buildings at North Tregear and Westcott, although full views would be partly masked by trees (see views to these designated assets from the proposed wind turbine site, Figs 30-31). The ZTV also includes Well Cottage (Grade II) in Three Hammers: the upper part of the turbine or blades, approximately 540m distant, are likely to impinge on views from the rear of the property, although the rising ground to the north will block full views. There may be some visibility of the upper part of the turbine in views to Well Cottage from the through route on which it stands, although this would probably be limited (Fig 33).

9.2 1-5 km radius ZTV

Figures 20, 21 and 25.

The wind turbine will be visible from a very substantial proportion of the 1-2 km radius zone and from more than 50 per cent of the 1-5 km zone. This zone extends across almost the whole of the ridge to the south and south east, the southern edge of which is followed by the A395 route from Davidstow and Hallworthy to the junction with the A30 at Kennard's House. It also takes in higher ground around Warbstow churchtown to the north west of the site and much of the northern and eastern sides of the valley of the River Ottery around Canworthy Water to the north and towards North Petherwin to the east.

Several Grade II Listed Buildings (Fig 21) lie within the 1-2 km zone but assessment suggest that the impact on most of these is likely to be minor. Brook Cottage, 1.7 km to the north, lies on the margin of the ZTV and it is likely that views of the proposed turbine would be restricted to the upper part of the mast or blades seen over intervening higher ground. Listed structures at Trussell, 1.6 km to the north west, are enclosed by trees and views out towards the proposed turbine site are likely to be limited. The setting for The Pottery, in the small settlement of Splatt just over 1 km to the west, is essentially that of the settlement and it is unlikely that the proposed turbine would be visible from within the streetscape. The vista north towards the proposed turbine site from the settlement of Badgall is across open country but the environs of the five Listed dwellings and two associated buildings there are well enclosed by trees, with the exception of the most northerly of this group, Listed as The Cottage. From here, however, views towards the proposed turbine site are compromised by a large modern farm complex immediately to the north. From Torrpark, to the west of Badgall, the upper part of the proposed turbine would probably be visible at a distance of a little under 2 km. Views north from Tregear House are screened by woodland on the north side of the road passing the house. Almost all the heritage assets in the settlement of Tregear immediately to the east are also screened by trees, with the exception of Tregear Methodist chapel and Sunday school, from which some visibility of the upper part of the proposed turbine is likely.

The impact on the setting of Trehummer and Treburtle farmhouses, to the east of the proposed turbine site in the 1-2 km zone, may be more significant. The roof of Trehummer is visible from ground level at the proposed turbine site (Fig 32) and there would therefore be views of most of the upper part of the turbine structure from the frontage of the asset itself, particularly from upper windows. Its setting in terms of views to the farmhouse from the adjacent public road would not be affected, however. Views from Treburtle farmhouse may similarly include the upper part of the turbine, although not its base. The adjacent Listed structure of Little Treburtle is masked by trees.

The 1-5 km zone contains several Grade II* Listed assets. Views towards the proposed turbine location from the Church of St Werburgha at Warbstow (National Heritage List no 1161531), 3.5 km to the north west, are partly blocked by trees in the immediate vicinity, together with a large modern farm complex (arguably itself representing a major impact on the setting of the asset) and, at the time of the fieldwork visit, substantial heaps of plastic-wrapped bales. From the south-east edge of the church's sub-circular enclosure there is a glimpse of the proposed turbine site (Fig 36); the turbine would be partly skylined although probably not visually dominant in this view. Views eastward towards the proposed site from the Church of St Gregory, Treneglos (National Heritage List no 1310214), 2.5 km distant, are across a wholly rural landscape with no overt modern elements within the direct line of sight. Motion within this otherwise tranquil view would be particularly noticeable. In this view the proposed turbine would be skylined on a near horizon and profiled against the distant bulk of Dartmoor (Fig 40). Views out to the east and north east from the church's sub-circular *lann* are framed rather than limited by the mature trees with large trunks set around the edge of the enclosure.

Winnacott farmhouse (Grade II*; National Heritage List no 1160463) lies just over 3 km to the north east of the proposed turbine site. From here the turbine would be skylined on a topographically prominent feature; the existing Cold Northcott wind farm would also be visible in its immediate background (Fig 41). Higher Penrose (Grade II*; National Heritage List no 1160373) was not accessible during fieldwork because of flooding. It lies on the upper slopes of a ridge at about 120m OD within the ZTV but it appears from air photographs to be masked from views in the direction of the proposed development by trees adjacent to the house. It seems probable, therefore, that there would be limited impact on its setting. Treglith farmhouse (Grade II*; National Heritage List no 1161194), Treneglos, lies in a location with limited views to the east and with a tree-covered ridge on the potential sight-line to the proposed turbine site. It is likely that views to the turbine would be limited to the upper part. It is unlikely that views to the asset would be affected from the immediate area.

The ZTV to 5 km includes several potentially intervisible Scheduled sites, including the hilltop-sited Warbstowbury hillfort (National Heritage List no 1006710), 4 km to the north west. There are direct views from the interior of the inner enclosure of the hillfort to the proposed turbine site and it would undoubtedly be noticeable in views to the east (Fig 37). Tregear-down, the site of Tregear Camp (National Heritage List no 1006711) rises 2.15 km beyond the proposed turbine site. Viewed from Warbstowbury, the turbine would be partly profiled against it (probably to some extent skylined) and thus, with the movement of the blades, it would be likely to be a significant distraction in views between these two potentially associated Scheduled sites. It must be acknowledged, however, that the setting, the quality and integrity of views from Warbstowbury are already to some extent compromised: three wind turbines are located within 1-2 km of the hillfort and are partly visible from the interior (Figs 38-39), and the Cold Northcott wind farm is partly skylined. Views from the hillfort also include a nearby microwave tower and, more distantly, two files of high tension electricity pylons.

No field visit was made to Tregear Camp because of difficult ground conditions on the access track after a period of heavy rain. However, it seems highly probable that views

back from Tregear Camp to Warbstowbury would also be compromised by an intervening turbine. Views out from this site may currently be limited to some extent by scrubby vegetation.

Other Scheduled monuments within the 1-5 km ZTV include a linear barrow group on Wilsey Down (National Heritage List no 1005468). These lie within a plantation and on the extreme fringe of the ZTV some 4.5 km from the proposed turbine site and it is unlikely that there would be views of the turbine structure as long as the plantation is extant. Another barrow group (National Heritage List no 1005440) lies at the extreme edge of the 5 km zone, again close to the edge of the ZTV, and it is unlikely that there would be a major impact on their visual setting. A prominent medieval wayside cross on rough ground beside the road crossing Laneast Downs (National Heritage List no 1007954) 2.75 km to the south of the proposed turbine lies within the ZTV, but views towards the site are currently blocked by a small plantation of evergreens in the near vicinity (Fig 42). The setting of this monument is arguably compromised by a newly erected wind turbine at Lidcott Farm, approximately 300m to the south (Fig 43).

One Registered Park and Garden, that of Penheale Manor (Grade II; National Heritage List no 1000653; DCO 6), lies within 5 km of the site (Fig 24). However, the ZTV mapping indicates that there is intervisibility with the proposed turbine only from a short length of the approach to the house from the south (marked by a line of pine trees in Fig 32); the ZTV only just intersects with the designated area by a few metres, suggesting that only the tips of the turbine blades would be visible. The ZTV does not extend to the area of Registered Park and Garden within the immediate area of the house and it is probable that a small hill to the west and mature trees along the western bounds of the site would block views to the proposed wind turbine site even from upper floors of the building.

No Conservation Areas, Registered Battlefields or areas of the Cornish Mining World Heritage Site lie within the 1-5 km radius ZTV.

9.3 5-10 km radius ZTV

Figures 22-26.

The wind turbine will potentially be visible from (very approximately) one third of this zone, with areas of probable intervisibility including:

- a length of the A39 centred on Wainhouse Corner to the north west;
- higher ground on the northern fringe of Jacobstow churchtown and south of Week St Mary to the north;
- North Petherwin churchtown and Yeolmbridge village to the east;
- Tregadillett and South Petherwin and Lewannick churchtowns to the south east;
- a substantial area on the northern flanks of Bodmin Moor, including the north- and north-eastward looking portions of East Moor, Fox Tor, Hendra Downs, Leskernick, Carne Downs, Bray Hill and Buttern Hill.

The zone contains a number of Scheduled Monuments (Fig 25). A full list is given in a subsequent section but these include:

- Ashbury hillfort (National Heritage List no 1010423);
- The Rings hillfort (National Heritage List no 1004243);
- paired enclosures near Rosecare Villa Farm (National Heritage List no 1007281);
- Trethinna Camp (National Heritage List no 1004462);
- Bray Down round (National Heritage List no 1004240);
- a round north east of West Carne farm (National Heritage List no 1011791);

- blocks of prehistoric coaxial fields and settlements on East Moor and Carne Downs (National Heritage List nos 1008245, 1008261, 1008439, 1011726);
- a number of barrows and cairns, including some groups;
- a small number of crosses and other stone features.

There are a substantial number of Listed Buildings in the zone, with a particular concentration in the Werrington – North Petherwin area to the east (Fig 26).

The western part of the Grade II Registered Park and Garden at Werrington (National Heritage List no 1000514) lies within the zone and there may be some limited intervisibility with part of the park, on the fringes of the ZTV (Fig 24). This is almost 10 km from the proposed turbine site, however, and does not appear to affect any designed vistas such as rides or avenues. The extreme edge of the ZTV touches the Grade I Listed Werrington Park (National Heritage List no 1309836) – the house within the park – but in reality ornamental trees on the western boundary of the immediate grounds of the house are likely to block views from it, except perhaps from an upper window. Again, this is at a distance of 10 km and the visual impact is likely to be minimal.

9.4 10-15 km radius ZTV

In accordance with English Heritage requirements, the ZTV was mapped to 15 km from the site. High-level designated sites within the 10-15 km zone of the ZTV are listed in this report (section 9.11; Fig 27), but do not need to be assessed.

The ZTV mapping suggests that only 10-15 per cent of the land surface within this zone would experience intervisibility with the proposed wind turbine, including small areas of high ground at Ridge, on the east side of East Moor, the west side of Smallacombe Downs and the north side of Twelve Men's Moor, all on Bodmin Moor. Another area of intervisibility lies on the east side of the River Tamar, extending north from Liftondown through St Giles-in-the-Heath to North Tamerton. For many of the sites within this outer zone, intervisibility is likely to be confined to the upper parts of the proposed turbine blades and then only at extreme distance.

This zone includes a further 26 potentially intervisible Scheduled Monuments and eight Grade I and II* Listed Buildings, including some across the Devon border to the east (listed in section 9.11).

NB. Launceston Castle (National Heritage List no 1017575) lies just over 10 km from the proposed wind turbine site. The ZTV mapping places the ground plan of the Scheduled site just outside the zone of intervisibility. However, it seems probable that the upper part of the thirteenth-century 'high tower' within the shell keep, with its grand first-floor window offering a view westward over the designed landscape of the former castle deer park (Herring 2003), could be within the viewshed of the proposed turbine site. However, at this distance it is unlikely that the intervisibility with the proposed turbine would have a major impact on the setting of the castle.

9.5 Scheduled Monuments within the 10 km radius ZTV

Figure 25.

There are 76 Scheduled Monuments within the 10 km radius ZTV of the site proposed for the wind turbine at Higher Churchtown Farm, Tresmeer (listed below). Many of these occur within groups.

National Heritage List no	Name	NGR
1003070	Round barrow cemetery including Tich Barrow 730m north east of Trehane Pool	SX 14827 88419
1003070	Round barrow cemetery including Tich Barrow 730m north east of Trehane Pool	SX 14776 88438
1003090	Round barrow cemetery 610m north east of Creddacott Farm	SX 23315 95914
1003090	Round barrow cemetery 610m north east of Creddacott Farm	SX 2358595973
1003090	Round barrow cemetery 610m north east of Creddacott Farm	SX 2339795937
1003090	Round barrow cemetery 610m north east of Creddacott Farm	SX 23533 95966
1003090	Round barrow cemetery 610m north east of Creddacott Farm	SX 23497 95958
1003090	Round barrow cemetery 610m north east of Creddacott Farm	SX 23299 95875
1003090	Round barrow cemetery 610m north east of Creddacott Farm	SX 23458 95949
1003118	Ring bank in the NW corner of Lewannick Plantation	SX 27627 79748
1003268	Multi-span bridge known as Yeolm Bridge	SX 31810 87378
1003272	Bowl barrow 680m north west of Trewithick Farm	SX 29112 85929
1004240	Iron Age defended settlement 425m west of Trebray	SX 19062 82579
1004241	Ring cairn and two kerbed cairns on Bray Down	SX 18968 82171
1004241	Ring cairn and two kerbed cairns on Bray Down	SX 18830 82184
1004241	Ring cairn and two kerbed cairns on Bray Down	SX 18902 82167
1004242	Bowl barrow 250m north west of Newpark	SX 16853 83842
1004243	Slight univallate hillfort with outworks 390m south east of Tanker's Lake	SX 28910 84630
1004371	Two bowl barrows 380m north of Beckaveans, one of which is called 'The Beacon'	SX 18714 95855
1004371	Two bowl barrows 380m north of Beckaveans, one of which is called 'The Beacon'	SX 18761 96000
1004385	Bowl barrow 410m east of Wainhouse Corner	SX 18566 95471
1004407	Bowl barrow 200m west of Tresplatt Farm	SX 13564 87009
1004408	Three bowl barrows, 60m and 250m south and 500m south west of Nettings Park	SX 13575 86483
1004408	Three bowl barrows, 60m and 250m south and 500m south west of Nettings Park	SX 13637 86660
1004462	Round 300m north of Northdown	SX 25761 82441
1004623	Three bowl barrows 600m south east of Small Hill Barton	SX 17774 93957
1004623	Three bowl barrows 600m south east of Small Hill Barton	SX 17615 93685
1004623	Three bowl barrows 600m south east of Small Hill Barton	SX 17759 94088
1004656	Well called Blaunder's Well	SX 27335 80707
1004661	Three bowl barrows 560m south east of Cherry Cross	SX 27488 96370
1004661	Three bowl barrows 560m south east of Cherry Cross	SX 27534 96339
1004661	Three bowl barrows 560m south east of Cherry Cross	SX 27102 96797
1004665	Two bowl barrows 240m SSW of Wilsworthy Cross	SX 27189 95840

1004665	Two bowl barrows 240m SSW of Wilsworthy Cross	SX 27161 96018
1005434	Part of a bowl barrow called Headon Barrow	SX 19236 94433
1005440	Three bowl barrows 750m south east of Lower Brazacott Farm	SX 27363 90657
1005440	Three bowl barrows 750m south east of Lower Brazacott Farm	SX 27217 90739
1005440	Three bowl barrows 750m south east of Lower Brazacott Farm	SX 27450 90709
1005450	Four bowl barrows 445m north of Buttern Farm	SX 27042 94672
1005450	Four bowl barrows 445m north of Buttern Farm	SX 27275 94762
1005450	Four bowl barrows 445m north of Buttern Farm	SX 27024 94363
1005450	Four bowl barrows 445m north of Buttern Farm	SX 27128 94697
1005464	Two bowl barrows 595m north west of Belah Park Farm	SX 15758 90524
1005464	Two bowl barrows 595m north west of Belah Park Farm	SX 15819 90451
1005465	Two bowl barrows 625m south of Greystone Farm	SX 15941 88594
1005465	Two bowl barrows 625m south of Greystone Farm	SX 15480 88648
1005467	Bowl barrow 700m east of Tregray Farm	SX 18603 88962
1005468	Round barrow cemetery on Wilsey Down	SX 18866 88032
1005468	Round barrow cemetery on Wilsey Down	SX 19179 87772
1006649	Wayside cross 110m SSW of Youlstone	SX 19822 89492
1006710	Large multivallate hillfort called Warbstow Bury and a pillow mound known as the Giant's Grave	SX 20129 90747
1006711	A round on Tregear-down Beacon, 295m north east of the Nook	SX 24945 86773
1007281	Rectangular enclosures 520m west of Rosecare Villa Farm	SX 17340 94938
1007294	Animal pound 90m ENE of Pound Cot	SX 20927 90097
1007298	Six cairns on Buttern Hill	SX 17465 81672
1007298	Six cairns on Buttern Hill	SX 17473 81632
1007298	Six cairns on Buttern Hill	SX 17463 81702
1007298	Six cairns on Buttern Hill	SX 17526 81607
1007298	Six cairns on Buttern Hill	SX 17479 81662
1007757	Medieval wayside cross 550m north-west of Lewannick church	SX 27369 81134
1007954	Medieval wayside cross on Laneast Downs, 270m SSW of High Hall Farm	SX 23475 85499
1008245	Prehistoric coaxial field system, incorporated and adjacent hut circles, stone setting, linear boundaries and medieval settlement on Fox Tor and Treburland Farm	SX 22958 78720
1008261	Prehistoric coaxial and regular field systems, incorporated hut circles and adjacent deserted medieval settlement, droveway and long house on Tregune Farm	SX 22439 79382
1008439	Two adjacent prehistoric coaxial field systems incorporating regular field systems, stone hut circles, cairns and medieval fields on East Moor and Ridge	SX 24079 77239
1010423	Ashbury Camp later prehistoric multivallate hillfort	SX 22795 97469
1011726	Co-axial field system, hut circle settlements, cairnfield and land boundaries on Carne Down	SX 20132 82046

1011726	Co-axial field system, hut circle settlements, cairnfield and land boundaries on Carne Down	SX 20095 82080
1011726	Co-axial field system, hut circle settlements, cairnfield and land boundaries on Carne Down	SX 20200 81568
1011781	Platform cairn with rim bank and central cairn, and a secondary cairn, on the summit of Carne Down	SX 20093 81769
1011791	Later Prehistoric to Roman round 500m NE of West Carne Farm	SX 20645 82448
1011791	Later Prehistoric to Roman round 500m NE of West Carne Farm	SX 20632 82540
1011826	Medieval wayside cross head 75m east of Newpark	SX 17140 83723
1014222	Wayside cross in Tresmeer churchyard	SX 23368 87486
1016365	An early Christian memorial stone in Lewannick churchyard	SX 27591 80688
1018002	Wayside cross 620m south west of Basil Farm	SX 18879 84024

In summary, the potentially intervisible Scheduled Monuments within the 10 km ZTV consist of:

- Three hillforts
- Five rounds
- Two other prehistoric enclosures
- Twenty barrows, cairns and barrow and cairn groups
- Four coaxial field systems with associated settlement and later features
- One inscribed stone
- One pound
- Six crosses
- One well
- One bridge.

The settings of churchyard crosses, bridges, wells, the inscribed stone and pound are very local and none of these features are very close to the proposed wind turbine site; the closest is a cross in the churchyard at Tresmeer, a little under 800m south of the proposed turbine site. In line with English Heritage guidance, therefore, no assessment on the impacts on their settings needs to be made. A tall medieval wayside cross located on unenclosed rough ground on Laneast Downs 2.75 km to the south of the proposed location lies within the ZTV but views from it are currently blocked by nearby evergreen trees (Fig 42). The newly erected wind turbine at Lidcott Farm, approximately 300m away and in clear view of the cross (Fig 43) is likely to be a more significant impact on its setting.

From Warbstowbury hillfort (National Heritage List no 1006710) there are views to the proposed wind turbine site (Fig 37) from the ramparts and part of the inner enclosure. However, the turbine site is approximately 4.5 km distant and would therefore not be dominant in general views from Warbstowbury, although it does lie on the alignment of views towards the Scheduled Tregearedown enclosed settlement (National Heritage List no 1006711). Views from and to Warbstowbury are arguably already compromised by other wind turbines close to it (Figs 28, 38-9).

Air photographs suggest that visual access towards the proposed site from Kestle Rings (National Heritage List no 1004243; Scheduled as 'Slight univallate hillfort with outworks 390m south east of Tanker's Lake'), 6.7 km to the south east, would be blocked by tree cover to the west of the hillfort. No such blocking is apparent from

Ashbury hillfort (National Heritage List no 1010423), but this is more than 9 km north of the proposed wind turbine site, and the impact of a turbine on its setting within the wider panorama of the landscape (already compromised by high-tension electricity transmission pylons) is likely to be small.

The round on Tregear-down Beacon (National Heritage List no 1006711) lies 2.2 km south east of the proposed turbine site. No access was possible during fieldwork but air photographs suggest that views out may to some extent be limited by scrub and small trees. However, views towards Warbstowbury – potentially a significant visual relationship for the site – would be across the proposed turbine site. Views towards the proposed site from Trethinna round (National Heritage List no 1004462; Scheduled as round 300m north of Northdown), 6.3 km distant, appear to be restricted by local tree cover. The Scheduled extent of the putative round 500m north east of West Carne farm (National Heritage List no 1011791) only just intersects with the ZTV and it is probable that views from it of the proposed turbine would be limited to the upper part of the blades at a distance of 6.4 km. The earthworks of the round on the lower slopes of Bray Down (National Heritage List no 1004240) are scrub covered and the site is again near the margin of the ZTV; it is probable that views would again be restricted to the upper part of the turbine blades approximately 7.1 km away. Views in this direction would include the intervening Cold Northcott wind farm, only 3 km distant. The rectangular enclosures west of Rosecare Villa (National Heritage List no 1007281) lie only just within the ZTV and the impact of the proposed turbine, 9 km distant, on views from the site is likely to be minor.

A number of Scheduled barrows and cairns lie within the 10 km ZTV of the proposed site, including two small groups just within the 5 km radius; in neither of these instances does it seem probable that there will be a substantial impact on setting (section 9.2). The remaining instances lie at greater distances and in most instances it seems unlikely that the proposed turbine would have a significant impact within views from these sites. A possible exception, where distant views were perhaps intended by the original builders of these ceremonial and ritual structures, are those on the summits of Buttern Hill and Bray Down on the northern fringe of Bodmin Moor (National Heritage List nos 1007298 and 1004241). A recent visit to these sites, however, demonstrated that views to the north from this area are now significantly compromised by a substantial number of wind turbines in much closer proximity than that under discussion, including the Cold Northcott group only 3.5-4.5 km distant (Fig 44). The impact of a further turbine, therefore, would be neutral. A similar observation may be made about the several Scheduled coaxial field systems in broadly the same area.

In summary, a number of Scheduled Monuments will be intervisible with the proposed turbine site but only in the cases of Warbstowbury and Tregear-down is there potential for a significant impact on views out and thus on setting. In this latter instance the potential negative impact is greater in that the proposed turbine would intervene directly in views between the two Scheduled sites.

9.6 Registered Parks and Gardens and Registered Battlefields within the 10 km radius ZTV

Figure 24.

As noted above, the Registered Park and Garden at Penheale Manor (Grade II; National Heritage List no 1000653) lies within 5 km of the site. However, the ZTV mapping indicates that only a short length of the approach to the house from the south intersects with the ZTV (Fig 32) and that there is no intervisibility with the proposed turbine site within the Registered Park and Garden in the immediate area of the house.

The western part of the Grade II Registered Park and Garden at Werrington (National Heritage List no 1000514) lies just within the 10 km zone. No apparent historic elements of the ornamental landscape (for example, drives, avenues or structured vistas) appear to be aligned on the direction in which the wind turbine might be seen,

and ground-level views from the immediate vicinity of the house are likely to be blocked by mature ornamental planting immediately to the west. However, the viewshed mapping indicates intervisibility between the proposed turbine site and the upper slopes of the area of parkland to the west of the house, on the north side of the Ottery valley. The drive approaching the house from the south west also passes through this area of intervisibility.

There are no Registered battlefields within 10 km of the proposed turbine site.

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

Figure 26.

There are 249 Listed Buildings of all grades within the 10 km radius ZTV of the proposed wind turbine site. Of these, five are Listed at Grade I, eight at Grade II*:

National Heritage List no	Name	Parish
Grade I		
1142745	Church of St Paternus	South Petherwin
1142836	Cullacott and attached open fronted cartshed	Werrington
1142855	Church of St Martin and St Giles	Werrington
1142888	Church of St Winwalo	Tremaine
1309836	Werrington Park (house)	Werrington
Grade II*		
1160373	Higher Penrose	North Petherwin
1161299	Church of St Nicholas	Tresmeer
1160463	Winnacott farmhouse and garden wall to front	North Petherwin
1161531	Church of St Werburgha	Warbstow
1142820	Milltown House and garden walls to front	Werrington
1277508	Church of St Martin	Lewannick
1161194	Treglith farmhouse	Treneglos
1310214	Church of St Gregory	Treneglos

9.8 Conservation Areas within the 5 km radius ZTV

There are no Conservation Areas within 5 km of the proposed wind turbine location.

9.9 Grade II Listed Buildings within the 5 km radius ZTV

Figure 21.

Within the 5 km zone, 118 Listed Buildings of all grades are intersected by the ZTV. Of these, one is Listed at Grade I – the church of St Winwalo at Tremaine, 800m to the north of the proposed site (National Heritage List no 1142888) – and a further six at Grade II*.

A total of 111 Grade II Listed Buildings (or groups of buildings) in this zone would therefore potentially be intervisible with the proposed wind turbine at Higher Churchtown Farm.

These consist of:

- 59 farmhouses, houses and cottages
- 8 agricultural buildings, domestic outbuildings.
- 1 church
- 2 Methodist chapels
- 7 gate piers, walls, etc
- 2 lodges
- 18 headstones, chest tombs, ledger stones
- 1 school
- 1 gazebo
- 1 village hall
- 1 cross
- 4 milestones and boundstones
- 1 war memorial
- 1 village pump.

Impacts on the settings of many of these feature types are unlikely except where they are in very close proximity to the proposed wind turbine site. These include the headstones, chest tombs and ledger stones, milestones and boundstones, the cross, pump and war memorial and probably the gatepiers and garden walls. Those in this category for which some possible impact on setting is possible have been discussed above in section 9.2.

Fourteen of the 111 Grade II Listed Buildings are located within 1 km of the proposed Higher Churchtown wind turbine site. In this area the ZTV mapping indicates that almost the whole of the landscape will be intervisible with the proposed wind turbine and some degree of impact might be expected. These are listed in the following table:

1142863	Well Cottage, Three Hammers (Grade II)	530m to south west
1161113	Grove Cottage (Grade II)	570m to north east
1328047	North Tregear farmhouse (Grade II)	560m to north west
1142892	Westcott farmhouse on south side of settlement (Grade II)	950m to north
1310247	Farmhouse on north of settlement at Westcott (Grade II)	950m to north
1142867	The Cottage (Grade II)	900m to south
1142866	Tresmeer farmhouse and garden walls to front (Grade II)	820m to south
1310272	2 headstones of J and C Sandercock 4 metres to south west of South Porch of Church of St Winwalo (Grade II)	800m to north
1142890	Group of 3 headstones of T. Colwell J. Hoskins and J. Baker, 6 metres to south west of West Tower of Church of St Winwalo (Grade II)	800m to north
1142889	Headstone of James Daw 2 metres to north of nave of Church of St Winwalo (Grade II)	800m to north

1310151	Cross 2 metres to east of chancel of church of St Nicholas (Grade II)	780m to south
1142864	Headstone of T Parsons 1 metres to south of nave of Church of St Nicholas (Grade II)	780m to south
1142865	Headstone of Richard Burnard 6 metres to south west of West Tower of Church of St Nicholas (Grade II)	780m to south
1161317	Headstone of John Kittow 2 metres to east of vestry of Church of St Nicholas (Grade II)	780m to south

Another Grade II Listed Building – The Pottery, Splatt (National Heritage List no 1142862) - lies within the ZTV just a few metres outside the 1 km radius.

Seven of these Listed Buildings are headstones and a cross in the churchyards of the churches of St Winwalo at Tremaine and St Nicholas, Tresmeer. The settings of these are essentially very local and no significant impact is likely.

As noted in section 9.2, there are potential impacts on the settings of some of the Grade II Listed houses in this zone, in terms of views both from and to the designated assets.

9.10 Undesignated sites within the 1 km ZTV

Figure 20.

The ZTV mapping suggests that nearly all of the landscape within a 1 km radius of the Higher Churchtown Farm 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 34 sites. The ZTV mapping indicates that all of these will be intervisible with the wind turbine to some degree or other. HER sites within 1 km are listed below. (**NB.** These include designated sites included in the HER and discussed elsewhere in this report.)

Prehistoric		
MCO 3767	Tresmere Downs barrow	240m south west
MCO 45459	Three Hammers barrow [? spoil heap]	810m south west
Early medieval and medieval		
MCO 22529	Tremaine lann	800m north
MCO 45465	Tremaine field boundary	900m north
MCO 45460	Splatt trackway, boundary	750m west
MCO 45458	Three Hammers field boundary, path	800m south west
MCO 17509	Tremaine settlement	670m north east
MCO 10876	North Tregeare farmhouse	570m west
MCO 22530	Tremaine strip field	550m north east
MCO 22535	Tresmeer strip field	550m south east
MCO 45466	Dunnaquarry ridge and furrow	960m east
MCO 45462	Three Hammers field boundary	770 south west
MCO 5989	Tresmeer cross	800m south
MCO 6512	Tremaine church	800m north
MCO 6516	Tresmeer church	800m south
MCO 17725	Tresmeer settlement	850m south
MCO 6079	Tresmeer cross	800m south
MCO 18316	Westcott settlement	930m north
Post medieval		
MCO 10808	Grove house	550m north
MCO 53682	Westcott accommodation bridge	780m north

MCO 45469	Three Hammers extractive pit	730m south east
MCO 22538	Three Hammers quarry	750 south west
MCO 53683	Danakerry railway bridge	580m east
MCO 22539	Three Hammers quarry	460m south
MCO 22540	Three Hammers quarry	700m south
MCO 32733	Tresmeer Nonconformist chapel	700m south west
MCO 32729	Tremaine Nonconformist chapel	670m north east
MCO 45461	Splatt extractive pit	920m west
MCO 16981	Three Hammers settlement	500m south
MCO 53289	Three Hammers teacher's house and school	470m south
MCO 15252	Lane End settlement	890m west
MCO 14105	Coombelake settlement	550m north east
MCO 14807	Helson settlement	470m south east
MCO 55710, 55712-5	North Cornwall railway	350m north east (closest point)

The form of several of these sites – quarries, railway bridges, crosses and cropmark features such as former boundaries or tracks – suggests that a wind turbine on the proposed site would have no significant impact on their settings. A number of historic settlements are recorded (as well as the designated churches and houses listed above), however, and here the potential impact may be greater. This may also be the case for the two Nonconformist chapels.

9.11 Designated sites within the 10-15km zone

Figure 27.

Current English Heritage guidance states that high-grade designated structures, sites and areas within this zone should be listed, but do not need to be assessed for impact at this stage.

Scheduled Monuments

Twenty-six discrete Scheduled Monuments (recorded under 24 National Heritage List numbers) are found within the extended viewshed of the proposed turbine site:

National Heritage List no	Description	Parish
1003075	Round called Rings Camp	North Hill
1004408	Three bowl barrows, 60m and 250m south and 500m south west of Nettings Park	Davidstow
1005437	Five bowl barrows south of Newton Farm forming part of a round barrow cemetery	St Juliot
1005447	Round 260m south west of Trengayor	St Gennys
1005460	Two bowl barrows 660m south west of Whitehill Cottage, forming part of a round barrow cemetery	St Gennys
1005461	Earthwork on Hill Down 500yds (450m) WSW of Tresparrett Posts	St Gennys
1009735	Round cairn with central cist 1.05km east of Trewortha Farm	North Hill
1010220	Three adjoining prehistoric linear boundaries on Bearah Tor, 687m SW of Nodmans Bowda Farm	North Hill

National Heritage List no	Description	Parish
1010361	Prehistoric round cairn on the eastern outcrop of Bearah Tor	North Hill
1010855	Dunheved Cross, 80m west of Launceston Hospital	Launceston
1011213	Round cairn 460m north of Showery Tor	St Breward
1011321	Prehistoric field system, hut circles, boundary, enclosure and standing stone, medieval field system and post-med. small-holding 1.46km NNE of Siblyback Farm	St Cleer
1011386	Prehistoric and medieval linear boundary 1.34km south of Eastmoorgate	Altarnun
1011544	Tor cairn on Showery Tor	St Breward
1011558	Prehistoric co-axial and regular aggregate field systems with incorporated and adjacent hut circle settlements on Bastreet Downs, south of Bowda Farm	North Hill
1011886	Allabury Camp slight univallate hillfort 425m WNW of West Castick Farm	North Hill
1012217	Prehistoric ritual enclosure 1.7km NW of Tresellern Farm	Altarnun
1012228	Prehistoric stone alignment 1km SSE of Eastmoorgate	Altarnun
1017638	St Anne's Well, in Whitstone churchyard	Whitstone, Devon
1017974	Two bowl barrows 690m and 760m south west of Leworthy	Clawton, Devon
1018629	Prehistoric to medieval settlements, field systems, enclosures and cairns, with post-medieval boundary and railway on north east Smallacoombe Down	Altarnun; St Cleer
1018631	Prehistoric to post-medieval field systems, boundaries, settlements and railway at Smallacoombe Parks and north eastern Siblyback Moor	St Cleer
1018646	Platform cairn with outer bank and central mound 430m WSW of Smallacoombe Tor	St Cleer
1019478	Earlier prehistoric hillfort with incorporated and adjacent cairns, chamber and medieval chapel on the summit ridge of Rough Tor and Little Rough Tor	St Breward

Listed Buildings

This zone includes eight Listed Buildings of Grade I and II*, all but one of which is in Devon.

National Heritage List no	Description	Parish
Grade I		
1142426	Parish church of St Anne	Whitstone, Devon
1164234	Wortham manor	Lifton, Devon
1252173	Church of the Holy Cross	Tettcott, Devon

National Heritage List no	Description	Parish
Grade II*		
1317882	Smallacombe farmhouse	Lifton, Devon
1105590	Granary with dovecot over, Smallacombe	Lifton, Devon
1164213	Wall mounting block and 2 pairs of gate piers round garden to the east of Smallacombe farmhouse	Lifton, Devon
1262341	Manor Cottage, Tettcott Barton	Tettcott, Devon
1291321	Lower Trekenner farmouse and cottage	Lezant

Registered Parks and Gardens

- None.

Registered Battlefields

- None.

World Heritage Site

- The extreme northern edge of the Caradon Mining District area of the Cornish Mining World Heritage Site intersects the 15 km radius from the proposed turbine site but does not fall within the ZTV.

10 Field verification of the ZTV

Figures 28-44.

The viewshed mapping and potential impacts were, wherever possible (given constraints on public access and ground conditions), ground checked from a number of locations, including sites at, adjacent to or overlooking the designated heritage assets of Tremaine church, Warbstow church, Treneglos church, Warbstowbury hillfort, Treglith, Winnacott, Warbstowbury hillfort, a Listed and Scheduled wayside cross on rough ground at Laneast and the settlements of Badgall, Downinney, Warbstow, Tresmeer churchtown, Three Hammers, Splatt and Egloskerry. Attempts were also made to visit Tregear-down Beacon (Scheduled Monument), inaccessible because of ground conditions on the access track, and Higher Penrose (Grade II* Listed Building), inaccessible because of flooding. In both cases it has been possible to make assessments of the probable extent of intervisibility and the impact on the setting of the assets.

At each accessible designated heritage site the potential visibility (and proportional visibility) of the proposed wind turbine was considered. Views out from the site towards key heritage assets were checked from the application site itself. Although true levels of intervisibility were impossible to determine (given that the turbine has not yet been constructed and views were only available from ground level), the general degree of openness of the views out from the site could be assessed. Existing wind turbines in the wider vista from the proposed site allowed the likely impacts of the proposed turbine on the settings of key heritage sites to be assessed.

Where possible, photographs were taken from key locations within the surrounding landscape and from the proposed location to these sites. Views from higher locations in the area allowed the location of the proposed wind turbine to be determined fairly readily. From lower-lying points, however, boundaries and vegetation tended to block

easy visibility. From small settlements such as Splatt, Downinney and Badgall, groups of buildings, vegetated boundaries and trees blocked many views.

11 Cumulative impacts

Recent English Heritage guidance requires assessments of applications for renewables to take account of cumulative impacts, as well as those relating to specific proposals.

There are already some existing individual and paired wind turbines in the wider landscape around the proposed Higher Churchtown Farm site. Those most prominent from the site are three skylined in the near vicinity of Warbstowbury hillfort, a little over 4 km to the west north west. One of these is the 77m to tip turbine at Trewonnard, Treneglos (PA12/03784); the others are probably at Fentrigan and Tredown Farm, Warbstow. Another turbine is skylined but distant to the north and another single turbine is visible but distant against a background of agricultural land to the north; a pair is similarly distant and with a landscape background to the east. The view to the north from the site also includes a line of high-tension electricity pylons. The Cold Northcott windfarm lies 3 km to the south west of the proposed Higher Churchtown Farm site and is widely visible from the surrounding area.

A 34.4m to tip turbine just under 3 km to the south at Lidcott was completed on the day that fieldwork was carried out (Fig 43).

A 39.6m to tip turbine is proposed at Ashgrove Farm, approximately 500m north of the proposed site at Higher Churchtown Farm (PA12/05350).

12 Synthesis

Neither the desk-based assessment, geophysics or walkover survey indicated the presence of any significant upstanding archaeology which might be directly impacted upon by the proposed wind turbine and cabling at Higher Churchtown Farm.

Impacts on both designated and undesignated heritage assets resulting from the construction of the proposed wind turbine on land at Higher Churchtown Farm will vary according to a number of factors, including:

- distance from the turbine sites
- state of preservation
- their specific character
- the effects of reduced or blocked intervisibility due to local topography, vegetation (including hedge plantings), the presence of other buildings or the proximity of already-existing wind turbines or other visually dominant modern structures or features.

In some cases, even where intervisibility would be present, it would be limited, either by topography – a number of assets lie on the margins of the ZTV and views would be substantially blocked by intervening ridges – or by nearby vegetation. There are also, however, a number of sites from which the turbine would be a visually significant in important views, skylined or partly skylined.

There will be moderate to substantial negative impact within the immediately local landscape out to 1-2 km from the site, with the clearest potential impacts on the Grade I Listed church of St Winwalo and the nearby Grade II Grove Cottage and Trehummer farmhouse, views from which are currently compromised by few overtly modern features. There will also potentially be impacts on the Grade II Listed North Tregear, Westcott and Well Cottage. The undesignated barrow site on the former Tresmeer Down lies within 250m of the proposed site.

In the wider landscape, there are potential impacts on views from and between two Scheduled Monuments, Warbstowbury hillfort and Tregeare Camp, and on views from the Listed Grade II* church of Trenglos and Winnacott farmhouse, from each of which the proposed turbine would be skylined.

There will be some impacts on the Historic Landscape Character of the local landscape around the proposed site, which has, to date, by and large not been modified by highly visible modern features. The development would also potentially have an impact on the character of landscape in the wider surrounding area, from which it would be visible.

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 (Department for Communities and Local Government 2012) 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 PPS5 English Heritage guidance

The English Heritage and DCMS (Department for Culture, Media and Sport) document 'PPS5 Planning for the Historic Environment: Historic Environment Planning Practice Guide' provides current guidance on PPS5 (and its successor the National Planning Policy Framework) and its application.

This refers to the need, for decision-making in response to an application for change that affects the historic environment, of providing and assessing, at a level appropriate to the relative importance of the asset affected, information on the asset and its extent, on its setting, and on the significance of both of these aspects. Section 5, 54 states that 'Heritage assets may be affected by direct physical change or by change in their setting. Being able to properly assess the nature, extent and importance of the significance of a heritage asset and the contribution of its setting is very important...'

Section 5 on Policies HE6 to HE 12, 58, notes among appropriate actions (in point 5) 'Seek[ing] advice on the best means of assessing the nature and extent of any archaeological interest e.g. geophysical survey, physical appraisal of visible structures and/or trial trenching for buried remains.'

The section on Policy HE10 defines setting as follows:

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

114. 'The extent and importance of setting is often expressed by reference to visual considerations. Although views of or from an asset will play an important part, the way in which we experience an asset in its setting is also influenced by other environmental factors such as noise, dust and vibration; by spatial associations; and, by our understanding of the historic relationship between places. For example, buildings that are in close proximity but not visible from each other may have a historic or aesthetic connection that amplifies the experience of the significance of each. They would be considered to be within one another's setting.'

13.3 Former Cornwall Structure Plan

The following policies in the Cornwall Structure Plan relate to the historic environment are currently used to guide responses to applications.

13.3.1 Policy 1

'Development should be compatible with:

The conservation and enhancement of Cornwall's character and distinctiveness;
The prudent use of resources and the conservation of natural and historic assets;
A reduction in the need to travel, whilst optimising the choice of modes, particularly opportunities for walking, cycling and the use of public transport;
Through developing the principles of Policy 1 it is intended to integrate environmental values with land use and transport policies, achieving patterns of development that reflect strong environmental protection and stewardship of resources.'

13.3.2 Policy 2

'Throughout Cornwall, development must respect local character and:

- Retain important elements of the local landscape, including natural and semi-natural habitats, hedges, trees, and other natural and historic features that add to its distinctiveness;
- Contribute to the regeneration, restoration, enhancement or conservation of the area;
- Positively relate to townscape and landscape character through siting, design, use of local materials and landscaping.
- The conservation and enhancement of sites, areas, or interests, of recognised international or national importance for their landscape, nature conservation, archaeological or historic importance, including the proposed World Heritage Site, should be given priority in the consideration of development proposals.'

13.4 Former North Cornwall District Council Local Plan

Although now part of Cornwall Council, North Cornwall District Council policies listed in its Local Plan (North Cornwall District Council 1999) continue to be relevant. Policies relevant to the historic environment are listed below.

Local Plan Strategy Principle 5. 'The Plan must protect and enhance the many natural and man-made [sic] environmental resources of the District giving special priority to those areas and sites of designated national importance.'

Local Plan Strategy Principle 6. 'The Plan must encourage standards in new development which will enhance local character and identity, support energy conservation and improve the quality of life for all sections of the community.'

Policy ENV 12/4: 'Development proposals for the erection of a new building or other structure, or the use of land, will not be permitted where this would adversely affect the character of appearance of a listed building or its setting.'

Policy ENV 13/4. 'Development proposals within, or outside but affecting, a conservation area will only be permitted where:

(a) they respect the area's special architectural and historic interest and the siting, scale, form, proportions, colour and materials of any new or altered buildings or advertisements are in keeping with the character or appearance of the area . . .'

Policy ENV 14/1: 'Development proposals affecting nationally important archaeological remains, whether scheduled or not, and their settings, will not be permitted unless:

- (a) there will be no significant damage to, or adverse effect on, a site or its setting; and
- (b) the development can be controlled through the use of conditions or planning obligations to ensure the remains are preserved in-situ.'

Policy ENV 14/2. 'Development proposals which adversely affect locally important archaeological sites or remains identified as a result of a prior archaeological investigation will only be permitted where:

(a) physical preservation in-situ is not feasible in conjunction with the proposed development and the importance of the development clearly outweighs the case for preservation of the remains; and

(b) satisfactory arrangements for investigation and recording of the remains before or during development.'

Policy Env 15. 'Development proposals will not be permitted where they would adversely affect the character, appearance or setting of Areas of Great Historic Value, Historic Parks and Gardens and Historic Battlefields.'

13.5 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 Probable impacts of the proposed development

14.1 Types and scale of impact

Two general types of archaeological impact associated with wind turbine developments have been identified as follows.

14.1.1 Types of impact, construction phase

Construction of the wind turbine could have direct, physical impacts on the buried archaeology of the site through the construction of the turbine foundations, through the undergrounding of cables, and through the provision of any works compound, together with any permanent or temporary vehicle access ways into and within the site. Such impacts would be **permanent** and **irreversible**.

14.1.2 Types of impact, operational phase

The proposed wind turbine might be expected to have a visual impact on the settings of some key heritage assets within its viewshed during the operational phase, given its height (77 metres), its prominent position in local topography and the open nature of the local landscape. Such factors also make it likely that the development would have an impact on Historic Landscape Character. These impacts would be **temporary** and **reversible** should the turbine subsequently be dismantled and not re-powered or replaced.

14.1.3 Scale and duration of impact

The impacts of the wind turbine on the historic environment may include positive as well as adverse effects. For the purposes of assessment these are evaluated on a seven-point scale:

positive/substantial

positive/moderate

positive/minor

neutral

negative/minor

negative/moderate

negative/ substantial

Negative/unknown is used where an adverse impact is predicted but where, at the present state of knowledge, its degree cannot be evaluated satisfactorily.

The assessment also distinguishes where possible between **permanent** and **temporary** effects, or between those that are **reversible** or **irreversible**, as appropriate, in the application of the scale of impacts.

14.1.4 Potential and residual impacts

Potential adverse impacts may be capable of mitigation through archaeological recording or other interventions. In the assessments forming section 14.2, where appropriate, both 'potential' and 'residual' impacts are given; that is, expected impacts 'before' and 'after' such work, principally in relation to the development phase. A possible mitigation strategy is outlined below in section 15.

14.2 Assessment of impact

Overall, the impact of the proposed wind turbine on the historic environment resource is assessed as having a potential scored as **negative/minor** to **negative/substantial**, principally depending on proximity to the proposed turbine site and intervisibility with them. In the case of the Grade I Listed church of St Winwalo, Tremaine, and Grade II Grove Cottage the impact on setting is assessed as **negative/substantial**.

Impacts on the settings of designated heritage sites within 10 km of the proposed turbine site have been assessed as **neutral** to **negative/moderate** overall.

It is considered that there is little potential for impacts on sub-surface archaeology within the development site, based on the evidence from the geophysical survey.

The assessments supporting this general statement are outlined in the following sub-sections. To comply with current policies and guidance (section 13), these provide assessments of impact in terms of different aspects of the historic environment resource: its individual sites, the settings of sites, Historic Landscape Character and field boundaries. There are inevitably areas of overlap between these categories of impact; the assessment is adjusted accordingly to avoid 'double counting' of impacts.

14.2.1 Impacts on archaeological sites within the development area

Ground disturbance associated with the installation of foundations for the wind turbine, cabling or ancillary works during the construction phase could result in **permanent, irreversible** loss of below-ground remains of archaeological sites within the development area, or of elements of these. The works, if deeper than current ground levels, might affect undetected buried cut features.

Scales of impact will vary with the degree of significance of individual sites, and with the proportion of the whole site which would be affected. The results of the geophysical survey indicate that the potential for impacts on significant buried archaeology is probably small. However, the presence of a barrow site in the wider vicinity raises the possibility that small-scale features such as pits could be present, related to settlement or to ceremonial activities but not detected by the geophysical survey.

14.2.2 Impacts on the settings of key heritage assets

The proposed wind turbine is considered likely to have an impact on the setting of key surrounding heritage assets, this being summarised as **negative/substantial** in the cases of the church of St Winwalo, Tremaine, and Grove Cottage) to **negative/moderate** in the case of the church of St Gregory, Treneglos, and the Grade II* house at Winnacott (from which the turbine would be skylined).

Several Scheduled Monuments and Grade I and II* Listed Buildings in the 10 km ZTV would, when constructed, have been intended to be highly visible focal points within the local landscape. These include Warbstowbury hillfort, Tregear Camp and the parish

churches of Tremaine, Treneglos and Warbstow. There will be significant intervisibility between some of these sites and the proposed wind turbine, most notably the church of St Winwalo, Tremaine, and it would also create a non-historic competing visual focus for these designated assets. Additionally, the proposed turbine may intervene in views to some of these points from other places within the wider landscape; it would certainly intervene directly in views between Warbstowbury and Tregear. The settings of Warbstowbury and Warbstow church – in terms of views out – have already been impacted on by, respectively, wind turbine developments more immediately adjacent and by an adjacent modern farm complex. Other Scheduled Monuments within the 10 km viewshed are for the most part either types which have only limited settings or are at distances from the proposed wind turbine and in contexts where their settings are unlikely to be impacted upon.

The turbine would be prominent in views south west from Winnacott but the Cold Northcott wind farm is already visible in this direction and the impact would be incremental rather than a new element. During the operational phase the wind turbine will impact significantly on the setting of the nearby Grove Cottage. Visibility from most other Listed Buildings in the 5 km zone is to some extent restricted and the impacts will thus be to some extent reduced.

There are no Registered Battlefields within the 10 km radius viewshed of the proposed wind turbine.

There are no Conservation Areas within the 5 km radius viewshed of the proposed wind turbine.

Impacts on heritage assets within the landscape surrounding the proposed wind turbine would be temporary/reversible overall should the wind turbine be dismantled in the future and not replaced, assuming that in the interim the presence of the turbine had not itself been taken as a precedent justifying the construction of other high visual impact structures of potentially longer duration.

14.2.2.1 Tree cover

A number of the judgements about potential intervisibility between the proposed wind turbine site and designated assets are based on the certainty or probability of views being blocked by tree cover. In many of these cases there must be a presumption that such tree cover is likely to remain in the medium term, almost certainly for the proposed life of the turbine development. However, there are currently significant threats to a variety of tree species within the British countryside and some weight should be given to the increased impact on the settings of designated assets which the proposed turbine might have if the current tree cover were removed or reduced. This is certainly a potentially significant consideration for several Listed Buildings within the 5 km zone and for the Scheduled Tregeardown enclosed settlement.

14.2.3 Designated heritage assets within the 10 km radius viewshed

Preliminary filtering of the potential for the likelihood of impacts on these sites is discussed above (section 2.2.2). Only those for which it was considered that some level of impact might occur are listed below and assessments of impact made.

14.2.3.1 Scheduled Monuments

Figure 25.

National Heritage List no	Site	Impact
1006710	Warbstowbury hillfort	Negative / minor
1006711	Tregear Camp	Negative / moderate

National Heritage List no	Site	Impact
1005468	Barrow group, Wilsey Down	Neutral
1005440	Barrow group, Brazzacott	Neutral
1007954	High Hall cross	Neutral
1007281	Rectangular enclosures 520m west of Rosecare Villa Farm	Neutral
1004243	Kestle Rings hillfort	Neutral
1004462	Trethinna round	Neutral
1011791	Round 500m NE of West Bray	Neutral
1004240	Bray Down round	Neutral
1007298	Barrows / cairns on Buttern Hill	Neutral
1004241	Barrows / cairns on Bray Down	Neutral

The potential negative impact on Warbstowbury hillfort, will as indicated earlier, be to some extent reduced by distance and will be minor by comparison with the impacts on its setting resulting from the three turbines recently built considerably closer to it. Tregeare Camp is rather closer to the proposed turbine site, which will additionally intervene in views from it to Warbstowbury.

14.2.3.2 Grade I Listed Buildings

Figure 26.

National Heritage List no	Site	Impact
1142888	Church of St Winwalo, Tremaine	Negative / substantial

The proposed wind turbine will be in full view at 800m distance from the churchyard of the church of St Winwalo and when exiting via the south porch of the church. It is considered likely that it would have a substantial negative impact on both the visual integrity and the tranquil and broadly immobile quality of its landscape setting.

14.2.3.3 Grade II* Listed Buildings

Figure 26.

National Heritage List no	Site	Impact
1160373	Higher Penrose, North Petherwin	Neutral
1161299	Church of St Nicholas, Tresmeer	Neutral
1160463	Winnacott farmhouse and garden wall to front, North Petherwin	Negative / minor - moderate
1161531	Church of St Werburgha, Warbstow	Negative / minor
1161194	Treglith farmhouse, Treneglos	Neutral
1310214	Church of St Gregory, Treneglos	Negative / moderate

The proposed turbine would be prominent and skylined in views south west from Winnacott. However, the Cold Northcott wind farm is already visible in this direction and the impact would therefore be additional. Views from the immediate vicinity of the church of St Werburgha at Warbstow are mostly blocked by nearby trees and vegetation and to an extent compromised by an adjacent farm complex. Views are available towards the proposed turbine from within the churchyard but these are to an extent similarly compromised.

Views east from the church of St Gregory, Treneglos, would be impacted on both by the partly skylined turbine and by the movement within an otherwise notably tranquil and static landscape.

Views to the proposed site from the church of St Nicholas in Tresmeer churchtown are blocked by vegetation and buildings. Intervisibility from Higher Penrose is likely to be limited because of intervening tree cover.

14.2.4 Designated heritage assets within the 5 km radius ZTV

14.2.4.1 Grade II Listed Buildings

Figure 21.

National Heritage List no	Site	Impact
1161113	Grove Cottage	Negative / substantial
1310247	Farmhouse on north of settlement at Westcott	Neutral
1142892	Farmhouse on south of settlement at Westcott	Negative / minor
1142863	Well Cottage	Negative / minor
1142866	Tresmeer farmhouse and garden walls to front	Neutral
1142867	The Cottage	Neutral
1328047	North Tregear farmhouse	Negative / minor
1328048	Trehummer farmhouse	Negative / moderate

The rear of Grove Cottage would be in full view of the proposed turbine. The impact on its setting will be similar to that indicated for views from the nearby church of St Winwalo, although the latter is a little further away.

The roof of the Listed Building at Trehummer is visible from ground level at the proposed turbine site and it seems probable that there would be significant views to the turbine shaft and blades from the front elevation.

Views to the base of the proposed turbine from North Tregear farmhouse, 570m to the west, are masked by trees around the property, although it is probable that the upper part of the shaft and blades would be visible above the trees.

At Westcott the Listed sites are masked by trees adjacent to the buildings and / or on intervening boundaries and a former railway line. An adjacent (unlisted) property is, however, in full view from ground level at the proposed site and it seems probable that the upper part of the turbine shaft and blades would be visible from the designated assets, particularly if there were any future loss of trees in the landscape.

There are likely to be partial views to the proposed site from the rear of Well Cottage and the turbine may also be partially visible in public views to the front elevation from the adjacent road.

Tresmeer farm house and The Cottage lie within the settlement at Tresmeer churchtown with views blocked by buildings and vegetation and impacts on their settings are unlikely.

14.2.5 Undesignated heritage assets within the 1 km radius ZTV

Figure 20.

HER identifier	Site	Impact
PRN 2428	Tresmere Downs barrow	Negative / substantial
PRN 2403.10	Tremaine lann	Negative / substantial
PRN 138525	Tresmeer Nonconformist chapel	Negative / minor
PRN 138521	Tremaine Nonconformist chapel	Neutral
PRN 177498	Three Hammers teacher's house / school	Negative / minor

It is not known whether the barrow on the former Tresmeer Down survives as a standing earthwork. If it does, it may be regarded in the terms of National Planning Policy Framework 139 as a heritage asset equivalent to a Scheduled Monument (section 13.1). The proposed wind turbine would have a substantial negative impact on the setting of the site, less than 250m away. Barrows, particularly those on higher ground, were constructed to be the most significant visual objects in the near landscape and often to have extensive views over the wider landscape. Both these elements would be to an extent compromised by the turbine, which, while it would not block views out would certainly be a distracting element within them.

The sub-circular *lann* enclosure around Tremaine church forms an important part of the setting of the church itself and its setting would be similarly impacted (section 14.2.3.2).

Both the Tresmeer chapel and the school / teacher's house lie within Three Hammers. Both are nineteenth-century structures and could be regarded in the terms of the National Planning Policy Framework as non-designated heritage assets. There are likely to be partial views from both to the proposed turbine, which may also be visible in some views to them.

Views from the Tremaine nonconformist chapel appear to be blocked by buildings and vegetation and the potential impact is therefore neutral.

14.2.6 Impacts on Historic Landscape Character

A wind turbine installation erected at Higher Churchtown Farm can be predicted to have some degree of negative impact on the historic character of the landscape. The expected effect on Historic Landscape Character has been assessed as **negative/minor - moderate**. Factors contributing to this assessment are as follows:

- The project area lies within an area characterised as Post-medieval Enclosed (Recently Enclosed Land); that is, land enclosed from rough ground during the period 1600-1900. Some visual impact on Historic Landscape Character would occur for the duration of the operational phase, affecting the integrity of this area as nineteenth-century agricultural land through the introduction of a highly visible modern feature. However, the impact is to some extent lessened by the limited time depth of this landscape character Type: in a longer view the wind turbine would represent a further 'modern' element alongside the nineteenth-century enclosure patterns which are the principal and dominant element of the current landscape. This suggests a **negative / minor** assessment of impact on character.
- However, the high visibility of the proposed wind turbine from both adjacent and more distant areas of Anciently Enclosed Land represents a potentially **negative / moderate** impact.

- The land-take for the proposed development is small in comparison with the area of the HLC units of both post-medieval and medieval farmland within the surrounding landscape.
- There would be no impacts in terms of physical loss during the construction phase of features which form the visible components of this type of HLC.
- Any impacts on the legibility of HLC would be temporary and reversible should the wind turbine be dismantled in the future.

15 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.

15.1 Archaeological recording

In the instance of the site at Higher Churchtown Farm, there is a possibility of at-present unrecorded below ground remains being directly impacted upon by the proposal to a construct wind turbine, although the geophysical survey suggests that nothing of significance is present. The Historic Environment Planning Advice Officer may require further evaluation through trenching to determine the likely impacts and significance of any below ground remains.

In the event that archaeological mitigation is required, a brief for work would be prepared by Cornwall Council's Historic Environment Planning Advice Officer, 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.

In addition, or alternatively, an archaeological watching brief may be required during the initial site works (cable trenching, access works and construction of the turbine foundation) to record any potential archaeological features.

This approach provides for preservation by record of upstanding or buried archaeological features or artefacts and reduces any impacts on the archaeology of the sites to **negative / minor**. Any resultant impacts would be **permanent** and **irreversible**.

16 References

16.1 Primary sources

- Gascoyne, J, 1991 [1699]. *A map of the county of Cornwall newly surveyed*, Devon and Cornwall Record Society, new series, **34**, Exeter
- Martyn, T, 1748. *New and accurate map of the county of Cornwall, from actual survey*, London (paper copy held by HE)
- Norden, J, 1972 [c 1600]. *John Norden's manuscript maps of Cornwall and its nine hundreds*, Exeter (University of Exeter)
- Tithe map and apportionment, 1839. Parish of Tresmeer (digital copies from Cornwall Record Office)
- Cornwall County Council 2005 aerial mapping of Cornwall.
- Ordnance Survey, c 1813, 1st edition 1in: 1 mile map (licensed digital copy at HE)
- Ordnance Survey, c 1880. 1st edition 25in: 1 mile map (licensed digital copy at HE)
- Ordnance Survey, c 1907. 2nd edition 25in: 1 mile map (licensed digital copy at HE)
- Ordnance Survey, 2007. Mastermap digital mapping

16.2 Publications

- British Geological Survey 2008. Digital Geological Map of Great Britain 1:625,000 scale (DiGMapGB-625). Dataset reference date: 11-2-2008.
- Department for Communities and Local Government 2012. *National Planning Policy Framework*, London
- English Heritage 2005. *Wind energy and the historic environment*, np
- English Heritage 2006. *Management of research projects in the historic environment (MoRPHE)*, Swindon
- English Heritage 2011, *The setting of heritage assets: English Heritage guidance*, London
- Herring, P. 1998, *Cornwall's historic landscape: presenting a method of historic landscape character assessment*, Truro (Cornwall Archaeological Unit)
- Herring, P, 2003. Cornish medieval deer parks, in *The lie of the land: aspects of the archaeology and history of the designed landscape in the south west of England*, R Wilson-North, ed, Exeter, 34-50
- Herring, P, 2011. Medieval and post-medieval outfield cultivation, in P Dudley, *Goon, hal, cliff and croft: the archaeology and landscape history of west Cornwall's rough ground*, Truro (Cornwall Council), 106-7
- Lake, W. (1867-72). *A complete parochial history of the county of Cornwall*, Truro and London (4 vols)
- Lawson-Jones, A, and Kirkham, G, 2009-10. Smithing in the round: excavations at Little Quoit Farm, St Columb Major, Cornwall, *Cornish Archaeology*, **48-49**, 173-226
- National Soil Resources Institute Soil Systems Group 2004. GIS data held by Cornwall Council. Data copyright © Cranfield University 2004
- North Cornwall District Council 1999. *North Cornwall District Local Plan: Part 1 – General policies*, Bodmin
- White, P, 2005. *The south-west highway atlas for 1675*, Launceston

16.3 Websites

www.heritagegateway.org.uk/gateway/ English Heritage's online database of Sites and Monuments Records, and Listed Buildings

www.bl.uk/onlinegallery/onlineex/ordsurvdraw/l/002osd00000001u00011000.html
British Library – Ordnance Survey surveyors' drawings, Launceston area, 1808

17 Project archive

The HE project number is **PR146193**

The project's documentary, photographic and drawn archive is housed at the offices of Historic Environment, Cornwall Council, Kennall Building, Old County Hall, Station Road, 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.E-H\Higher Churchtown Farm wind turbine assessment 2012 146193\fieldwork photos
3. English Heritage/ADS OASIS online reference: cornwall2-138785
4. This report text is held in digital form as: G:\TWE\Waste & Env\Strat Waste & Land\Historic Environment\Projects\Sites\Sites H\Higher Churchtown Farm wind turbine assessment 2012 146193\final report\Higher Churchtown Farm, Tresmeer, wind turbine assessment 2012 146193.doc



Fig 6. The proposed turbine site and its wider surroundings shown on Thomas Martyn's 1748 map of Cornwall. The approximate position of the project area is circled in red.

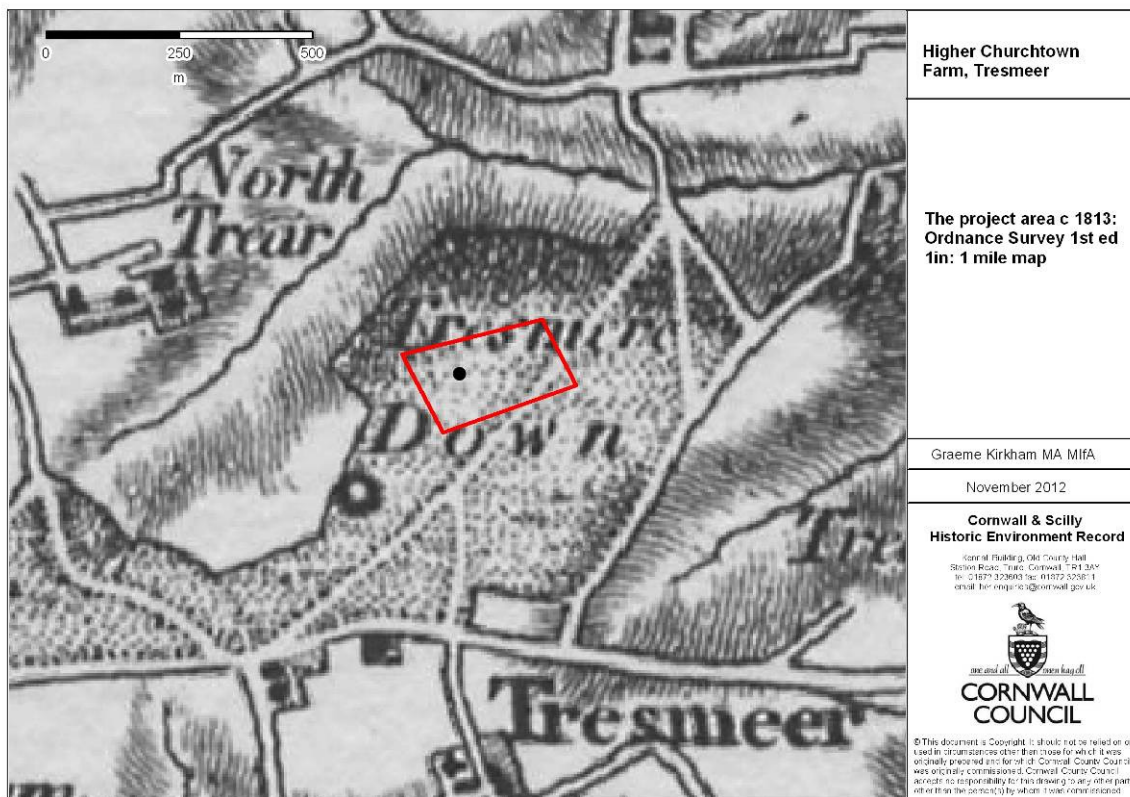


Fig 7. The project area, turbine location and surroundings shown on the 1st edition Ordnance Survey 1in map of c 1813. The project area is approximate because of the small scale of the historic map and the different projections used by the nineteenth-century surveyors and modern mapping.

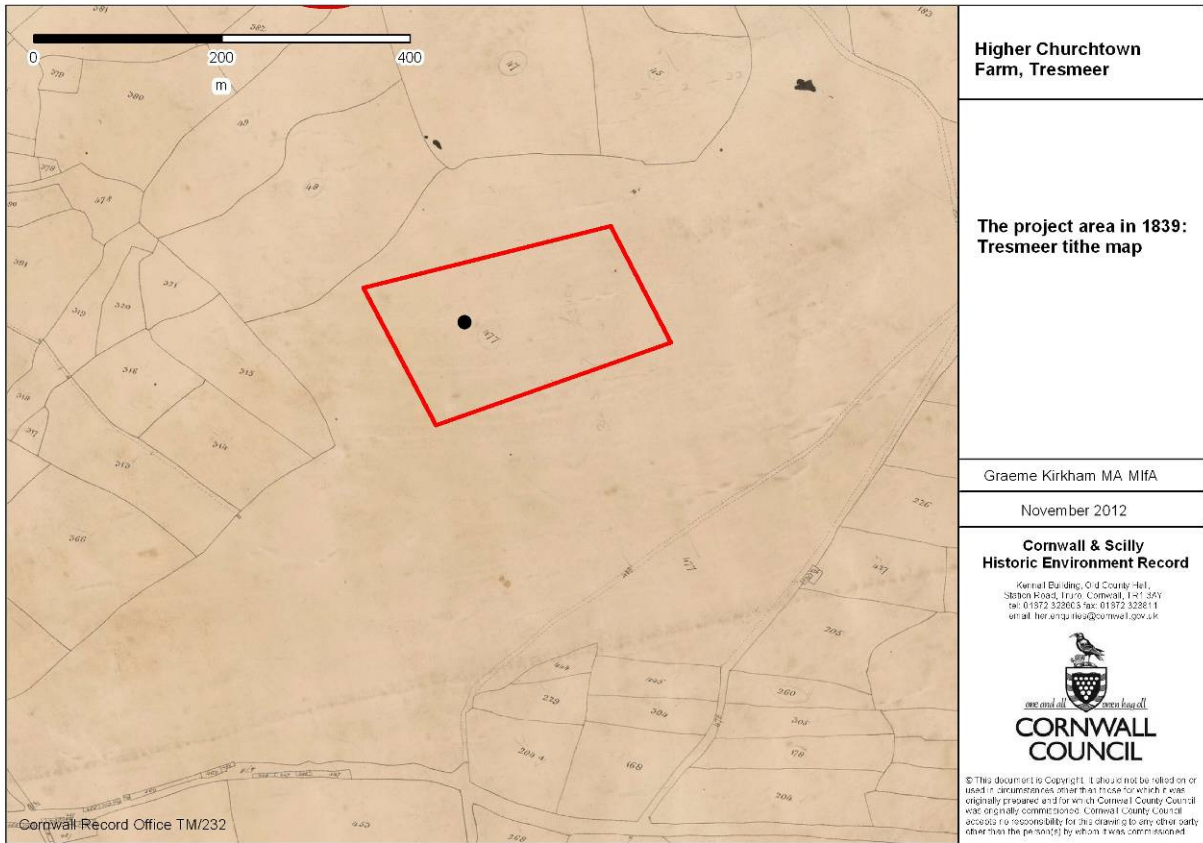


Fig 8. The project area and proposed turbine location on the Tresmeer tithe map of 1839.

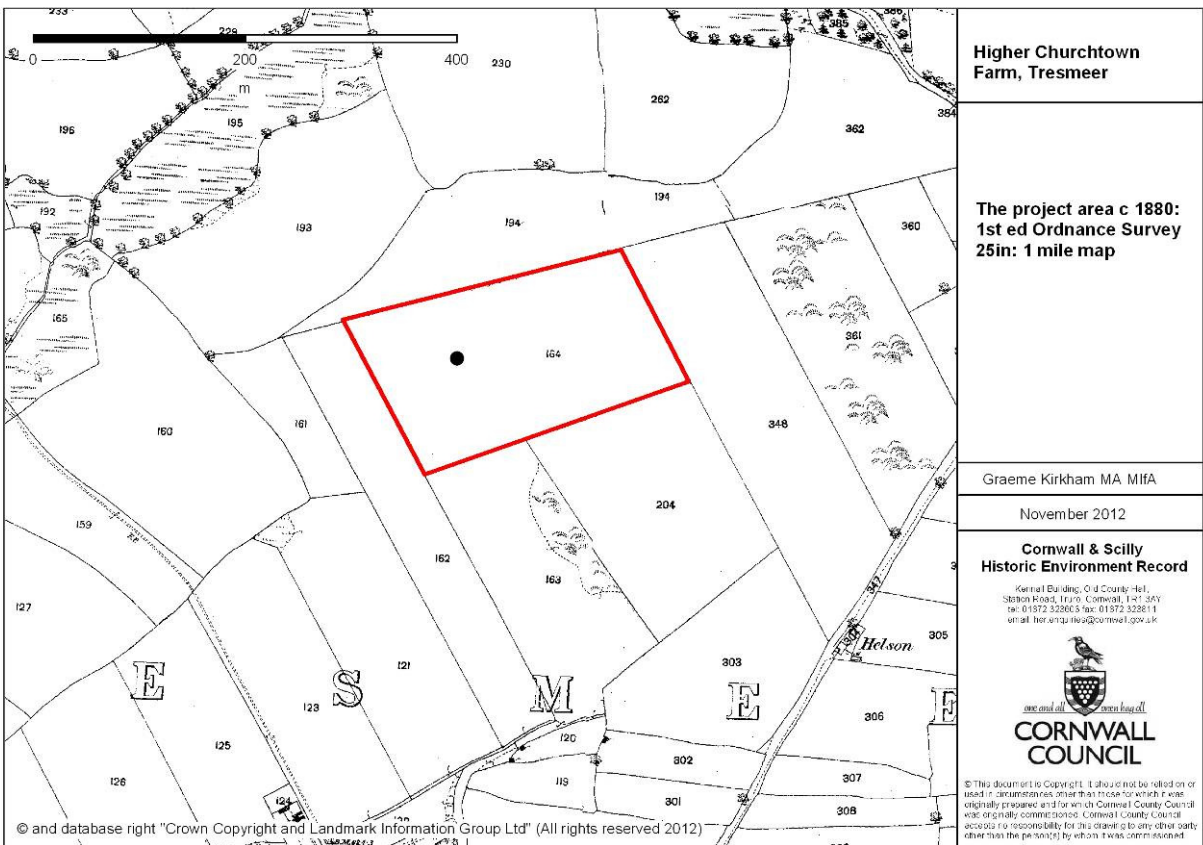


Fig 9. The project area and turbine location on the Ordnance Survey 1st ed 25in: 1 mile map of c 1880.

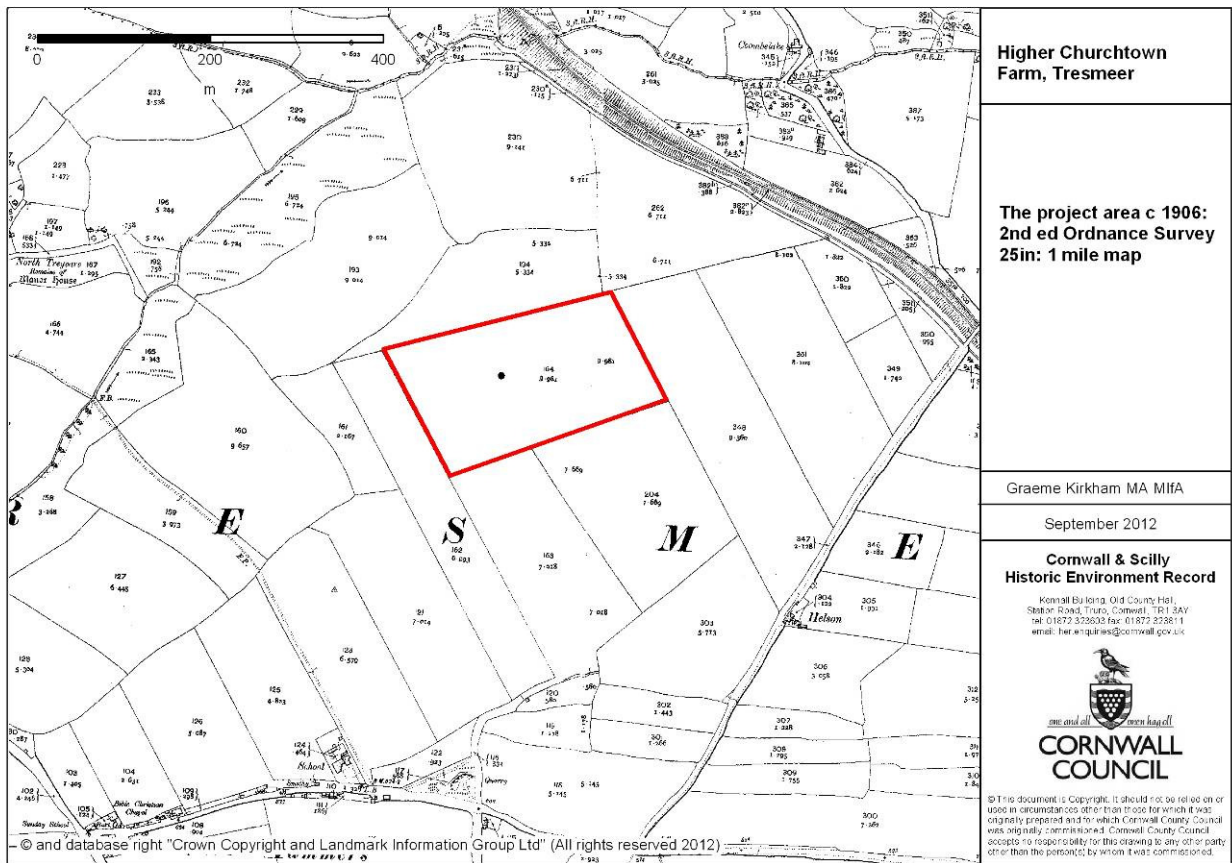


Fig 10. The project area and turbine location on Ordnance Survey 2nd ed 25in: 1 mile mapping of c 1906.

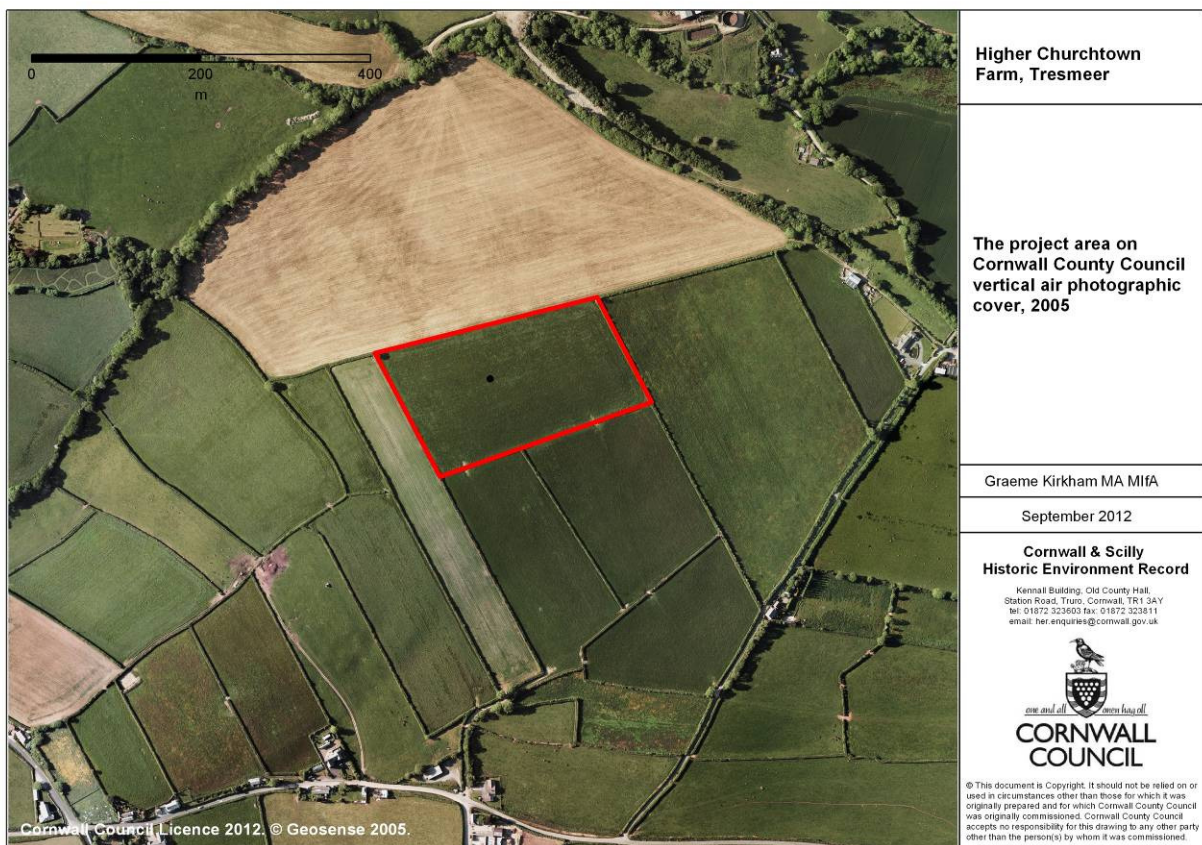


Fig 11. The project area and turbine location on a 2005 CCC aerial photograph (© Geosense 2005).

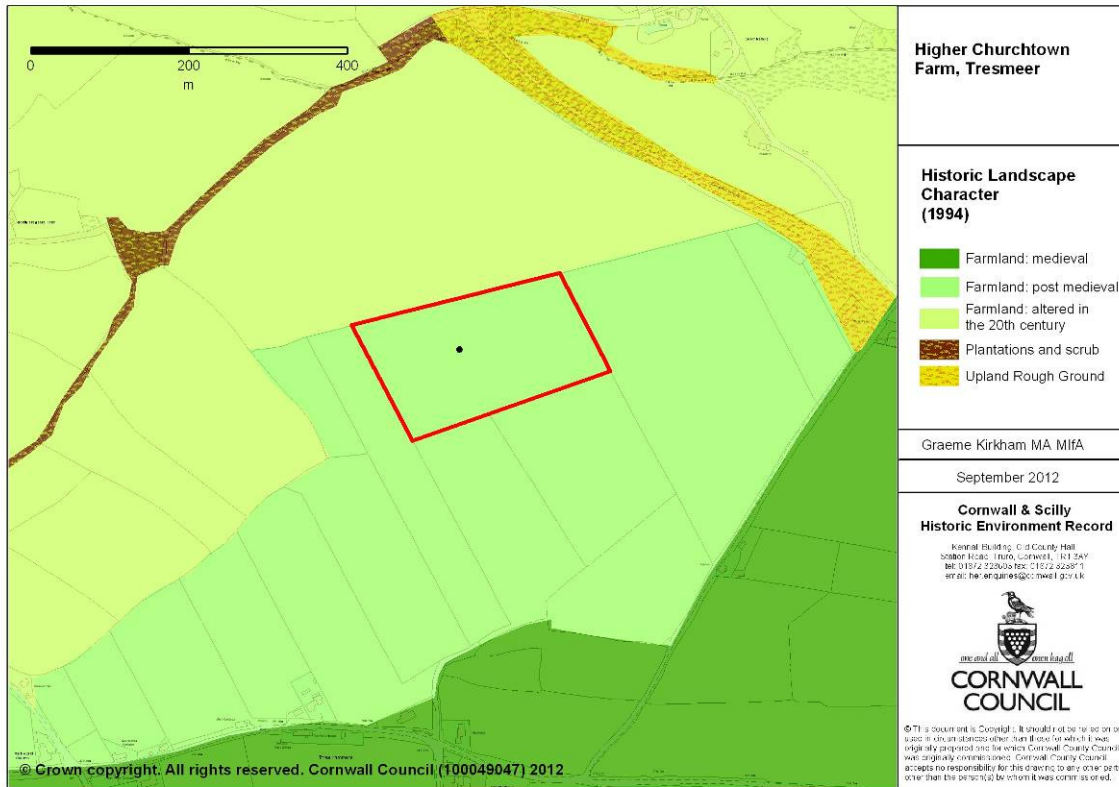


Fig 12. Historic Landscape Character mapping for the area around the proposed wind turbine. The immediate area represents late enclosure of rough ground; to the north is farmland which has been altered by removal of historic boundaries in the relatively recent past.

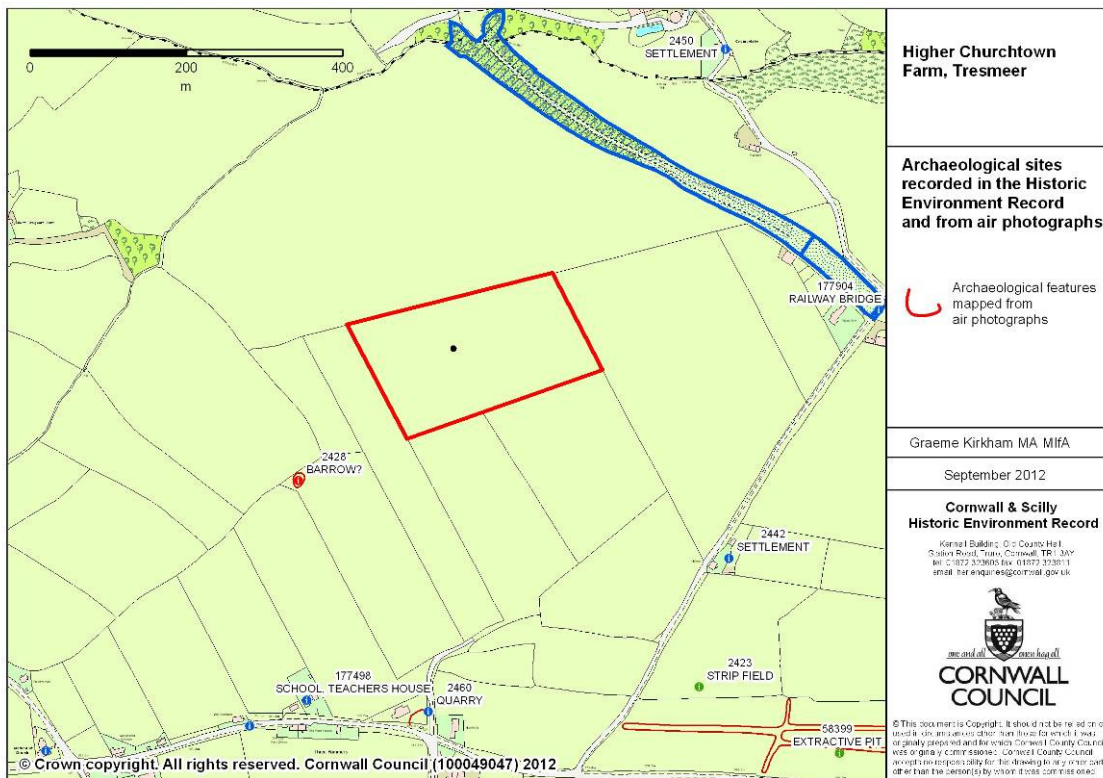


Fig 13. Sites recorded in the Cornwall and Scilly Historic Environment Record in the vicinity of the proposed turbine site, together with archaeological features mapped from air photographs. Relevant sites are discussed in the text.

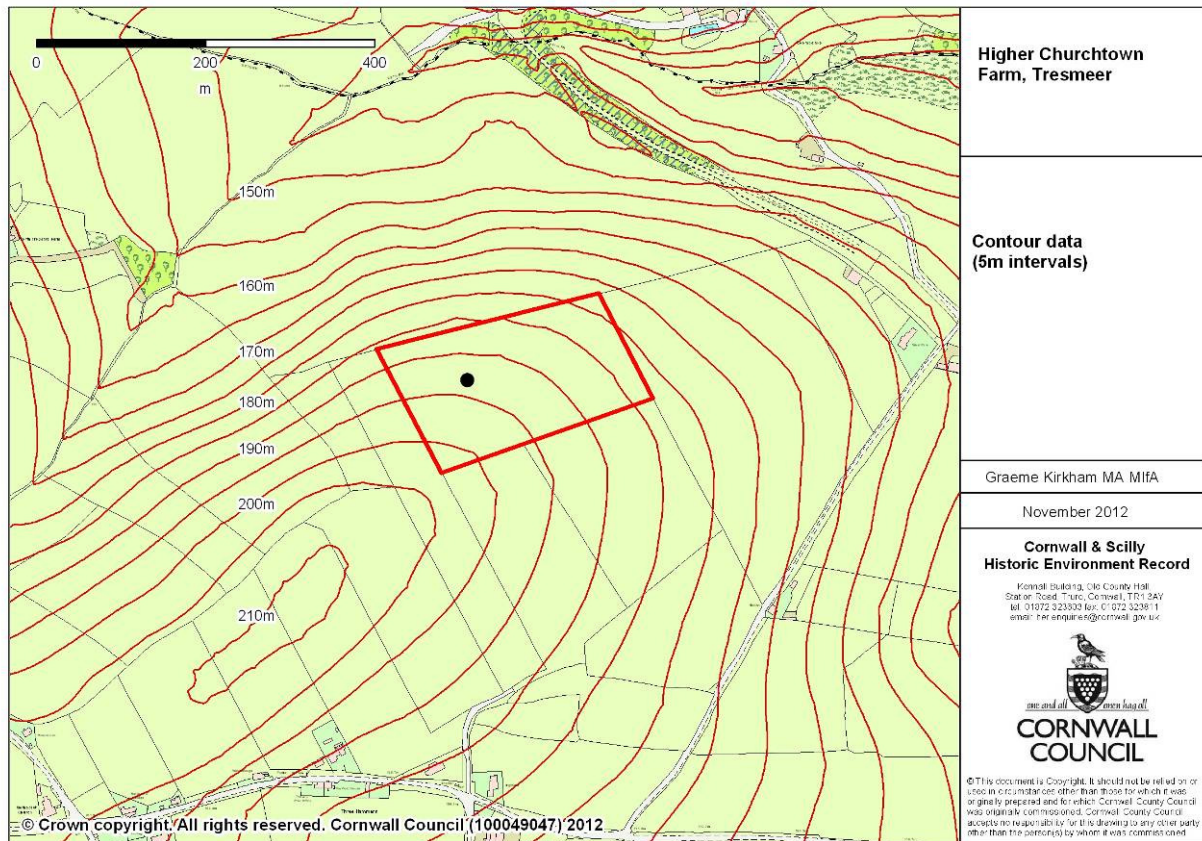


Fig 14. Contour data for the area immediately surrounding the proposed wind turbine shows the site located on a northern slope at the end of a relatively steep-sided ridge.

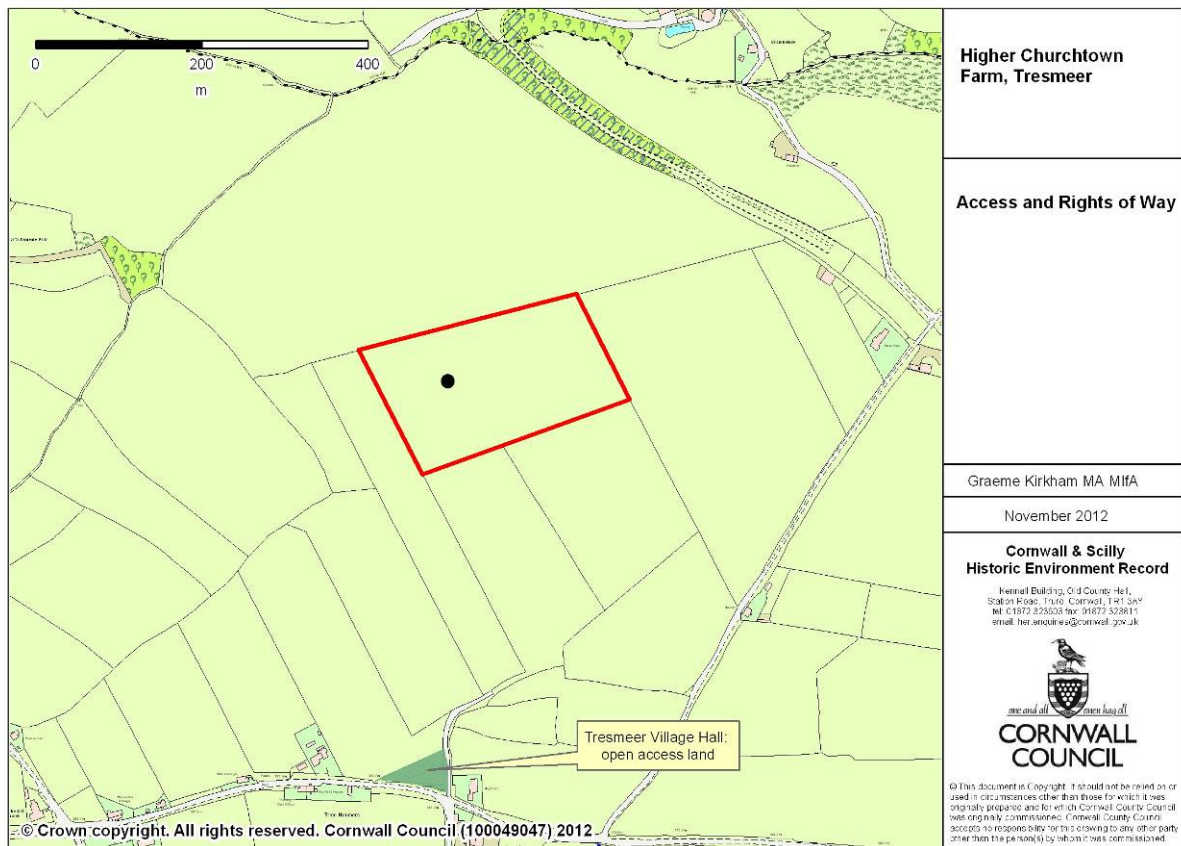
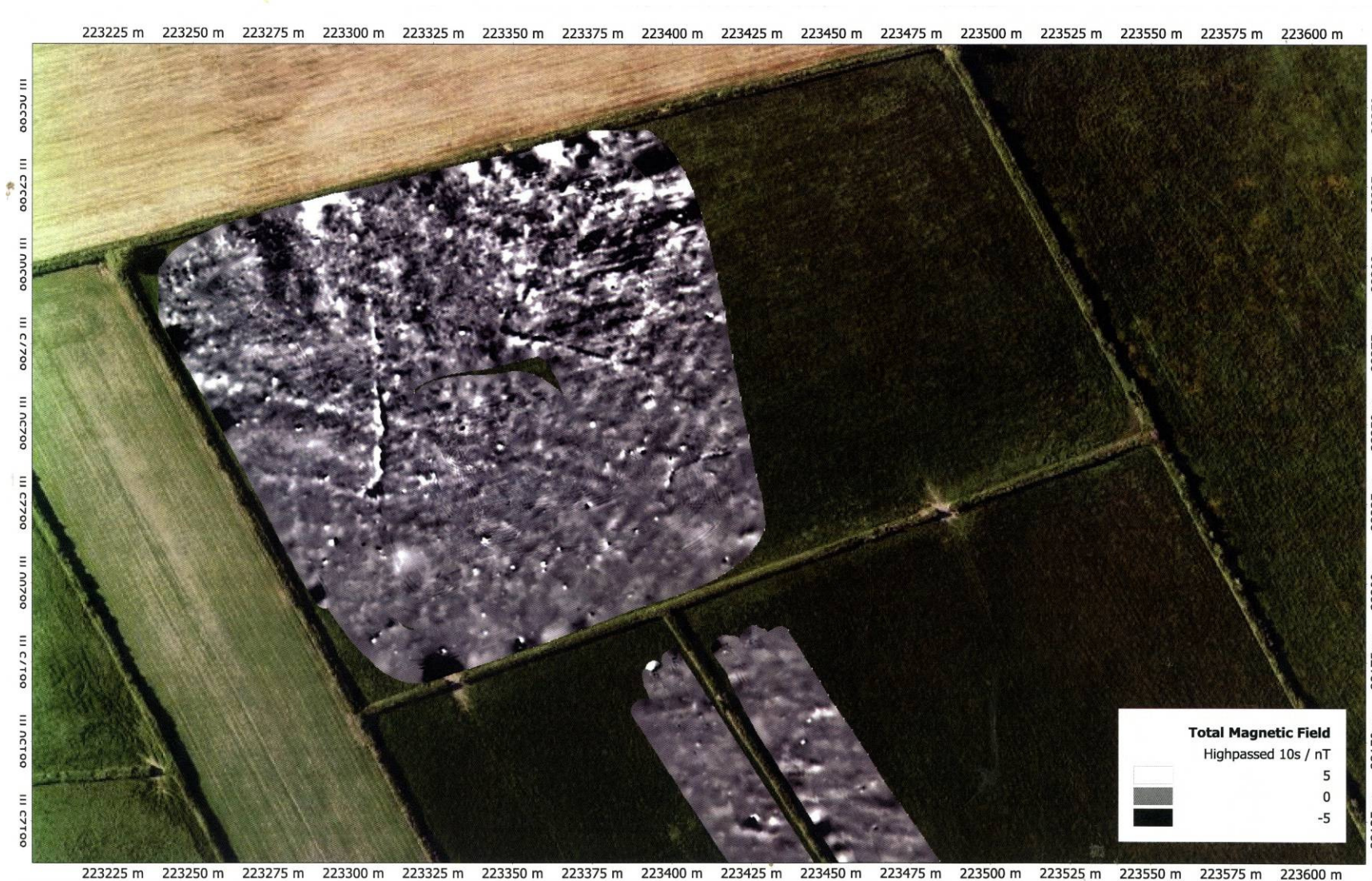


Fig 15. Access designations and Rights of Way (none) in the vicinity of the project area.



HTC121 Higher Churchtown Farm, Tresmeer, Cornwall
DWG 02 Magnetic Data - North



Orthographic Centre X: 223408.38 m Centre Y: 88240.68 m Scale: 1:1500 @ A4 Spatial Units: Meter. Do not scale off this drawing
File: HCT map from PERSEPOLIS 29/10/2012 Copyright ArchaeoPhysica Ltd 2012 OS OpenData Crown Copyright & Database Right 2012

Fig 16. Geophysics data for the northern part of the project area (ArchaeoPhysica Ltd).



Fig 17. Geophysics data for the southern part of the project area (ArchaeoPhysica Ltd).

Higher Churchtown Farm, Tresmeer: archaeological assessment of proposed wind turbine



Fig 18. Interpretation of the geophysical data for the northern part of the project area (ArchaeoPhysica Ltd).

Higher Churchtown Farm, Tresmeer: archaeological assessment of proposed wind turbine



Fig 19. Interpretation of the geophysical data for the southern part of the project area (ArchaeoPhysica Ltd).

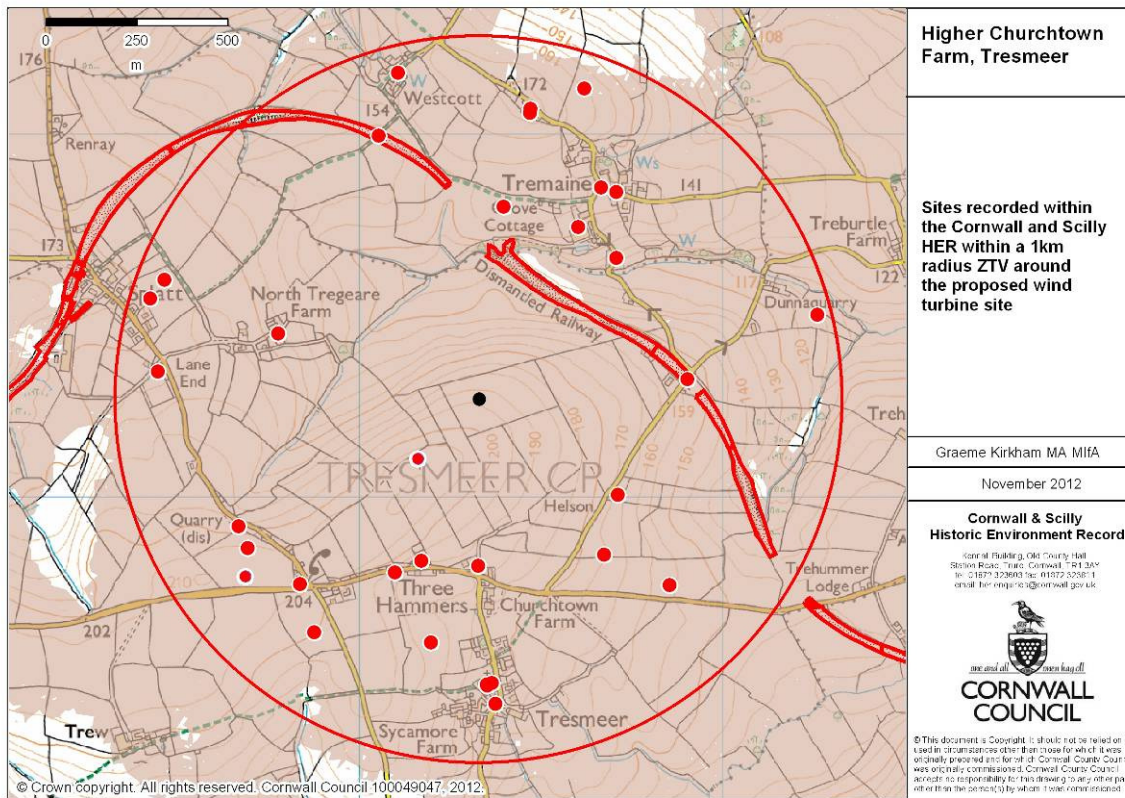


Fig 20. The ZTV, indicating potentially intervisible sites recorded in the HER within a 1 km radius of the site proposed for the wind turbine.

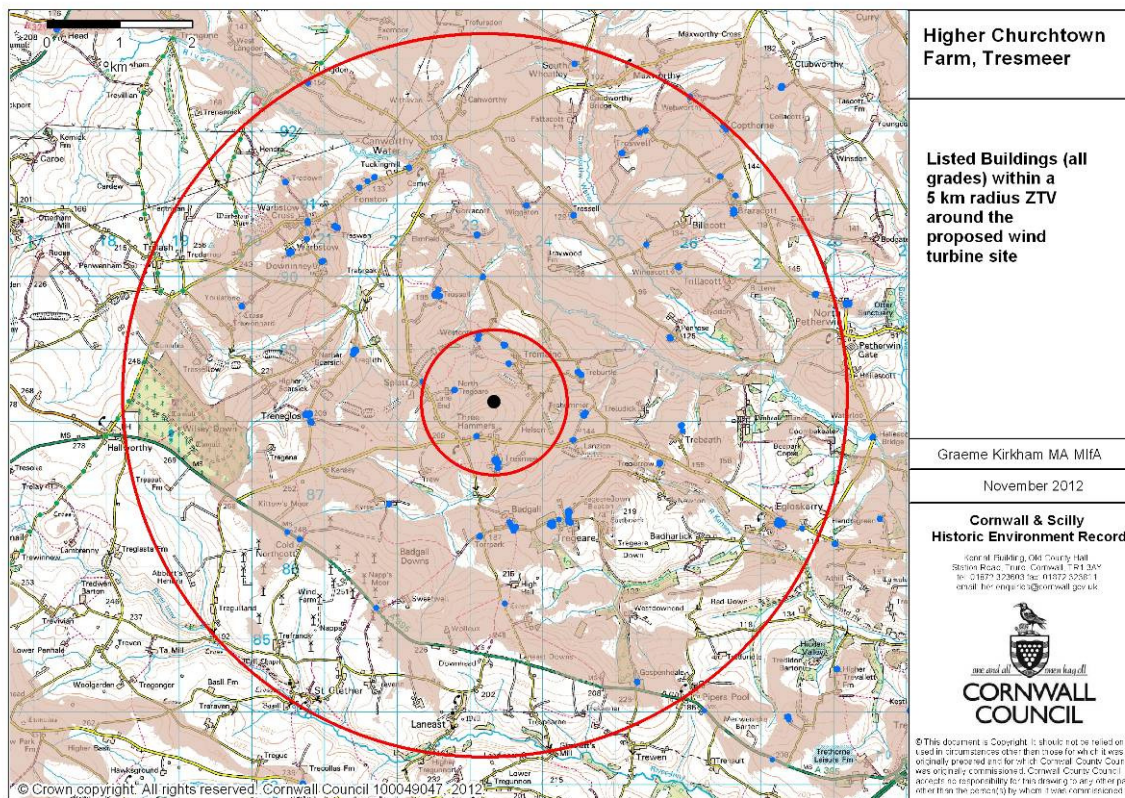


Fig 21. The ZTV within a 5 km radius of the proposed wind turbine site, showing potentially intervisible Listed Buildings (all grades).

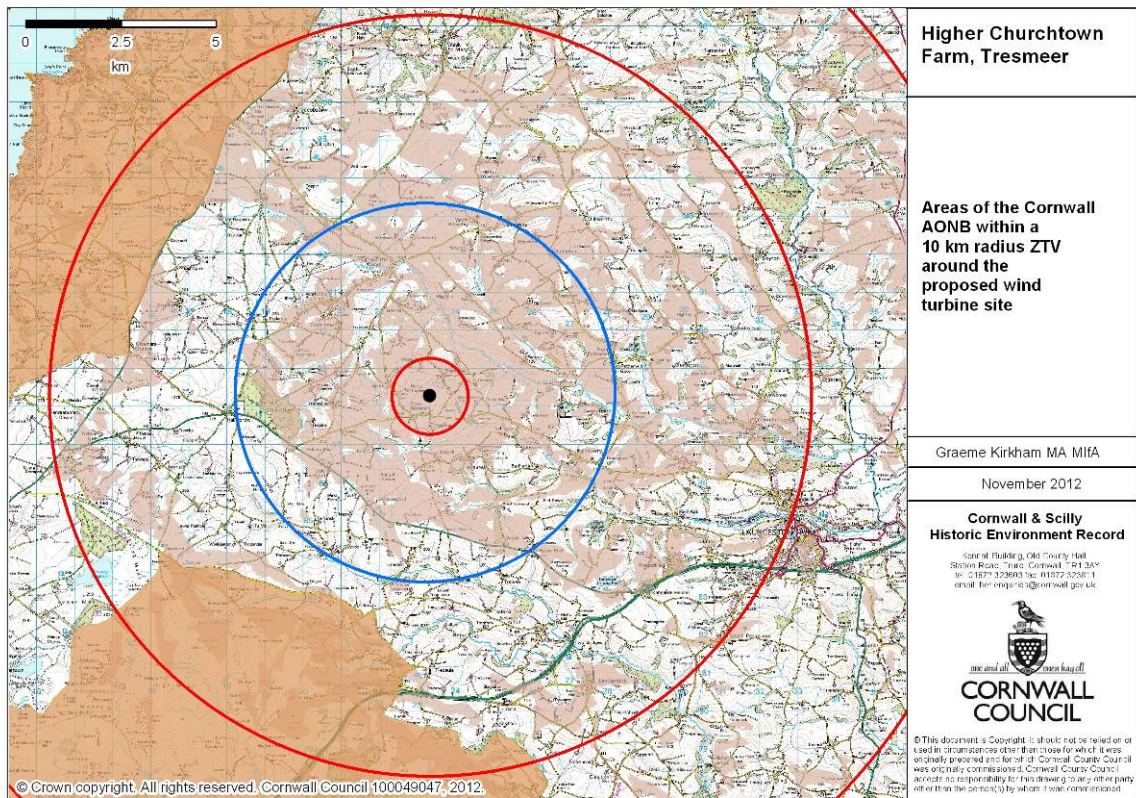


Fig 22. The Cornwall AONB within a 10 km radius ZTV of the site for the proposed wind turbine.

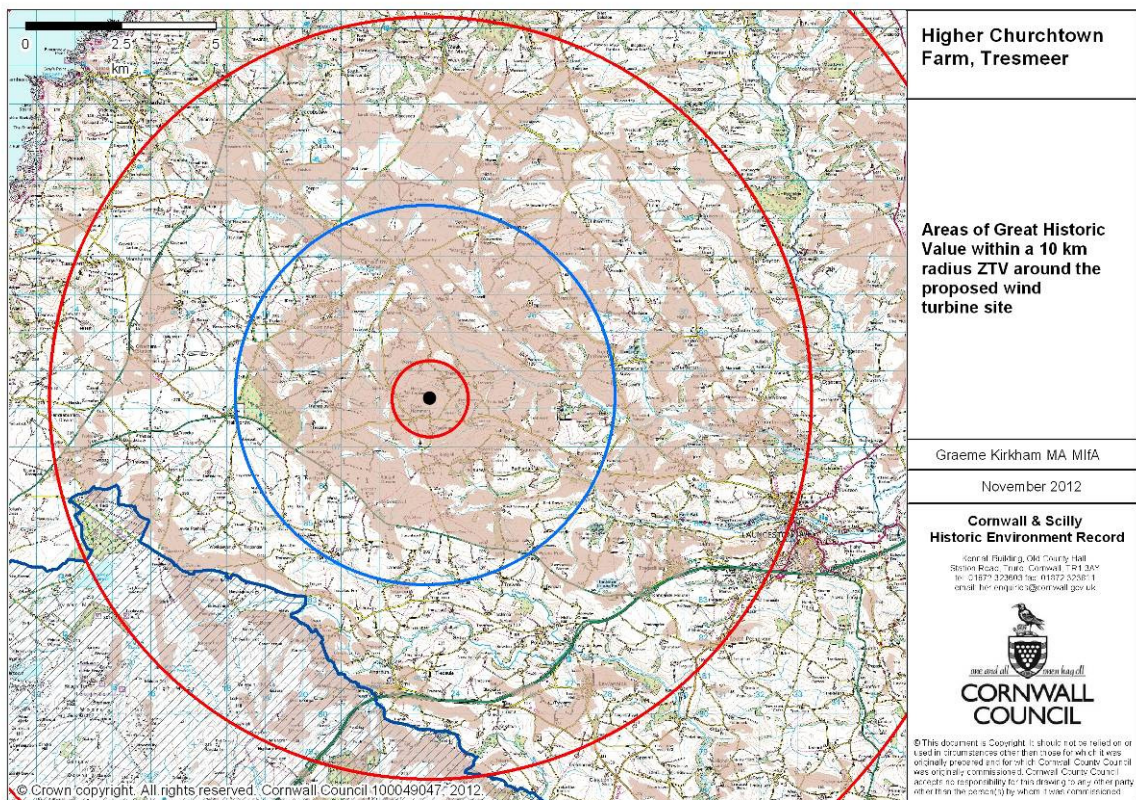


Fig 23. Areas of Great Historical Value (AGHV) within a 10 km radius ZTV of the site for the proposed wind turbine.

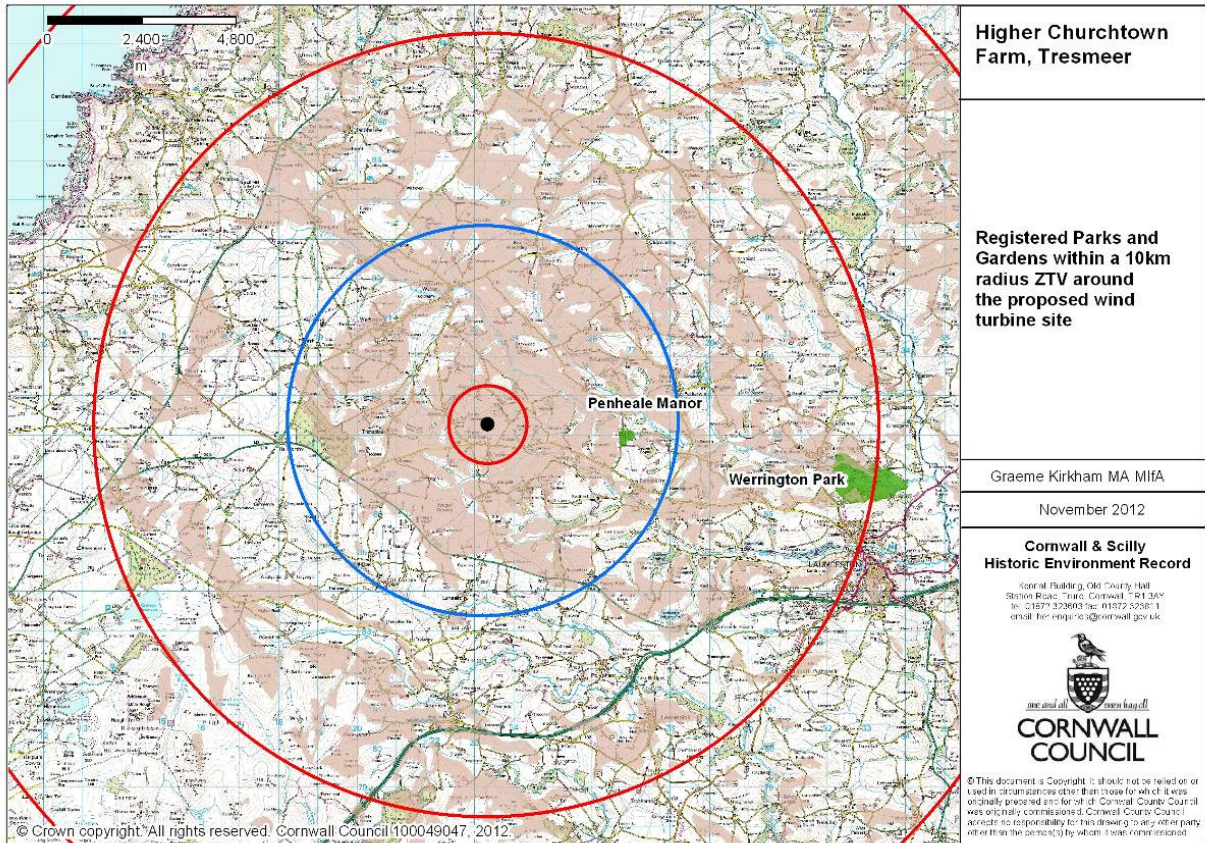


Fig 24. Registered Parks and Gardens within the 10 km ZTV of the proposed wind turbine site.

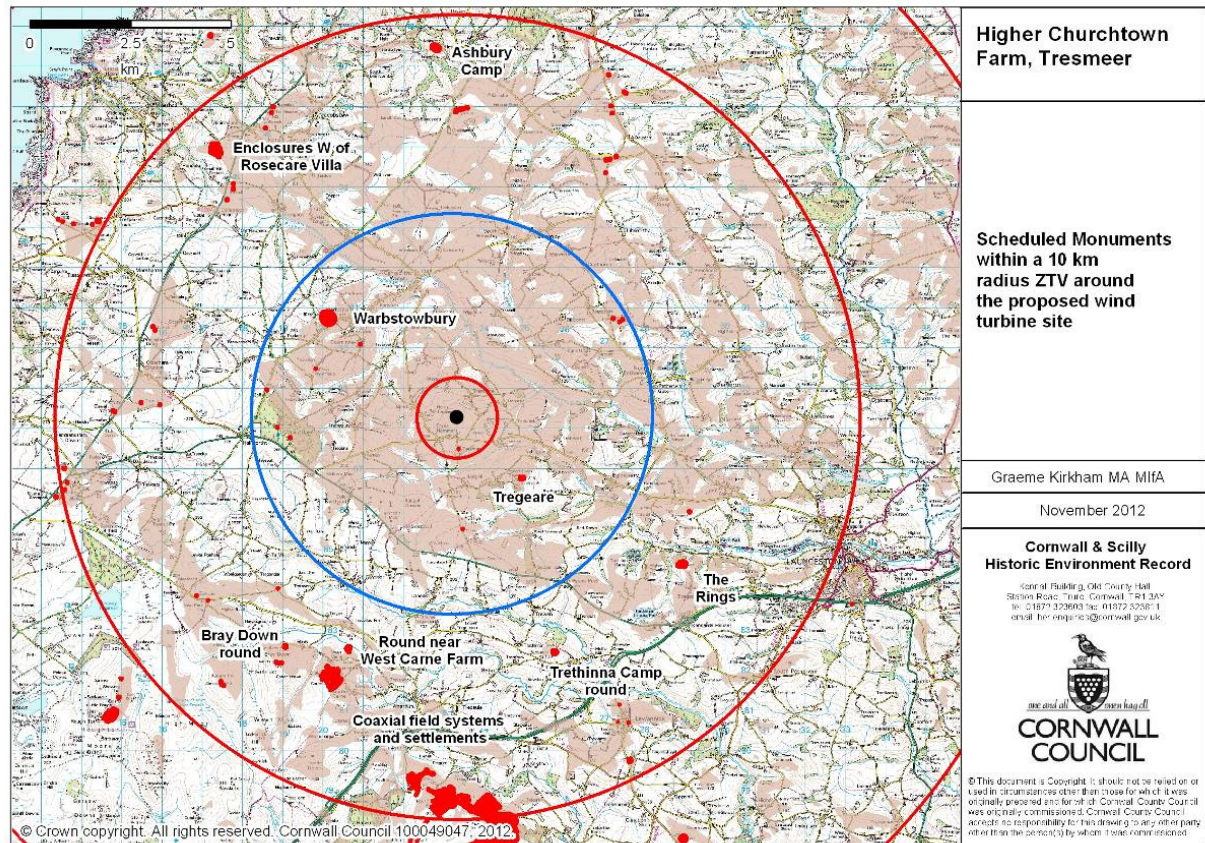


Fig 25. Scheduled Monuments within the 10 km ZTV of the proposed wind turbine site.

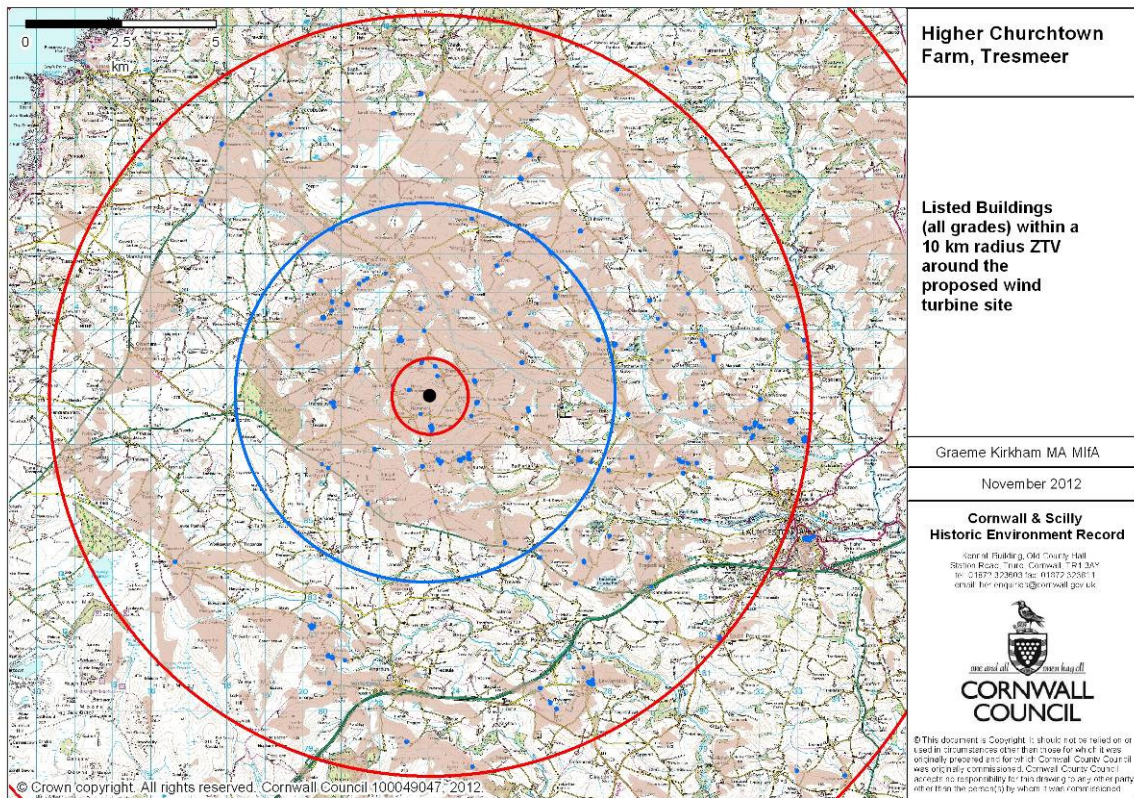


Fig 26. Potentially intervisible Listed Buildings (all grades) within the 10 km ZTV of the proposed wind turbine site.

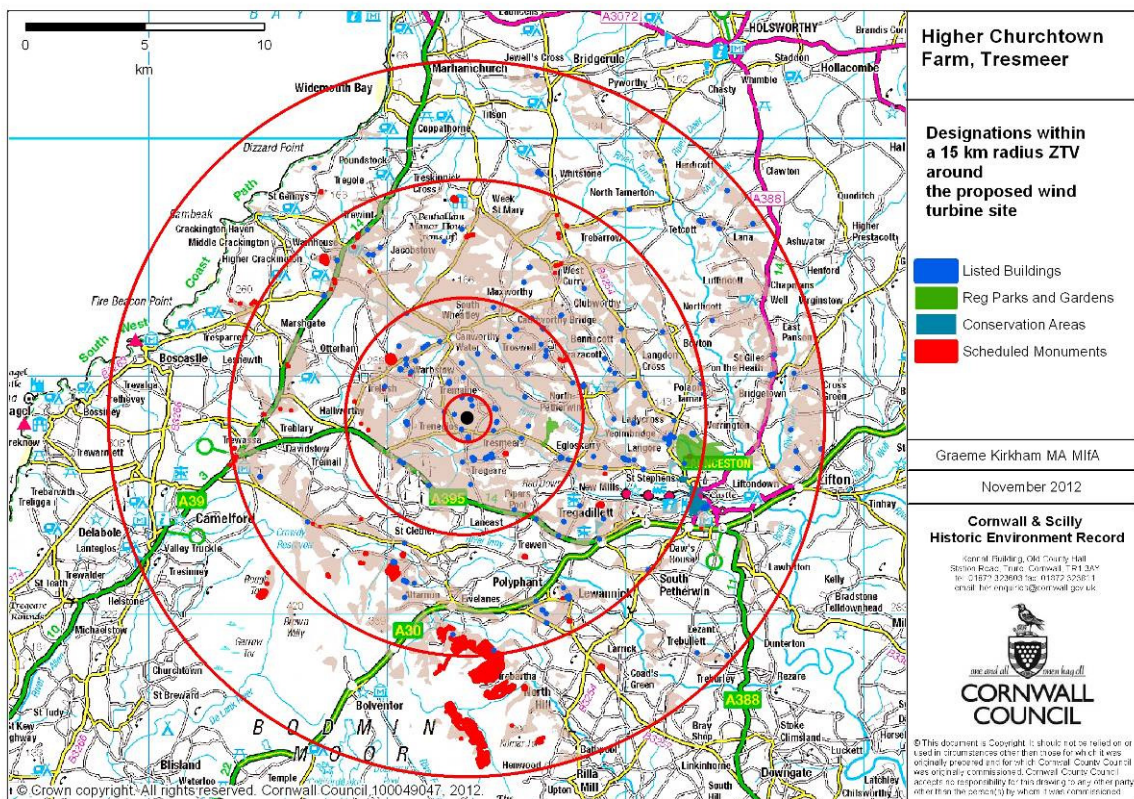


Fig 27. The 15 km ZTV for the proposed wind turbine at Higher Churchtown Farm, Tresmeer, showing potential intervisibility with designated areas and sites.



Fig 28. The view west-north-west from the proposed turbine site to Warbstowbury hillfort (centre, on the skyline) and two adjacent wind turbines, and to Warbstow church and village.



Fig 29. The view north from the proposed turbine site to the church of St Winwalo, Tremaine (Listed Building Grade I) and, to the right, Grove Cottage (Grade II).



Fig 30. The view west from the proposed site towards North Tregear. The Grade II Listed farmhouse is not visible in this view from ground level but the upper part of the turbine would probably be partly visible in the reverse view. The plantation at Wilsey Down on the horizon to the left shelters three Scheduled barrows. The church of St Gregory, Treneglos (Listed Grade II), lies below the plantation.*



Fig 31. The view north towards Westcott. The two Grade II Listed farmhouses are not visible in this ground level view but the upper part of the turbine could be partly visible from at least one of them in the reverse view.



Fig 32. The view east from the proposed turbine site. The roof of the Grade II Listed farmhouse at Trehummer is just visible over the surface of the field in the foreground. A row of pines the middle distance is on the drive to Penheale Manor (Grade II Registered Park and Garden) and woods on higher ground beyond are plantations to the west of Werrington Park.



Fig 33. Looking north east to Well Cottage (Listed Grade II) in Three Hammers. The upper part of the proposed turbine is likely to be visible from the rear of the property but may not be visible in public views of the designated asset from the adjacent road.



Fig 34. The view south from the churchyard of the church of St Winwalo, Tremaine (Listed Grade I) to the proposed turbine site 800m distant in the stubble field just below the skyline (centre).



Fig 35. The view south towards the proposed turbine site from the south porch of the church of St Winwalo, Tremaine.



Fig 36 The view south east towards the proposed turbine site (centre, below the skyline above the right-hand end of the gate in the foreground) from the perimeter of the churchyard of the church of St Werburgha, Warbstow.



Fig 37. The view from the interior of Warbstowbury hillfort towards the proposed turbine site (centre). Tregearedown Beacon lies immediately behind the turbine site.



Fig 38. The view from the inner rampart of Warbstowbury south towards a recently installed wind turbine near Trewonnard, and to the Cold Northcott wind farm on the skyline.



Fig 39. The view west from the inner rampart at Warbstowbury to two nearby wind turbines.



Fig 40. The view east from the perimeter of the churchyard of the church of St Gregory, Treneglos (Listed Grade II) towards the proposed turbine site, located on the higher ground on the near horizon just right of the centre of the image.*



Fig 41. The view south west to the proposed turbine site from the road adjacent to the Listed (Grade II) house at Winnacott. The turbine would be located on the prominent skyline with some turbines of the existing Cold Northcott wind farm visible behind it.*



Fig 42. The Listed Grade II High Hall cross on Laneast Down. Views north to the proposed wind turbine site are currently blocked by a small plantation of evergreens.



Fig 43. Looking south from High Hall cross to the newly-erected wind turbine at Lidcott.



Fig 44. The view north east towards the proposed wind turbine site in September 2012 from the northern slope of Bray Down, close to the Scheduled cairn group and enclosed settlement. The Cold Northcott wind farm is prominent in the landscape in the middle distance. (NB. Photograph not taken for the current project.)