



Tremaine Farm, Pelynt, Cornwall

Archaeological assessment of proposed wind turbine



Historic Environment Projects

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The viewshed mapping was carried out by Francis Shepherd.

The Project Manager was Adam Sharpe.

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

Looking north from the proposed turbine site at Tremaine Farm towards Bury Down.

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Abbreviations

EH	English Heritage
HER	Cornwall and the Isles of Scilly Historic Environment Record
HE	Historic Environment, Cornwall Council
MCO	Monument number in Cornwall HER
NGR	National Grid Reference
OD	Ordnance Datum – height above mean sea level at Newlyn
OS	Ordnance Survey

1 Summary

Historic Environment Projects, Cornwall Council, was approached by Claire Roberts of Capture Energy Ltd in late May 2013 with a request to provide costs for an archaeological assessment of a proposed wind turbine at Tremaine Farm, near Pelynt, as part of a proposed planning application.

The proposal is for a 500kW wind turbine with a hub height of 50m and a maximum blade tip height of 77m to be sited at Tremaine Farm in the eastern part of the civil parish of Lanreath, at SX 19166 56406. The site chosen for the wind turbine lies at a height of approximately 142m OD just to the west of a low hilltop within an area of dissected plateau backing the south coast of Cornwall and is likely to be visible over an extensive range of the surrounding countryside. The predominant historic landscape character of the surrounding farmland suggests a farming landscape laid out during the medieval period.

The assessment consisted of a desk-based assessment, viewshed analysis out to 10km from the turbine locations and a walkover survey. Photomontages supplied by the client were also consulted.

Given the nature of the location chosen for the wind turbine, it was anticipated that there was some potential for negative impacts on the settings of a number of important Scheduled Monuments and high grade Listed Buildings within a 10km radius; particularly close to the proposed site are elements of the Giants Hedge, the late prehistoric round of Bake Rings, the Grade I Listed church of St Manarck and St Dunstan and the Grade II* Listed Court Barton at Lanreath. The Conservation Area at Lanreath is just over 1km to the north west. Some impacts on the Historic Landscape Character of the landscape surrounding the proposed wind turbine were also anticipated.

A geophysical survey of the proposed development site indicated the potential for substantial surviving below ground archaeological features, multi-period field and enclosure boundaries and further anomalous pits and hollows immediately underlying the proposed turbine site having been tentatively identified.

Following the results of the viewshed analysis and a walkover survey, setting impacts resulting from the development were considered likely to be predominantly **negative/minor**, but with some potential for **negative/substantial** impact in the case of the Giants Hedge, which runs to the east of the site and is around 400m distant at its closest point.

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

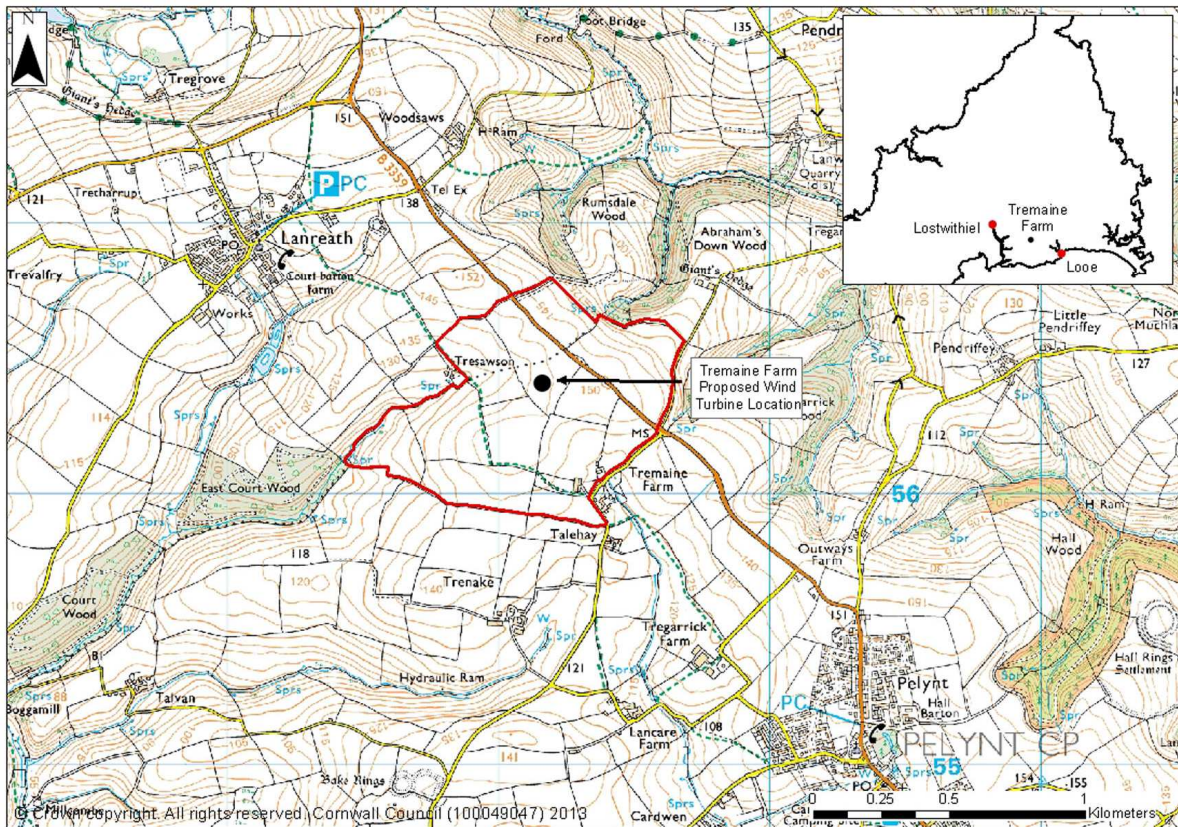


Fig 1 The Location of Tremaine Farm and the site of the proposed wind turbine

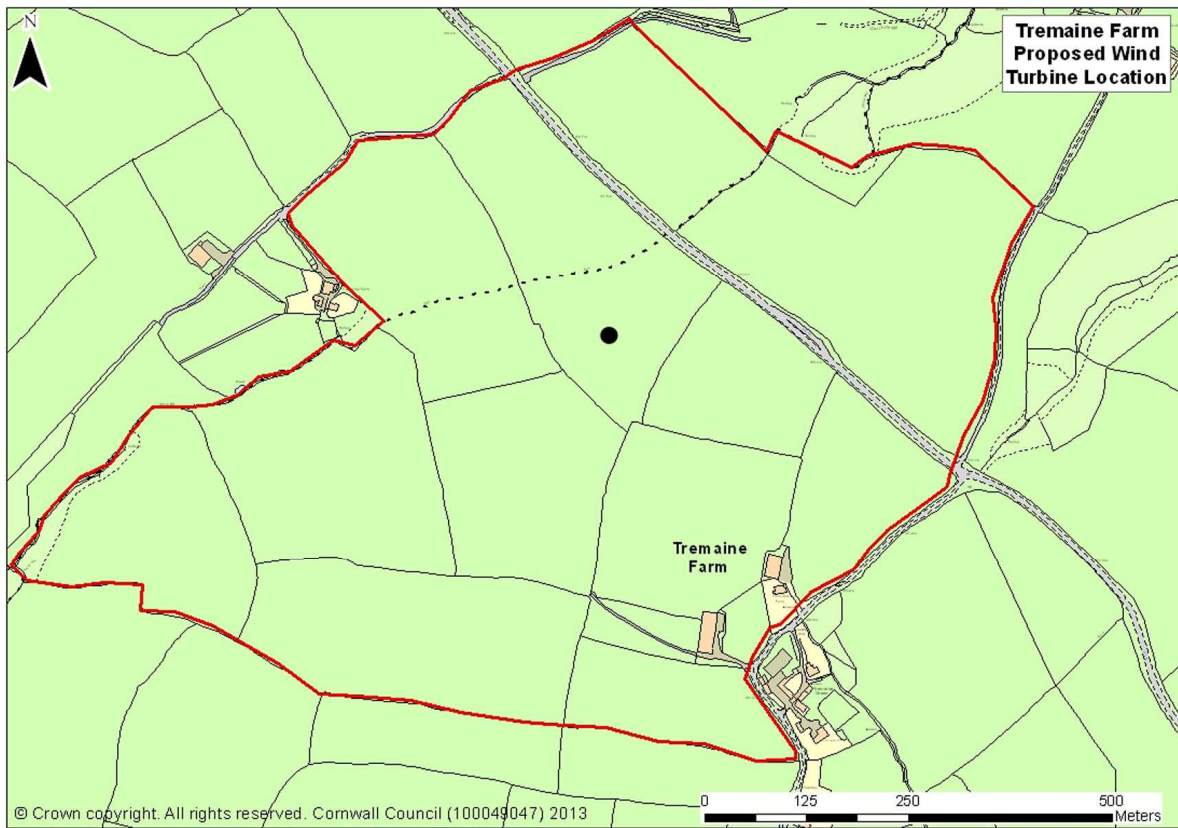


Fig 2 The location proposed for the wind turbine at Tremaine Farm

2 Introduction

2.1 Project background

Historic Environment Projects, Cornwall Council, were approached by Claire Roberts of Capture Energy Ltd in late May 2013 with a request to provide costs for an archaeological assessment of a proposed wind turbine at Tremaine Farm, near Pelynt, as part of a proposed planning application.

The proposal is for a 500kW wind turbine with a hub height of 50m and a maximum blade tip height of 77m to be sited at Tremaine Farm in the eastern part of the civil parish of Lanreath, at SX 19166 56406. The site chosen for the wind turbine lies at a height of approximately 142m OD just to the west of a low hilltop within an area of dissected plateau backing the south coast of Cornwall and is likely to be visible over an extensive range of the surrounding countryside. The predominant historic landscape character of the surrounding farmland suggests a farming landscape laid out during the medieval period.

The assessment consisted of a desk-based assessment, viewshed analysis out to 10Km from the turbine locations and a walkover survey. Photomontages supplied by the client were also consulted.

Given the nature of the location chosen for the wind turbine, it was anticipated that there was some potential for negative impacts on the settings of a number of important Scheduled Monuments within a 10km radius; principally elements of the Giants Hedge, the late prehistoric hillforts of Bury Down and Hall Rings, the late prehistoric 'Round' of Bake Rings, a group of ten barrows at Wilton Down and a group of three barrows near Hendra and Cartole, all lying within 3km of the site, the stone circle at Duloe around 4.9km to the north east, Mabel bowl barrow around 4.3km to the south west, several barrow groups situated on the hillslopes around 9km to the north west and the late prehistoric hillfort at Castle Dore, around 9km to the west.

Also within the 10km radius are a significant number of Listed Buildings, which were anticipated as having at least partial intervisibility with the proposed development site from certain points, with some potential for negative impact on their settings. Particularly close to the site are the Grade I Listed church of St Manarck and St Dunstan and the Grade II* Listed Court Barton at Lanreath, with the Grade I Listed church of St Nonna, at Pelynt, around 1.8km to the south east, and the Grade I Listed church of St Cuby, at Duloe, around 4.6km to the north north east.

The Conservation Area at Lanreath lies around 1km to the north west. The Registered Battlefield at Braddock Down is around 6.75km to the north. Three Registered Parks and Gardens at Bocconoc, Lanhydrock and Menabilly intersect the 10km radius viewshed, though the orientation of any designed landscapes within these, their topography and the distances away from the proposed development site will most likely limit any negative impacts on their settings. Some impacts on the Historic Landscape Character of the landscape surrounding the proposed wind turbine were also anticipated.

Generally, the visible impact of the proposed wind turbine was considered to be greatest within a 1km radius, there being likely to be fairly extensive intervisibility out as far as 3km and to the east and west out to between 5km and 10km. The nature of the local topography, however, significantly constrains the limit of potential vistas, with large areas within the 10km radius excluded from the ZTV in all directions, predominantly the lower valley slopes. Additional factors such as vegetation cover and buildings presence will most likely restrict potential views further still in some instances.

The potential for cumulative impacts was considered and the following judgement made in a pre-application assessment:

A pre-application for a 50 metre turbine at Tremaine, around 140m north west of the current site was submitted in 2012 under planning application number PREAPP12/00913. A turbine (size undetermined) was granted at Lancare Park, Pelynt, around 1.1km to the south east of Tremaine, in 2007, under decision notice number E2/06/01649/FUL, and is currently operational. A 25m turbine was granted at Polean Farm, Pelynt, around 2.8km south of Tremaine Farm under decision notice number PA12/04688 and is currently operational. A turbine (size undetermined) was granted for The Telephone Exchange, Lanreath, around 850m to the north west of Tremaine in 2004, under planning application number E2/04/01657/FUL, but planning permission has now lapsed. An application for a 50 metre turbine at Tresawson, around 360m to the north west, is currently at the pre-application stage. Two applications for a 44 metre and a 55 metre turbine at Bocaddon Farm, around 2.1km to the north west, were given screening opinions in 2011 and 2012 under planning application numbers PA11/02309 and PA12/06011; a further application for a 55 metre turbine at Bocaddon Farm was refused permission in 2012 under decision notice number PA12/09363 but is currently under appeal. An application for a 50m turbine at Woodford Farm, Lansallos, around 2.9km south west of Tremaine Farm, was given screening opinion advice in 2011 under planning application number PA11/03066. An application for a 50 metre turbine at Bosuen Manor Farm, around 2.8km north east of Tremaine Farm, had screening opinion withdrawn in September 2012 under planning application number PA12/07701. It is therefore considered that there is currently some potential for significant or adverse culmination with other development in this particular location, pending the outcome of current applications, both already approved and in process.

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

2.2 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 at Tremaine Farm, in the civil parish of Lanreath, near Pelynt.

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. A further objective is to create an entry for the OASIS/Online database.

2.3 Methods

2.3.1 Desk-based assessment

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

- Published sources available in the Cornwall and Scilly HER.
- Historic maps including
 - Norden's Map of Cornwall (printed in 1728 but mapped *circa* 1600)
 - Joel Gascoyne's map of Cornwall (1699)
 - Thomas Martyn's map of Cornwall (1748),
 - OS 1 inch survey (*circa* 1810)
 - Lanreath Tithe Map (*circa* 1840),
 - 1st and 2nd Editions of the OS 25 inch maps (*circa* 1880 and *circa* 1907).
- Modern maps.
- National Mapping Programme transcripts from aerial photographs.
- Other aerial photographs in the Cornwall and Scilly HER.
- Historic Landscape Characterisation mapping.
- Cornwall and Scilly Historic Buildings, Sites and Monuments Record (HBSMR).
- Information held as GIS themes as part of the Cornwall and Scilly HER.

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

2.3.2 Viewshed analysis

An assessment of the impacts of the proposals was made from the surrounding area using the guidelines and methodological approaches set out in English Heritage's recent consultation draft guidance on the setting of heritage assets. 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 viewshed analyses, several variables are used to limit or adjust the calculation including offset values, limitations on horizontal and vertical viewing angles (azimuth) and distance parameters (radius) for each observer point. For the proposed wind turbine at Tremaine, the viewsheds were based on 'overall observer elevation values' made up of the 'elevation values' or heights above sea level of the ground at the observer viewpoint, with added to this additional offsets of 50m to represent the heights of the turbine hub and 77m to represent that of its blades.

These viewsheds were checked on the ground, given that vegetation and other factors may substantially block views to and from key sites, whilst significant heritage assets within the theoretical viewsheds 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). Viewshed radii of either 10Km, 5km or 3Km were used to determine potential impacts on designated heritage assets (as appropriate) and a radius of 1Km for undesignated heritage assets (Figures 17 to 50).

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 1km, 3km, 5km and 10km from the site, as required by the HEPAO model brief and English Heritage guidance.

The site types within these data sets were then analysed to determine their likely sensitivity to impacts on their settings. Those site types which had no setting (documented sites) were excluded from further analysis, as were those which by their nature have very localised settings (for example, milestones, wayside crosses and fingerposts) except where in very close proximity to the application site. The resultant site lists were further filtered by close examination of the ZTV data and a 2005 vertical aerial photograph GIS layer to remove from the lists those sites where mature vegetation or proximal buildings would almost certainly block intervisibility and where intrusion into key views was unlikely. Designated sites with limited settings (most Grade II Listed Buildings) and those with local settings such as associated urban development which were more than 2Km from the application site tended to be excluded from assessment at this stage unless specific reasons such as wholly unimpeded intervisibility were identified for their retention. The assessment process was assisted by photomontages of some key locations that were made available by the client; these were examined to further evaluate potential intervisibility and the degree to which the proposed wind turbine would impinge on views of sensitive sites, and hence their settings.

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

2.3.3 Fieldwork

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

A walkover survey of the site proposed for the wind turbine and for its cabling was also undertaken; the site was examined for upstanding archaeology and the natures of the

boundary types which might be impacted upon during the development were recorded. A list of sites visited is contained within Section 9 of this report.

2.3.4 Post-fieldwork

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

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

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

3 Location and setting

The site proposed for the wind turbine at Tremaine is located at SX 19166 56406, just to the west of a low hilltop within an area of dissected plateau backing the south coast of Cornwall, at about 142m OD. The parent bedrock underlying the application site consists of Lower Devonian mudstones, siltstones and sandstones; no superficial (drift) deposits are recorded by the British Geological Survey. The agricultural classification of this land is Grade 2.

The site lies within a predominantly rural area to the south east of Lanreath, with the area immediately surrounding the proposed turbine site being recorded as Anciently Enclosed Land (Farmland Medieval). The boundaries enclosing the site field are largely traditional low Cornish hedges, the boundary bordering the road being a combination of low wooden fencing and recently planted hedging. Ground level views to the north offer views of Bury Down and its late prehistoric hillfort, now neighboured by a substantial telecommunications mast to its east (Fig 56). Ground level views to the north east round to the east are closed off by the roadside field boundary (Fig 57), whilst ground level views from the east round to the south east are also closed at the hedged field boundary in this direction (Fig 58). The Grade I Listed church tower of St Nonna, Pelynt, lies in a south easterly direction from the proposed turbine site, but was not visible from ground level. Ground level views to the south afforded a narrow glimpse of hilltop on the skyline (Fig 59), while views to the south west at ground level were closed by the hill crest in the neighbouring field (Fig 60). From the south west round to the north west, ground level views out from the site were more open, providing views across the deeply dissected hillsides and along the upper parts of the valley slopes. The valley floors are obscured from view, however, and substantial tracts of woodland further reduce visibility in some instances (Fig 61).

Tresawson Farm is visible to the north west from ground level, with the western edges of Lanreath also glimpsed beyond the treeline; the church and Court Barton were not visible in this direction from ground level as they were obscured by the levels of intervening tree cover (Fig 62). Ground level views to the north north west are closed off by the field boundary, which runs along the crest of the hill in this direction (Fig 63).

The settlement history of Tremaine and its surrounding landscape suggests it may have been extensively settled and farmed since prehistory. Around 1.5km to the south west of Tremaine lies the substantial late prehistoric and Romano-British enclosed settlement, or 'round' at Bake Rings, while around 2.4km to the south east, and 3km to the north east, are the late prehistoric hillforts of Hall Rings and Bury Down. Continuity

of settlement is indicated by the numerous hamlets and farmsteads, including Tremaine itself, whose early medieval place names suggest at least 12th or 13th century origins, but which, in all probability, have much earlier origins.

Within the surrounding area, the National Mapping Programme has recorded some evidence for surviving sub-surface archaeology showing as cropmarks or soil marks, including ploughed-out field boundaries and early settlement-related features. The remains of relict early medieval and medieval field systems are suggested at Tremaine and at nearby Polventon, and Tresawson to the north west (Fig 13). The Domesday settlement of Lanreath lies around 1.2km to the north west; the 15th century church of St Manarck and St Dunstan is Grade I Listed (1136993) and was originally the site of an early Christian 'Lann' (an enclosed churchyard), as suggested by the 'Lan' place-name element. The early 17th century Court Barton farmhouse, to the west of the church is Grade II* Listed (1137024) and has a well-preserved 18th century walled rabbit warren, which is Grade II Listed (1146528).

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 paragraph 129 of the 2012 National Planning Policy Framework (NPPF), 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 – 1km radius.
- Scheduled Monuments, Grade I and Grade II* Listed Buildings – 10km radius.
- Grade II Listed Buildings – 5km radius.
- Conservation Areas – 3km radius.
- Registered Parks and Gardens – 10km radius.

5 Designations

5.1 International

None apply to the site.

5.2 National

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

The 10km radius viewshed includes 28 potentially intervisible Scheduled Monuments (Fig 37. See also Figs 17, 23 to 27 and 38 to 41).

The 10km radius viewshed intersects two Registered Parks and Gardens (Figure 47. See also Figs 48 and 49).

The 10km radius viewshed includes 8 Grade I Listed Building and 8 Grade II* Listed Buildings (Fig 42, also Figs 15, 29, 34, 43 to 45).

The 3km radius viewshed mapping contains one Conservation Area (Fig 20).

Within the 3km radius viewshed, the wind turbine would be theoretically intervisible to some degree with a number of Grade II Listed Buildings or groups of Grade II Listed Buildings, including the farmhouses at nearby Trenake and Talehay, a number of buildings at Pelynt, including Pelynt House and the Old Schoolhouse, and two at Lanreath, both of which also fall within the Conservation Area (Fig 28).

Parts of the Cornwall South Coast-Eastern Area of Outstanding Natural Beauty (AONB) lies between the 5km and 10km radii to the south west and to the south of Tremaine, along the coast. The strip of coastline between Polruan and Polperro, around 6km to the south of Tremaine, is also a designated Site of Specific Scientific Interest (SSSI).

5.3 Regional/county

None apply to the site.

The proposed turbine site at Tremaine borders the Looe and Seaton Valleys Area of Great landscape Value (AGLV), which extends eastwards beyond the 10km radius. The Bocconoc and Mid Fowey AGLV extends across the north west area of the 10km radius zone around Tremaine, with the Caradon Hill AGLV intersecting the 10km radius zone to the north east.

5.4 Local

None apply to the site.

5.5 Rights of Way

No rights of way traverse the site proposed for the wind turbine, nor the remainder of the area across which the cabling will be undergrounded. This area is not registered as open access land under the CROW Act 2005.

6 Results of desk-based assessment

The site proposed for the wind turbine at Tremaine lies just to the west of a low hill, at around 142m OD (Figs 1, 2 and 12). The wider landscape takes the form of a deeply dissected plateau backing Cornwall's south coast, with the historic landscape in the vicinity of Tremaine predominantly characterised by field patterns of evolved medieval form set around farms, many of which are documented by the 12th to 13th centuries, although their origins may well be far older. Place-name evidence suggests a diverse settlement history for the surrounding area, with place-names being a mixture of those of both Cornish and English derivation, and variously influenced by the nature of their origin or aspects of their physical location within the surrounding landscape. Tremaine, for example, derives from the Cornish element 'Tre', indicating a farmstead of early medieval origin, and the Cornish place-name element *men*, 'stones'. The neighbouring settlement of Tresawson also contains the 'Tre' prefix and the Cornish place-name element *zowzon*, 'Englishman'. The early medieval settlement of Talehay, to the southwest of Tremaine, is first documented earlier in the 14th century than either Tremaine or Tresawson, but is of English derivation and contains the place-name element *hay*, 'clearing'; the whole meaning 'at the clearing'. The larger settlements of Pelynt, to the south east, and Lanreath, to the north west, are documented as secular manors at Domesday, but their place-names indicate earlier ecclesiastical origins. Pelynt is recorded as 'Plunant', combining the place-name element of 'Plu', 'people of the parish', with the Saints' name *Nonna*, after which the parish church is dedicated. Lanreath contains the prefix 'Lan', suggesting the site of an early Christian centre, with the suffix *reath* possibly indicating a personal name (Padel 1985; 1988), but stated by Tonkin, in Gilbert (1838, 394), to be old English for 'law'. Numerous smaller farming settlements of early medieval or earlier origin are represented by 'bod', 'bos' or 'bot' place-names, whilst within the wider landscape are many settlements with place-name elements derived from local topographical features, such as Pendriscott, 'pen', 'head',

dres, across, beyond and 'cos', wood, or Penadlake, originally 'Benathelec', 'place of the broom plants'.

Clearly, the rural landscape surrounding Tremaine demonstrates a considerable time depth of farming settlement. Because it has been a focus for human activity over a long period, the archaeological potential of such land is regarded as high. The evidence for a continuum of settlement and farming since at least later prehistory can be inferred by the local prominence of late prehistoric/Romano-British enclosed settlements, or 'rounds', such as nearby 'Bake Rings', and late prehistoric hillforts, such as nearby 'Hall Rings' and 'Bury Down'. Located along the high ridges and hilltops, sites such as these would have dominated the social infrastructure of the Iron Age and into the Roman period. Hillforts, in particular, are thought to have been significant places within Iron Age communities, possibly used as the focii for a variety of activities such as feasting and ritual celebration, but also likely to represent centres of commerce and trade, hierarchical display and social organisation, as well providing a possible respite in times of trouble. They were designed to be visible in the wider landscape, both as focii for the local communities they served and as a demonstration of the status, power and wealth of local ruling elites to others.

The Roman period itself remains poorly understood in Cornwall, but, in addition to the pantheon of native 'Romano-British' rural settlement within the county, past and recent evidence is demonstrating that the valleys and headlands bordering the Rivers Camel and Fowey were clearly areas with a significant Roman military presence; the recently discovered Roman fort at Restormel is situated around 10.2km to the north west of Tremaine, at a strategic location above the River Fowey, close to the later Norman castle.

Distinct evidence for even earlier settlement is also to be found in the locality, with numerous Bronze Age barrow cemeteries situated on the higher ground to the south of Tremaine, at Wilton, Hendra and Cartole, for example, and on the prominent ridge of hills to the north west in the vicinity of Grey Mare Lodge, West Taphouse, Penadlake, Ironmine Plantation and Fairy Cross. In addition, a Bronze age stone circle at Duloe, the smallest of its kind recorded in Cornwall, is located below a west facing hill crest around 4.8km to the north north east of Tremaine.

The first mapping depicting this area is John Norden's map, drawn up at the end of the 17th century, though not published until 1728 (Fig 3). The map depicting West Hundred showed the principal churches, settlements and great houses; Lanreath and Pelynt were shown on this map, as were Tregarrick and Landwarnick, complete with the names of their contemporary landowners. Court Barton Farm at Lanreath was shown in the ownership of Charles Grills, a name which also appeared on Joel Gascoyne's more detailed map of Cornwall in 1699 (Fig 4). Gilbert (1838, 394) stated that Grills sold the Court Barton to John Buller, the Buller family were also shown as owners of Tremaine lands in the *circa* 1840 tithe apportionment for Pelynt. Gascoyne's map also showed Lanreath, Pelynt and Tregarrick, but additionally named Trenake, or *Trenack*, to the south west of Tremaine. Thomas Martyn's map (Fig 5), drawn up a few decades later, showed a rather more detailed landscape again, though the reprint copy for this area is rather poor quality. The named farmsteads differ slightly from Gascoyne's map, however; Tremaine was named for the first time, as was Tresawson to the north.

The 1st Edition of the Ordnance Survey 1" to a mile mapping (Fig 6), dating to the first decade of the 19th century, is more topographical than the earlier examples, indications of terrain and areas of woodland being included, in addition to the network of settlement and roads. Lanreath and Pelynt were both named, as were the settlements of Tremaine, Tresawson, Polventon, Tregarrick, Trenake and Talehay, though the spelling of settlement names differ in some instances; Trenake was spelt as *Trenaix*, for example.

The site proposed for the wind turbine at Tremaine lies within the Tremaine holdings in the ecclesiastical and civil parish of Pelynt. The field within which the proposed site lies

was shown as a number of smaller enclosures at the time of the *circa* 1840 Tithe Map (Fig 7). The enclosure containing the proposed turbine site was numbered 1543 on this map and was named as Great North Park in the associated *circa* 1840 tithe apportionment. The western and eastern boundaries of this enclosure appear slightly curvilinear in shape, as do some of the neighbouring field boundaries recorded on the *circa* 1840 tithe map to the east (Fig 7). The morphology of the immediate agricultural fieldscape, combined with the evidence surmised from National Mapping Programme (NMP) data (Fig 13) and the field names recorded in the tithe apportionment, suggests the site potentially lies within an area of secondary, possibly early to mid 19th century, enclosure, which replaced an early medieval or medieval field pattern whilst retaining some elements of medieval common field and strip field boundaries. The study area for Tremaine incorporates parts of the holdings recorded for Tremaine in the tithe apportionment for Pelynt, along with a small number of fields recorded for Tresawson, to the north, in the tithe apportionment for Lanreath (Fig 7). Frederick William Buller was recorded as the landowner of both Tremaine and Tresawson, with Thomas Bryant and Joseph Leach recorded as the occupiers of Higher and Lower Tremaine, respectively. John and William Harris were recorded as lessees of Tresawson, with John Harris also the occupier. The field numbers, names, acreage and land use of the fields incorporated within the study area were recorded as follows:

Higher Tremayne:

• 1049		Furze	0 acres, 0 poles, 31 perches
• 1050	Great Park	Arable	6 acres, 2 poles, 13 perches
• 1051	Lane End	Arable	4 acres, 0 poles, 33 perches
• 1052	Lower Field	Arable	3 acres, 3 poles, 8 perches
• 1053	Lower Field	Arable	4 acres, 0 poles, 14 perches
• 1054	Quarry Park	Arable	4 acres, 2 poles, 28 perches
• 1530	Garden Meadow	Arable	1 acre, 0 poles, 2 perches
• 1531	Garden		0 acres, 1 pole, 2 perches
• 1532	House etc		0 acres, 3 poles, 0 perches
• 1533	Orchard		0 acres, 1 pole, 5 perches
• 1534	Child Meadow		0 acre, 3 poles, 10 perches
• 1535	Road		1 acre, 2 poles, 14 perches
• 1536	Bove Town	Arable	6 acres, 1 pole, 38 perches
• 1537	Little Stone Park	Arable	3 acres, 1 pole, 9 perches
• 1538	Lower Long Park	Arable	2 acres, 3 poles, 18 perches
• 1539	Mowhay Meadow	Arable	1 acre, 1 pole, 11 perches
• 1540	Higher Long Park	Arable	2 acres, 3 poles, 28 perches
• 1541	Stone Park	Arable	4 acres, 2 poles, 13 perches
• 1542	Little North Park	Arable	3 acres, 0 poles, 10 perches
• 1543	Great North Park	Arable	4 acres, 1 poles, 33 perches

Lower Tremayne:

• 1520	Garden		0 acres, 0 poles, 37 perches
• 1521	Orchard		0 acres, 3 poles, 6 perches
• 1522	Long Moor	Arable	2 acres, 1 pole, 24 perches

• 1523	Bove Town	Arable	6 acres, 0 poles, 19 perches
• 1524	Post Park	Arable	6 acres, 1 pole, 25 perches
• 1525	Middle Park	Arable	4 acres, 3 poles, 23 perches
• 1526	Furze Park	Arable	4 acres, 1 pole, 34 perches
• 1527	Cost is Lost	Arable	5 acres, 1 pole, 25 perches
• 1528	High Park	Arable	5 acres, 1 pole, 27 perches
• 1529	Way Park	Arable	3 acres, 2 poles, 20 perches
• 1544	Lower Oxen Park	Arable	4 acres, 3 poles, 0 perches
• 1545	Higher Oxen Park	Arable	6 acres, 2 poles, 36 perches
• 1546	Harding's Park	Arable	6 acres, 2 poles, 15 perches
• 1547	Quarry Park	Arable	4 acres, 0 poles, 13 perches
• 1548	Coomb Park	Furze	4 acres, 0 poles, 13 perches
• 1549	Coomb Park	Arable	4 acres, 0 poles, 6 perches
• 1550		Furze	3 acres, 2 poles, 20 perches

Tresawson:

• 1107	Little East Way	Arable	3 acres, 3 poles, 39 perches
• 1108	Higher Bovetown	Arable	4 acres, 1 pole, 28 perches
• 1109	Lower Bovetown	Arable	5 acres, 2 poles, 20 perches
• 1116	Lower Bovehay	Arable	4 acres, 0 poles, 21 perches
• 1117	Higher Bovehay	Arable	4 acres, 2 poles, 4 perches
• 1118	Greater East Way	Arable	9 acres, 2 poles, 0 perches

The land use information indicates that almost all of the fields making up the holdings had been in arable use within the seven years prior to the 1840 tithe assessment, as would have been expected within this part of Cornwall's agricultural heartland. Although the majority of field boundaries to these forty-three fields and enclosures remained comparatively unchanged during the late 19th century (Fig 8) and into the first decade of the 20th century (Fig 9), the field containing the proposed wind turbine site, Great North Park, had become amalgamated with Little North Park to the east by the late 19th century (Fig 8). The two fields recorded in the Lanreath tithe map and apportionment, to the north, Higher Bovetown and Higher Bovehay had also become amalgamated by the late 19th century (Fig 8). At some point after the first decade of the twentieth century these four fields were further amalgamated, resulting in the formation of a single larger enclosure (see Fig 10).

7 Results of geophysical survey

See Figures 51 to 55

A gradiometer survey was undertaken by Substrata (Dean 2013a) on 9 September 2013, this covering a 1.3Ha area around the site originally proposed for the turbine and a 30m wide access corridor centred on the proposed cable connection route.

The results of the survey was summarised by Substrata (Dean 2013a, p1) as follows:

The magnetic contrast across the survey area was relatively good and was sufficient to distinguish between anomalies representing potential archaeology and natural deposits.

Thirty-two magnetic anomaly groups were identified as representing potential archaeological deposits. The majority of the groups are typical of anomaly patterns representing former field boundaries, tracks and enclosures from earlier, multiple phases of archaeological deposition. Five anomaly groups possibly representing large pits were recorded.

The most obvious feature recorded by the geophysical survey appears to represent a ploughed out Cornish hedge boundary (Figs 49 to 52) that aligns with the current field system; this is most likely the boundary recorded on the *circa* 1840 tithe map for Pelynt and removed prior to *circa* 1877 when the OS 1st Edition 25" to a mile mapping was surveyed (Fig 8). Underlying this boundary are a number of linear and curvilinear features, pits, and hollows that potentially reflect the remnants of multi-phase field boundaries, trackways and enclosures (Dean 2013a, 6 and see Figs 51 to 55). The potential scope and time depth of agricultural activity on this site and the surrounding area are further indicated in the results of a similar gradiometer survey in the adjacent field to the north at Tresawson, ahead of a second wind turbine application there (Dean 2013b). The National Mapping Programme (NMP) has also plotted the remains of relict field boundaries which survive as cropmarks or low earthworks (Fig 13).

8 Results of site walkover

See figures 56 to 80

A site walkover was undertaken on 25 and 27 September 2013. The first visit was in fair weather to begin with but this rapidly declined into low cloud and drizzly rain, followed by heavier rain and fog. The second visit was made to reassess the site in better conditions; the day was bright and breezy with clearer visibility, although haze was evident in distant views.

The proposed turbine site is located in the south west corner of a field currently under a low fodder crop. The site lies just to the west of a low hill crest, from where the ground slopes gently away to the north west (see Figs 62 and 63). Where visible, the field boundaries are predominantly low traditional Cornish hedges, except on the roadside boundary to the north east, where the boundary comprises low wooden fencing and what appeared to be more recently planted hedging (Fig 57). Generally, the views from the proposed turbine site are relatively local and closed in by the lay of the land from the north east round to the south. There are partial skyline views to the north towards Bury Down (see report cover image), with more open views to the south west and west across the deeply dissected ridges and plateaux bordering the Fowey estuary (Figs 60 and 61). A rapid walkover of the site revealed no apparent above ground features; the present crop cover obscured the ground surface and no artefacts were recovered from the soil.

There were no impediments to the second site walkover, with relatively good visibility possible in all directions. To the north there were skyline views across the hedgeline towards Bury Down; the upper part of a prominent telecommunications mast close to the hillfort was also clearly visible (Fig 56). To the north east the views were closed by the field boundary bordering the main road (Fig 57). To the south east and south the views were also closed by the hedgelines along the field boundaries (Figs 58 and 59), bar a narrow glimpse of hilltop beyond the hedgeline to the south (Fig 59). From the south round to the west there were more open views across the upper slopes and hilltops bordering the Fowey estuary. Tresawson Farm was visible in a dip of ground to the west (Fig 61), but in general the valley bottoms were not visible; there was some woodland cover in places that further obscured views in this direction (Figs 60 and 61). To the north west in the direction of Lanreath, there were views along the length of the field and across the neighbouring fields to the north west and north north west (Figs 62 and 63), though Lanreath itself was not visible in this direction from ground level.

9 Results of viewshed analysis

See Figures 17 to 50.

Given the topography of the site and its surroundings and the height of the turbine tower, the viewshed analysis suggests that it is likely to be visible over a fairly large proportion of the surrounding countryside, although its Zone of Theoretical Visibility (ZTV) may be constrained in some areas due to the deeply dissected nature of this section of coastal plateau. In line with the requirements of English Heritage guidance, the ZTV has been mapped to a distance of 10km from the site. The visibility of the turbine will diminish with distance and will, at many sites, be blocked by topographical features, 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

See Figures 17 to 22.

Given the nature of the local topography and the relatively high elevation of the proposed wind turbine, the ZTV suggests that the turbine mast or blades will potentially be visible from approximately 95% of this zone, the exception being some small sections of lower valley slope to the north west, north east and east (Figs 17 and 18). The zone extends to the near edges of Lanreath to the northwest, to Woodsaws in the north, to the near edges of Tregarrick Wood in the east, to beyond Trenake in the south east and to the near centre of East Court Wood in the south west. The zone includes the Giants Hedge Scheduled Monument (Fig 17) and intersects the south east corner of the Conservation Area of Lanreath and the Grade II Listed Rabbit Warren walls at Court Barton (Figs 18 to 20). It also incorporates the Grade II Listed farmhouses at Talehay and Trenake and a Grade II Listed milestone to the north of Tremaine Farm (Fig 18).

9.2 1km to 3km radius ZTV

See Figures 23 to 32.

The wind turbine will potentially be visible from around 70% of the 1km to 3km radius area around it, its visibility being notably limited by local topography, particularly within the steeper valleys and hillsides facing away from the site. This zone extends to the near edge of Bury Down in the north, to beyond Muchlarnick in the east, to Pelean Farm in the south south east, to Peakswater and Trefrawl in the south west, to Castelmawgan in the west and to Penadlake in the north west.

This zone contains six potentially intervisible Scheduled Monuments: Hall Rings, Bake Rings, several sections of the Giants Hedge and the barrow groups at Wilton, Hendra and Cartole. It also just clips the southern edges of Bury Down. Of these, some sections of the Giants Hedge may be most susceptible to potential impact on its setting (Fig 23).

The zone contains one Conservation Area at Lanreath, no Registered Parks and Gardens and no Registered Battlefields. The zone also contains the Grade I Listed Churches of St Manarck and St Dunstan, Lanreath and St Nonna, Pelynt, the Grade II* Listed Court Barton at Lanreath and numerous Grade II Listed Buildings, the majority of which fall substantially or wholly within the ZTV (Figs 28 to 32).

9.3 3km to 5km radius ZTV

See Figures 33 to 36, and Figs 37 and 39

The proposed wind turbine will potentially only be intervisible with around 35% of the 3km to 5km zone, with large areas excluded from potential intervisibility by the nature of the surrounding topography (Fig 33). This zone extends to Couch's Mill in the north west, to beyond Herodsfoot in the north east, to beyond Duloe in the east north east, to Carey Park and the northern edges of Polperro in the south, to Lansallos in the south west and to Lerryn in the west.

Potential intervisibility with the proposed wind turbine appears to be intermittent across the 3km to 5km zone, given the deeply dissected nature of the local topography, with only the upper valley slopes and hilltops likely to intersect with the ZTV. Sections of the Giants Hedge Scheduled Monument continue across the west of this zone, which also contains the Scheduled Monuments of Duloe stone circle towards its eastern extent (Fig 39) and Bury Down in the north, which lies just beyond the outer edge of the 3km radius zone (Fig 37).

The zone intersects the near edges of the Conservation Areas at Lerryn and Polperro and the Registered Park and Garden at Boconnoc. The zone contains no Registered Battlefields. There are a small number of high Grade Listed Buildings within the 3km to 5km radius, though only the Grade I Listed Church of St Cuby, Duloe (Fig 34) is intersected by the ZTV. There are numerous Grade II Listed Buildings (Fig 33) contained within this zone, though only a small number of these, such as Hillhead and Polpever in the south east, potentially fall wholly within the ZTV (Figs 35 and 36).

9.4 5km to 10km radius ZTV

See Figures 37 to 50.

The proposed wind turbine will potentially only be visible with around 25% of the 5km to 10km zone; as before, there are large areas excluded from the ZTV by the nature of the surrounding topography, while the southern part of this zone extends beyond the coastline (see Fig 37). The greatest potential intervisibility with the proposed wind turbine appears to be to the east and west, though generally, the ZTV coverage within this zone is patchy and limited in extent (see Fig 37). In addition, although there may be some degree of intervisibility with the wind turbine, a pronounced fall-off in its visual prominence will occur.

This zone contains a substantial number of Scheduled Monuments (Fig 37). Whilst not all of these intersect the ZTV, a number of barrow cemeteries towards the farthest extent of the 10km radius in the north west (Fig 38) and Castle Dore in the west (Fig 38), in particular, will potentially be intervisible with the proposed wind turbine at Tremaine. Whilst these sites were all intended to have relatively wide landscape settings any impact on them is likely to be nullified by their distance from the proposed development site and by the blocking effects of intervening landscape features.

Two Registered Parks and Gardens, at Bocconnoc and Menabilly, intersect the 5km to 10km radius ZTV (Fig 47), though only at Bocconnoc is there the potential for any substantial intervisibility with the proposed turbine site (Fig 48). The heavily wooded topography of Bocconnoc significantly reduces any negative impact on its setting; should any significant felling of trees occur during the lifespan of the proposed turbine, however, the degree of impact might increase. The 5km to 10km zone contains six Conservation Areas, which lie outside the remit of this assessment. The zone also contains the Registered Battlefield of Braddock Down to the north of Tremaine, where it intersects the ZTV; the mapping suggests there will be potential intervisibility with the proposed wind turbine on the high ground across its middle section (Fig 50).

A small number of high grade Listed Buildings fall within the 5km to 10km zone and intersect the ZTV. To the west and south west of Tremaine, in particular, there may be potential intervisibility between the proposed wind turbine and the Grade I Listed churches of Sts Ciricus and Julitta at St Veep (Fig 43), St Sampson at Golant (Fig 44) and St Willow at Lanteglos by Fowey (Fig 45), and the Grade II* Listed St Nectan's Chapel (Fig 46).

9.5 Scheduled Monuments within the 10 km radius ZTV

See Figure 37, also Figures 17 and 23.

There are 27 Scheduled Monuments within 10km of the proposed wind turbine site at Tremaine and falling within its ZTV, as follows:

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

- 3 individual barrows
- 11 barrow groups
- 1 stone circle
- 3 hillforts
- 1 late prehistoric 'round'
- 1 Roman fort
- 1 chapel
- 1 early Christian memorial stone
- 4 crosses, cross base or cross heads
- 1 early medieval linear earthwork (the Giants Hedge)

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

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

Although there is likely to be some degree of intervisibility between these sites and the proposed wind turbine, in some cases views of it will tend to be distant, in some partial and in others locally blocked by nearby vegetation or structures. Although, given the topography of the site selected for the Tremaine wind turbine, negative impacts on the settings of most Scheduled Monuments are likely to be neutral or minor in extent, there are a number of Scheduled Monuments within the 3km radius where negative impacts on their settings may increase to moderate or substantial in extent. This is particularly the case for the Giants Hedge, an early medieval linear defensive earthwork that runs to the north of the proposed site and is only 400m distant at its closest point.

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

See Figures 47 to 50.

Two Registered Parks and Gardens fall within the 10km radius ZTV: Bocconoc and Menabilly (Fig 47). There is minimal intersection between the Grade II* Registered Park and Garden at Menabilly and the ZTV (Fig 49) and its distance from the proposed wind turbine site suggests there will be either limited or no impact on its setting. There is greater potential for intervisibility with the Grade II* Registered Park and Garden at Bocconoc, with some potential for intrusion into aspects of its designed landscape, though this may be limited to glimpsed views of the wind turbine in most instances (Fig 48). Furthermore, the natural topography of the Park and the substantial level of tree and vegetation cover should greatly reduce any potential negative impact on its setting, although this could change if any significant felling of trees or clearance of vegetation occurs during the lifespan of the turbine.

There is one Registered Battlefield within 10km of the proposed turbine site. Braddock Down lies around 6.7km to the north of Tremaine and the ZTV suggests there may be some intervisibility with the proposed wind turbine along the crests of the two hills that run across the centre of the designated area (Fig 50), though this may only be with the upper parts of the mast or with the blades, as the proposed turbine would be viewed across intervening hills and ridges. These hilltops are also the sites of two Scheduled barrow groups (1004433/1004435). Although these lie at some distance from the proposed turbine site, the combined impact on the settings of these and the Registered Battlefield could potentially lie between neutral to negative/minor in extent.

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

See Figure 42.

There are 52 Listed Buildings of all grades within 10km of the proposed wind turbine at Tremaine within the ZTV.

The following buildings intersected by the 10km ZTV are Listed at Grade I:

- 113693 – Church of St Manarck and St Dunstan, Lanreath
- 1161660 – Church of St Nonna, Pelynt
- 1312202 – Church of St Cuby, Duloe
- 1312492 – Church of St Willow, Lanteglos by Fowey
- 1140311 – Church of St Ciricus and St Julitta, St Veep
- 1158982 – Church of St Sampson, Golant
- 1282854 – Church of St Martin by Looe, Looe
- 1140324 – Church of St Mary the Virgin, Broadoak

The following buildings (or groups of buildings) intersected by the 10km ZTV are Listed at Grade II*:

- 1137024 – Court Barton Farmhouse, Lanreath
- 1138175– Chapel of St Nectans, St Winnow
- 1329407 – Cartuther Barton and courtyard buildings to east, Menheniot
- 1311893 – Ethy House, including garden walls to north and east, Lerryn
- 1140728 – Penellick Farmhouse, Pelynt
- 1219027 – Inscribed stone, (Castle Dor or Tristam Stone)
- 1140332 – Stone cross south of south porch of Church of St Willow
- 1203204 – Stone cross south east of Pendean House, Liskeard

Designated features such as crosses have relatively local settings and all are at a sufficient distance from the wind turbine for no impacts on their settings to occur.

The Grade I Listed Church of St Manarck and St Dunstan and the Grade II* Listed Court Barton, both at Lanreath, lie around 1.2km north west of Tremaine and are both within the 1km to 3km ZTV. The Grade I Listed Church of St Nonna, Pelynt lies within 2km of Tremaine and is partially intersected by the 3km ZTV; the upper section of its tower may be partially intervisible with the proposed wind turbine (Fig 29), but was not visible from the proposed site at ground level. All three of these buildings were judged to be potentially vulnerable to impacts on their settings given that church towers were intended to be landmarks within the landscape when constructed, although it is likely that these impacts may be substantially reduced by the local topography and vegetation cover.

9.8 Conservation Areas within the 3km radius ZTV

See Figure 20.

The Conservation Area of Lanreath falls within the 3km radius ZTV. At around 1.2km distance from Tremaine, its setting was judged to be potentially vulnerable to impact, though the topography surrounding Lanreath, the blocking effect of both the urban and wider rural landscape, together with the level of tree and vegetation cover within and around the Conservation Area, might be expected to reduce setting impacts to some extent.

9.9 Grade II Listed Buildings within the 5km radius ZTV

See Figure 33 and Figures 18 and 19, 21 and 22, 29 to 32 and 34 to 36.

There are 39 Listed Buildings of all grades within 5km of the proposed wind turbine at Tremaine within the ZTV. Of these, 36 are Grade II Listed, as follows:

- 9 farmhouses
- 1 schoolhouse
- 1 lodge
- 5 houses
- 1 cottage
- 2 groups of cottages
- 2 rabbit warren walls
- 6 milestones
- 1 guidepost
- 3 headstones
- 2 tombchests
- 2 groups of tombchests
- 1 drinking trough

Impacts on the settings of these feature types are very unlikely unless they are in very close proximity to the proposed wind turbine. These include structures like guideposts, milestones, headstones or chest tombs, a trough, crosses and a school house. Others such as houses, farmhouses and lodges have rather more extensive local settings but the majority of the Grade II Listed features noted above would not be considered vulnerable to impacts on their settings. Impacts on potentially sensitive Grade II Listed Buildings have only been evaluated within an area extending out to approximately 2km from the proposal site (though this has been varied according to local topography, taking in the openness and general orientation of views). As a result, the following Grade II Listed Buildings are considered potentially vulnerable to impacts on their settings:

- The rabbit warren walls at Court Barton, Lanreath (1146528) lie within 1.2km of the proposed turbine site and fall almost wholly within the 1km to 3km ZTV (see Fig 19). The proposed turbine would be sited over the crest of the hill away from this building and intervisibility is therefore only likely to occur between parts of the upper hub and /or blades and this site. The photomontage provided by Capture-Energy (Fig 81) gives some indication of the possible extent of intervisibility between the proposed turbine and areas of Lanreath; the local topography and levels of vegetation cover may also reduce any impacts on the settings of the Rabbit Warren Walls at Court Barton, although this would potentially alter were the vegetation to be cut back or removed.

- The Grade II Listed 18th century house at Lanreath (1140331) also lies within 1.2km of the proposed turbine site and falls almost wholly within the 1km to 3km ZTV, suggesting it may be intervisible with the proposed turbine. It is likely, however, that the buildings at Court Barton and current levels of intervening vegetation to the south east would provide substantial blocking in this direction, although this may potentially alter were the vegetation to be cut back or removed. (Fig 19).
- The Grade II Listed 17th century farmhouse at Talehay lies around 650m south east of the proposed turbine site and falls almost wholly within the 1km radius ZTV (Fig 21). There would potentially be substantial intervisibility with the proposed turbine from the farmhouse at Talehay, and views towards the farmhouse from the access road to the south may also incorporate the turbine, although this could not be ascertained during the ground survey. The siting of the proposed turbine on the far side of the hill from Talehay may, however, reduce potential intervisibility to the upper parts of the turbine mast and/or its blades.
- The Grade II Listed 17th century farmhouse at Trenake lies around 850m south of the proposed turbine site and falls within the 1km radius ZTV along its north eastern extent (Fig 22). Similarly to Talehay, there would potentially be substantial intervisibility with the proposed turbine from the farmhouse at Trenake, with views towards the farmhouse from the road to the south also being likely to incorporate the turbine, although this could not be ascertained during the ground survey. The siting of the proposed turbine on the far side of the hill from Trenake may, however, reduce potential intervisibility to the upper parts of the turbine mast and/or its blades.
- The Grade II Listed 18th century Jaffers Cottage at Trefanny Hill lies around 1.8km north east of the proposed turbine site and falls almost wholly within the 1km to 3km radius ZTV (Fig 31). There would potentially be substantial intervisibility with the proposed turbine, although this is likely to be over a series of intervening hilltops and ridges and potentially blocked in places by intervening tree cover; views across the cottage from the road to the north may also incorporate the turbine. Whilst this could not be ascertained during the ground survey, the photomontage provided by Capture-Energy (Fig 83) demonstrates the general openness of the views toward the proposed turbine site from the east and north east.
- The Grade II Listed 18th century farmhouse at Trevawden lies around 2.2km north of Tremaine and falls wholly within the 1km to 3km radius ZTV (Fig 32). The nature of the local topography suggests there may be views along the valley slopes and across intervening hilltops and ridges towards Tremaine, though these may be blocked or reduced by intervening tree cover in places. This could not be ascertained during the ground survey.

Although towards the eastern edge of the 5km radius zone, the Grade II Listed Buildings at Polpever and Hillhead also fall wholly within the ZTV (Figs 35 and 36), though Hillhead falls predominantly within that for the blade tip alone (Fig 36). A drive by during the ground survey confirmed some open views across the hilltops and along the valley sides in the direction of Tremaine, although relatively poor visibility due to low cloud and fog did not allow the quality of any potential intervisibility to be determined. Given the distance from the proposed turbine site at Tremaine, and the reducing effects of the local topography and tree cover, it is not anticipated that there would any major impact on the settings of these two sites, although this could not be absolutely verified.

Given their distances from the proposed turbine site, the local topography and vegetation, the site types (and hence their sensitivities) and the degree to which they

potentially intersect the 5km radius ZTV, no impacts on the settings of the remaining sites are considered likely.

9.10 Undesignated sites within the 1km ZTV

See Figure 14.

The ZTV mapping suggests that around 95% of the landscape within a 1km radius of Tremaine will be intervisible with all or part of the proposed wind turbine. Within this zone, the Cornwall and Scilly Historic Environment Record (HER) records 11 intervisible sites, as follows:

Early medieval

- MCO17510 – Tremaine – settlement (documented site)
- MCO17550 – Trenake - settlement (documented site)
- MCO17690 – Tresawson – settlement (documented site)
- MCO40090 – Trenake – trackway (cropmark)
- MCO40094 – Lanreath – field boundary (cropmark)
- MCO40095 – Polventon – field boundary (cropmark)

Medieval

- MCO40091– Tremaine –field system (cropmark)
- MCO40092 – Tresawson – field boundary (cropmark)
- MCO40097– Polventon – field boundary (extant)

Post-medieval/modern

- MCO53409 – Lanreath – milestone (extant)

Given the nature of these sites, the proposal for a wind turbine at Tremaine would have no significant impact on the majority of their settings.

10 Field verification of ZTV

See Figures 56 to 80

The viewshed mapping and potential impacts were, wherever possible (given constraints on public access) ground checked from a number of locations, including sites at, adjacent to or overlooking Lanreath, Pelynt, Duloe, Bocconoc, St Nectan's Chapel, St Veep and Golant, together with adjacent monuments, near Bury Down, Bake Rings, Duloe stone circle, Braddock Down, the barrow groups at Grey Mare Lodge, Penadlake and West Taphouse, and Castle Dore.

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. Though true levels of intervisibility were impossible to determine from ground level 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.

Where possible, photographs were taken from key locations within the surrounding landscape and from the location at Tremaine back to these sites. Whilst views from the surrounding ground allowed the location of the proposed wind turbine to be determined within the landscape, in the lower lying areas, field hedges, woods and other tree plantings blocked views back towards the site; within settlements, groups of buildings and mature trees and shrubs also blocked many views back to the site. During the initial site visit, poor visibility obscured distant views in most instances, but where sites

were considered particularly vulnerable, or where the potential for suitable photographs was anticipated, these were subsequently revisited. The visibility cut-off imposed by the local topography suggested by the DTM viewshed mapping was broadly confirmed; from ground level some areas of suggested intervisibility were inevitably closed off by woods and other tree plantings, which were not included within this type of ZTV modelling.

Field verification broadly confirmed the viewshed mapping. This suggests that much of the 1km zone falls within the ZTV and that most identified sites within this zone may be intervisible with all, or part, of the constructed turbine. Assessed from ground level, the area of potential intervisibility also seems fairly comprehensive out to the 3km radius for areas of higher ground but generally excludes the lower valley slopes and valley bottoms (see Fig 23). There may be some distant views out to 3km to the north and north east, although these may be limited in places to skyline views across intervening ridge tops and will be further blocked by intermittent tree cover in some instances. Views are relatively closed at 3km from the south east round to the south west but open up quite extensively from the south west round to the north west, though intervening hill spurs and tree cover may have a blocking effect in some instances. Views to the north west appear relatively closed beyond the 1km radius. From the proposed turbine site at ground level, Bury Down is visible around 3km to the north (Fig 56) and Tresawson Farm is visible around 330m to the west (Fig 61).

Beyond the 3km radius, the viewshed mapping suggests that potential intervisibility will be much more intermittent and limited to areas of high ground, many of the steeper valley slopes and low ground falling outside the ZTV. Beyond the 3km radius, the topography and heavily wooded nature of many of the valley slopes also suggests that most views towards and from the proposed turbine site will be partial or glimpsed; a possible exception to this is from the south west round to the north west, where views across the Fowey estuary are more open and far reaching out towards the 10km radius, with less apparent blocking by tree and vegetation cover on the higher ridge tops. The openness of the general vista in this direction is demonstrated in the photomontage provided by Capture-Energy (Fig 84), looking east from St Veep, around 5.4km west of Tremaine Farm. Given the positioning of the proposed turbine site, it seems likely that potential intervisibility may be limited in most directions to partial views of the upper turbine hub and blades; the exception to this may again be within an arc from the south west round to the north west out as far as the 10km radius. However, the generally reduced ZTV coverage observed for this distance, as above, will be a factor.

As a result of these observations, setting impacts beyond 3km from the proposed development site were considered unlikely or minimal in most directions.

11 Cumulative impacts

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

Given the current number of both small and large-scale wind turbines operational, at application or pre-application stages or proposed at some time within a 3km radius of the Tremaine site, there is some potential for cumulative impacts (see above): at Tremaine Farm (77m to tip, pre-application stage), Lancare Park, Pelynt (size undetermined, operational), Polean Farm, Pelynt (34.2m to tip, operational), The Telephone Exchange, Lanreath (size undetermined, planning lapsed), Tresawson (77m to tip, pre-application stage), Bocaddon Farm (two, 61m to tip and 79m to tip, screening opinion given), Bocaddon Farm (79m to tip, refused, under appeal), Woodford Farm, Lansallos (77m to tip, screening opinion given), Bosuen Manor Farm (77m to tip, screening opinion withdrawn).

There are, therefore, currently few areas within the 3km locality where wind turbines of any height are prominent within local views, though this may change in the future given the range of current applications and those which may subsequently be proposed.

12 Synthesis

The desk-based assessment identified the potential for relict field boundaries surviving as cropmarks in the field proposed for the wind turbine at Tremaine (Fig 13). The walkover survey was unable to identify any visible upstanding earthworks in the vicinity of the proposed development site, although the geophysical survey results (Figs 51 to 55) indicate the possible survival of multi-phase archaeological features below ground level, including possible field and enclosure boundaries and oval pits or hollows of unknown origin, which would be directly impacted by the proposed wind turbine and cabling works. The potential for below ground archaeology in the field at Tremaine could potentially contribute to understanding the nature and extent of human activity within the immediate area, and the time depth over which this has occurred.

Impacts on both designated and undesignated heritage assets within the local landscape resulting from the construction of the wind turbine on land at Tremaine will vary with their distance from the turbine site, their state of preservation, their nature, and the effects of reduced or blocked intervisibility due to local topography, vegetation (including hedge plantings) or the presence of other buildings. In the case of some designated assets around the application site out to 10km away, even where intervisibility will occur, the distance from Tremaine will significantly reduce any impacts.

There is the potential for between minor and substantial negative impact on the settings of sensitive receptors within the local landscape out to 3km from the site, principally the Scheduled Monuments of the Giants Hedge, Bury Down, Bake Rings and the barrow groups to the south near Hendra, the Conservation Area of Lanreath and the high grade Listed Buildings at Lanreath and Pelynt. Beyond this zone, any impacts are likely to be minor or neutral in character.

There is also some potential for some impacts on the Historic Landscape Character of the surrounding landscape at Tremaine. Whilst there are a number of wind turbine applications in progress, there is currently little precedent for operational turbines within a 3km radius of this site and the proposed turbine at Tremaine would constitute a clearly visible modern feature within a relatively closed-in agricultural landscape whose character reflects its medieval origins.

13 Policies and guidance

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

13.1 National Planning Policy Framework 2012

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

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

129. *Local planning authorities should identify and assess the particular significance of any heritage asset that may be affected by a proposal (including by development*

affecting the setting of a heritage asset) taking account of the available evidence and any necessary expertise. They should take this assessment into account when considering the impact of a proposal on a heritage asset, to avoid or minimise conflict between the heritage asset's conservation and any aspect of the proposal.

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

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

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

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

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

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

13.2 Former Caradon Local Plan

Although now part of Cornwall Council, Caradon District Council's policies listed in its local plan continue to be relevant. Relevant policies concerning the historic environment are listed below.

The Caradon Local Plan contains policies designed to protect the archaeological resource, using the following elements of policy framework:

Policy CL19

High priority will be given to the protection, preservation and enhancement of nationally important scheduled and unscheduled monuments and other sites and buildings of archaeological and historic significance in the plan area through the following measures:-

(i) Development proposals which would prejudice the preservation of nationally important archaeological remains, whether scheduled or not, and their settings, will not be allowed unless the development is also of national importance and there is no alternative site.

(ii) If there is evidence to suggest that significant remains may exist on the site of a proposed development, the extent and importance of which are unknown, the Local Planning Authority will request the developer to arrange for an archaeological evaluation to be carried out before the planning application is determined, thus enabling an informed planning decision to be made.'

(iii) Where preservation in-situ is not possible the Local Authority will not allow development to take place until satisfactory provision has been made for a programme of archaeological investigation and recording prior to the commencement of the development.

Policy CL20

Where proposed development is likely to significantly affect sites of County or local archaeological importance, they should be protected in situ, unless the significance of the remains is not sufficient, when weighed against the need for development, to justify their physical preservation. Where retention of remains is not possible, the council may impose conditions or seek planning obligations to ensure that adequate archaeological records are prepared before development commences.

Policy CL21

Proposals for development affecting the historic parks and gardens listed by English Heritage and shown on the proposals map will not be approved unless all of the following criteria can be satisfied:

(i) That the important historic and architectural features, layout and ornamentation of the garden are preserved.

(ii) That the character of the parkland setting is preserved or enhanced and

(iii) That the trees and woodland that contribute towards the character of the historic garden are retained.

Policy CL22

Planning permission for development in the historic battlefield site of Braddock Down, identified on the proposals map, will not be granted if it would demonstrably harm the integrity of the site, its topography, or an appreciation of the site through views obtained across it.

14 Likely 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

The construction of wind turbines can have direct, physical impacts on the buried archaeology of development sites through the construction of their foundations, through the undergrounding of cables, and through the provision of any temporary works compound, together with any permanent or temporary vehicle access ways into and within the site. In the case of Tresawson, the geophysical survey results indicate significant potential for surviving underlying archaeology on site. In the event of any such impacts occurring, these would be **permanent** and **irreversible**.

14.1.2 Types of impact, operational phase

The proposed wind turbine at Tremaine might be expected to have some visual impact on the settings of some key heritage assets within its viewshed during its operational phase, given its height (77m to tip), the topography of the site and the 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. A proposed mitigation strategy is outlined below in Section 15.

14.2 Assessment of impact

Overall, the impacts of the proposed wind turbine on the archaeological resource within 3km from the proposed turbine site are assessed as having a potential scored as **negative/moderate**, principally dependant on proximity to the proposed turbine site and intervisibility with it. The impact of the current proposal is assessed as **negative/minor** on the Scheduled Monuments of Bury Down, Bake Rings and the barrow groups to the south near Hendra, the Conservation Area of Lanreath, the Grade I Listed churches of St Manarck and St Dunstan, Lanreath and St Nonna, Pelynt, and the Grade II* Listed Court Barton at Lanreath. A caveat to this, however, is that there is a substantial telecommunications mast adjacent to Bury Down that already impacts on its setting. Whilst it could be argued that the proposed wind turbine at Tremaine will add to the cumulative impact on the setting of this Scheduled Monument, it could also be argued that setting impacts have already occurred owing to the mast's proximity. There is therefore potential to downgrade the impact on Bury Down to **neutral** on this basis. The impact of the current proposal is, however, assessed as potentially **negative/substantial** on the Scheduled Monument of the Giants Hedge, given its proximity to the proposed development site at Tremaine, its intended nature as a distinct and visibly dominant landscape feature, and the visual prominence which the wind turbine will exhibit within views of this Scheduled Monument.

Impacts on the settings of designated heritage sites between 3km and 10km from the proposed turbine sites have been assessed as **neutral** to **negative/minor** overall.

There is some potential for negative impacts on sub-surface archaeology within the development site, given the evidence from the geophysical survey. This has the potential to range from **minor** to **moderate** in scope, given the character of the feature types which showed up in the data. Means by which these impacts might be mitigated are addressed in the mitigation strategy in Section 15.

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 archaeological 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, cable trenching 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 each site that would be affected. The presence of possible field and enclosure boundaries and pit-like anomalies directly underlying the site proposed for the wind turbine at Tremaine considerably raises the potential for impacts on potentially significant sub-surface archaeology taking place. The geophysical survey undertaken by Substrata suggests that the scale and nature of any such impacts **may** require further determination at the discretion of the HEPAO.

14.2.2 Impacts on the settings of surrounding 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/minor**, in particular in relation to the Scheduled Monuments of Bury Down, Bake Rings, the barrow groups to the south near Hendra, the Grade I Listed church of St Manark and St Dunstan, Lanreath, the Grade II* Listed Court Barton at Lanreath and on the setting of some parts of the Conservation Area of Lanreath, though not necessarily to all of its individual components. The impact on the setting of the Scheduled Monuments of the Giants Hedge is summarised as **negative/substantial**, due to its proximity to the proposed development site, its intended nature as a substantial visible landscape feature and the visual prominence which the wind turbine will exhibit within views of this Scheduled Monument. Owing to the proximity of the adjacent telecommunications mast to Bury Down, however, the impact on the setting of this site may be downgraded from **negative/minor** to **neutral**.

Such impacts will be **temporary/reversible** overall should the wind turbine be dismantled in the future and not be replaced:

- There are a number of Scheduled sites located within 5km of the site proposed for the wind turbine that would have been intended, when constructed, to be important focal points within the local landscape. These include the early prehistoric barrows and barrow groups to the south of Tremaine, at Wilton, Hendra and Cartole, the early prehistoric stone circle at Duloe and the late prehistoric hillfort enclosures of Bury Down and Hall Rings. Whilst there may not be substantial intervisibility between some of these sites and the proposed wind turbine, they will occupy the same general area of the local landscape, and the construction of the wind turbine may alter visitors' perceptions of the area and of the significance of these sites.

- These impacts are likely to be mitigated at most of these sites by current levels of vegetation cover, the presence of other structures near Listed Buildings and the nature of the local topography. Hall Rings, for example, is predominantly situated on a hillcrest facing away from Tremaine, so that only its upper north east facing edges may be impacted on by potential intervisibility with the proposed turbine. The turbine will, however, appear in some views of Hall Rings and may, therefore produce negative impacts on its setting. The barrow groups to the south, at Wilton, Hendra and Cartole (Fig 27), are situated on lower hillslopes facing north towards Tremaine, but any impacts on their settings may be reduced by the presence of intervening hilltops and ridges and by vegetation cover, although this could not be adequately verified by ground survey, due to access issues. The stone circle at Duloe (Fig 39) is situated on a west facing slope around 4.9km from the proposed turbine site at Tremaine, but views towards the proposed development site may be partially blocked by the near presence of buildings and intervening valley slopes and vegetation cover. Visitors approaching the stone circle will do so in a direction facing away from the proposed development site; conversely, views back across the stone circle may well include glimpses of the wind turbine. Bury Down (Fig 25), while only around 3km distant, is likely to be intervisible with the proposed turbine only along its south western face; its setting has already been compromised by the adjacent telecommunications mast. In contrast, however, a section of the Giants Hedge runs from north west to south east just 400m to the north of the proposed development site. The setting of the Giants Hedge is likely to be substantially impacted by the proposed turbine at Tremaine, although the effects may be reduced from some viewpoints within the immediate landscape by the lay of the land and by intervening tree cover.
- There are currently few visible individual wind turbines or wind farms within a 3km radius, and as a result the long-standing agricultural character of the surrounding landscape generally preserves its integrity. It could therefore be argued that given the relative absence of such modern, visually prominent developments within the landscape, the construction of a wind turbine at Tremaine will result in enhanced impacts on the settings of some Scheduled Monuments and Listed Buildings in the immediate locality should the turbine be constructed. As noted above, the proposed site also lies adjacent to an Area of Great Landscape Value, which merits sensitive development within its confines, but is also susceptible to impacts from developments adjacent to its perimeter. The cumulative effect of wind turbine development in the area local to Tremaine is therefore an issue for consideration.
- Other Scheduled Monuments within the 3km to 10km viewshed are either types which have only limited settings or are at distances from the proposed wind turbine where their settings are less likely to be impacted upon to any great extent. However, the Scheduled barrow groups to the north west of Tremaine and the later prehistoric hillfort of Castle Dore would all originally have been intended to command dominating positions within the local landscape. Despite being situated towards the 10km extent (see Fig 37), there is potentially substantial intervisibility with the proposed turbine site and some impact on their settings may occur.
- During the operational phase the wind turbine is likely to impact to some degree on the settings of some of the Listed Buildings within its viewshed, particularly within 1km of it. However, intervisibility at these sites may well be constrained by trees and by modern farm buildings. The Grade I Listed church of St Manarck and St Dunstan, the Grade II* Listed Court Barton and additional Grade II Listed Buildings at Lanreath are situated around 1.2km north west of Tremaine and all fall within the 1km to 3km ZTV. An assessment from ground level suggests that only the upper part of the turbine mast and its blades may be intervisible with these sites, as the proposed development site lies over the far side of a hillcrest.

Furthermore, views towards the proposed turbine are likely to be blocked in places by the presence of buildings, the lay of the land and by intervening vegetation cover. There are points within Lanreath, however, where views across the churchyard or across Court Barton may include partial views of the proposed turbine (Figs 64 to 66); the main approach through Lanreath, in particular, may contain a view of the proposed turbine, which would substantially impact on the view towards the church and its tower (Fig 64). The Grade I Listed church tower of St Nonna, Pelynt, is not visible from the proposed turbine site at ground level, and a ground survey suggested that views towards the church from within Pelynt or outwards from the churchyard in the direction of the proposed development site would be unlikely to be impacted by any intervisibility at ground level. There is, however, the potential for some views within the local landscape to incorporate both the church tower and the proposed turbine, although this could not be verified from a ground survey. The Grade II Listed farmhouses at Trenake and Talehay lie within 1km of Tremaine and fall almost wholly within the 1km ZTV coverage, suggesting almost total intervisibility with the proposed wind turbine (Figs 21 and 22). These could not be accessed during the ground survey, but a study of 2005 aerial photography suggests that any impacts on their settings may be reduced to some extent by intervening tree cover and the lay of the land.

- There are a number of additional high grade Listed Buildings within the 10km radius viewshed, although their distance from the proposed turbine site, and the nature of the intervening topography and vegetation cover, will limit potential impacts on the majority of their settings.
- There is one Registered Battlefield within the 10km radius viewshed of the proposed wind turbine, at Braddock Down around 6.75km to the north of Tremaine (Fig 50). The proposed turbine site is likely to be intervisible with the high ground across its middle section, which also contains a number of Scheduled barrows. The site could not be adequately accessed during the ground survey, and views across its extent towards the proposed turbine site were not achieved. The viewshed analysis for this site, however, suggests that any impact on its setting would be limited by the distance from the proposed development site, and the nature of the intervening topography.
- There are two Registered Parks and Gardens within the 10km radius viewshed, although only that of Bocconoc is considered likely to experience any impact on its setting. At this location, intervisibility will probably be only partial, and unlikely to be experienced from any designed landscape aspects. The topography of the Park and the substantial plantings of trees and vegetation are likely to create a blocking effect from within it, although this might change if the cover was reduced in the future through dieback or vegetation clearance. Views across Bocconoc from the road to the north (Fig 72) will potentially include views of the proposed turbine, although any impact is likely to be significantly reduced by the nature of the local topography and intervening vegetation cover.
- There are a relatively high number of Conservation Areas within a 10km radius of Tremaine, although only the Conservation Area at Lanreath falls within the 3km radius ZTV. Its relatively close proximity to the proposed turbine site suggests there would potentially be between **minor to moderate** impact on its setting in some places. Whilst it is likely that only the upper parts of the turbine mast and its blades would be visible from the majority of viewpoints within the village, their proximity to the Conservation Area means they could still be visibly distracting in sensitive views. The impact may, however, be limited by the local lay of the land and the blocking effect of intervening vegetation cover and buildings presence.

- Any impacts on heritage assets within the landscape surrounding the proposed wind turbine would be temporary and reversible should it be dismantled in the future.

14.2.3 Designated heritage assets within the 10km radius viewshed

Preliminary filtering of the potential for the likelihood of impacts on these sites is discussed above (Section 9). Only those for which it was considered that some level of impact might occur are listed below and assessments of impact made.

Scheduled Monuments (SM) – see Figure 37.

Identifier	Site	Impact
1006681	Giants Hedge, Lerryn to Lanreath	Negative/substantial
1017682	Bake Rings later prehistoric-Roman round	Negative/minor
1004621	Group of three round barrows, N of Hendra	Negative/minor
1004465	Ten barrows S of Wilton Mill	Negative/minor
1004373	Round barrows SE of Cartole	Negative/minor
1006682	Hall Rings	Negative/minor
1006635	Bury Down Camp	Neutral to negative/minor
1006691	Castle Dore (camp)	Neutral to negative/minor
1006714	Stone Circle, Duloe	Neutral to negative/minor
1004433	Group of round barrows SE of Middle Taphouse	Neutral to negative/minor
1004435	Round barrow S of Middle Taphouse	Neutral to negative/minor
1004617	Round barrows W of West Taphouse	Neutral to negative/minor
1003077	Two round barrows NW of Middle Taphouse	Neutral to negative/minor
1003080	Group of round barrows N of Grey Mare Lodge	Neutral to negative/minor
1004436	Group of round barrows S of Penadlake	Neutral to negative/minor
1004438	Ironmine Plantation round barrows	Neutral
1004439	Two round barrows NE of Fairy Cross	Neutral
1006683	Mabel Barrow	Neutral

The distance of some of these sites from Tremaine, combined with the intervening topography and vegetation cover, suggests that the impact on their settings will probably be **neutral**. The impact on the settings of a number of barrow groups to the north west of Tremaine, the later prehistoric hillfort at Castle Dore, the early prehistoric stone circle at Duloe and the later prehistoric hillfort at Bury Down is assessed to lie between **neutral** and **negative/minor** in extent. This assessment considers their original intended function as dominant landscape features and the likely level of intervisibility with the proposed turbine site, but recognises that some sites lie towards the 10km extent and that most will probably have other potentially closer set modern features visible from them that already impact on their settings. It is considered that there is a greater risk of potential impact on the settings of a number of Scheduled Monuments within the 3km radius viewshed, which fall almost wholly within the ZTV and which have been assessed as potentially vulnerable through ground survey; this includes the Scheduled Monument of Hall Rings, which is potentially impacted across its originally intended key views, despite relatively limited intersection by the ZTV coverage. The impact on these have largely been assessed as **negative/minor**, except for the section of the Giants Hedge running immediately east of the proposed turbine site, which is assessed as **negative/substantial**.

Grade I Listed Buildings - see Figure 42 and Figures 18, 19, 29, 34 and 43 to 46.

Identifier	Site	Impact
1136993	Church of St Manarck and St Dunstan	Negative/minor to negative/moderate
1161660	Church of St Nonna	Negative/minor
1140311	Church of St Ciricus and St Julitta	Negative/minor
1158982	Church of St Sampson	Negative/minor
1312202	Church of St Cuby	Neutral
1140324	Church of St Mary the Virgin	Neutral

Identifier	Site	Impact
1282854	Church of St Martin by Looe	Neutral
1312492	Church of St Willow	Neutral

The Church of St Manarck and St Dunstan is situated around 780m north west of the proposed turbine site. Although this would be located over the crest of an intervening hill, it is likely that at least the upper parts of the turbine mast and blades will be intervisible with the church and will impact on views from and towards its tower and churchyard. The impact on its setting is therefore considered to lie between **negative/minor** and **negative/moderate** in extent. The Grade I Listed churches of St Nonna, Pelynt, St Ciricus and St Julitta, St Veep, and St Sampson, Golant, are also considered to be at risk of **negative/minor** impact on their settings, given either their proximity to the proposed turbine site or the relative openness of views in their direction. Some degree of blocking by intervening hillslopes or vegetation cover in certain instances may act as limiting factors. The remaining Grade I Listed churches are considered to lie at sufficient distance from the proposed turbine site, or to have sufficient levels of blocking by intervening topography, vegetation cover or proximal buildings to result in **neutral** impacts on their settings.

Grade II* Listed Buildings - see Figure 42, and Figures 18, 19 and 46

Identifier	Site	Impact
1137024	Court Barton Farmhouse	Negative/minor to negative/moderate
1138175	Chapel of St Nectans	Neutral to negative/minor

The Grade II* Listed Court Barton Farmhouse at Lanreath is situated around 1.2km the north west of the proposed turbine site. Views across the farm complex from the road to the north (Fig 66) suggest that at least the upper parts of the mast and the blades of the proposed turbine may be intervisible with the farm complex and in some views of it. The potential impact on its settings is therefore assessed as lying between **negative/minor** and **negative/moderate** in extent. The Grade II* Listed Chapel of St Nectans commands partially open views towards the proposed turbine site, although it lies around 6.8km distant and there is currently partial blocking by localised tree cover (Fig 74). Views towards the chapel from the approach road are currently unlikely to be impacted by the proposed turbine, although some views out from the chapel and from its gateway may include partial intervisibility with the upper parts of the turbine and its blades. At present the potential impact on its setting is assessed as **neutral**, but this could rise to **negative/minor** should any of the trees in front of the chapel die or be felled. Several additional Grade II* Listed farmhouses fall within the 10km radius ZTV, but the level of likely intervisibility between them and the wind turbine is considered sufficiently negligible to result in little potential for impacts on their settings.

14.2.4 Designated heritage assets within the 3km radius viewshed.

Grade II Listed Buildings - see Figure 28 and Figures 18, 19, 21, 22 and 29 to 32.

Identifier	Site	Impact
1146528	Rabbit Warren Walls South of Court Barton	Negative/minor to negative/moderate
1140331	18 th century house, Lanreath	Negative/minor to negative/moderate
1329080	Talehay Farmhouse	Negative/minor
1161601	Trenake Farmhouse	Negative/minor
1137617	Trevawden	Negative/minor
1140262	Jaffers Cottage	Negative/minor
1161832	North Muchlarnick	Neutral
1140697	Hall Barton Farmhouse	Neutral

1309922	The Old School House	Neutral
1329086	Pelynt House	Neutral
1329078	Bake Farm	Neutral

The settings of the Grade II Listed Buildings at Lanreath are assessed as being at risk of between **negative/minor** and **negative/moderate** impact from the proposed turbine site, given their relative proximity and the likely level of intervisibility between them and the wind turbine. The Grade II Listed farmhouses at Trenake and Talehay (Figs 21 and 22) are situated within 1km south of Tremaine and fall substantially within the ZTV coverage. The Grade II Listed Jaffers Cottage (Fig 31) and the Grade II Listed farmhouse at Trevawden (Fig 32) are situated around 1.8km north east and 2.2km east north east of Tremaine, respectively, and fall wholly within the ZTV coverage. Although not ground checked, the risk of any impact on their settings has been assessed on this basis as potentially **negative/minor**. Setting impacts on the remaining Grade II Listed Buildings within the 3km radius viewshed are assessed as **neutral**, given either the low level of suggested intervisibility or the high level of potential blocking by the intervening topography, buildings or vegetation cover, as checked at ground level.

Conservation Areas

See Figure 20.

Identifier	Site	Impact
DCO151	Lanreath	Negative/minor to negative/moderate

The Conservation Area of Lanreath is situated around 1.2km north west of the proposed turbine site at Tremaine and substantial sections of the settlement within the designation boundary fall within the ZTV coverage, including the main approach from the north, which incorporates views of the church and churchyard, the core of original settlement around the church and areas of the Court Barton farm and manor complex. The location of the proposed turbine is below a hillcrest facing away from Lanreath and it is probable that only the upper parts of the mast and the turbine blades will be visible from most locations (see Fig 81). Nonetheless, the proximity of the Conservation Area to the proposed development site, the potential levels of intervisibility, the significance of vulnerable receptors within the Conservation Area and the visual intrusion of the wind turbine into views of and from the Conservation Area lead to the assessment of the potential impact on its setting as falling between **negative/minor** and **negative/moderate**.

Registered Parks and Gardens

See Figures 47 to 49.

Identifier	Site	Impact
1000350	Bocconoc	Neutral to negative/minor

Three Registered Parks and Gardens fall within the 10km radius viewshed but only Bocconoc is assessed as likely to experience any potential impact on its setting from the construction of the proposed wind turbine at Tremaine. As discussed above, the nature of the topography at Bocconoc and the present level of vegetation cover across this designated landscape suggest that any potential impact on its setting will be significantly reduced, as long as the current level of vegetation pertains. There is little likelihood of any designed aspect of the Bocconoc landscape being impacted on through potential intervisibility with the proposed turbine, but it is possible that views across Bocconoc from the road to the north will incorporate at least partial views of the upper parts of the turbine and its blades. Currently the potential impact on the setting of Bocconoc is assessed as **neutral**, but this may rise to **negative/minor** should any

tree plantings or vegetation be substantially cleared, especially if this results in the wind turbine becoming visible from planned elements of the Park.

Registered Battlefields

See Figure 50.

Identifier	Site	Impact
1000005	Battle of Braddock Down	Neutral to negative/minor

The Registered Battlefield of Braddock Down is situated around 6.75km north of Tremaine, and falls partially within the ZTV coverage on the high ground across its central extent. There are also a number of barrow groups across this central area, these being considered separately, above. The high ground of the battlefield would no doubt have been intended to be visually prominent within the surrounding landscape and to imply a position of strength and dominance. The site is also a memorial to those who fought and died there and, as such, is significant both for its historic context and as a place of conflict and burial. There are many arguments as to its sensitivity as a receptor to potential impact from intrusive modern constructions, such as wind turbines, but it does lie at a relative distance from Tremaine and is likely to experience only partial intervisibility with the upper sections of the turbine mast and its blades. The level of potential impact could not be easily ground checked, due to problems of access and safe parking, but the viewshed analysis suggests that the intervening topography between Braddock Down and the proposed turbine site may have some blocking effect on intervisibility, which may be further reduced by the level of vegetation cover. The impact on its setting is therefore assessed as potentially lying between **neutral** and **negative/minor** in extent.

14.2.5 Undesignated heritage assets within the 1km radius viewshed

See Figure 14.

None are likely to be affected given that the majority are either cropmark sites, milestones, or documented sites/place names.

14.2.6 Impacts on Historic Landscape Character

The installation of a wind turbine at Tremaine can be predicted to have some degree of negative impact on the historic character of the immediate surrounding landscape. The expected effect on HLC has been assessed as **negative/moderate**. Factors contributing to this assessment are as follows:

- Some significant visual impact throughout the operational phase would occur, affecting the integrity of the immediate surrounding area as former medieval farmland through the introduction of a highly visible modern feature into this landscape.
- There are presently very few highly-visible modern features within the immediate local landscape, which by and large retains its historic landscape character.
- 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.
- There is some potential for impact in terms of physical loss during the construction phase of surviving below ground features that could potentially inform the historic processes of agricultural change in the local area, and possibly confirm a substantial time depth of human activity on the site, back into later prehistory. There is the potential, through further investigation, for these features to more greatly contextualise the visible above ground components of this type of HLC. Their loss as a result of an unmitigated development proposal would, conversely, result in a further negative impact on HLC.

- Any impacts on the legibility of HLC would be temporary and reversible should the wind turbine be dismantled in the future. Any loss to surviving below ground archaeological features that would potentially inform and contextualise the HLC of the site would be permanent and irreversible.

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 (HEPAO), who may choose to recommend one or more of the following.

15.1 Archaeological works in advance of construction

Given the potential for sub-surface archaeological remains within the area which might be affected by the construction of the wind turbine and associated activities and the potential ambiguity of the geophysical evidence, the HEPAO may consider that, in this instance, some degree of further investigation through evaluation trenching may be required to determine the presence or absence of this feature, and thus the nature and scale of any potential sub-surface archaeological impacts that might result within this part of the field as a result of the proposed construction activities before a recommendation for the granting of planning permission could be made.

15.2 Site redesign

Given the nature of the site selected for the proposed wind turbine and the topography of the local landscape, there would seem to be little potential for reducing the potential impacts on the setting of the Giants Hedge, the Conservation Area of Lanreath and its Listed components and other relatively closely-set Scheduled Monuments through relocation of the wind turbine to another site within its immediate environs. There may be some scope for micro-relocation to mitigate the potential for impacts on the potential sub-surface archaeology of this site, given the proximity of possible multi-phase field and enclosure boundaries underlying the site, although the nature of these archaeological features would indicate that other similar features may survive below ground across a fairly extensive area, but were not necessarily detectable by magnetometer survey.

15.3 Archaeological recording during site works

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

Archaeological recording may be required in the form of the recording of elements of the site that might be negatively impacted upon by the works, through a controlled soil strip and watching brief (observation by an archaeologist during mechanical ground reduction activities). This is likely to be required either where any significant features or areas of ground are to be disturbed (for instance excavation for the foundations for the turbine or during cable trenching), in areas where significant features had been identified through the site walkover or geophysical survey, or where the balance of probability suggested that sub-surface archaeology might survive. 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 reduced to **permanent** and **irreversible**.

In the instance of the site at Tremaine, given the proximity of possible field and enclosure boundaries, plus additional anomalous features that may reflect multi-period

agricultural activity on the site, there is a possibility of at-present unrecorded below ground remains being directly impacted upon by the proposal, as suggested by the geophysical survey. The Historic Environment Planning Advice Officer may require archaeological recording of sites or features revealed during groundworks associated with the construction of the wind turbine as a condition of the granting of planning permission for the proposal in addition to or as an alternative to any evaluation trenching noted above.

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)
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- Ordnance Survey, c1907. *25 Inch Map* Second Edition (licensed digital copy at HE)
- Ordnance Survey, 2007. *Mastermap Digital Mapping*
- Tithe Map and Apportionment, c1840. *Parish of Lanreath* (digital copy available from CRO)

16.2 Publications

- Dean, R. 2013a, *Land at Tremaine Farm, Pelynt, Looe, Cornwall*, Bideford, Substrata
- Dean, R. 2013b, *Land at Tresawson Farm, Lanreath, Looe, Cornwall*, Bideford, Substrata
- English Heritage 2005, *Wind energy and the Historic Environment*
- English Heritage 2011, *The setting of Heritage assets: English Heritage guidance*
- Gilbert, D. 1838, *Parochial History of Cornwall*
- Herring, P. 1998, *Cornwall's historic landscape: presenting a method of historic landscape character assessment*, Cornwall Archaeological Unit
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- Padel, O.J. 1985, *Cornish Place-Name Elements*, Nottingham, English Place-Name Society
- Padel, O.J. 1988, *Cornish place-names*, Penzance
- Thorn, C and Thorn, F. (eds.) 1979, *Domesday Book, 10: Cornwall*, Chichester

16.3 Websites

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

17 Project archive

The HE project number is **146286**

The project's documentary, photographic and drawn archive is housed at the offices of Historic Environment, Cornwall Council, Fal Building, County Hall, Treyew 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.Q-T\Tremaine and Tresawson Site Visit_Digital Images
3. English Heritage/ADS OASIS online reference: cornwall2-161846
4. This report text is held in digital form as: G:\TWE\Waste & Env\Strat Waste & Land\Historic Environment\Projects\Sites\Sites T\Tremaine wind turbine assessment 2013\Report\2013R075 Tremaine Wind Turbine Assessment Report.doc



Fig 3 The proposed turbine site and its surroundings, as shown on John Norden's Map of Cornwall. The project area is circled in red.



Fig 4 The project area and its surroundings, shown on Joel Gascoyne's 1699 Map of Cornwall. The project area is circled in red.



Fig 5 The proposed turbine site and its surroundings, as shown on Martyn's 1748 Map of Cornwall. The project area is circled in red.



Fig 6 The project area and its surroundings as shown on the around 1807 1st Edition OS mapping. The turbine project area is slightly offset because of the differing projections used by the 19th century OS surveyors and modern mapping.

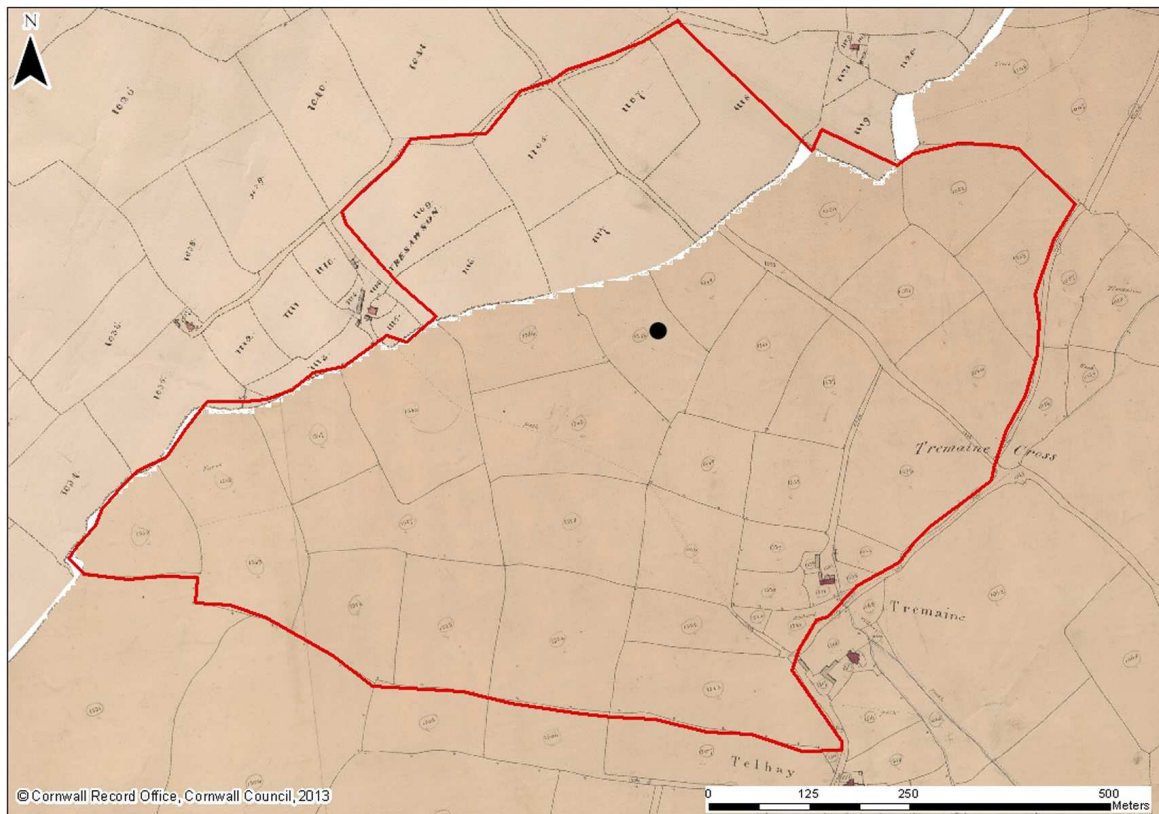


Fig 7 The project area as shown on the circa 1840 Lanreath Tithe Map. The proposed turbine is indicated by a black dot.

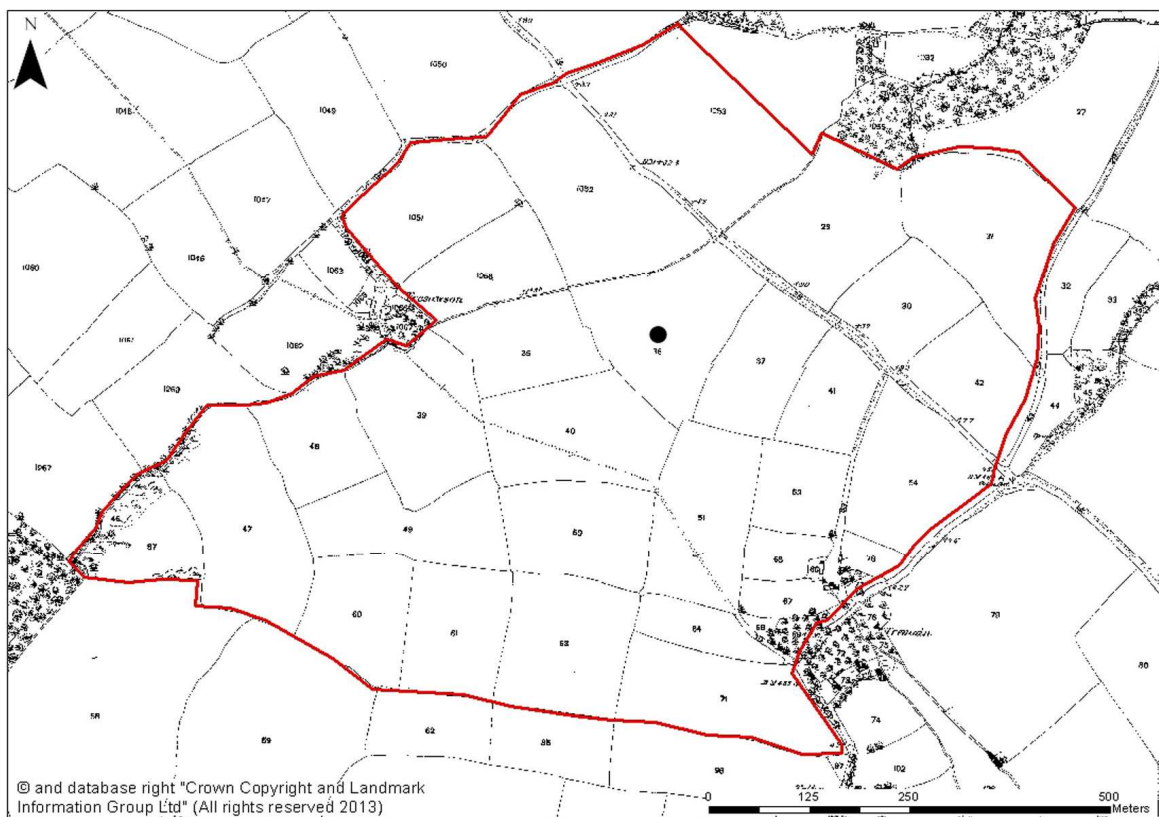


Fig 8 The project area as shown on the circa 1877 1st Edition OS 25" to the mile mapping.

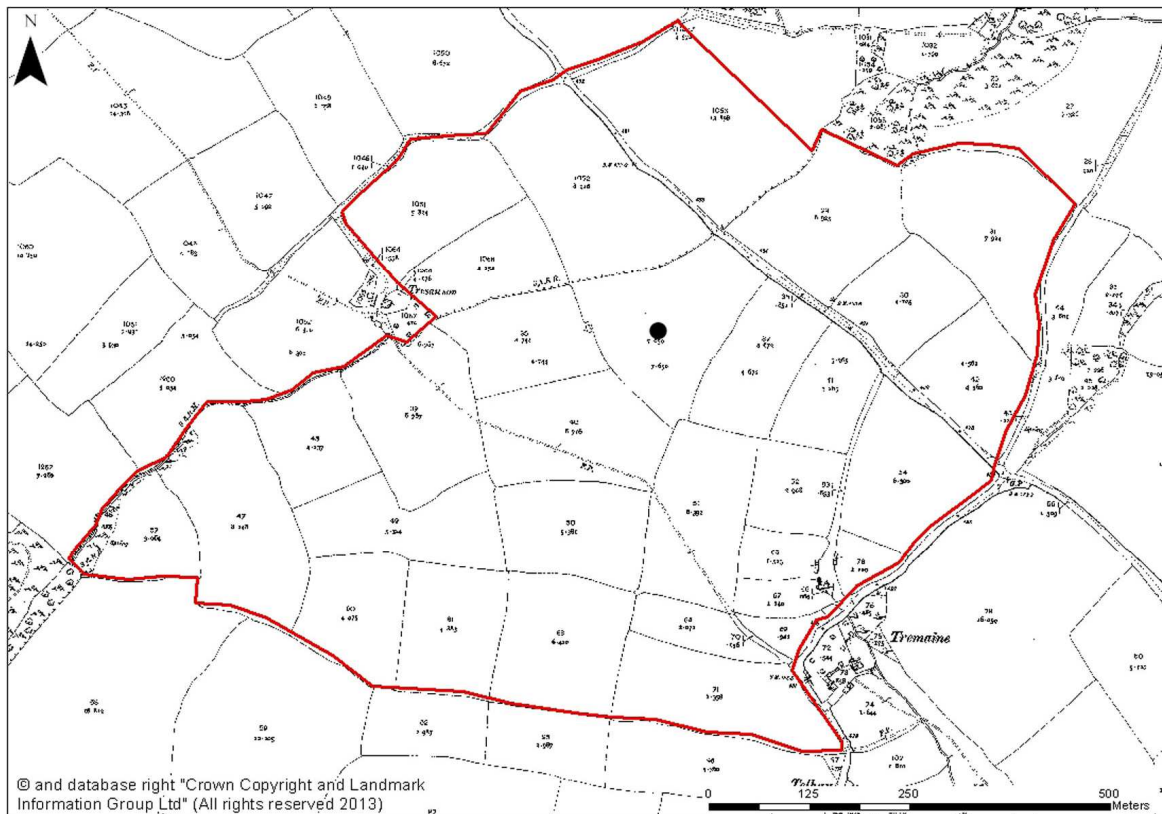


Fig 9 The project area as shown on the circa 1908 OS 25" to the mile mapping



Fig 10 The project area as shown on a 2005 CCC aerial photograph.

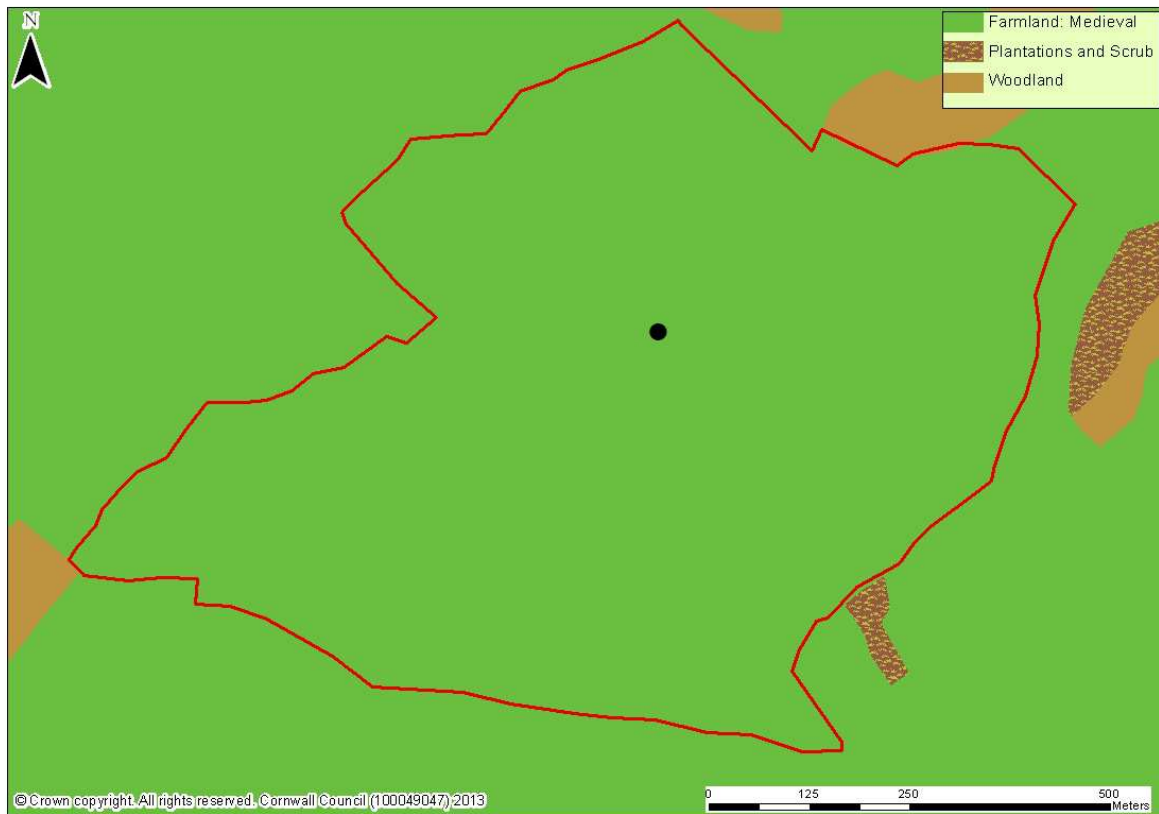


Fig 11 Historic Landscape Character mapping showing how this area of countryside is derived from land enclosed during the medieval period.



Fig 12 OS contour data for the area immediately surrounding the proposed wind turbine shows its site located on a north west facing slope between two small hill tops

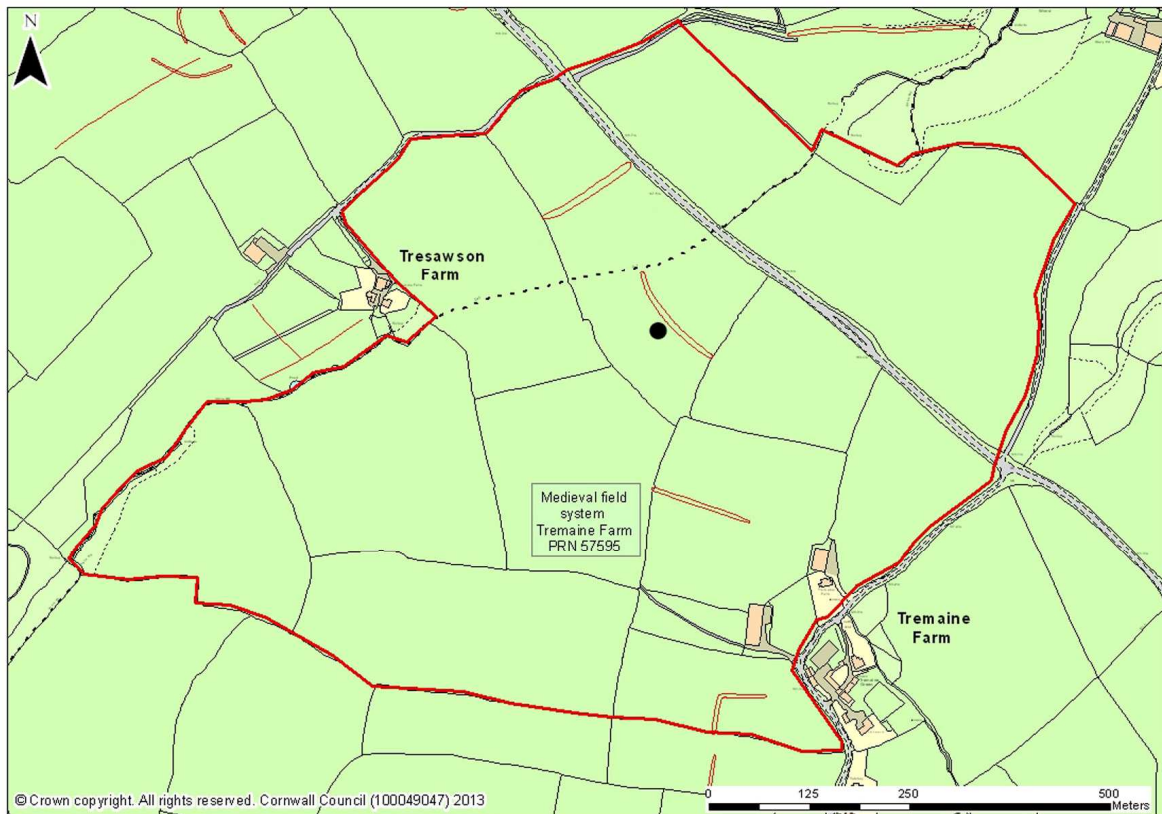


Fig 13 Cropmark archaeological sites within the vicinity of the site at Tremaine recorded by the National Mapping Project. NMP mapping ©English Heritage

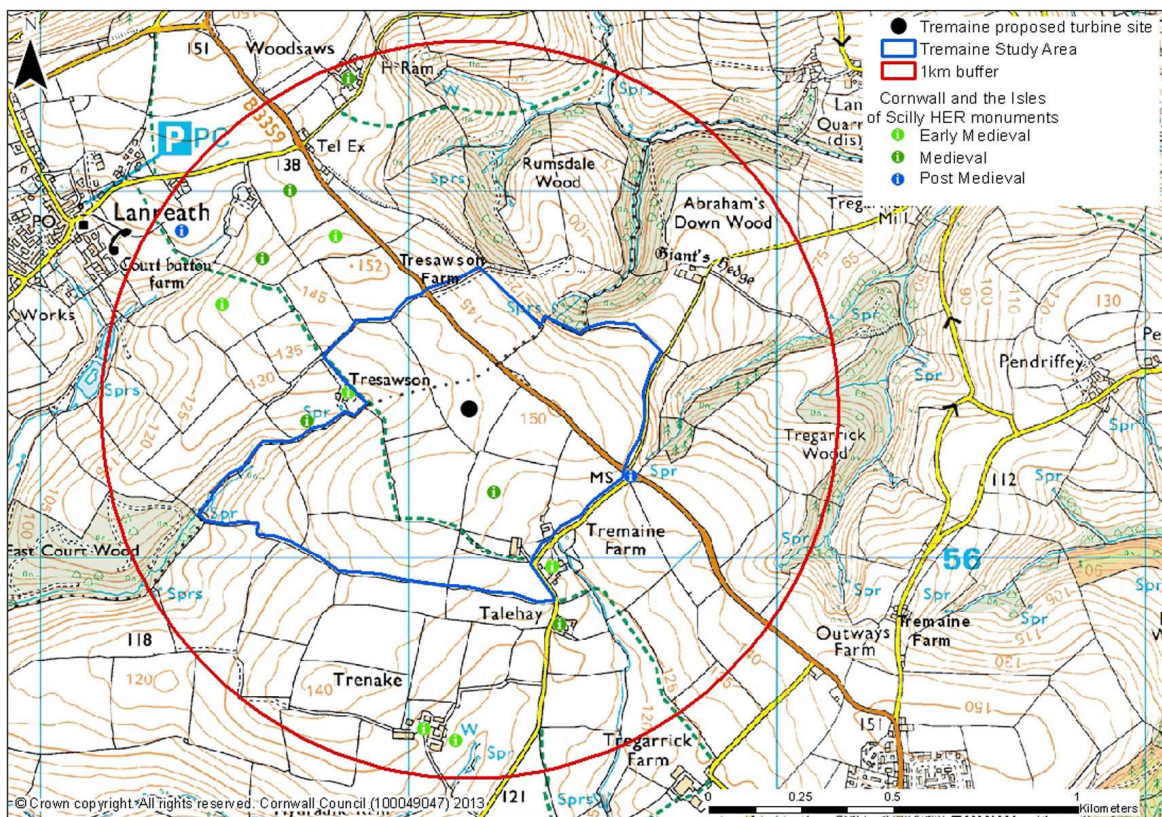


Fig 14 Sites within a 1km radius of Tremaine recorded in the Cornwall and Scilly HER.

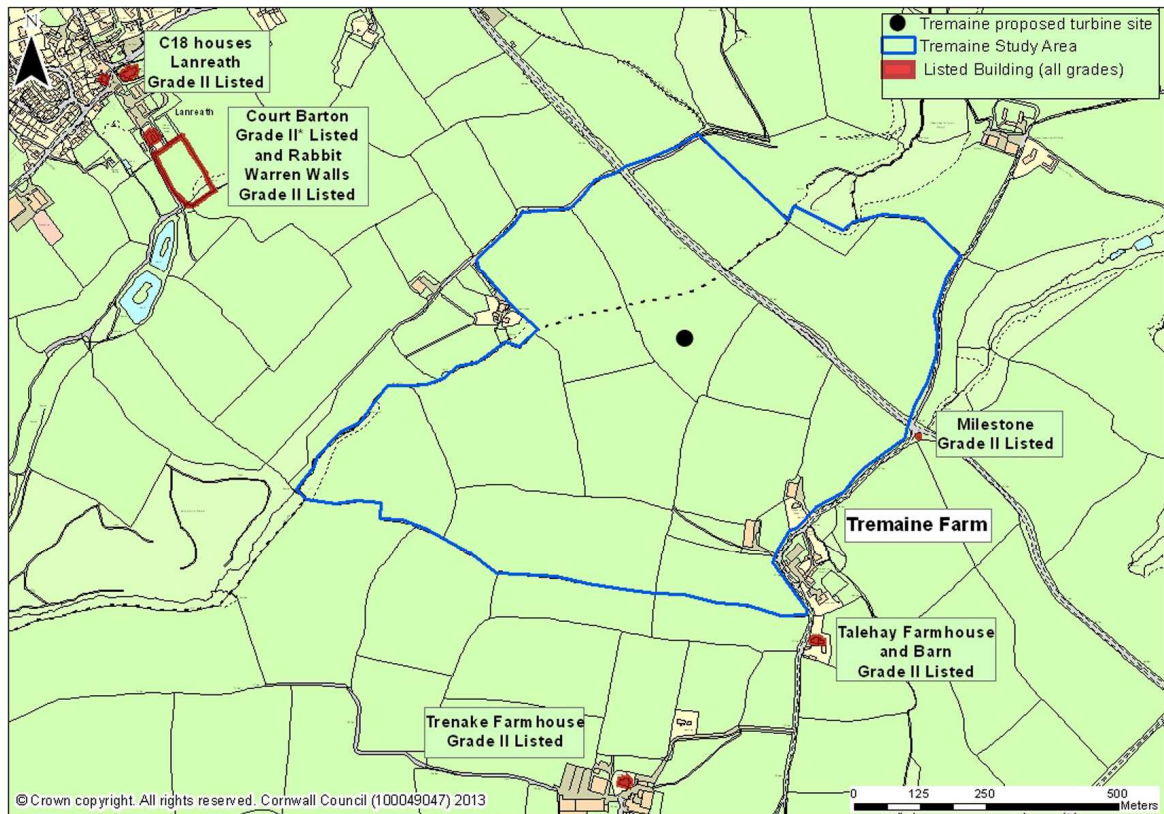


Fig 15 Listed Buildings within the landscape immediately surrounding Tremaine, at Lanreath, Trenake and Talehay.

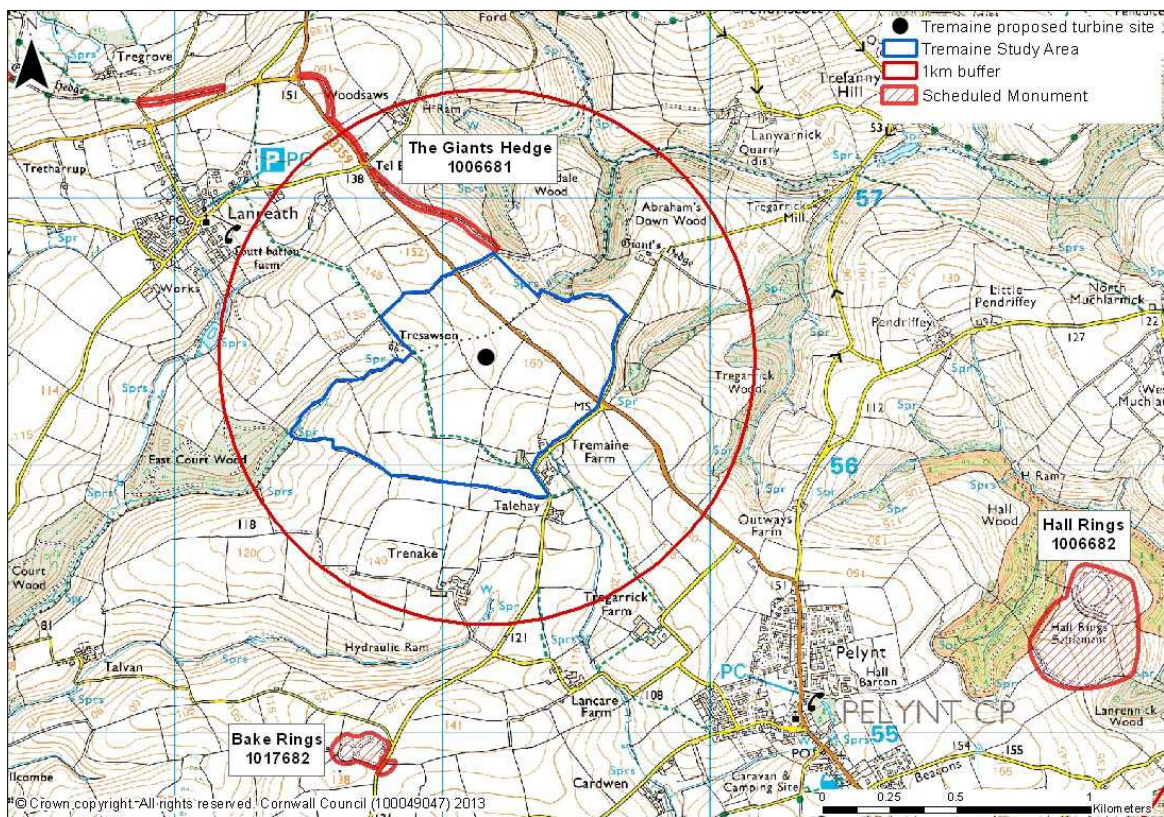


Fig 16 National Monument Numbers for Scheduled Monuments within the landscape immediately surrounding Tremaine.

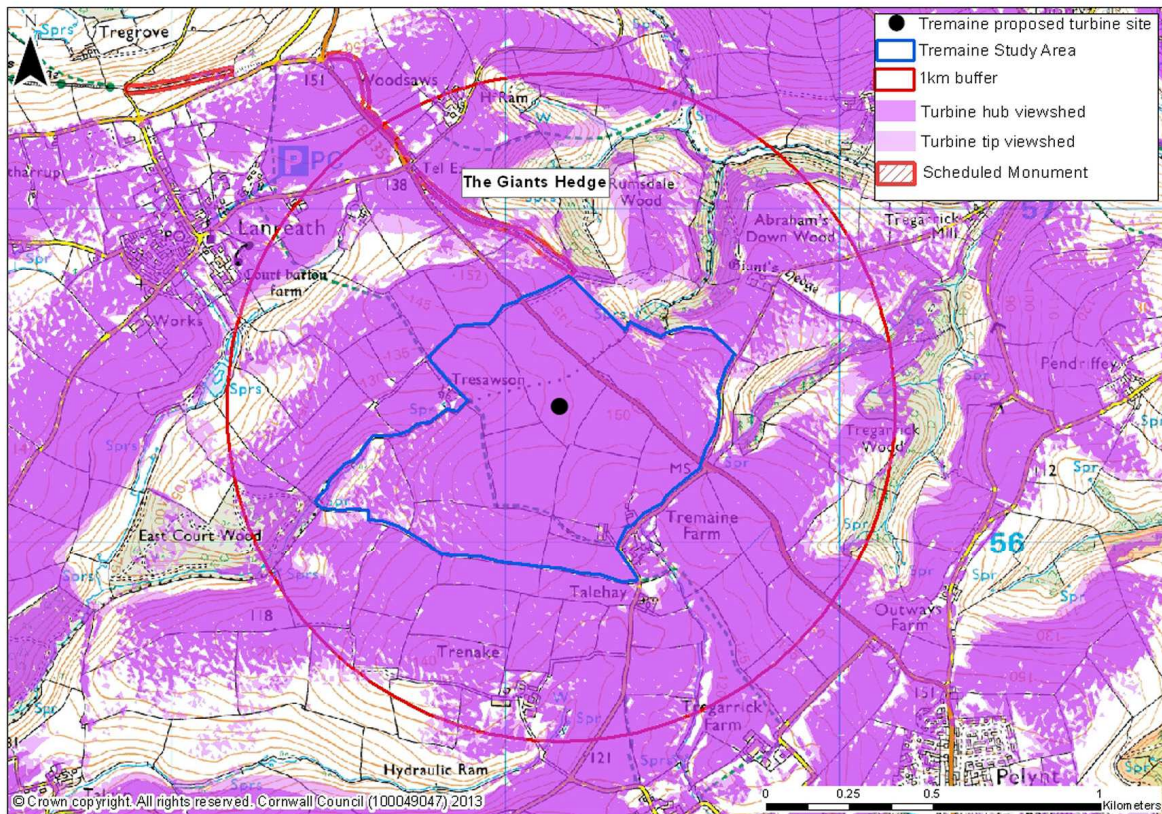


Fig 17 Mapping showing potentially intervisible Scheduled Monuments within the 1Km radius ZTV of the proposed wind turbine site.

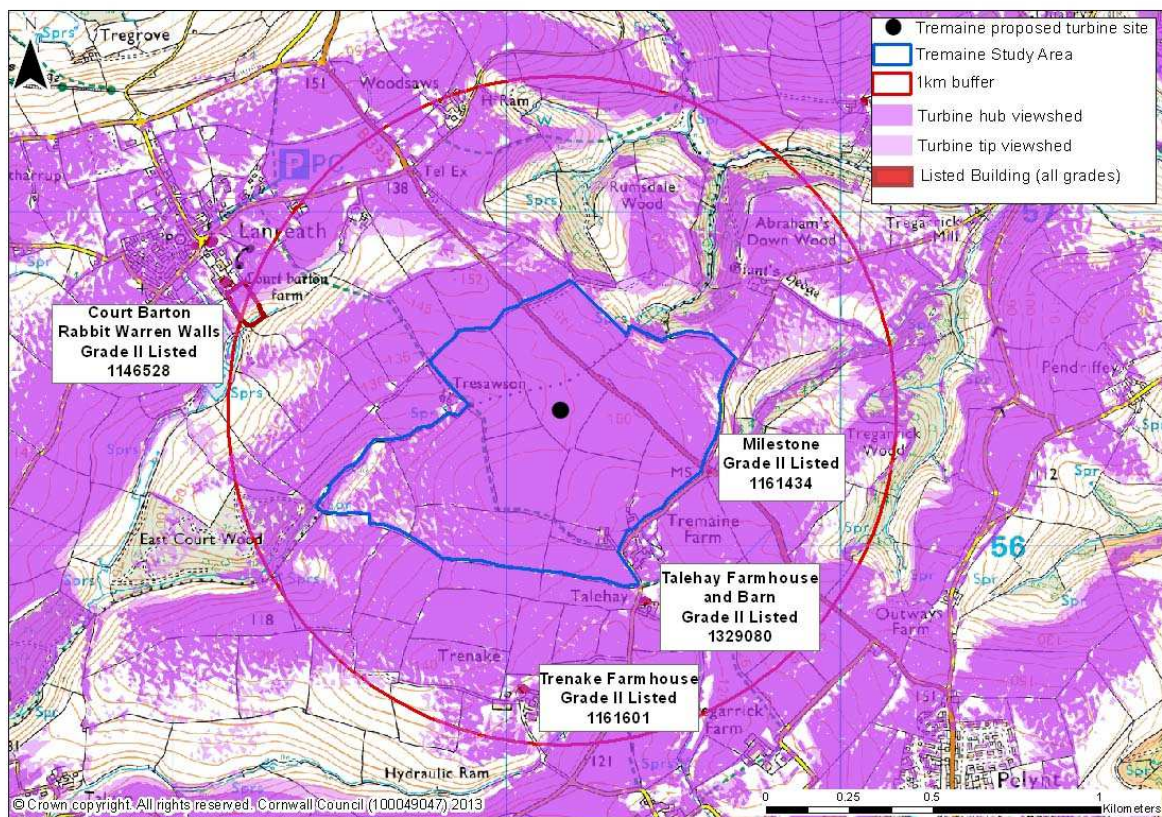


Fig 18 Mapping showing potentially intervisible Listed Buildings within and close to the 1Km radius ZTV of the proposed wind turbine site.

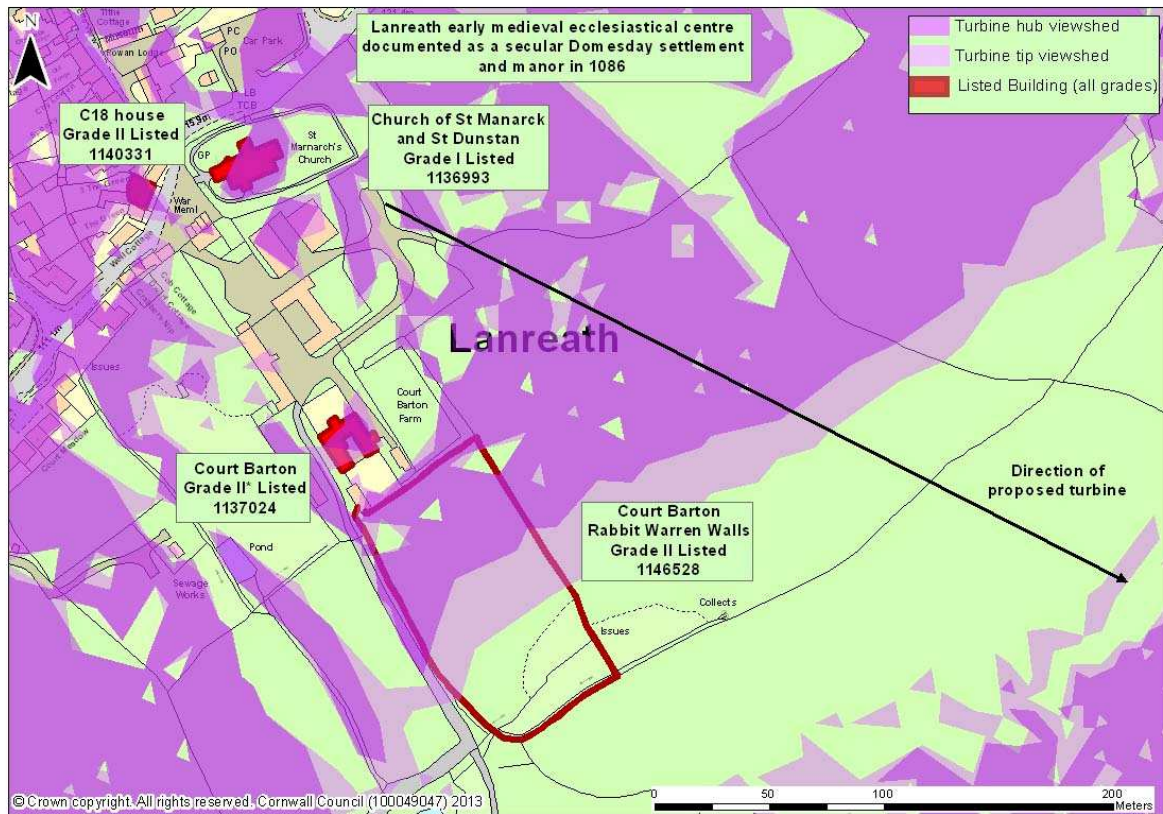


Fig 19 Detail of the ZTV mapping for Listed Buildings at Lanreath, all of which lie within the ZTV at less than 1km distance from the proposed wind turbine at Tremaine. The arrow shows the direction in which the proposed turbine would lie.

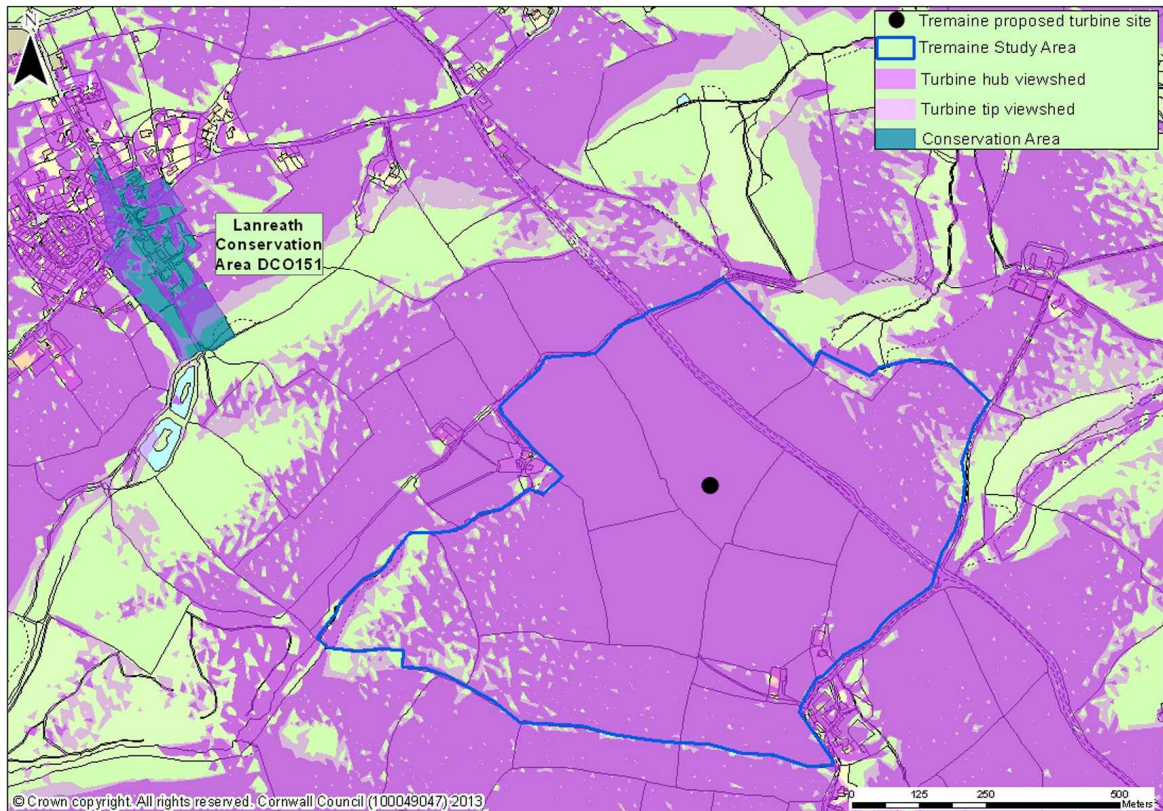


Fig 20 Mapping showing the Conservation Area at Lanreath, within 1km of the site proposed for the wind turbine at Tremaine and potentially intervisible with it.

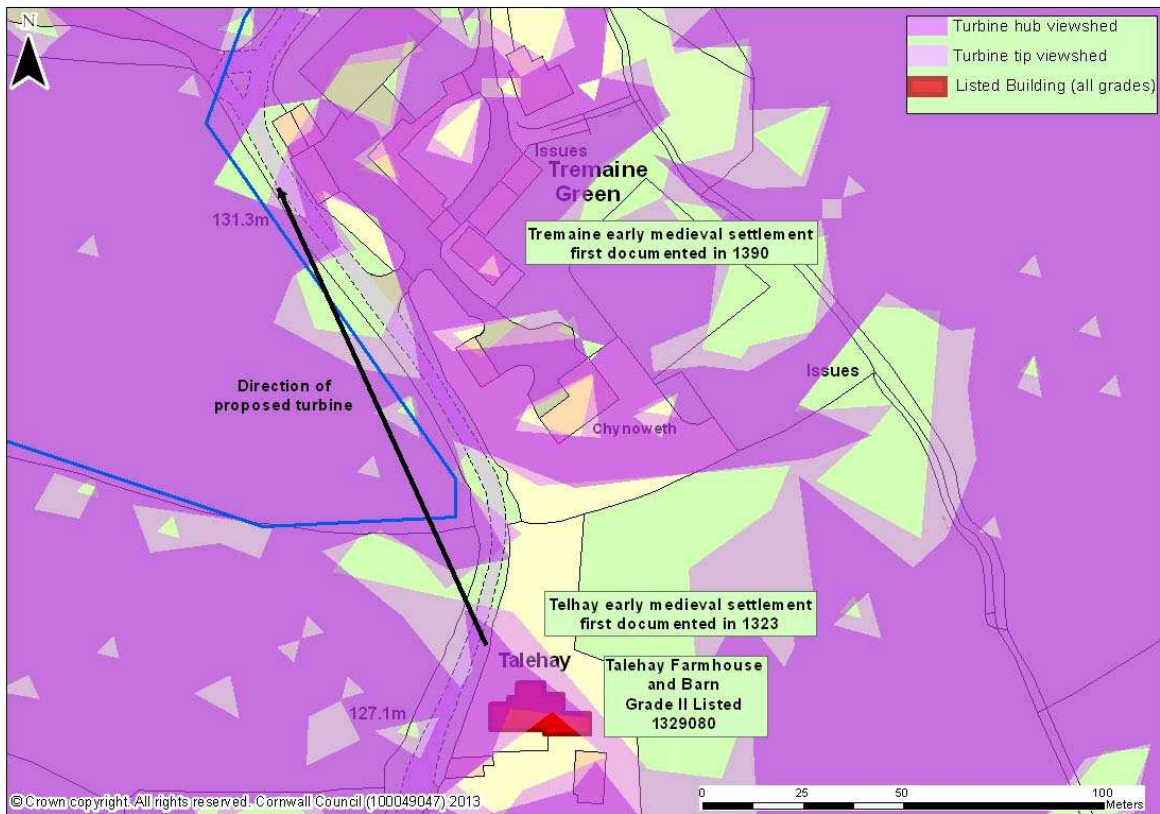


Fig 21 Mapping showing the early 17th century Grade II Listed farmhouse at Talehay and the extent of potential intervisibility with the proposed wind turbine site.

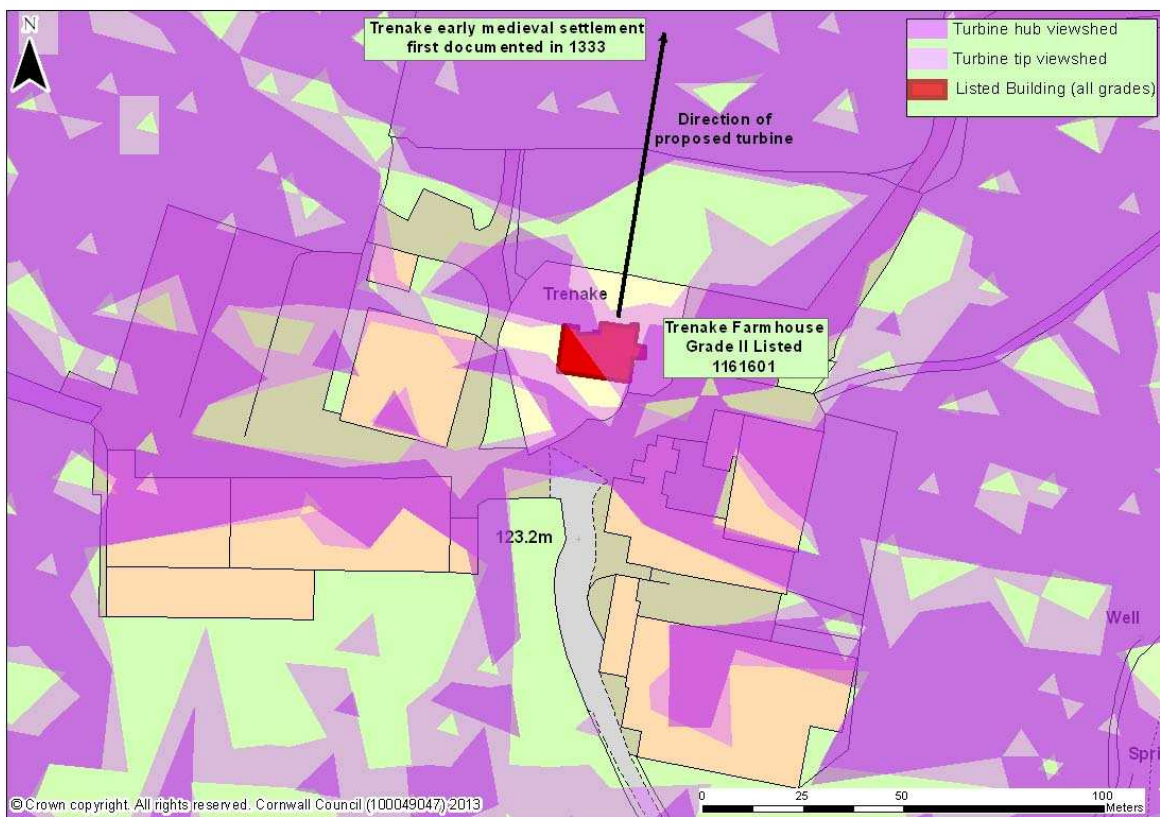


Fig 22 Mapping showing the early to mid 17th century Grade II Listed farmhouse at Trenake and the extent of potential intervisibility with the proposed wind turbine site.

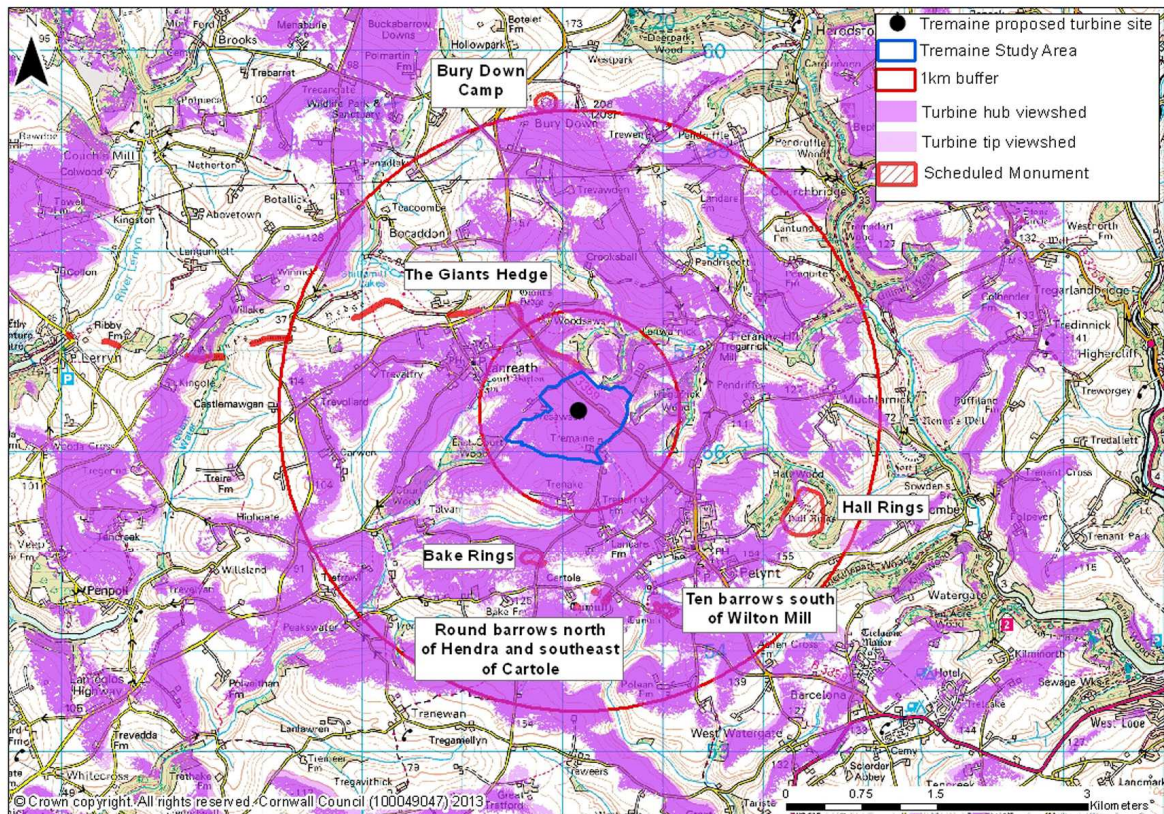


Fig 23 Mapping showing significant and potentially intervisible Scheduled Monuments between 1km and 3km radius ZTV of the proposed wind turbine site.

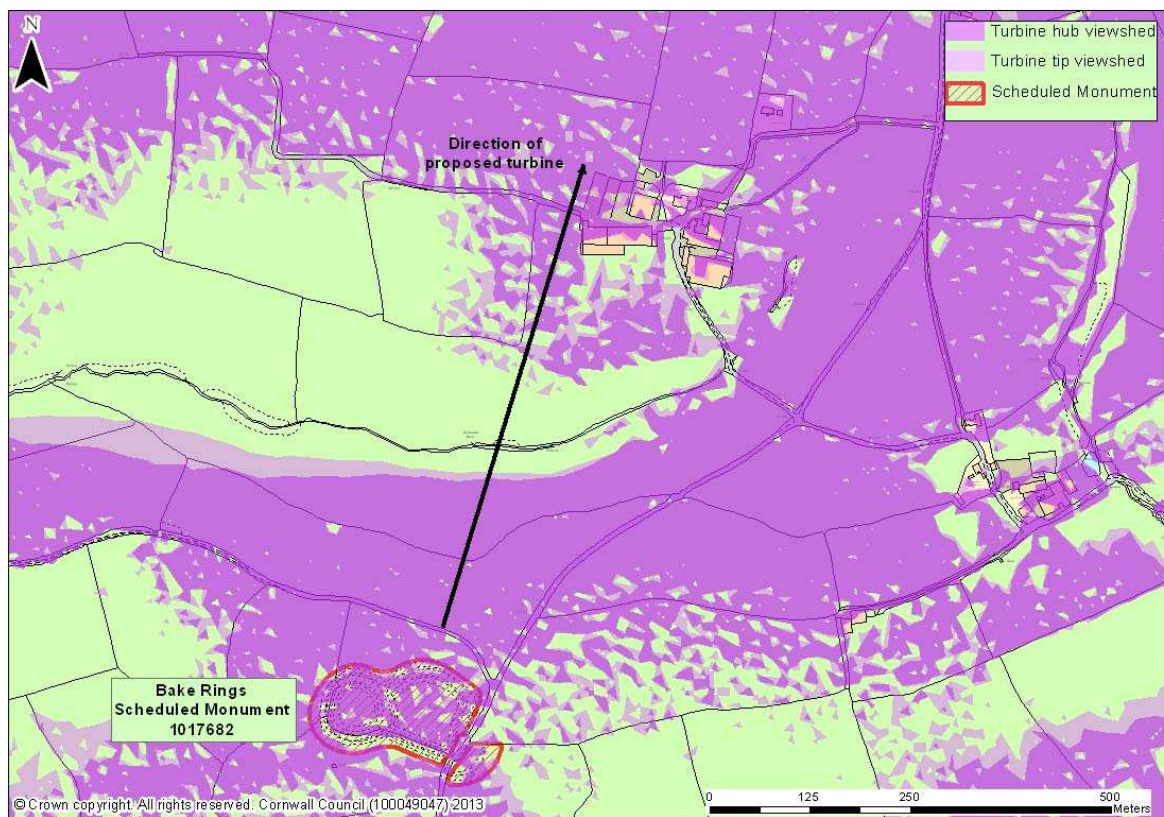


Fig 24 Mapping showing the Scheduled Monument of Bake Rings and the substantial extent of potential intervisibility with the proposed wind turbine site.

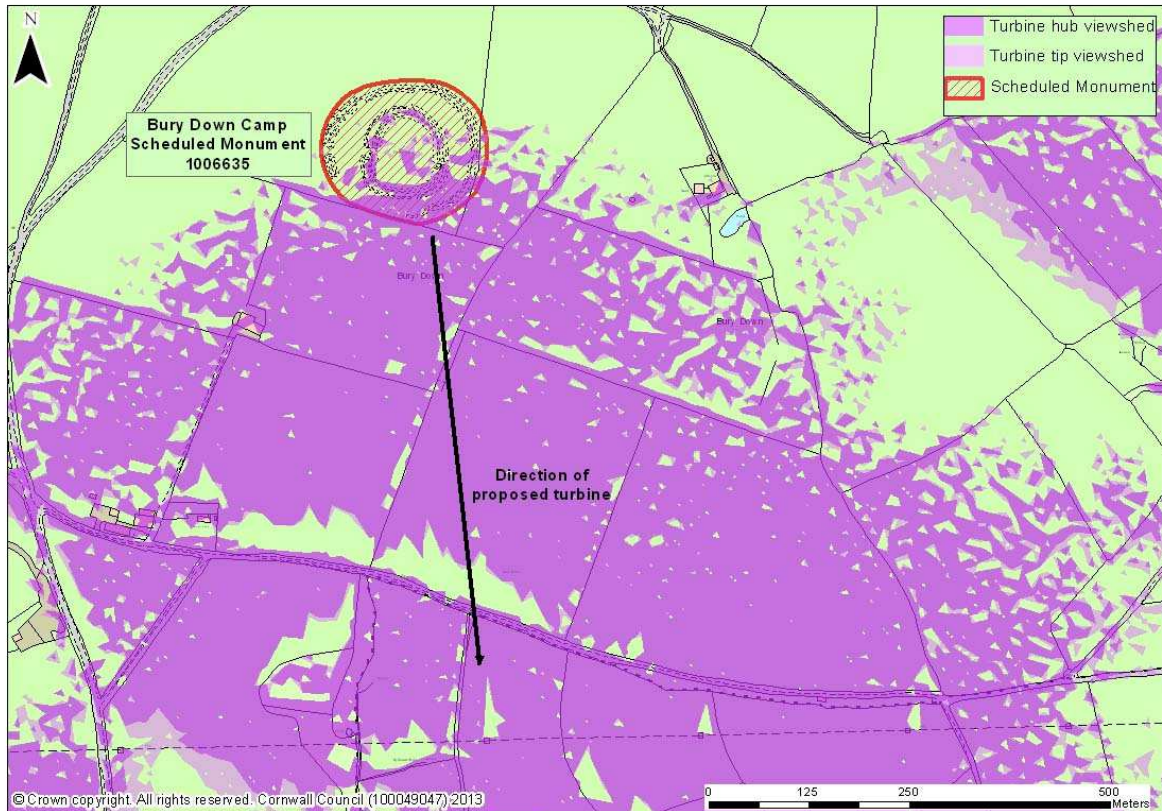


Fig 25 Mapping showing the Scheduled Monument of Bury Down Camp and the limited intervisibility with the proposed wind turbine site. The view south across the valley from this site was probably an important one when it was constructed.

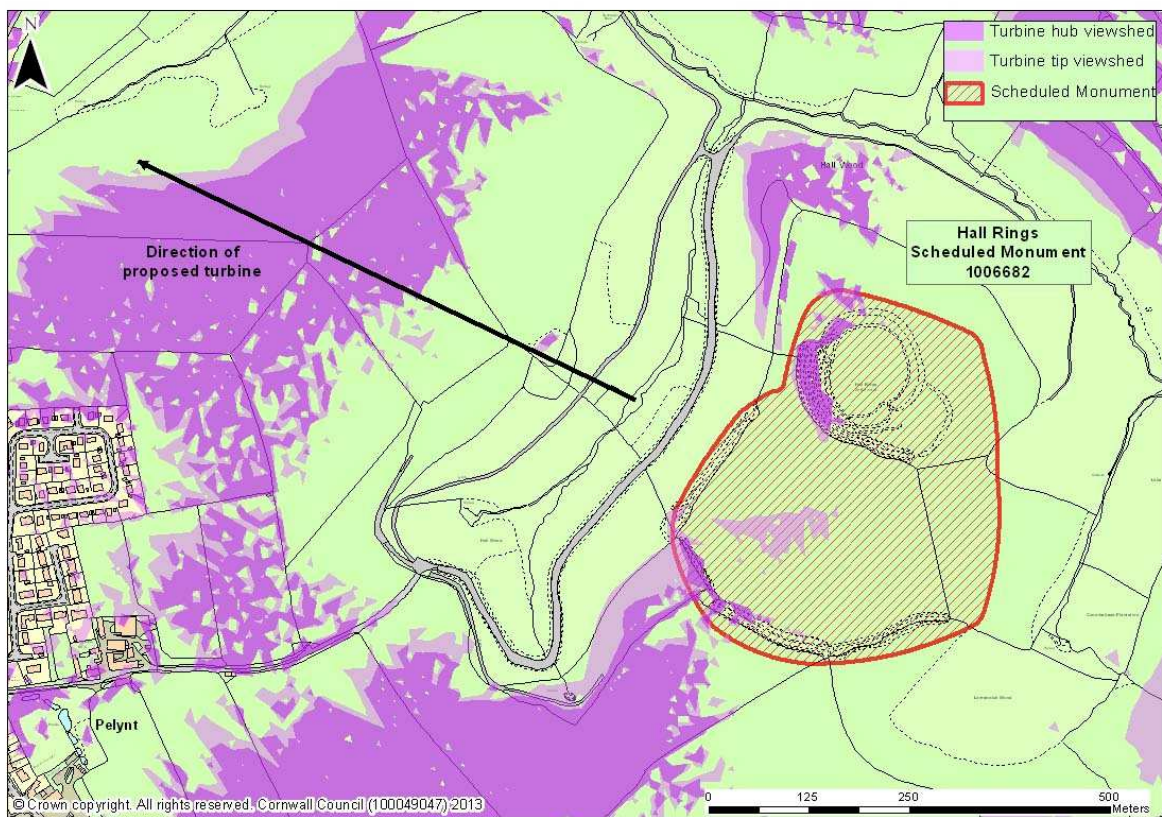


Fig 26 Mapping showing the Scheduled Monument of Hall Rings; although there is limited intervisibility with the proposed wind turbine site, the view west along the valley from this site was probably an important one when it was constructed.

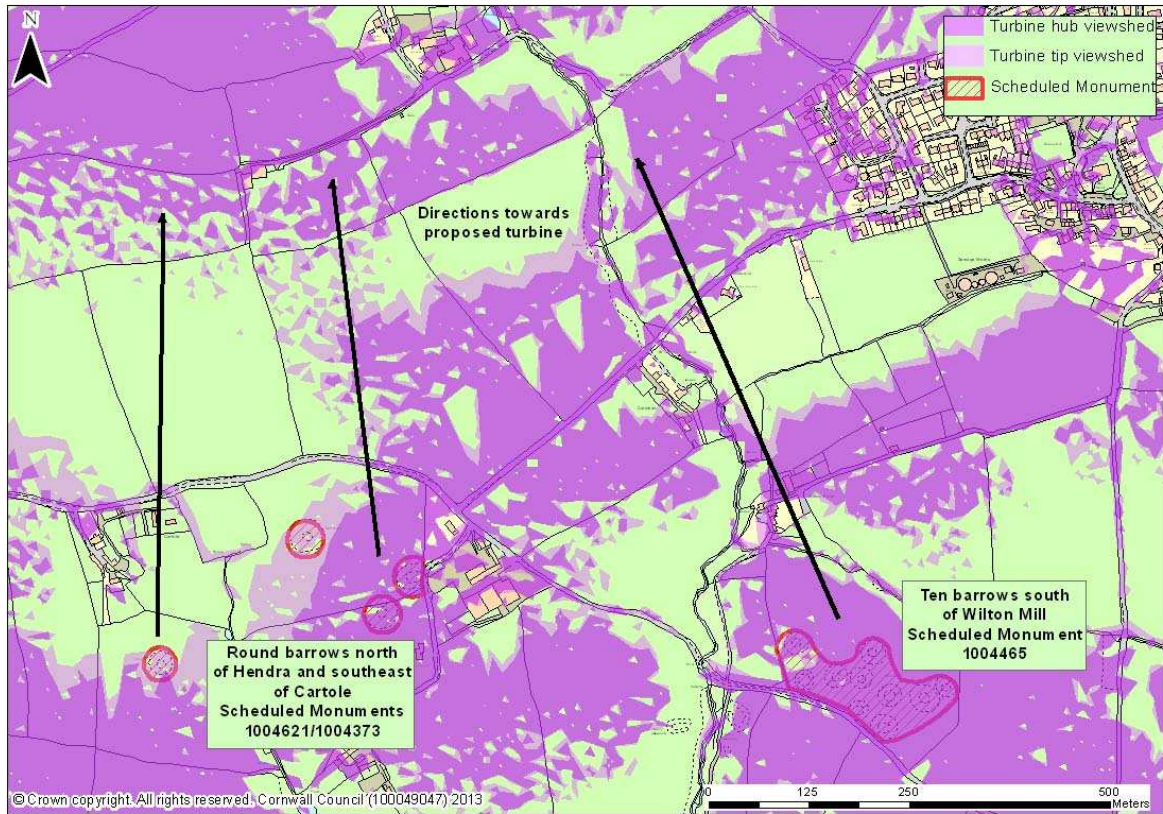


Fig 27 Mapping showing the Scheduled Monuments of the barrow groups at Wilton Mill, Hendra and Cartole and the likely intervisibility with the proposed wind turbine site. The barrows were probably intended to be visible from the landscape to their north.

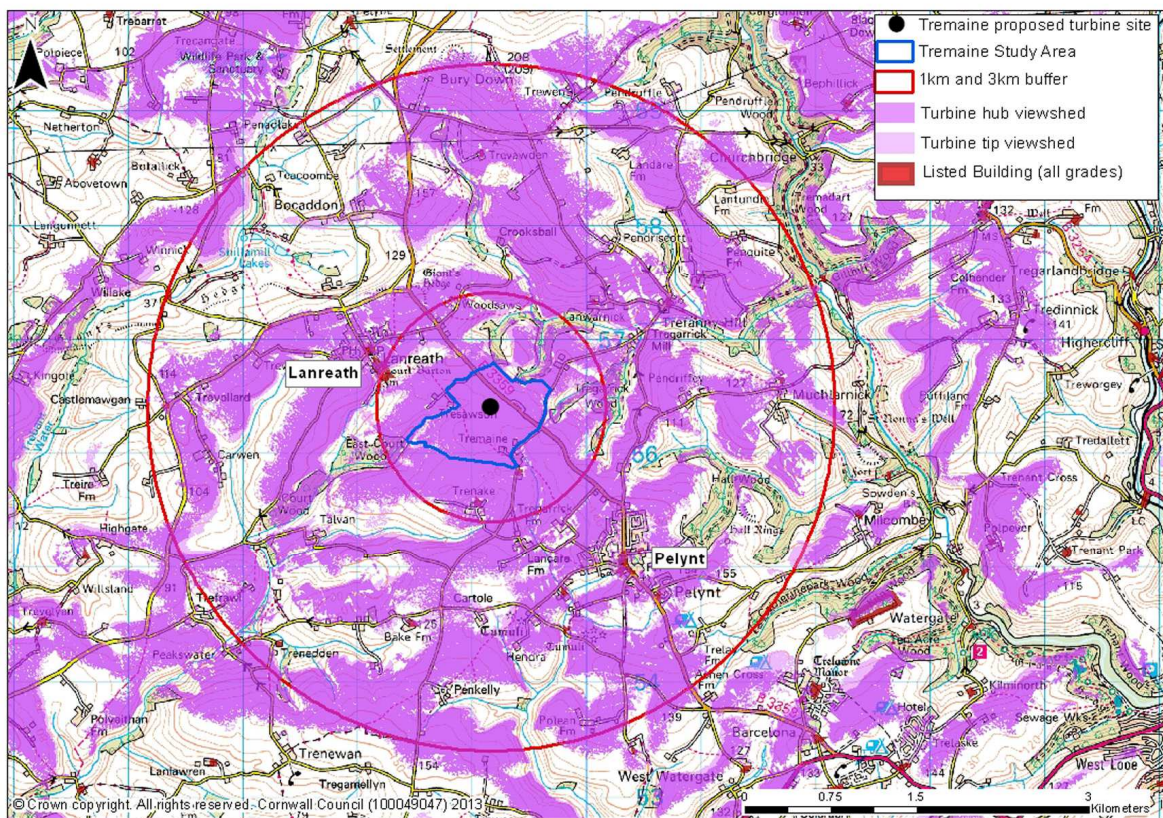


Fig 28 Mapping showing potentially intervisible Listed Buildings within and close to the 3km radius ZTV of the proposed wind turbine site.

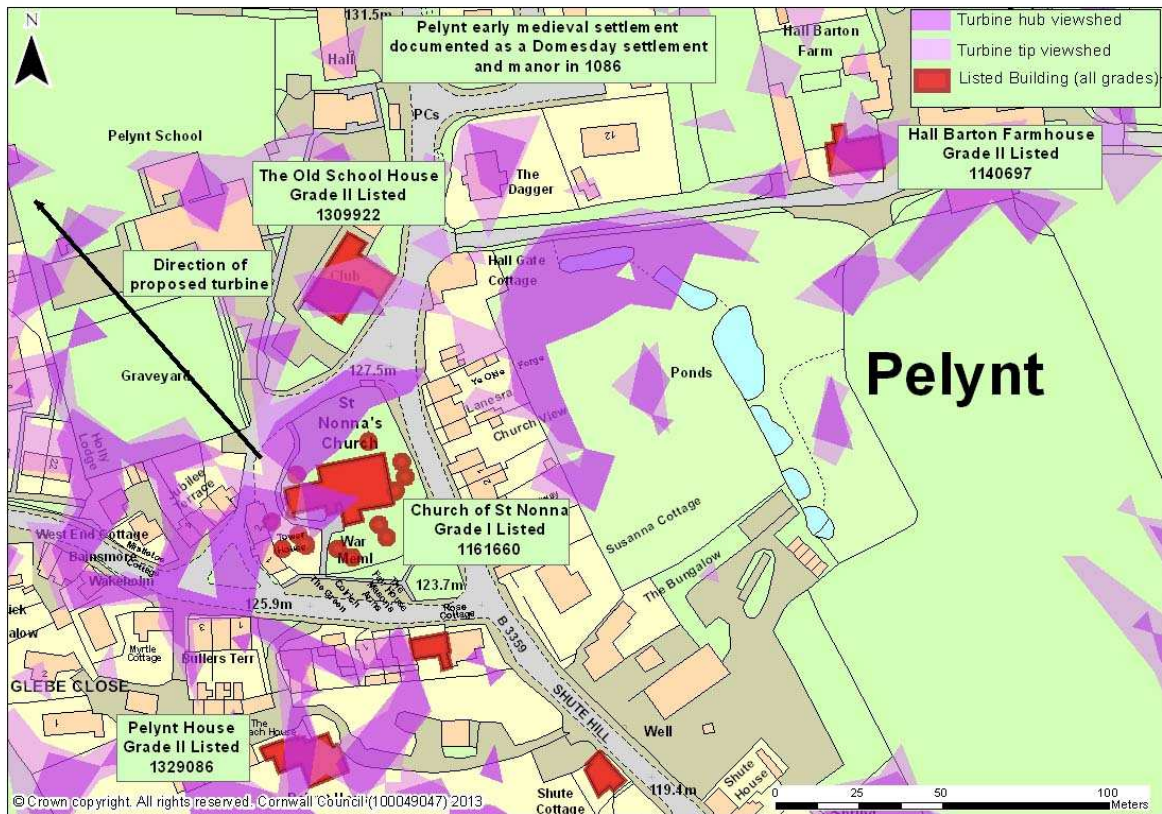


Fig 29 Mapping showing the Listed Buildings at Pelynt, including the Grade I Listed St Nonna Church, and the extent of potential intervisibility with the proposed wind turbine site.

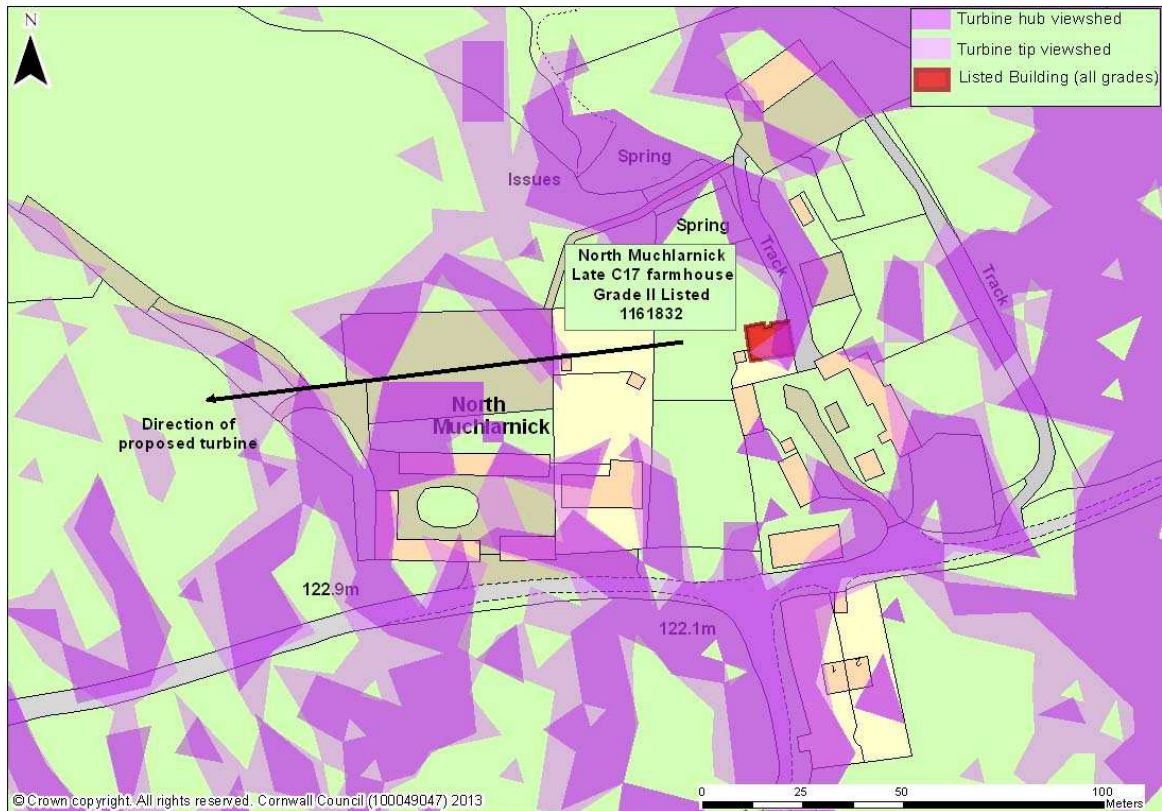


Fig 30 Mapping showing the 17thC Grade II Listed farmhouse at North Muchlarnick and the extent of potential intervisibility with the proposed wind turbine site.



Fig 31 Mapping showing the 18thC Grade II Listed Jaffers Cottage and the extent of potential intervisibility with the proposed wind turbine site.

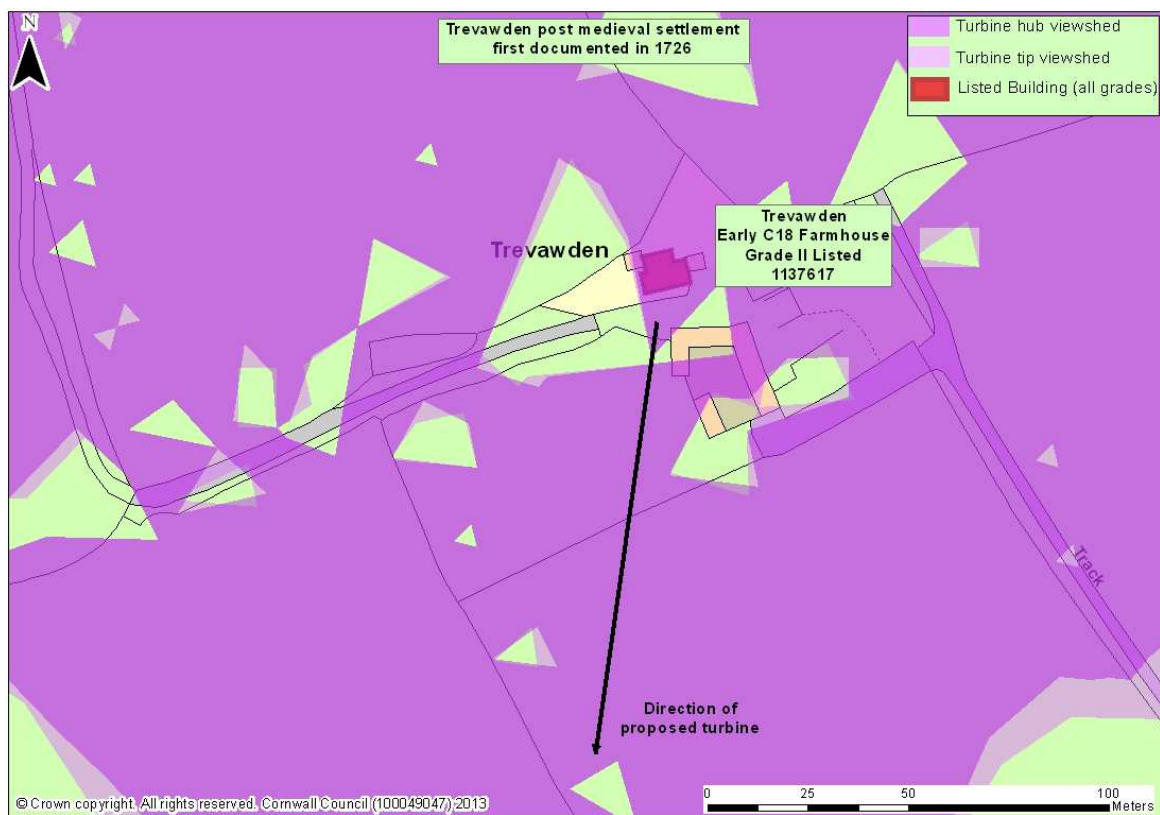


Fig 32 Mapping showing the 18th century Grade II Listed farmhouse at Trevawden and the extent of potential intervisibility with the proposed wind turbine site.

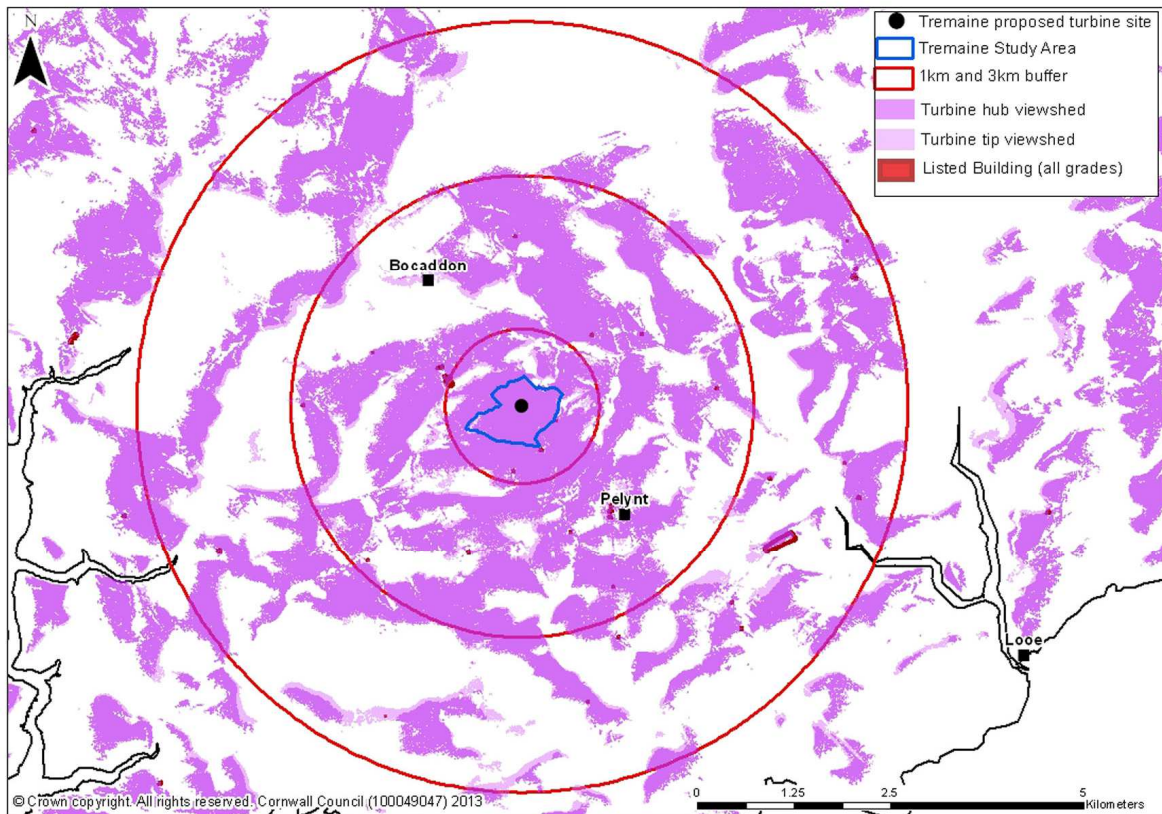


Fig 33 Mapping showing potentially intervisible Listed Buildings within and close to the 5km radius ZTV of the proposed wind turbine site

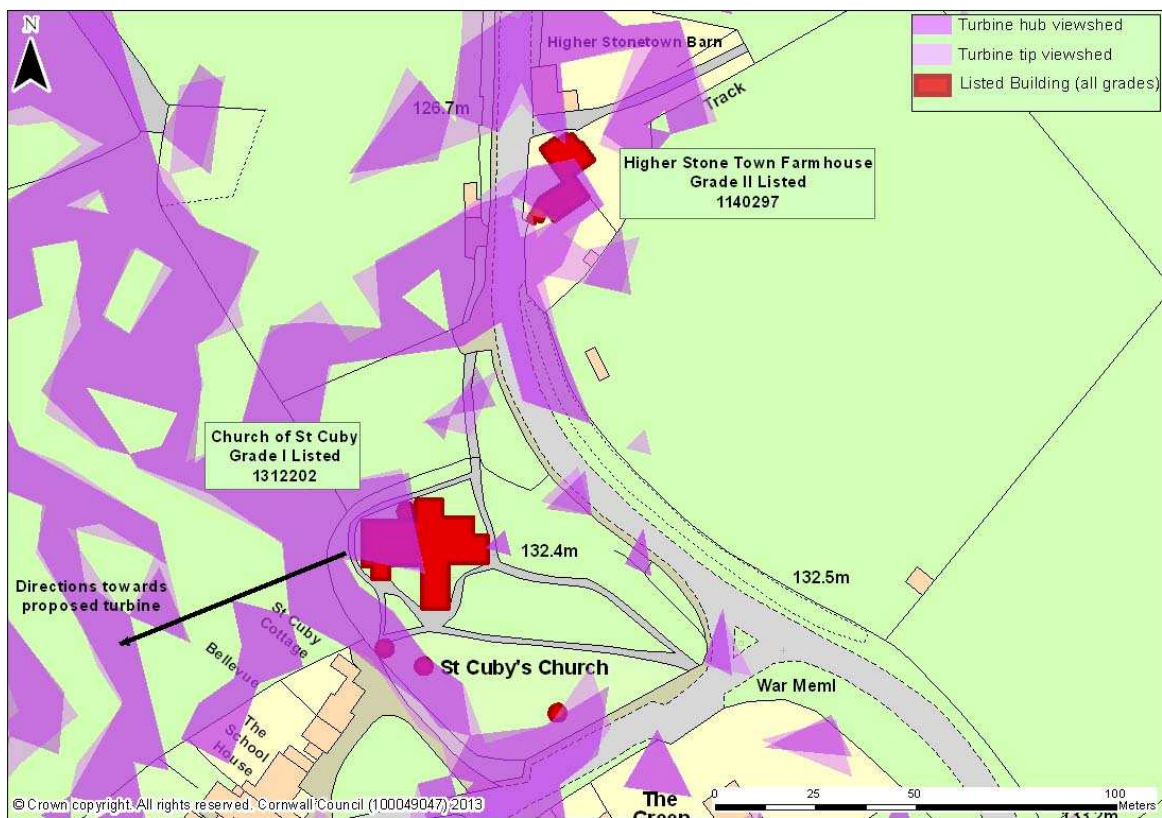


Fig 34 Mapping showing the Listed Buildings at Duloe, including the Grade I Listed St Cuby's Church, and the extent of potential intervisibility with the proposed wind turbine site.



Fig 35 Mapping showing the 17th century Grade II Listed farmhouse at Polpever and the extent of potential intervisibility with the proposed wind turbine site.



Fig 36 Mapping showing the 18th century Grade II Listed house at Hillhead and the extent of potential intervisibility with the proposed wind turbine site.

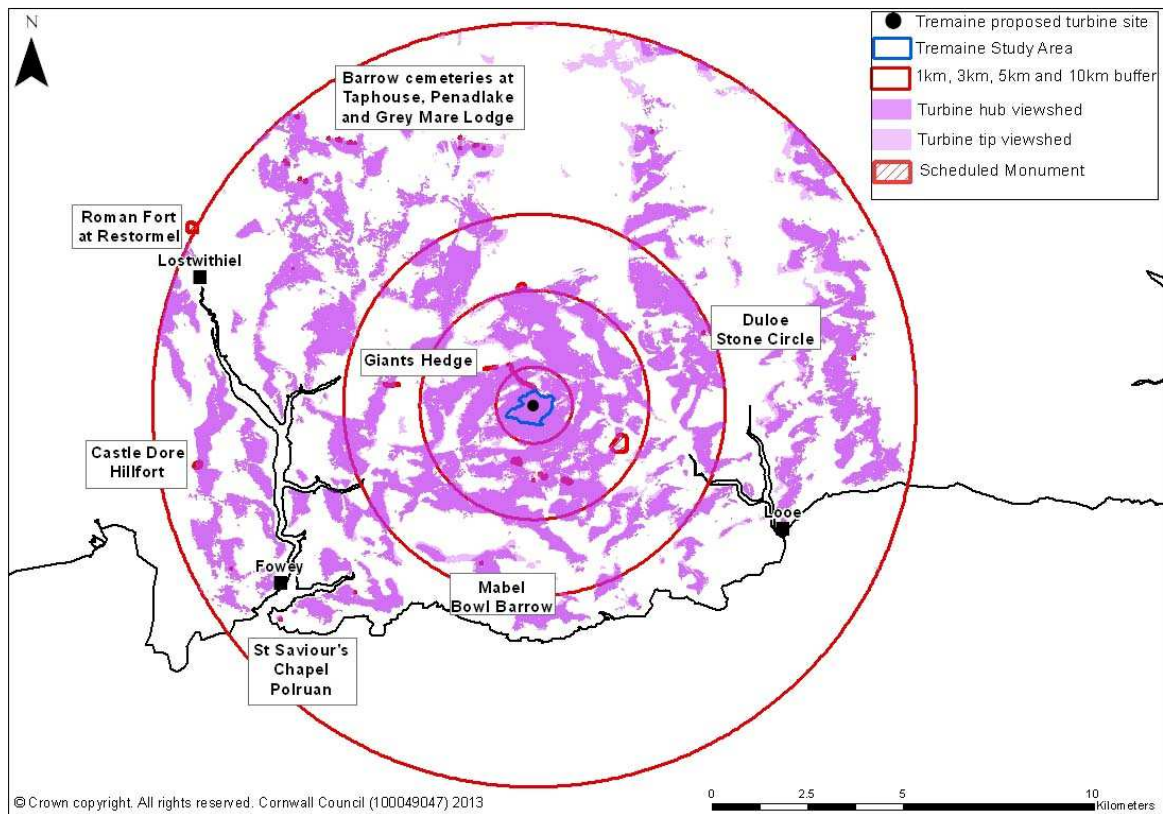


Fig 37 Mapping showing potentially intervisible Scheduled Monuments within and close to the 10km radius ZTV of the proposed wind turbine site.

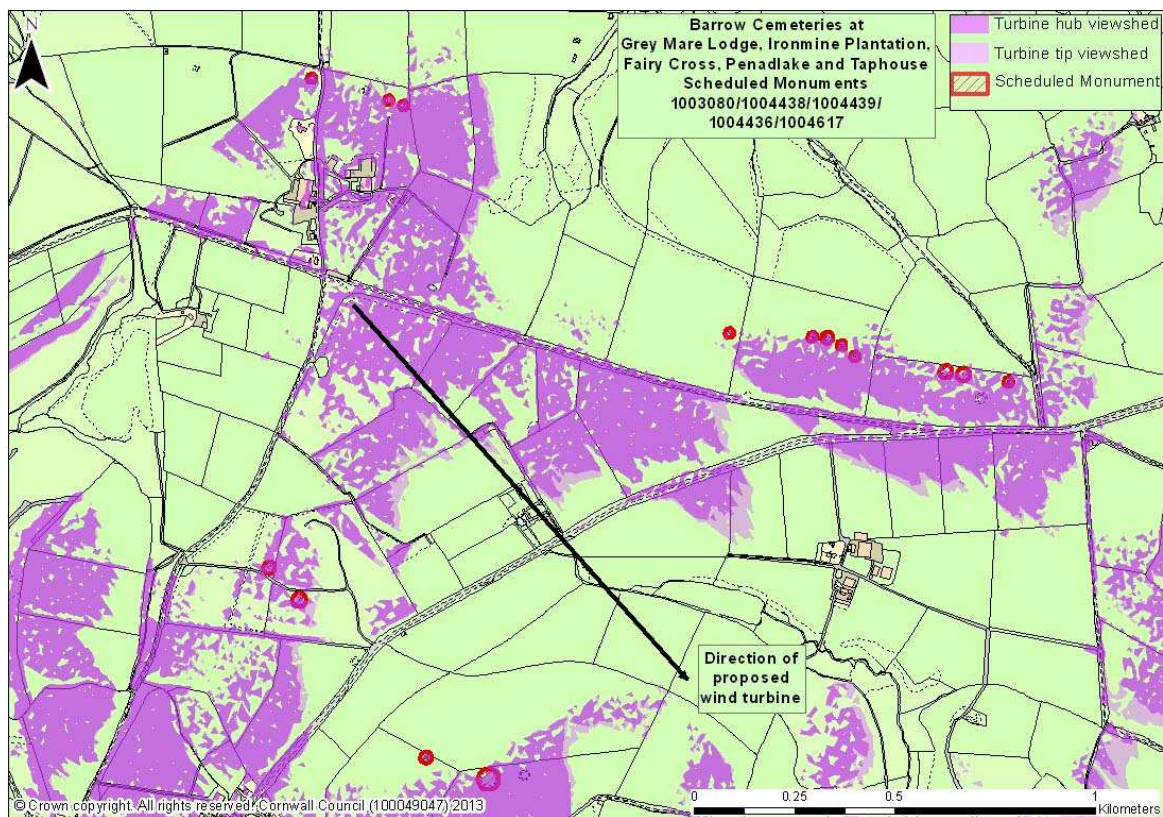


Fig 38 Mapping showing the Scheduled Monuments of several barrow groups to the north west of Tremaine and their likely intervisibility with the proposed turbine site. The barrows were probably intended to be visible on the hilltops from the valley to the south.

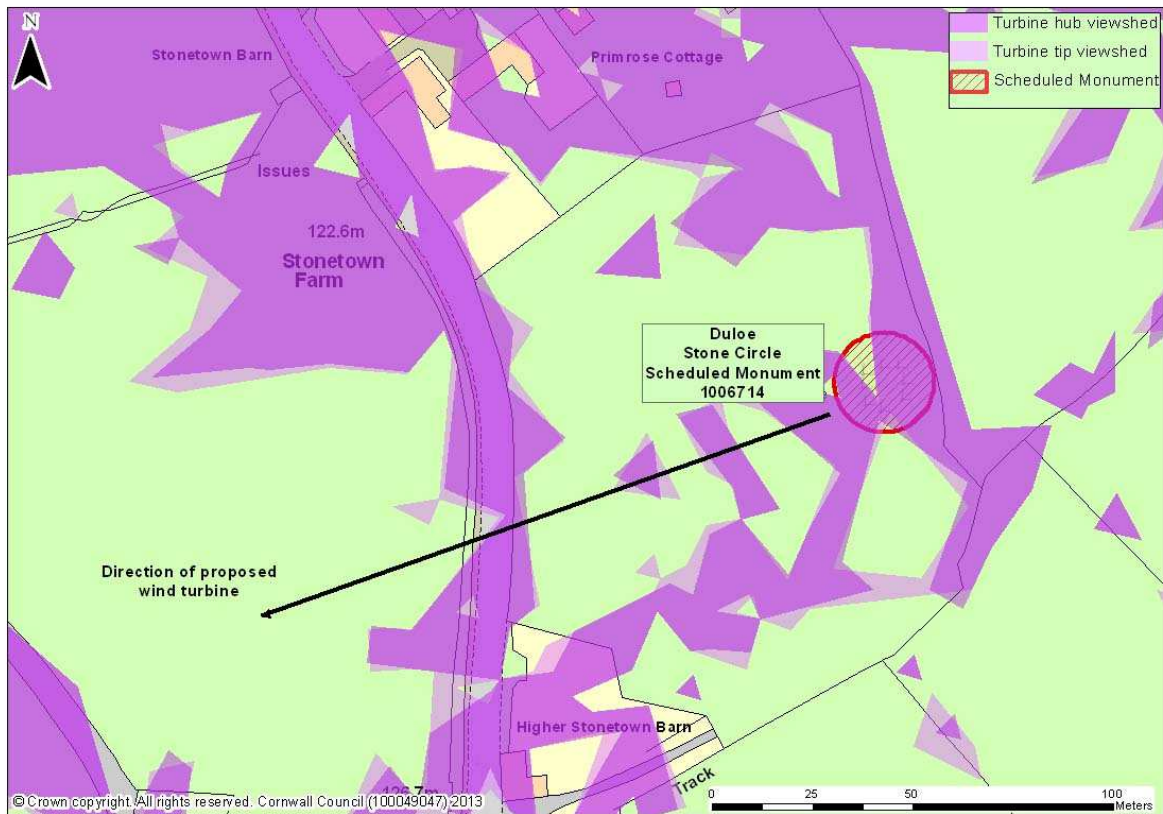


Fig 39 Mapping showing the Scheduled Monument of Duloe Stone Circle and the extent of potential intervisibility with the proposed wind turbine site.



Fig 40 Mapping showing the Scheduled Monument of Mabel Bowl Barrow and the extent of potential intervisibility with the proposed wind turbine site.



Fig 41 Mapping showing the Scheduled Monument of Castle Dore hillfort and its likely intervisibility with the proposed wind turbine site. The view out to the east from Castle Dore across the Fowey estuary would originally have been a key one.

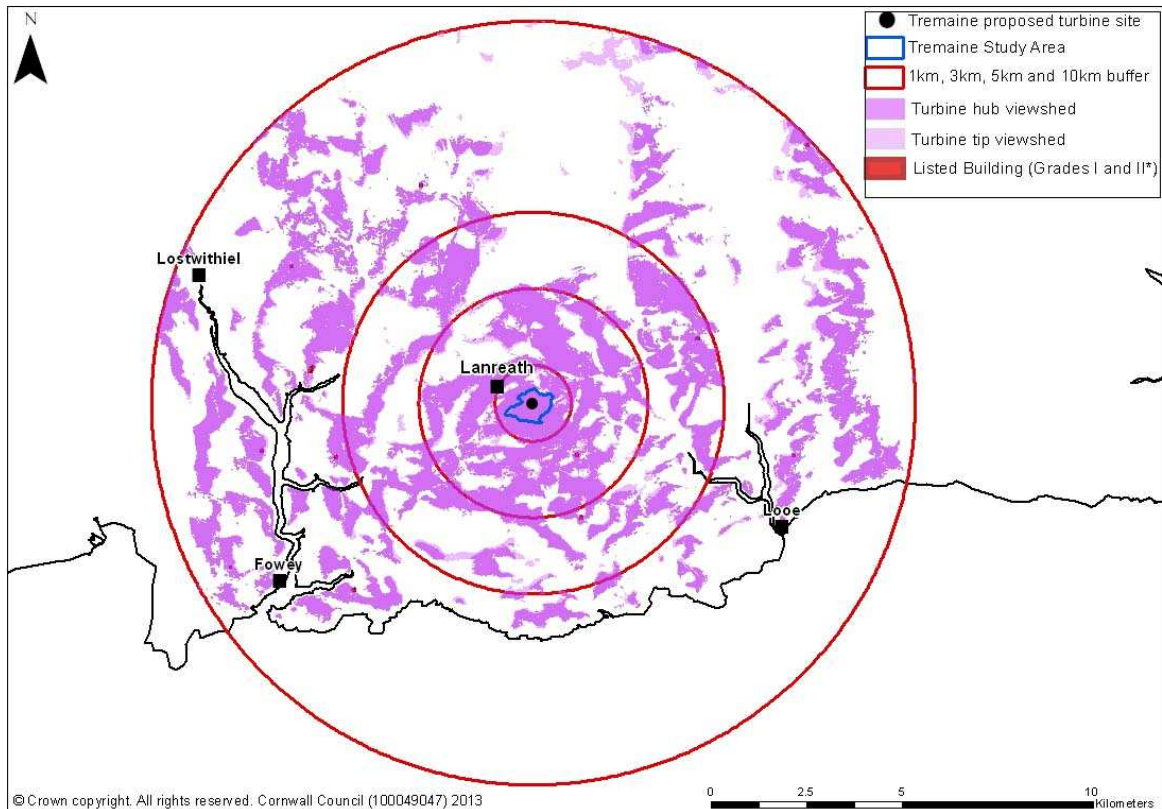


Fig 42 Mapping showing potentially intervisible Grade I and Grade II* Listed Buildings within and close to the 10km radius ZTV of the proposed wind turbine site.



Fig 43 Mapping showing the Grade I Listed St Circius and St Julitta, St Veep, and the extent of potential intervisibility with the proposed wind turbine site.

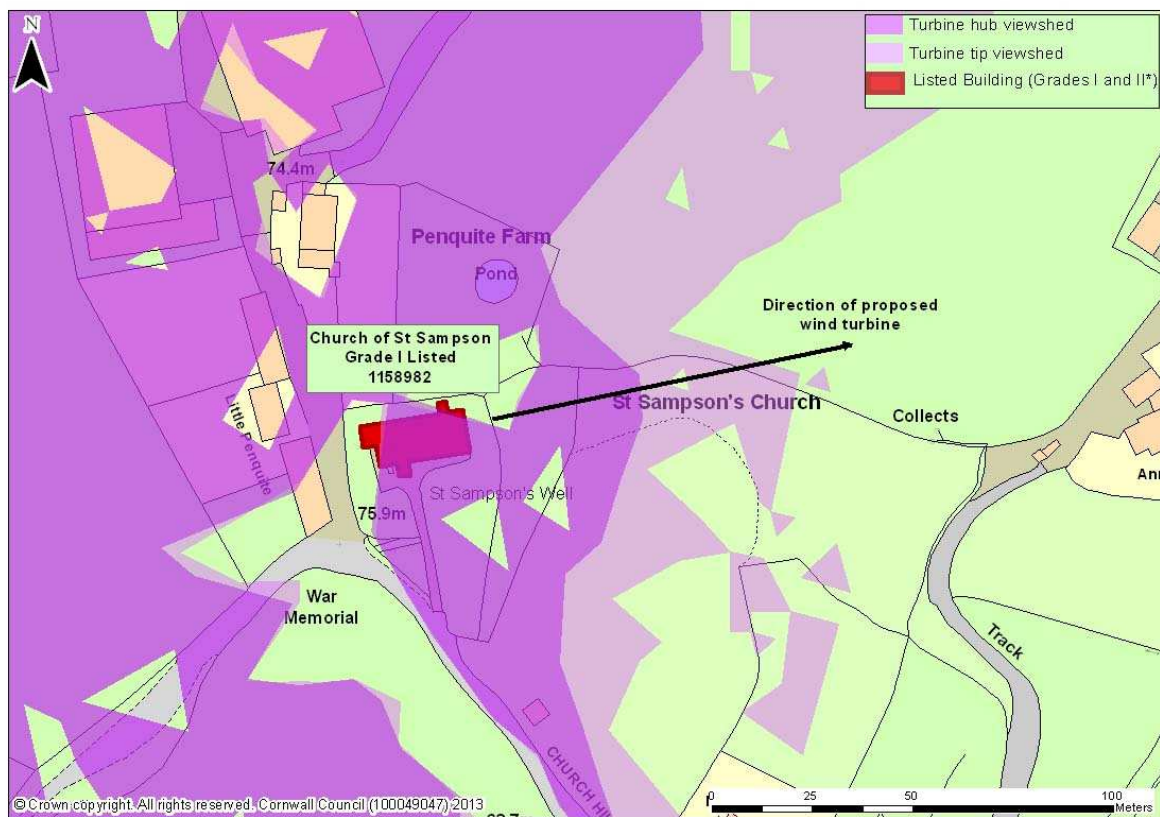


Fig 44 Mapping showing the Grade I Listed St Sampson, Golant and the extent of potential intervisibility with the proposed wind turbine site.

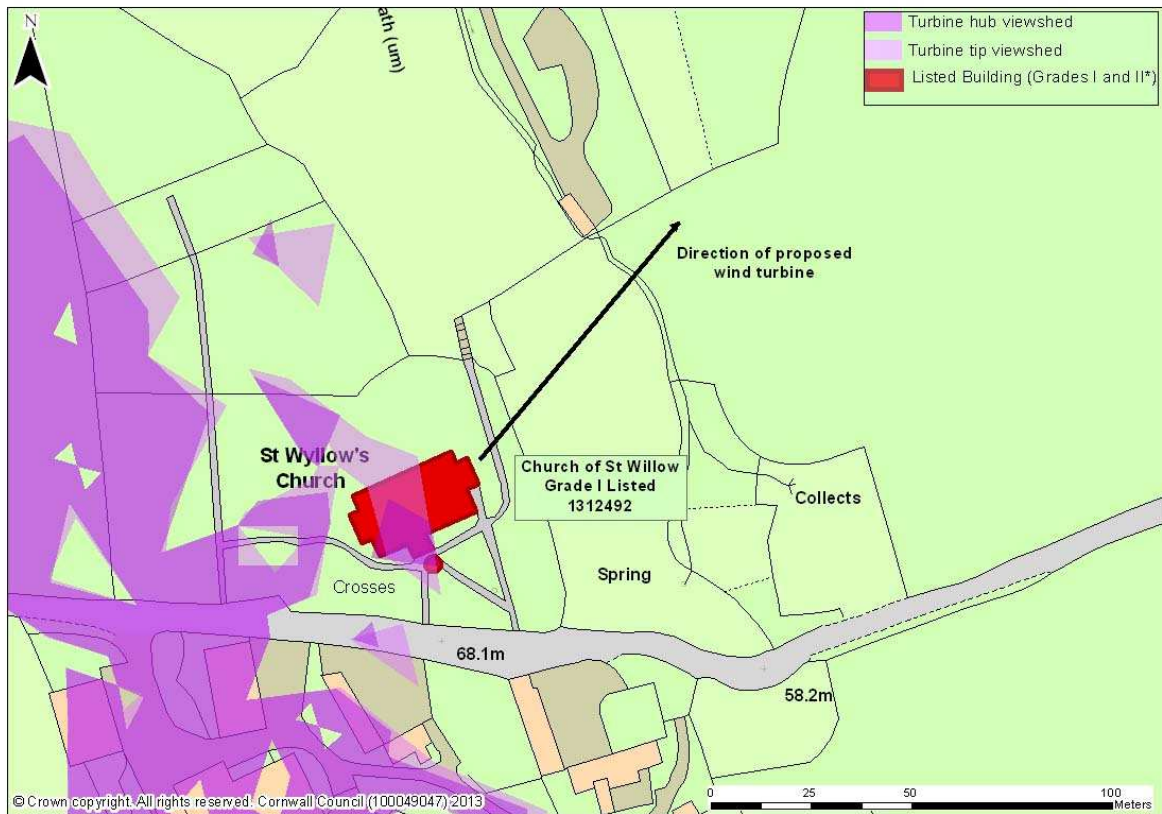


Fig 45 Mapping showing the Grade I Listed St Willow, Lanteglos by Fowey, and the extent of potential intervisibility with the proposed wind turbine site.

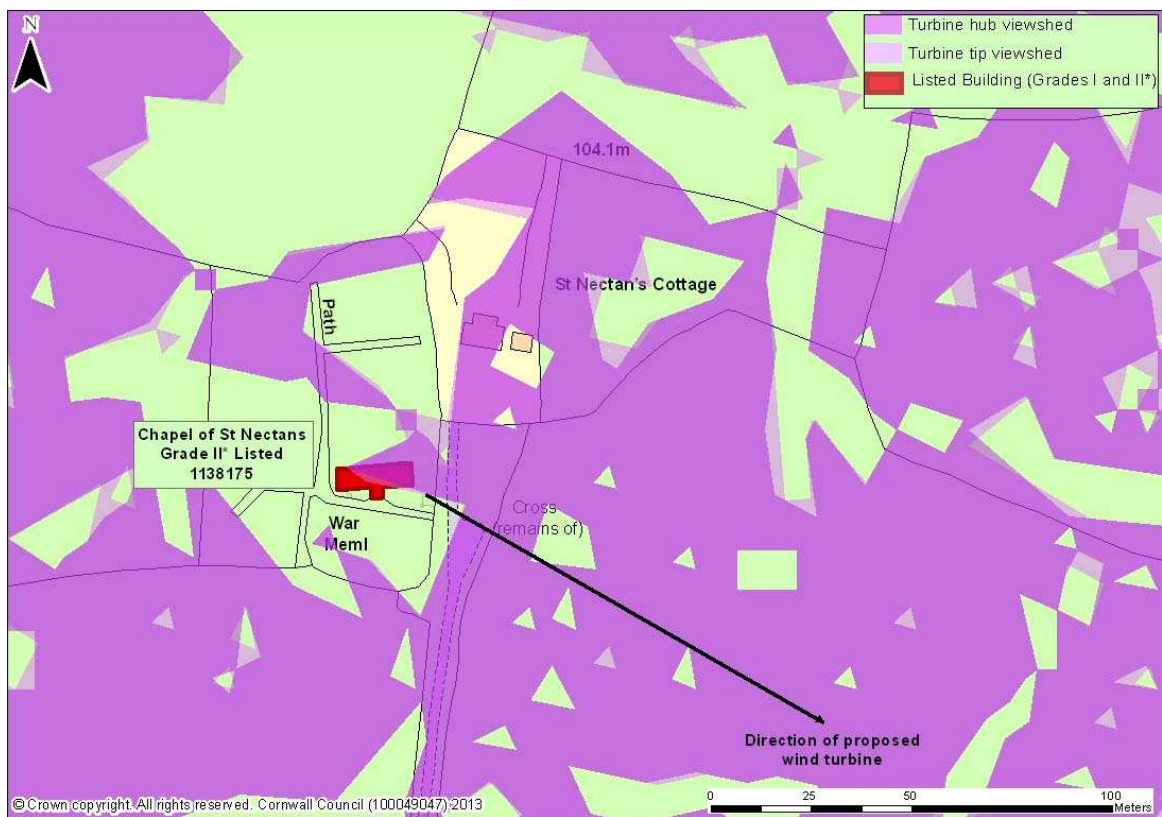


Fig 46 Mapping showing the Grade II* Listed St Nectan's Chapel, and the extent of potential intervisibility with the proposed wind turbine site.

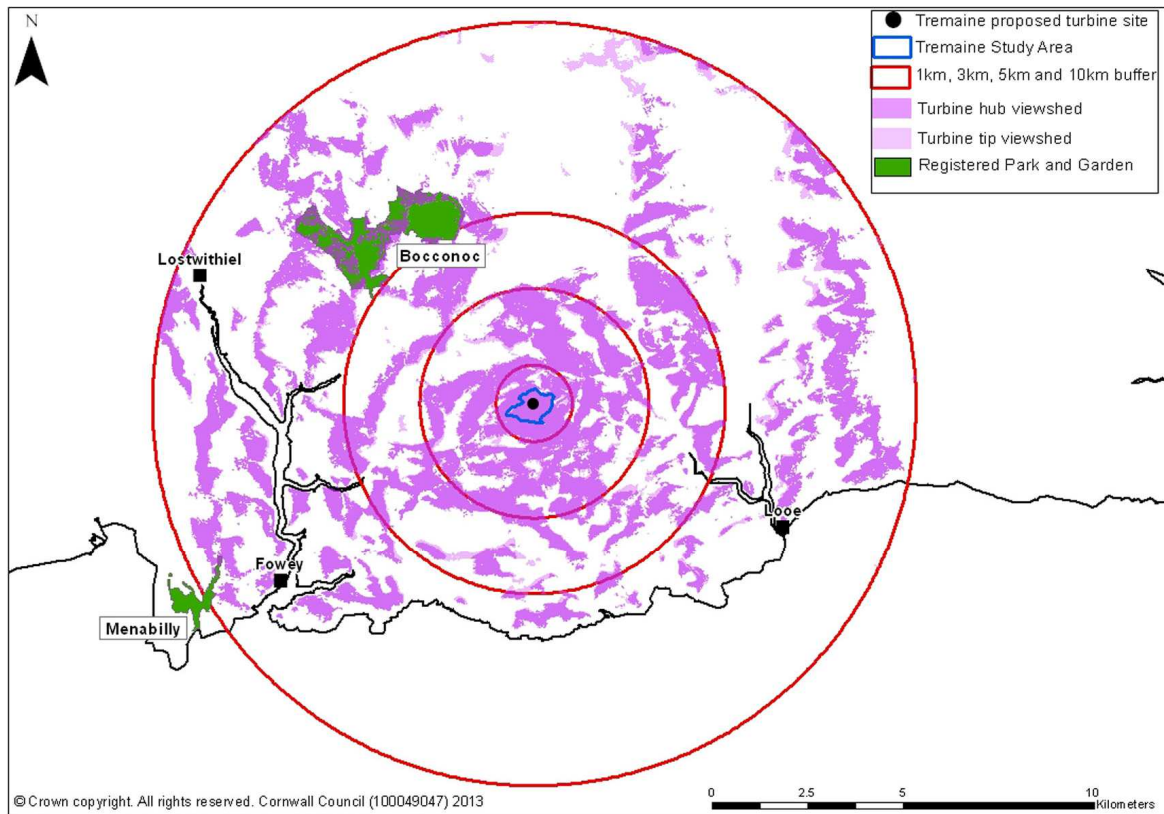


Fig 47 Mapping showing potentially intervisible Registered Parks and Gardens within and close to the 10km radius ZTV of the site proposed for the wind turbine.

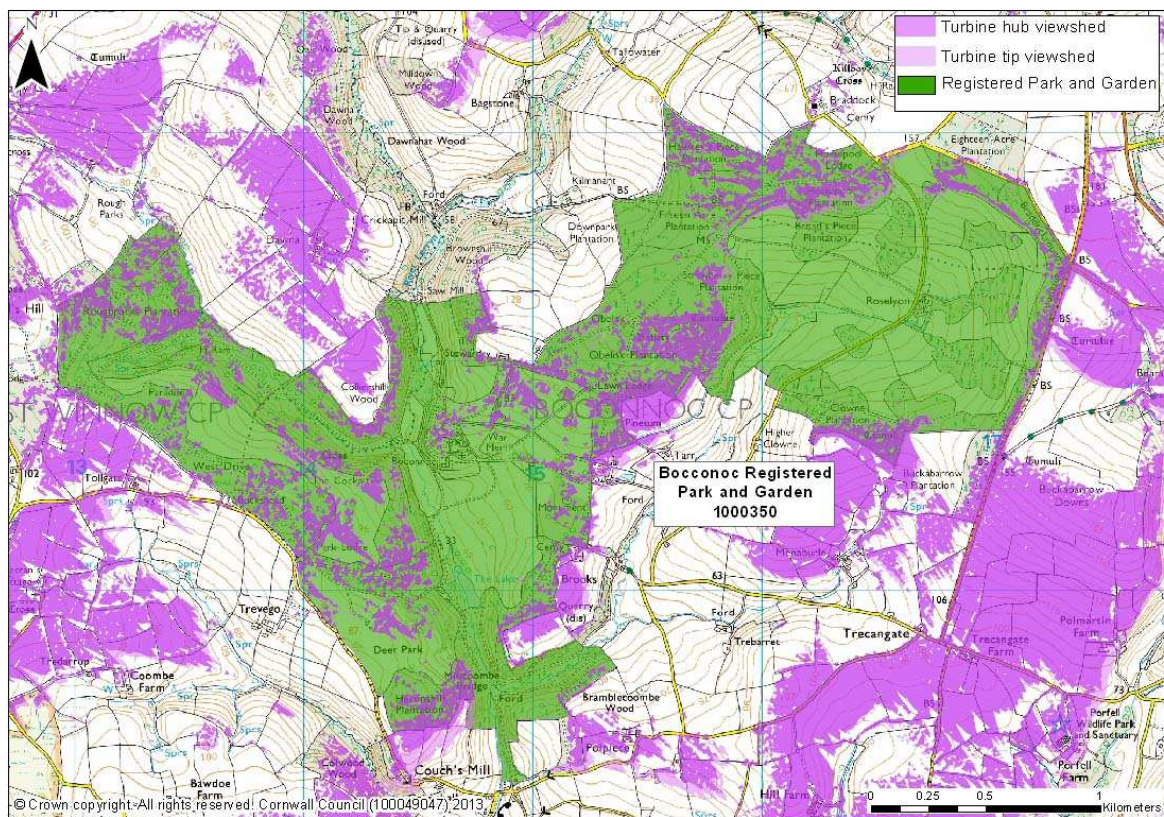


Fig 48 Mapping showing the Registered Park and Garden of Boconnoc and the extent of potential intervisibility with the proposed wind turbine site. The ZTV is rather patchy and intervisibility will probably be limited by topography and intervening vegetation.

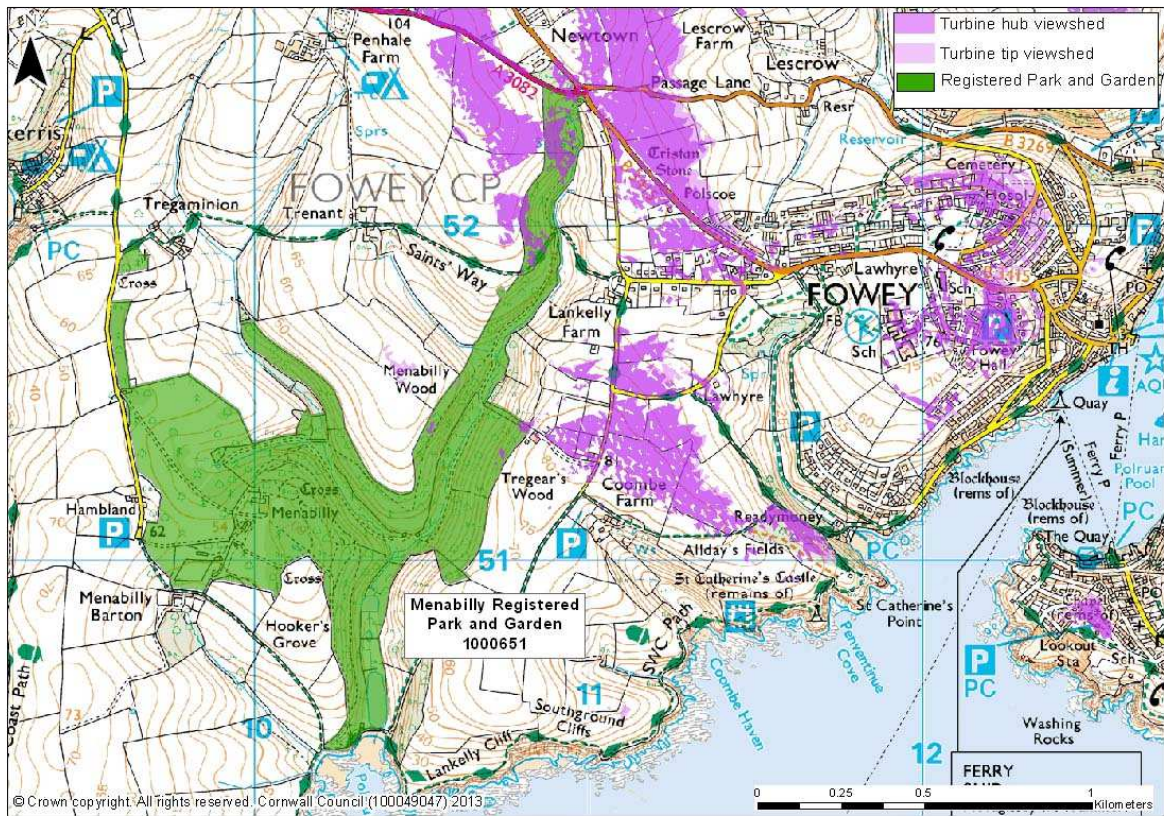


Fig 49 Mapping showing the Registered Park and Garden of Menability and the extent of potential intervisibility with the proposed wind turbine site, which is negligible.

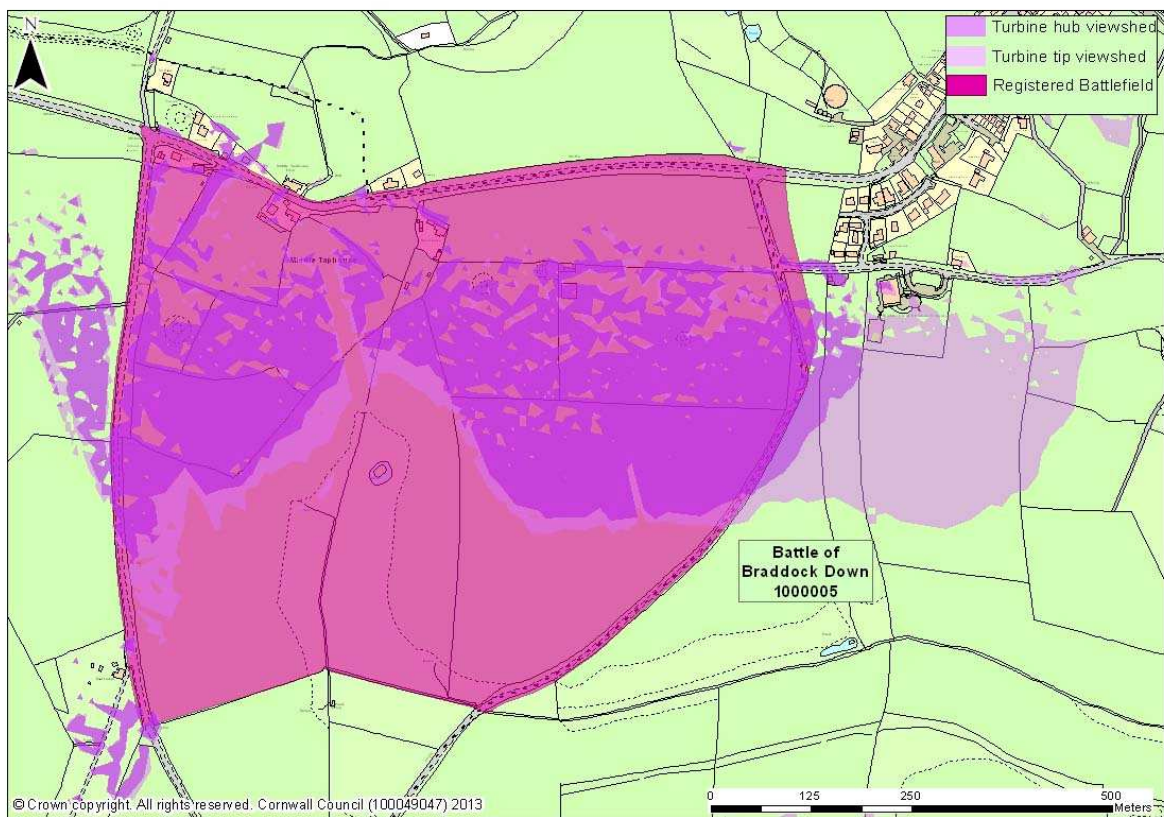


Fig 50 Mapping showing the Registered Battlefield of Braddock Down and the extent of potentially substantial intervisibility with the proposed wind turbine site.

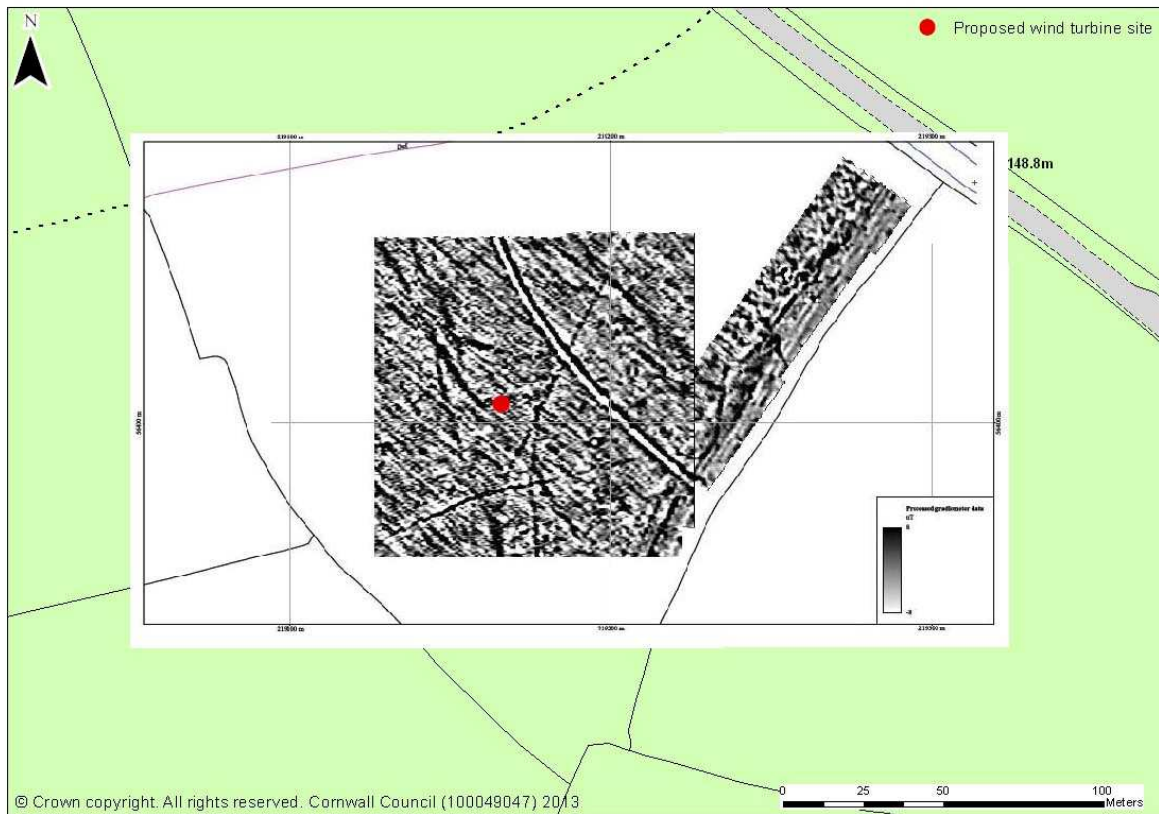


Fig 51 Results of the geophysical survey at Tremaine by Substrata, georeferenced onto the OS Mastermap and showing the proposed wind turbine site.

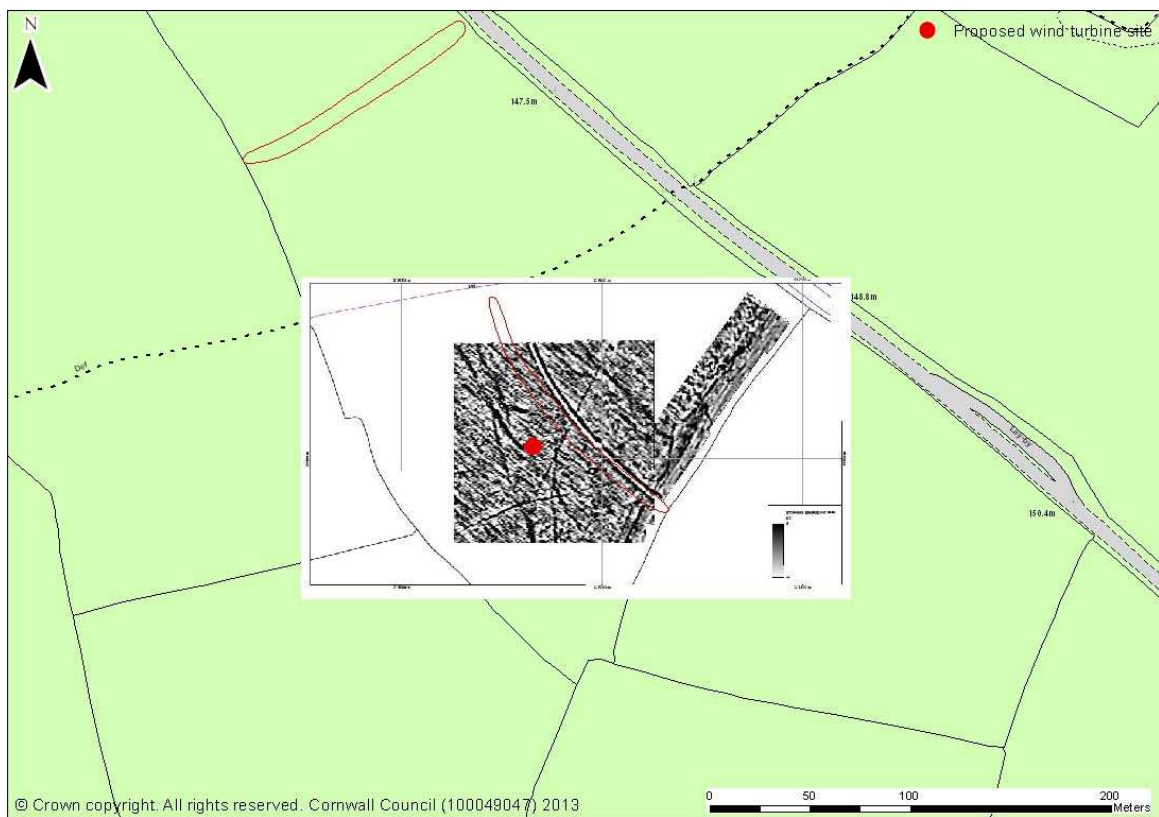


Fig 52 The results of the geophysical survey at Tremaine by Substrata, shown in relation to the National Mapping Programme data.

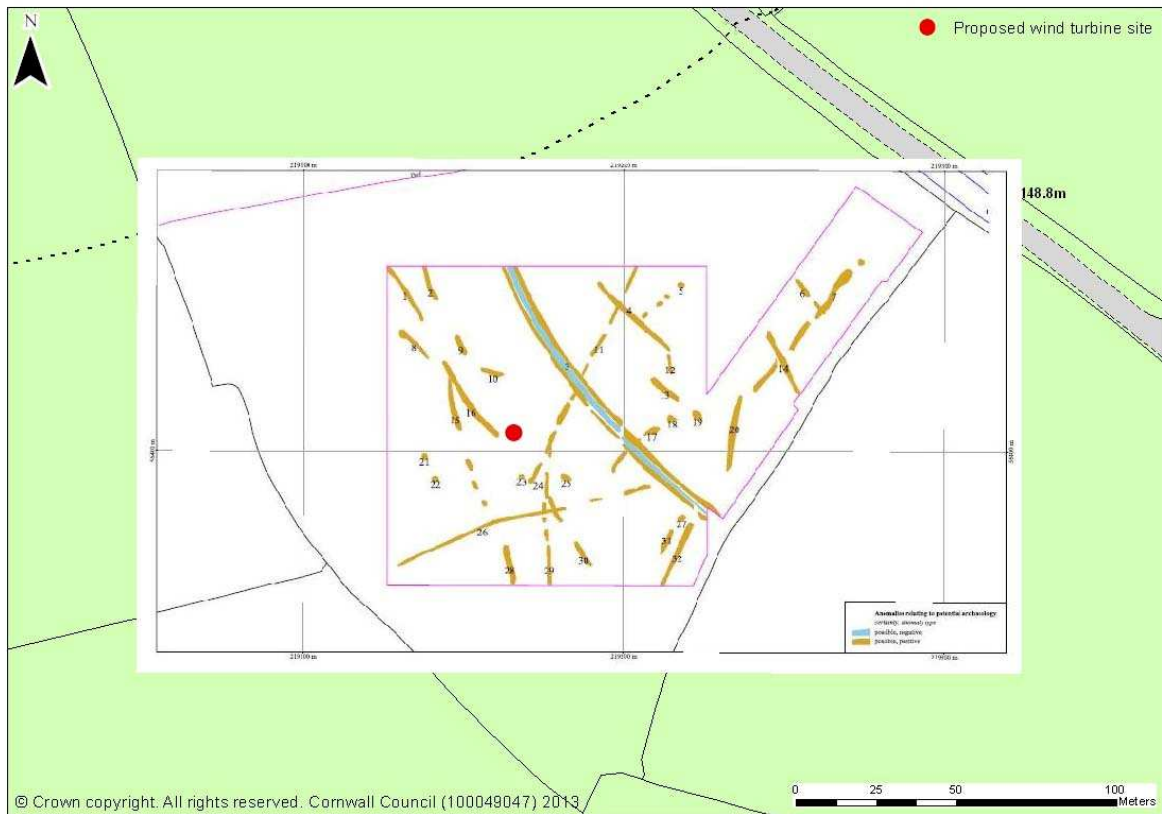


Fig 53 The interpreted results of the geophysical survey at Tremaine by Substrata, georeferenced onto the OS Mastermap and showing the proposed wind turbine site.

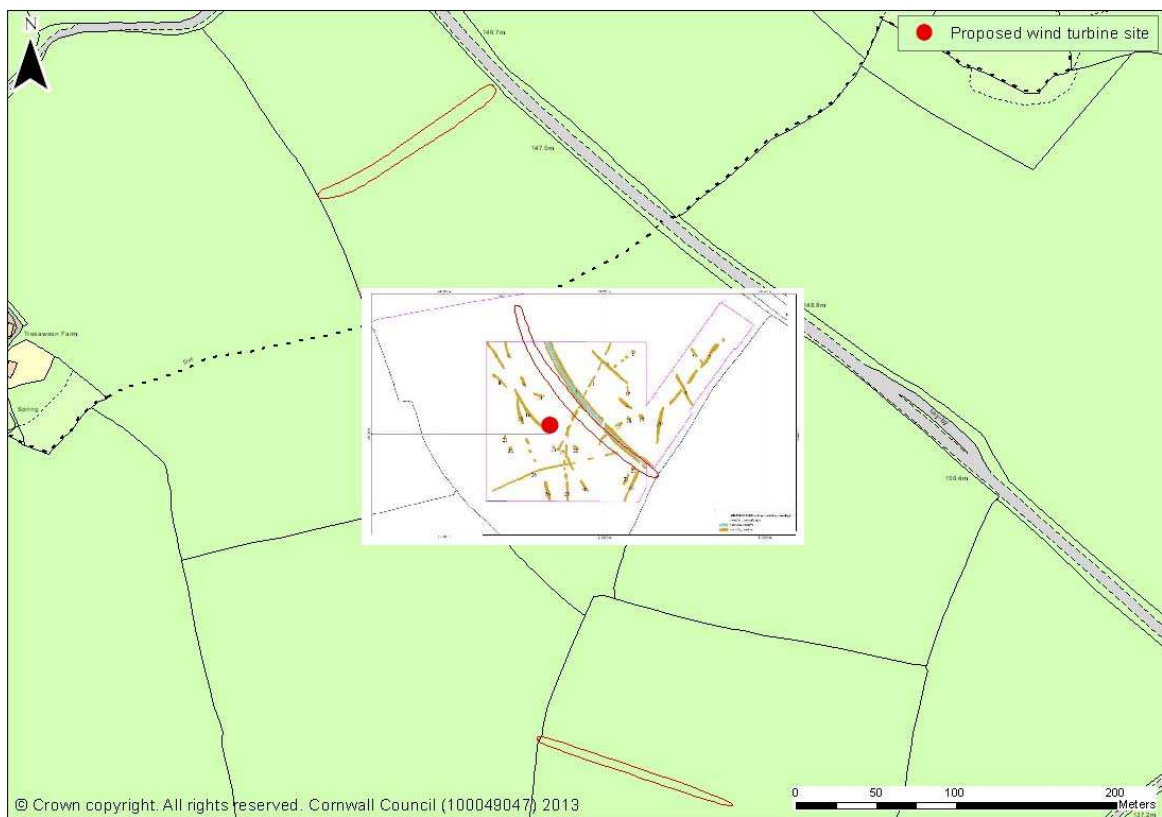


Fig 54 The interpreted results of the geophysical survey at Tremaine by Substrata, shown in relation to the National Mapping Programme data.

Anomaly group	Anomaly characterisation certainty and class	Anomaly form	Additional archaeological characterisation	comments
1	Possible, positive	linear		
2	Possible, positive	linear		
3	Possible, positive	linear	Cornish bank	
4	Possible, positive	linear		
5	Possible, positive	disrupted linear or series of ovals	Linear deposit or series of pits	
6	Possible, positive	disrupted linear		
7	Possible, positive	disrupted linear		
8	Possible, positive	linear		
9	Possible, positive	linear		
10	Possible, positive	linear		
11	Possible, positive	disrupted linear		
12	Possible, positive	linear		
13	Possible, positive	linear		anomaly group may represent a linear deposit or relatively recent ploughing
14	Possible, positive	linear		
15	Possible, positive	linear		
16	Possible, positive	linear		
17	Possible, positive	curvilinear		
18	Possible, positive	oval	pit	
19	Possible, positive	oval	pit	
20	Possible, positive	linear		
21	Possible, dipolar	oval	pit	
22	Possible, positive	oval	pit	
23	Possible, positive	oval	pit	
24	Possible, positive	oval	pit	
25	Possible, positive	oval	pit	
26	Possible, positive	linear		
27	Possible, positive	linear		
28	Possible, positive	linear		
29	Possible, positive	disrupted linear		
30	Possible, positive	disrupted linear		
31	Possible, positive	linear		
32	Possible, positive	linear		

Fig 55 Table of data analysis reproduced from the geophysical survey report for Tremaine (Substrata 2013), relating to Figures 51 to 54.



Fig 56 Looking north from the proposed turbine site at Tremaine towards Bury Down



Fig 57 Looking north east from the proposed turbine site at Tremaine



Fig 58 Looking south east from the proposed turbine site at Tremaine



Fig 59 Looking south from the proposed turbine site at Tremaine



Fig 60 Looking south west from the proposed turbine site at Tremaine



Fig 61 Looking west from the proposed wind turbine site at Tremaine towards the Fowey estuary, with Tresawson Farm visible centre shot



Fig 62 Looking north west from the proposed wind turbine site at Tremaine in the direction of Lanreath



Fig 63 Looking north north west from the proposed wind turbine site at Tremaine; there are proposals for a further wind turbine to be sited in the adjacent field in this direction, above the hedgeline, left of shot



Fig 65 Looking south east towards the tower of St Manarck and St Dunstan Church, Lanreath, in the direction of the proposed turbine site at Tremaine, which is likely to be substantially visible above the skyline to the left of the church tower



Fig 66 Looking south east across Lanreath churchyard towards the proposed turbine site at Tremaine, which is likely to be substantially visible above the skyline looking across the churchyard from the car park by the shop



Fig 66 Looking from the corner of the junction of a small housing estate south east across Court Barton, Lanreath, towards the proposed turbine site at Tremaine, which may be substantially visible above the skyline, though partially blocked by present tree cover



Fig 67 Looking south across the Giants Hedge (centre shot) towards the proposed turbine site at Tremaine, the upper parts of which may be visible above the skyline, centre left of shot



Fig 68 Looking north west from Pelynt churchyard towards the proposed turbine site at Tremaine, which may give glimpsed or partial views of the upper hub and/or blades through gaps in the buildings or vegetation cover



Fig 69 Looking west north west along the valley in front of Hillhead towards the proposed turbine site at Tremaine, which may be partially visible above the ridge, with some possible blocking by intervening hillslopes and vegetation



Fig 70 looking west south west along the valley from the rear of St Cuby churchyard, Duloe, towards the proposed turbine site at Tremaine, which is likely to be blocked from view by the present tree cover in this direction



Fig 71 Looking south west from Duloe stone circle towards the proposed turbine site at Tremaine, which is likely to be only partially visible above the skyline and across intervening hills and valleys (poor visibility during the site visit means this could not be confidently ascertained)



Fig 72 looking south east across Boconnoc towards the proposed turbine site at Tremaine, which is likely to be partially visible above the skyline, centre left of shot; the setting of the Park from this direction is already impacted upon by a modern pylon



Fig 73 looking south east from beside the barrow group N of Grey Mare Farm towards the proposed turbine site at Tremaine, which may be partially visible above the skyline, centre shot; a modern pylon is already visible centre right of shot



Fig 74 looking south east from in front of St Nectans Chapel towards the proposed turbine site at Tremaine, which may be partially visible above the skyline, centre shot, although the present tree cover would probably have some blocking effect



Fig 75 Looking north east from the north west corner of St Veep churchyard towards the proposed turbine site at Tremaine, which may appear substantially above the skyline in this direction, though possibly blocked from view by present tree cover



Fig 76 Looking north east from the road to the north of St Veep churchyard towards the proposed turbine site at Tremaine, which may be substantially visible above the skyline, centre left of shot



Fig 77 Looking north east from St Sampson's churchyard, Golant, towards the proposed turbine site at Tremaine, which may be partially visible above the skyline to left of trees



Fig 78 Looking north east from the rear of St Sampson's churchyard, Golant, towards the proposed turbine site at Tremaine, which may be partially visible above the skyline, behind the trees



Fig 79 Looking north east across the field to the south of Castle Dore towards the proposed turbine site at Tremaine, which may partially visible at a distance above the skyline, centre left of shot



Fig 80 Looking north north east across Castle Dore, demonstrating the openness of the vista in this direction; the proposed turbine at Tremaine may be partially visible above the distant skyline, far right of shot



Fig 81 A reduced scale copy of a photomontage provided by Capture-Energy looking from the shop car park at Lanreath across the corner of the churchyard towards the proposed turbine site at Tremaine, about 1.2km distant, centre right of shot. This is included for information only, but indicates that the upper parts of the turbine mast and its blades will be substantially visible from some areas within Lanreath, including views of, and across, the Grade I Listed church



Fig 82 A reduced scale copy of a photomontage provided by Capture-Energy looking from the B3359 N of Pelynt towards the proposed turbine site at Tremaine, about 1.4km distant, centre left of shot. This is included for information only, but indicates that the turbine will be substantially visible from this distance within some areas of the local landscape



Fig 83 A reduced scale copy of a photomontage provided by Capture-Energy looking west from No Mans Land towards the proposed turbine site at Tremaine, about 8.3km distant, centre shot. This is included for information only, but indicates that the turbine will be visible in some distant views of the local landscape from this direction



Fig 84 A reduced scale copy of a photomontage provided by Capture-Energy looking north east from a viewpoint just south of St Ciricus and St Julitta Church, St Veep, towards the proposed turbine site at Tremaine, about 5.4km distant, centre right of shot. This is included for information only, but indicates that the upper parts of the turbine will be visible on the distant skyline across a relatively open landscape from this direction