Report No: 2012R073

Ladock Community Wind Turbine, Cornwall

Archaeological assessment of proposal

Historic Environment Projects

Ladock Community wind turbine, Cornwall

Archaeological assessment of proposal

Client	**Mi-Grid**
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Acknowledgements

This study was commissioned by Chloe Bines of Mi-Grid Ltd. and carried out by Historic Environment Projects, Cornwall Council.

The viewshed mapping was carried out by Francis Shepherd.

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.

Freedom of Information Act

As Cornwall Council is a public authority it is subject to the terms of the Freedom of Information Act 2000, which came into effect from 1st January 2005.

Historic Environment, Cornwall Council is a Registered Organisation with the Institute for Archaeologists

Cover illustration

Looking north east towards the New Mills application site (centre, mid skyline) from Hillcoose to the west of Ladock. Existing wind turbines at Cregan Gate and Halezy are to the left and right of the site.

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Abbreviations

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

1 Summary

Historic Environment Projects, Cornwall Council, were approached by Chloe Bines of Mi-Grid Ltd on 15 August 2012 with a request to provide costs for the provision of an archaeological assessment of a proposed wind turbine at New Mills, Ladock as part of a proposed planning application. A cost schedule for this work was approved on 10 October 2012.

The proposal is for a single 500KW wind turbine with a maximum blade tip height of 76m to be sited on farmland at New Mills, Ladock at SW 90574 52234. The site chosen for the wind turbine lies on the upper eastern side of the New Mills valley to the north of Ladock in an area of former downland which was enclosed to agriculture during the 19th century.

The assessment consisted of a desk-based assessment, viewshed analysis out to 10km from the turbine location, analysis of a geophysical survey of the site and a walkover survey.

No upstanding archaeology was found within the application site, whilst the geophysical survey revealed a ploughed out Cornish hedge, one further fragmentary boundary and a rather ephemeral curvilinear feature which might represent either the ring ditch around a barrow or a roundhouse. A further possible curvilinear ditch surrounded this feature.

Given the nature of the location chosen for the wind turbine, with its fairly wide ranging views across the surrounding landscape, visual impacts resulting from its construction are inevitable, in particular on its historic landscape character. Impacts on the settings of designated heritage assets are, however, likely to be limited, though will be experienced in the case of Ladock church.

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

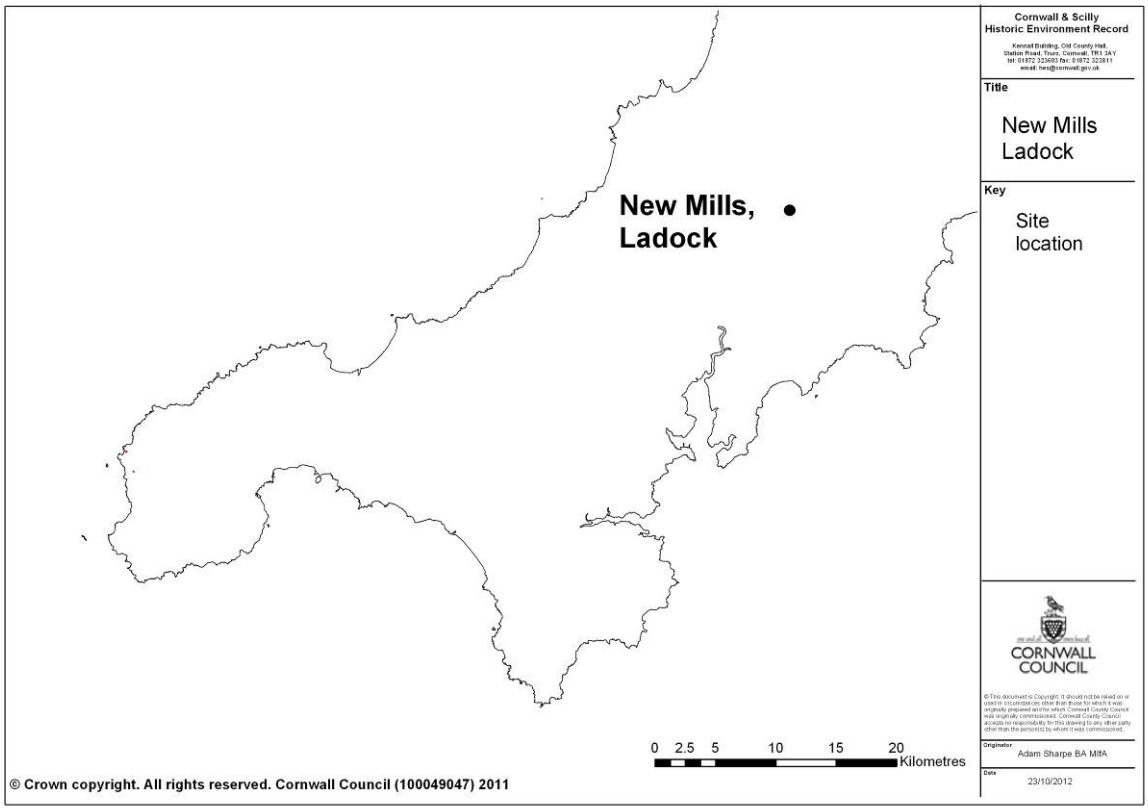

Fig 1. The location of New Mills, Ladock.

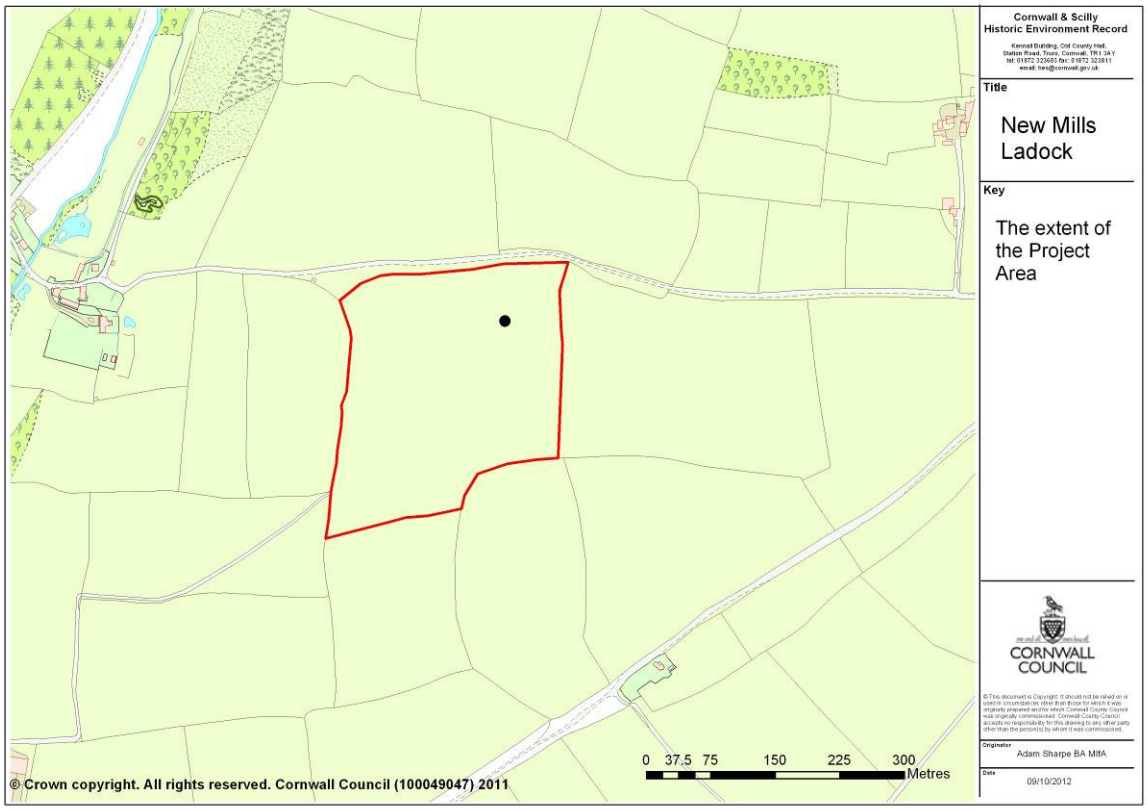

Fig 2. The location proposed for the wind turbine at New Mills, Ladock.

2 Introduction

2.1 Project background

Historic Environment Projects, Cornwall Council, were approached by Chloe Bines of Mi-Grid Ltd on 15 August 2012 with a request to provide costs for the provision of an archaeological assessment of a proposed wind turbine at New Mills, Ladock (Figs 1 and 2) as part of a proposed planning application. A cost schedule for this work was approved on 10 October 2012.

The proposal is for a single 500KW wind turbine with a maximum blade tip height of 76m to be sited on farmland at New Mills, Ladock at SW 90574 52234. The site chosen for the wind turbine lies on the upper eastern side of the New Mills valley to the north of Ladock in a 6.7Ha area of land noted as enclosed during the medieval period (though see below).

The assessment consisted of a desk-based assessment, viewshed analysis out to 10km from the turbine location, analysis of a geophysical survey of the site and a walkover survey.

An initial planning assessment (number PA12/06577) for a single 800KW turbine and associated infrastructure was responded to on 28/09/2012, this response determining that the application was considered not to be an EIA Development (a Schedule 2 development) within the meaning of the EIA Regulations.

The potential for cumulative impacts was noted given that a 35m high wind turbine has already been erected at Cregan Gate 900m to the east, and a similar wind turbine has sited been approved but not constructed 1.2km to the east. A 15m high turbine is sited 1.4km south east at Woodland Valley Farm, whilst a 35m high turbine has been approved 1.3km to the south east. A further 47m high wind turbine has been proposed at Carnwinnick Farm 1.7km to the south east – this application is understood to be currently under consideration.

A model brief prepared by Mr Dan Ratcliffe, Historic Environment Planning Advice Officer, 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 in 2012, a letter from Nick Russell, Assistant Inspector of Monuments dated 05/10/2012 and verbal advice following on from this.

The walkover survey and viewshed check were undertaken on the 22nd October 2012.

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 on land at New Mills, Ladock.

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, walkover and geophysical survey in interpreted form.

- Inform whether an archaeological evaluation or further archaeological recording of any potential buried remains or other mitigation is recommended.

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

2.3 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)
    - Ladock Tithe Map (*circa* 1839),
    - 1st and 2nd Editions of the OS 25 inch maps (*circa* 1880 and *circa* 1907).
- Modern maps.
- National Mapping Programme transcripts from aerial photographs.
- Other aerial photographs in the Cornwall and Scilly HER.
- Historic Landscape Characterisation mapping.
- Cornwall and Scilly Historic Buildings, Sites and Monuments Record (HBSMR).
- Information held as GIS themes as part of the Cornwall and Scilly HER.

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

2.3.2 Viewshed analysis

An assessment of the impacts of the proposals was made from the surrounding area using the guidelines and methodological approaches set out in English Heritage's recent consultation draft guidance on the setting of heritage assets. 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. Viewsheds were generated for an 'observer point' based on the location of the proposed wind turbine.

When performing a viewshed analysis, several variables are used to limit or adjust the calculation including offset values, limitations on horizontal and vertical viewing angles (azimuth) and distance parameters (radius) for each observer point. For the proposed wind turbine at New Mills, the viewshed was based on an 'overall observer elevation

value' made up of the 'elevation value' or height above sea level of the ground at the observer viewpoint, with added to this additional and separate offsets of 50m and 76m to represent the hub height and the maximum height of the turbine 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 viewshed were visited (where access was possible) and the landscape within which they sit considered to determine intervisibility with the proposed development site and the natures of their settings, both locally and at a distance. This informed the likely scales and types of any visual impacts which might affect their settings, as required by English Heritage (2011). Viewshed radii of 10km, 5km or 3km were used to determine potential impacts on designated heritage assets (as determined by guidance from English Heritage) and a radius of 1km for undesignated heritage assets (see Figs 15 to 23). High level designated heritage sites within the outer 10km zone of the ZTV were identified but not assessed for impact (Fig 22). These are listed in tables contained in this report.

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

The site types within these data sets were then analysed to determine their likely sensitivity to impacts on settings. Those site types which had no setting (documented sites) were excluded from further analysis, as were those which by their nature have very localised settings (for example, milestones, tomb slabs, 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 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 or hillforts), or which were designed to function as part of intervisible elements of larger groups with landscape settings (for instance barrow cemeteries or hillforts), and other high grade designated historic structures which were intended when built to be highly prominent within the landscape (predominantly church towers and spires), as well as upstanding undesignated sites in close proximity to the development site. This filtered group of sites 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.

A walkover survey of the site proposed for the wind turbine and for its cabling was also undertaken to examine the site for upstanding archaeology and to record the nature of the boundary types which might be impacted upon during the development. A list of sites visited is contained within Section 9 of this report.

A magnetometer survey of a 1Ha area centred on the site proposed for the wind turbine and on a 30m corridor along its cabling route was commissioned from Archaeophysica Ltd by Mi-Grid. The survey results were made available to HE Projects prior to the completion 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 Monuments Record (NMR) 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 is at SW 90574 52234 within a large agricultural enclosure measuring 6.7 Ha in extent. The site is located on a south and west facing hillslope on the eastern side of the valley running northwards from Ladock through New Mills at a height of 95m OD (Fig 14). Given the nature of the local topography, views from ground level at the site tend to be closed in and restricted to nearby areas of the landscape, though the considerable height of the turbine will lift its hub and blades clear of the valley, allowing them to be visible over a wide area (see Figs 15 to 23).

The development area is characterised in the Cornwall and Scilly Historic Environment Record (HER) as 'Anciently Enclosed Land' – Farmland Medieval, that is land whose boundary arrangements were laid down during the medieval period, though placenames within this locality such as 'Downgate', and in particular the name of the field proposed for the wind turbine – 'White Downs' and those of the adjoining fields - 'Middle Downs' and 'Outer Downs' and their description in 1839 as being in 'Furze' suggest that the higher ground on this part of the valley side remained substantially unenclosed and unimproved until the early part of the Modern period (Fig 11).

The parent bedrock underlying the application site consists of interbedded Devonian slates, mudstones and sandstones of the Gramscatho Group, whilst the soils are recorded as being of the Manod Group, these being well drained fine loams or silts over shale. No superficial (drift) deposits are recorded by the British Geological Survey. The agricultural classification of this land is Grade 3.

As noted in the screening response (and in Section 5 below), the site itself lacks special designations, although there is a Listed Building to the west in New Mills, whilst Areas of Great Landscape Value lies approximately 1.7km to the south east and 2km to the west north west (Fig 19).

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 Framework, sections 16(2) and 66(1) of the Planning (Listed Buildings and Conservations Areas) Act 1990 Chapter 9, and English Heritage guidance relating to the setting of historic assets (2011) and on wind energy and the historic environment (2005), namely:

- Non-designated heritage assets – 1km radius.
- Grade II Listed Buildings, World Heritage Site Areas and Conservation Areas – 5km radius.
- Scheduled Monuments, Grade I and II* Listed Buildings, Registered Battlefields and Registered Parks and Gardens – 10km radius (these also being noted out to 15km).

5 Designations

5.1 International

None apply within the 10km zone.

5.2 National

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

The 10km radius viewshed zone includes 21 potentially intervisible Scheduled Monuments (Figs 20 and 22). Five of these are within 3km of the site and seven are between 3km and 5km from the site. It also intersects small areas of two Registered Parks and Gardens between 5km and 7.5km from the proposed wind turbine site (Fig 21), four Grade I Listed Buildings, nine Grade II* Listed Buildings and 138 Grade II Listed Buildings (Figs 16, 17 and 22).

The 5km radius viewshed includes seven potentially intervisible Scheduled Monuments, a small part of one Registered Park and Garden, four Grade I Listed Buildings, two Grade II* Listed Buildings, 23 Grade II Listed Buildings and parts of two Conservation Areas (Figs 17, 18, 20).

The 3km radius viewshed includes five Scheduled Monuments, one Grade I Listed Building and one Grade II* Listed Building (Figs 16 to 20).

The 1km radius viewshed includes one Grade II Listed Building (Fig 16).

5.3 Regional/county

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

5.4 Local

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

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 lies on the eastern side of the valley of the Tresillian River – a tributary of the River Fal which rises on Trefullock Moor near Indian Queens on the western edge of the Hensbarrow uplands and runs just to the west of north through a notably dissected landscape to Tresillian, where it joins the Fal Estuary. Whilst there is ample evidence for settlement and farming since prehistory in the lower lying areas surrounding the southern part of this water course, and on the more favourable sites flanking the valley, the open, elevated hill and ridgetops seem to have been more sparsely settled, many areas remaining as open downland until the modern period. Some of these areas (such as to the north of Brighton Cross, at Cregan Gate, Carnwinnick, Trendeal and Higher Trelassick) site Early Bronze Age (*c* 2000-1500 BC) barrows, either singly or in groups, and it can be assumed that, prior to the agricultural improvement of these hilltops during the 19th century, barrows would have been the prevalent archaeological site type within these upland areas (see Fig 39). Geophysical survey has revealed the possible site of a prehistoric barrow (or possibly a roundhouse) in the north eastern corner of the development site (Fig 41).

These ceremonial and funerary monuments would have been accompanied by related settlements sited on the valley sides and the more sheltered upper hillslopes, where they would be able to exploit deeper, more fertile soils, yet also have access to areas of woodland in the valleys and to rough grazing and fuel grounds in the uplands. Little evidence for these settlements has been identified locally given the extent to which later agricultural improvement has occurred.

It is likely that much of this landscape was farmed, either intensively or extensively during the later part of the Bronze Age (1500-800 BC), and that similar but larger areas were brought into agricultural use during the Iron Age (800 BC-AD43). Again, little evidence for farming settlements of this period has been identified, but small hillforts were sited at Resurrance 2.7km to the north west and Crow Hill 3.7km to the east south east.

During late prehistory and into the Romano-British period (AD43-410) enclosed settlements were established in the more fertile or more sheltered areas of the landscape. Aerial photography has identified the sites of a large number of such farming settlements, as for example at Penhale 2.4km to the south west, Trebeigh 1.14km to the west south west, Kestle 3.25km to the south west, Ladock 1.93km to the south south west, Grampound road 2.25km to the south south east, Penhale 1.8km to the south east, Goonabarn 2.4km to the north north west , Nankervis 1.5km to the north, Great Hewas 1.5km to the north east, Besowsa 2km and Brighton 2.1km to the north and Scarcewater 2.8km to the north east. An example at Penhale on the outskirts of Indian Queens was excavated in advance of the creation of the Indian Queens bypass in 1993 and the site was found to have had a long and complex history, with evidence for settlement in the Neolithic and the Middle to later Bronze Age before the establishment of a round in the late Iron Age. Considerable remodelling and modification of the site took place until it was finally abandoned in the 4th Century. Once again, the nearby uplands would have remained unenclosed, and used for rough summer grazing and as sources of fuel and animal bedding, whilst the valleys would have provided timber for building and for firewood.

The downs remained as open land into the historic period, the rough grassland which they supported continuing to provide an important agricultural resource for farming families living in the surrounding landscape. Settlements were established off the high

ground during the pre-Conquest period, these having names incorporating elements in Cornish such as '*Tre', Bos, Nans or 'Venton'*, though a few farms were created on the fringes of the Downs – these being characterised by names beginning with the prefix '*Ros',* or '*Goon'* meaning heath or downs*.*

The analysis of historic aerial photographs undertaken as part of the English Heritage National Mapping Programme (Fig 13) shows evidence for medieval strip fields near Trendeal, Goonabarn, Resurrance, Higher Hewas and Boswiddle, and it is likely that great fields were laid out around most of the other large farms dating to this period. There is little available evidence for intermittent outfield cultivation in the form of strip fields laid out on the downs and commons. Such strip fields, where they existed, were used for only short periods, perhaps once a generation, exploiting what little natural fertility had built up in the shallow soils of the downs in the interim.

The Domesday Book (1086) does not specifically mention either New Mills or Ladock, and this area is thought likely to have been within the Manor of Arrallas, which had been held by Brictmer pre-1066. The manor was noted as having land for three ploughs, though only ½ a plough was there at the time of the survey. There were 9 smallholders and one slave. Ten acres of woodland were recorded (most likely within the valleys on the estate), and one league of pasture. One cow, six pigs, 12 sheep and six goats were recorded. Ventonladock was first mentioned as *Funthenladock* in 1311 – this name deriving from the holy well and associated chapel at this location. New Mills was first recorded (in Cornish) in 1364 as *Melynewyth*.

Tin streaming is documented within many valleys running off the granite uplands throughout the medieval period, and that running through New Mills and Ladock up to Trefullock Moor is no exception. At New Mills, the valley base has been extensively disturbed by these activities, and is, in places where it has not been reclaimed to agriculture or gardens, boggy, marked by low hillocks and shallow ponds and is overgrown with willows. Similar, but larger boggy areas reflecting former streaming activity are found on Trefullock Moor to the north, the source of the tin being alluvial material eroded from lodes within the nearby Hensbarrow granite.

The first mapping of this area, John Norden's map published in 1728, but drawn up *circa* 1600 (Fig 3) depicting the Hundred of 'Powder, showed the landscape to the north east of Truro as a hilly landscape between the valleys of the Fal and Truro Rivers. Ladock Church was depicted, as were significant houses at 'Trenouthe' and 'Trethurffe'. The area to the north of Ladock was shown as notably hilly.

Joel Gascoyne's late 17th century map of Cornwall (Fig 4) showed a small settlement around the church at Ladock, this being traversed by a road running eastwards through Ladock from St. Erme. The road running from the south through Ladock to New Mills and on to Fraddon had not been created at this date, and New Mills was not shown on this mapping.

Martyn's map of 1748 (Fig 5) did show New Mills, though there was, at this date, no direct road connection between this hamlet and Ladock, the connection being via the road running past the site over the downs from Trelion to the east; a branch of this network of lanes passed through Downs Gate and Nankelly to Bissick, just to the south of Ladock Church.

Within the area to the north of New Mills, the detail of the published 1st Edition of the Ordnance Survey 1" to a mile mapping (Fig 6), is unfortunately partly obscured by part of a large letter 'W' (part of the word 'Cornwall') printed across this part of the map. The original inked up survey, drawn by Charles Budgen in 1811, shows considerable detail, including the road running eastwards from New Mills up onto the downs and then north to Great Hewas, the land to the south of this at the location proposed for the wind turbine (part of 'Venton Ladock') being a large open enclosure. The survey reveals the landscape to the south around Ladock itself as characterised by an intimate mixture of large and small farms, smallholdings, woods and lanes, many of the settlements having names in Cornish – for example 'Trethurfe', 'Nankelly', 'Treworyan', Venton

Ladock', 'Hewas' and 'Trendeal' indicating long establishment. However, the hilltops and ridgetops further to the north east tended to be sparsely populated and had names in English, examples being 'Downgate', 'Snellsgate', 'Cregan Gate' and 'High Lane'. In the valley base to the north east of Ladock, placenames again tend to be in English – 'Buddles' (at the site of a tin streamwork and a lead/silver mine called Wheal Albion on other sources), 'Fairmoor' and 'New Mill'.

In 1839, the Ladock Tithe Map showed the area proposed for the wind turbine as being within parcel 1103, which was noted in the associated Apportionment as '*White Downs',* a 17 acre part of the tenement of Ventenladock (now Fentonladock), owned by the Earl of Falmouth and leased by Joseph Blake. The enclosure, like its neighbours Middle Downs and Outer Downs, was recorded as being in '*Furze*' (gorse), and was clearly unimproved at the time of the assessment, though the Downs had clearly been parcelled up between 1811 and 1839 (Fig 7).

It seems likely that these enclosures within former downland were improved to agriculture between 1839 and 1877, as the 1st Edition of the Ordnance Survey 25" to a mile mapping (Fig 8) showing only very limited strips of surviving unimproved grassland along the edges of the lane to the north of the field proposed for the wind turbine. A farm track connected Fentonladock to the enclosure near its south-western corner, whilst smallholders' cottages shown on the Tithe Map just to the north west of the enclosure adjacent to the lane had been demolished. No changes were recorded to these fields on the Ordnance Survey 2nd Edition of this mapping, re-surveyed during the first decade of the 20th century (Fig 9).

The 2005 Cornwall County Council aerial photograph (Fig 10) shows this enclosure as having been recently harvested, probably for hay or silage. A Google Earth image dating to December 2001 suggests a similar use for this field at the time, though most of the surrounding fields appear on this mapping to have been in permanent pasture.

Mining for a variety of minerals is documented here during the medieval and post-medieval periods, tin streaming within the valley deposits having been mentioned above. An argentiferous lead lode outcropping just to the north of New Mills was worked under the name Wheal Albion during the 1860s, when a winding engine was erected, and again in the early 1880s under the name Silver Valley. Gold has also been found in the alluvium in the valley base, mostly to the south of this outcrop, probably emplaced in association with the Carrick Thrust fault. Enough of this gold was collected during the 19th century from tin streams near Arrallas to make a necklace which is now on display in the Royal Cornwall Museum. Ladock Iron Mine was also operated near Pollard's Tenement for a short period during the 19th century.

7 Results of site walkover

A site walkover was undertaken on 22nd October 2012. The weather was variable, the skies having no more than 10% cloud cover at midday, with some haze partly obscuring more distant sites. Over the course of the afternoon, the cloud cover became ubiquitous, though light levels remained good, and there were no impediments to visibility, this being available out to at least 7km from the site in most directions.

The site proposed for this wind turbine was in relatively short pasture (Figs 25 and 40) and some areas had been dung-spread fairly recently. A strip of the field at its southern edge had been separated from the remainder of the enclosure by an electric fence to provide a corridor along which cattle could bed moved from the field to the south west to the field to the east. There were no impediments to survey, but no surface evidence for the sites recorded here in the Cornwall and Scilly HER was observable (Fig 12).

The site slopes gently to the west, though the southern part of the enclosure also slopes to the south and south west. To the north, the ground continues to rise slightly, cutting off views in this direction. The eastern, northern, western and the western section of the southern field boundary are formed by relatively low Cornish hedges

(these being in the order of 1.2m high), topped with tree saplings and hedge vegetation to heights up to 2.0m high. The eastern section of the southern boundary is part of an enclosure to the south, up to which the western part of the southern boundary and the eastern boundary of White Downs were butted when they were created. This section of boundary is a Cornish hedge 1.4m high, again topped with vegetation. The northern boundary, against the lane from New Mills over the Downs, has some rather stunted oak trees growing along its length.

The field has a principally westerly and south westerly aspect, with open views towards Mitchell, Ladock and Probus, particularly westwards across Ladock and St. Enoder Woods in the general direction of Carland Cross (Fig 31) and south westerly down the valley to Ladock (Fig 26). The settlement of Probus is not visible, though its church tower is a skyline feature (Fig 27).

The landscape centred on New Mills is characterised by a series of small valleys cutting through a dissected plateau which rises gently northwards towards the Hensbarrow granite uplands. As a result, whilst hilltops and ridges are visible out to a considerable distance from the site, these tend to blend together with distance, and only small parts of each are visible behind those nearer to the site. Valley sites are almost entirely hidden from view, and from ground level, only those dwellings sited on higher ground at New Mills can be seen, despite their proximity to the site proposed for the wind turbine.

Another significant element of the site is the number of trees within these valley areas and extending up onto hillsides (for example, Fig 26). Ladock and St. Enoder Woods to the west of New Mills are extensive, long-established conifer plantations with deciduous fringes, often of oak. Boundaries within this landscape tend to be Cornish hedges, often long-established and well-vegetated; lanes and roadways are also bounded in this fashion. As a result, despite the proximity of the settlement of Ladock, few of its dwellings were visible from the site, though its church tower rises above the mature tress which surround it and which fringe the nearby school and associated Listed Buildings.

The general character of the surrounding landscape within views from the site is almost wholly rural, representing a mature farming landscape established during the medieval period. Agricultural silos, power transmission pylons and mobile phone masts are rare within this locality, as are modern agricultural barns. Most settlements and dwellings are set on lower hillslopes or within valleys, and hence have very local settings.

A number of medium sized (around 35m to hub) wind turbines have recently been erected within this area. From the site at New Mills, a pair at Cregan Gate can clearly be seen 1km to the west (Figs 28, 30, 32 to 34, 39), as can another pair at Halezy 1.25km to the south east (Figs 29, 33, 35). Another is on high ground just to the south of the road between Brighton Cross and Terras 1.8km to the north east, a sixth is just visible about 5km to the west south west of the New Mills site and a seventh lies not far to the south of Ladock. Whilst these are visible from the high ground of the Downs around New Mills, Ladock, Cregan Gate and Grampound Road, they are much less of a presence from the local valleys, and cannot be seen from either Ladock or New Mills.

8 Results of viewshed analysis

See Figs 15 to 23.

Given the location of the site and the significant height of the turbine tower, the viewshed analysis suggests that the Zone of Theoretical Visibility (ZTV) will be fairly far-reaching, though the notably dissected nature of the surrounding topography will constrain visibility beyond a 2km radius to the hilltops, ridgetops and upper hillslopes facing its site. In line with the requirements of English Heritage guidance, the ZTV has been mapped to a distance of 10km from the site; the ZTV suggests that the potential visibility of the wind turbine is unlikely to extend to any significant degree beyond this

zone. The visibility of the turbine will diminish with distance, and will, at many sites in the locality , be blocked by intervening buildings within settlements or farmsteads or by mature groups of trees (albeit on a temporary basis, should such trees subsequently be felled) (Fig 38).

8.1 1km radius ZTV

See Fig 15.

Given the nature of the local topography and the elevation of the proposed wind turbine, the ZTV suggests that the turbine mast and blades will be visible from approximately 90% of this zone, which extends to North Trendeal to the north, Homer Downs to the north west, the valley sides above New Mills to the east, Nankilly Water to the south and Pollard's Farm to the north east. The only areas where intervisibility with the wind turbine will be absent will be along the road from New Mills to Trethurffe Hills Farm to the north and along the valley base at Nankilly Water to the south. These areas include the majority of the hamlet of New Mills and a number of farm settlements.

8.2 1km to 3km radius ZTV

See Fig 16.

The wind turbine will be visible from around 70% of the 3km radius ZTV, which will extend to Westow Farm to the north, Arrallas to the north west, Trelassick to the west, Nansough to the south west, Trenithan Bennett to the south, Trenowth to the south east, Trelion to the east and Scarcewater to the north east. Areas around Grampound Road, Trelion and to the west of Brighton Cross will not fall within the ZTV.

This zone includes many farmsteads of medieval origin as well as the sites of a large number of cropmark rounds and barrow groups north of Trendeal and near Carnmenough Farm. The zone includes the village of Ladock, which includes its Grade I Listed church (Fig 36) and a number of Grade II Listed Buildings, including the schoolhouse at Ladock (Fig 37). The zone contains no Registered Parks and Gardens, though includes five potentially intervisible Scheduled Monuments, these being:

- Four round barrows 480m north of Besowsa (1020750) 2.5km away.
- Three bowl barrows 670m and 775m north west of Homer Downs (1019064) 1.6km away.
- A round barrow 530m north west of Carnwinnick (1020751) 2km away.
- A round 390m south west of Trethurffe (1020797) 2km away.
- A round 330m south east of Penhale (1020752) 2.4km away.

8.3 3km to 5km radius ZTV

See Figs 17 to 20.

The wind turbine will be visible from around 40% of the 5km ZTV, which extends to Penhale to the north, Summercourt and Mitchell to the north west, Probus to the south, Coombe to the east south east and Treviscoe to the north east. The principal areas of potential intervisibility are from Penhale to Mitchell in the north west and from Stepaside to Coombe in the east.

Very small parts of the Conservation Areas in the settlements of Probus and Grampound will have some potential intervisibility with the proposed wind turbine. The settlements of Summercourt, Coombe and St. Stephens in Brannel will experience some degree of intervisibility with the wind turbine, as will the eastern part of the settlement of Mitchell. Each contains some Listed Buildings. The only Registered Park and Garden within this zone is Trewithen, 5km to the south, where intervisibility with

the wind turbine is likely to be limited to its northern edge and to a part of its core near Trewithen House.

The zone includes seven potentially intervisible Scheduled Monuments, these being:

- Resugga Castle (107685).
- A prehistoric/Roman period settlement at Carvossa (1016890).
- A round with an annexe 720m west south west of Tregear (1020179) (very limited potential intervisibility).
- Tregargus number 2 china stone mill (1003101) (very limited potential intervisibility).
- Five bowl barrows 450m and 510m north of Hendra Farm (1019021) (very limited potential intervisibility).
- Wayside cross in St. Enoder churchyard (1014221) (probably no intervisibility).
- Wayside cross in St. Stephen in Brannel churchyard (1018694) (probably no intervisibility.
- Cross shaft and base in St. Stephen in Brannel churchyard (1018695) (probably no intervisibility).

8.4 5km to 10km radius ZTV

See Figs 21 to 22.

The wind turbine will potentially be visible from around 35% of this zone, the likely intervisible areas extending to St. Columb Road to the north, St. Newlyn East to the north west, Zelah to the west, the north eastern margins of Truro around Polwhele to the south west, Ruan Lanihorne to the south, St. Ewe to the south east, the outskirts of St. Austell to the east and Whitemoor to the north east. The fall-off in intervisibility within this zone is marked, the ZTV terminating on the rising ground of Hensbarrow to the north east, by the line of the A30 to the north and the A39 to the west. To the south, the ZTV is patchy and limited to hill and ridge tops. A pronounced fall-off in the visual prominence of the wind turbine is inevitable within this zone.

As well as Listed Buildings in the intervisible settlements, small parts of the Conservation Areas at Tregony and St. Newlyn East may experience very limited intervisibility with the proposed wind turbine. Most settlements within this zone are located within valleys, and will not be intervisible with the wind turbine.

Trewarthenick Registered Park and Garden is 7.5km to the south of the proposed wind turbine site at New Mills. Intervisibility will be limited to a very small part of its northern valley section.

The zone includes nine potentially intervisible Scheduled Monuments (either single sites or groups), as follows:

- Round barrow cemetery 420m north east of Higher Ennis Farm (1020758).
- Long barrow and four round barrows 580m and 750m south west of Mitchell Farm (1017350).
- Barrow south west of Mitchell Farm (1019020).
- Barrow south west of Mitchell Farm (1019021).
- Wayside Cross in St. Allen churchyard (1015075).
- Multiple enclosure fort 300m north east of Trethewes (1020798).
- Hillfort 450m north north west of Cargoll Farm (1019496).
- Round south west of St. Stephens' Beacon (1007291).

- Sticker Camp (1011994).
- Medieval wayside cross base 550m west north west of Lanhadron Farm (1007952).
- Medieval cross base at St. Ewe (1010849).

8.5 Scheduled Monuments within the 5km radius ZTV

See Fig 20.

There are 15 Scheduled Monuments within 5km of the proposed wind turbine site at New Mills, as follows:

- 3 individual barrows.
- 3 barrow groups.
- 1 hillfort.
- 3 rounds.
- 1 hillfort.
- 1 prehistoric settlement.
- 2 wayside crosses.
- 1 churchyard cross.
- 1 china stone mill.

Of these, nine individual monuments (or elements of these) would potentially be intervisible with the wind turbine, these excluding the crosses at St. Enoder and St. Stephens in Brannel, a barrow to the south west of Mitchell Farm and two barrows to the south west of Mitchell Farm listed above.

Of these, there would be partial intervisibility only with the following;

- Tregear Round (1020179) – north eastern edge only.
- Penhale Round (1020752) – eastern half only, with a probability of this being blocked by nearby hedge vegetation.
- Barrow south west of Mitchell Farm (1019020) – eastern half only.
- Resugga Castle (1017685) – outworks to north west only.
- Carvossa settlement (1016890) – northern half only.

Intervisibility is suggested with the following, all within 3km of the proposed turbine site:

- Round near Trethurffe (1020797).
- Barrow near Carnwinnion (1020751).
- Four barrows near Besowsa (1020750).
- Three barrows near Homer Downs (1019064).

In summary, the potentially intervisible Scheduled Monuments within the 5km ZTV consist of one round and three barrows or groups of barrows. The latter would have originally been deliberately sited so as to have extensive landscape settings.

Although there is likely to be some degree of intervisibility between these sites and the proposed wind turbine, in most cases views of them will tend to be distant, in some cases partial and in others locally blocked by nearby vegetation or structures. There are few locations within the landscape from which views of these designated sites will include the wind turbine as significant, and far fewer as dominant, elements. Significant negative impacts on the settings of these Scheduled Monuments are therefore unlikely.

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

See Fig 21.

Trewithen Garden near Probus (Grade II*, 1000510) is 5km to the south of New Mills. There will be some intervisibility with the wind turbine along the northern edge of the Park. Towards the core of the Park, open areas to the north of the house may allow views of both the hub and blades of the turbine, though these will be a considerable distance away, will not form significant elements within views and will not occupy designed views.

Trewarthenick, near Tregony (Grade II, 1000658) is 7.5km to the south of New Mills. The ZTV mapping suggests a very small area of potential intervisibility within Killiow Brake in the northern part of the Park adjacent to the road to Tregony.

There are no Registered battlefields within 10km of the sites proposed for the wind turbine at New Mills.

8.7 Grade 1 and II* Listed Buildings within the 5km radius ZTV

See Fig 17.

153 Listed Buildings of all grades intersect the 10km ZTV relating to the proposed New Mills wind turbine. Four are Listed at Grade I and nine at Grade II* as follows:

Grade I

- Church of St. Ladoca – 1310553.
- Pavilion 15m north west of Trewithen House – 1328913.
- Trewithen House – 1141100.
- Pavilion north of Trewithen House – 1160827.

Grade II*

- Pennans Farmhouse – 1144033.
- Golden Manor – 11441132.
- Church of St. Newlyna – 1137190.
- Church of St. Allen – 1141465.
- Barn and adjoining walls at Golden Manor – 1310504.
- Church of St. Denis – 1327433.
- Gate piers at Trewithen House – 1160865.
- Treveor Farmhouse – 1312571.
- Goonvean engine house and associated boiler house – 1136944.

66 Listed Buildings of all grades intersect the 5km ZTV. Four are Listed at Grade I and two at Grade II*, as follows:

Grade I

- Church of St. Ladoca – 1310553.
- Pavilion 15m north west of Trewithen House – 1328913.
- Trewithen House – 1141100.
- Pavilion north of Trewithen House – 1160827.

Grade II*

- Gate piers at Trewithen House – 1160865.

- Treveor Farmhouse – 1312571.

Within 3km of the New Mills site, 24 Listed Buildings intersect the ZTV. The following are Listed at either Grade I or Grade II*:

Grade 1

- Church of St. Ladoca – 1310553.

Grade II*

- None.

Of this group, the Church of St. Ladoca is most likely to experience some negative impacts on its setting, given its hilltop location, site type and relative proximity to the proposed wind turbine. Given their relative distance from the proposed wind turbine site, significant impacts on the settings of the high grade Listed Buildings at Trewithen are unlikely.

8.8 Conservation Areas within the 5km radius ZTV

See Fig 18.

Two Conservation Areas are sited within 5Km of the site at New Mills proposed for the Ladock Community wind turbine, these being Probus (DCO58) and Grampound (DCO102). The key views within Probus are inwards towards its church and open core area, particularly along the approach line formed by the road from the west. The only areas of the Conservation Area with any degree of potential intervisibility are at its extreme western end and its northern part. Views out of the settlement in the northern part may be compromised to some degree, as these may frame the wind turbine, though at a distance of just under 5km. In the case of Grampound, the settlement is linear and aligned west north west to east south east. Intervisibility with the wind turbine may just occur at the extreme eastern end of the Conservation Area.

In neither case are views of the settlements likely to be negatively impacted upon by the construction of the wind turbine at New Mills.

8.9 Grade II Listed Buildings within the 3km and 1km radius ZTVs

See Fig 16.

Within the 3km zone there are 23 Grade II Listed Buildings, as follows:

- 13 farmhouses or farm buildings.
- 1 village house.
- 1 manor house and 1 associated feature.
- 1 school (Ladock)
- 1 smithy.
- 2 holy wells.
- 2 milestones.
- 1 chest tomb (Ladock churchyard).
- 1 churchyard wall (Ladock).

One of these Grade II Listed Buildings is within the 1km ZTV:

- B3275 milestone at New Mills - 1396599

Impacts on the settings of some of these feature types are very unlikely unless they are in very close proximity to the proposed wind turbine. These include milestones, churchyard walls, headstones or chest tombs. Some negative impacts on the settings of

closely-set Grade II Listed Buildings may occur, for instance at Trendeal and Ladock, the later being 1.7km to the south south east.

Given their distances from the site of the proposed wind turbine, the local topography and vegetation and the site types (and hence their sensitivities), no impacts on the settings of the remaining sites are likely.

8.10 Undesignated sites within the 1km ZTV

See Figs 12 and 15.

The ZTV mapping suggests that nearly all of the landscape within a 1km radius of the New Mills site will be intervisible with all or part of the proposed wind turbine. Within this zone, the Cornwall and Scilly Historic Environment Record (HER) records 35 sites, and of these, the ZTV mapping indicates that 30 undesignated sites will be intervisible with the wind turbine to some degree or other:

Prehistoric

- MCO8281 – Round field name.
- MCO54643 – Iron Age bank.
- MCO45500 – TrackWay.
- MCO45501 – TrackWay.
- MCO45494 – Three barrows?
- MCO45498 – TrackWay.
- MCO2499 – Barrow (destroyed).

Medieval

- MCO45486 – Early Medieval field boundary.
- MCO15905 – New Mill settlement.
- MCO32238 – TrackWay.
- MCO5598 – Cross field name.
- MCO9940 – Holy well.
- MCO14428 – Fentonladock settlement.
- MCO45503 – Boundary.
- MCO45499 – Field system.
- MCO45494 - Ridge and furrow.
- MCO45489 – Ridge and furrow.
- MCO45491 – Ridge and furrow.
- MCO45490 – Leat.

Post-medieval/modern

- MCO45487 – Spoil heap, part of Wheal Albion.
- MCO12807 – Wheal Albion engine house. No intervisibility.
- MCO44336 – Wheal Albion adit. No intervisibility.
- MCO44571 – Site of cob cottage. No intervisibility.
- MCO45488 – Cottage pair. No intervisibility.
- MCO25632 – Quarry.

- MCO39404 – Tin streamworks.
- MCO25627 – Corn mill.
- MCO32291 – Non-conformist chapel.
- MCO10818 – Double fronted cottage.
- MCO54048 – Milestone (see also Grade II Listed Buildings).
- MCO45506 – Mine shaft. No intervisibility.
- MCO45502 – Spoil heap.
- MCO25633 – Quarry.
- MCO45495 – Quarry.
- MCO25265 – Gravel pit.

Given the natures of the majority of these sites, the proposal for a wind turbine at New Mills would have no significant impact on their settings, the exceptions being the possible barrows and trackWay on White Downs (the presence and condition of these and associated features was to be tested for using the geophysical survey), the Non-conformist Chapel, corn mill and early double-fronted cottage in New Mills.

9 Field verification of ZTV

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 Ladock Church and School, New Mills, Downgate, Pollard's Tenement, a site adjacent to the barrows north of Homer Downs, Trendeal, Menna, Cregan Gate, Resugga Castle and Trewithen Park (see Fig 24 for specific sites visited).

At each accessible designated heritage site the potential visibility (and proportional visibility within views) 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. Viewpoints within the landscape were also used to determine the degree to which views of key heritage assets will include the proposed wind turbine as a dominating or distracting feature affecting their settings.

Where possible, photographs were taken from key locations within the surrounding landscape and from the locations at New Mills back to these sites. Whilst views from these sites allowed the location of the proposed wind turbine to be readily determined within the landscape, particularly from lower lying ground some distance from the site, field hedges, woods and other tree plantings blocked views back towards the site in rural areas; within settlements, groups of buildings, mature garden trees and shrubs and local tree groups also blocked many views back to the site. The visibility cut-off imposed by the local topography suggested by the viewshed mapping was confirmed, though the wooded nature of much of the surrounding landscape blocked intervisibility with many areas where the DTM ZTV suggested that this would be present.

Field verification tended to confirm the general nature of the viewshed mapping, the densest areas of the viewshed more or less terminating 5km to the north along the high ground occupied by the A30 between Fraddon and Mitchell, 5km to the west along the high ground between Mitchell and Trehane Barton, 4.5km to the south along hilltops between Probus and Grampound, and 4km to the east along the upper valley sides of the River Fal between Grampound and Treviscoe.

The viewshed will extend beyond this though the visibility of the wind turbine will be restricted to hill and ridge tops facing the site, and will increasingly be prone to blocking by hedges, buildings and trees. In practice, therefore, 5km represents the effective ZTV of the proposed wind turbine.

The wind turbine is likely to be a skyline or hilltop feature from higher parts of much of this zone where views are not blocked by valley sides, tree plantings or buildings within settlements. Given the nature of the local landscape, views of the wind turbine from moving vehicles will tend to be fleeting and it is unlikely to be a dominant and persistent feature within key views within or of the area. Most views within this zone which will include the New Mills turbine will also include one or more of the already-existing turbines within the surrounding locality.

There will be some locations within the area surrounding New Mills, however, from which the proposed turbine will be clearly visible as a dominant vertical and modern feature of the landscape. These were not found likely to contain or include views of designated heritage assets with settings sensitive to such developments, however.

10 Summary results of geophysical survey

A magnetometer survey of the site was undertaken on 20 November 2012 by Archaeophysica Ltd., covering a 1Ha area centred on the site proposed for the wind turbine with a 30m wide corridor following the route of the proposed cable connection from the wind turbine to overhead power lines nearby.

The geophysical survey (Fig 41) showed most of the survey area to be devoid of archaeological features. The survey area was bisected by an east-west aligned double ditched linear feature typical of a ploughed Cornish Hedge. Against the eastern hedge and parallel to it is a short length of what appears to be another removed boundary, possibly representing the eastern side of a north-south aligned former trackWay across the downs.

Of most interest, though very ephemeral in nature, was a 7.0m diameter circular feature in the north eastern corner of the survey area, immediately adjacent to the gateway into the field. This could be interpreted as either the ring ditch around a Bronze Age barrow – features of this type are documented within the immediately surrounding landscape, or possibly the eaves gully around a prehistoric roundhouse. This feature appears to be enclosed within or to overlie a further, less well defined curvilinear feature.

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.

The EIA screening option for this site has indicated the potential for cumulative impacts, though did not consider these to be likely to be significant. A pair of 35m high wind turbines have been erected at Cregan Gate 900m to the east, and a second pair are sited at Halezy 1.5km to the south east. A further wind turbine is sited 2km to the north east and a 15m high turbine is sited 1.4km south east at Woodland Valley Farm. A 35m high turbine has been approved 1.3Km to the south east and a further 47m high wind turbine has been proposed at Carnwinnick Farm 1.7km to the south east – this application is understood to be currently under consideration. A further wind turbine was noted to the south west of the application site during the site visit.

High voltage power lines cross the landscape between 3km and 4km to the north paralleling the route of the A30 on its southern side. These are visible as distant skyline features from the New Mills site. There are very few visible mobile phone masts,

television repeater masts, microwave towers, large agricultural silos or large-scale modern agricultural sheds within the landscape surrounding Ladock and New Mills.

The landscape is characteristically agricultural in character, consisting of a patchwork of small and medium-sized fields, often bounded by trees, interspersed with small and medium sized areas of woodland and plantation. Church towers and other historic buildings tend to be set within tight clusters in locations which characteristically include mature trees, so whilst these features have strong local presences, they are not dominant within the landscape (except in the case of Probus church tower, given its hilltop location). The wind turbines which have been recently constructed within this landscape have introduced an (at present) small number of visually dominant and clearly modern features into this landscape.

12 Synthesis

Neither the desk-based assessment nor the walkover survey indicated the presence of any significant upstanding archaeology which might be directly impacted upon by the proposed wind turbine and cabling at New Mills. The geophysical survey suggests the possible presence of either a prehistoric roundhouse or a Bronze Age barrow in the north eastern part of the area surveyed. This feature is likely to be vulnerable to impacts from site traffic if the nearby gateway is to be utilised during the construction of the wind turbine.

Impacts on both designated and undesignated heritage assets within the local landscape resulting from the construction of a wind turbine on land at White Downs, New Mills 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), the presence of other buildings or the proximity of already-existing wind turbines or other visually dominant modern structures or features. In some cases, even where intervisibility will be present, the prevailing local topography will result in the New Mills wind turbine being only partially visible or not visible at all.

There will be some degree of negative impact within the immediately local landscape out to one to two kilometres from the site. The most sensitive sites are those within and bordering the hamlet of New Mills itself, and there is some potential for the setting of Ladock Church tower to be compromised, though locations within the landscape where views of the church tower will include the proposed wind turbine as a distracting element are likely to be few in number. The settings of other designated sites within the locality are likely to be unaffected.

There will be some impacts on the Historic Landscape Character of this landscape, which has, to date, by and large not been modified by highly visible modern features, though this will be to a certain extent reduced by the visual clustering effect with the five already-operational medium sized wind turbines within the immediately-surrounding area.

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 planing policy relating to the Historic Environment and are germane to this assessment:

128 *In determining applications, local planning authorities should require an*

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

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

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

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

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

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

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

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

13.2 PPS5 English Heritage guidance

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

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

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

The section on Policy HE10 defines setting as follows:

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

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

13.3 Former Cornwall Structure Plan

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

13.3.1 Policy 1

'*Development should be compatible with:*

The conservation and enhancement of Cornwall's character and distinctiveness;

The prudent use of resources and the conservation of natural and historic assets;

A reduction in the need to travel, whilst optimising the choice of modes, particularly opportunities for walking, cycling and the use of public transport;

Through developing the principles of Policy 1 it is intended to integrate environmental values with land use and transport policies, achieving patterns of development that reflect strong environmental protection and stewardship of resources.'

13.3.2 Policy 2

'*Throughout Cornwall, development must respect local character and:*

- *Retain important elements of the local landscape, including natural and semi-natural habitats, hedges, trees, and other natural and historic features that add to its distinctiveness;*

- *Contribute to the regeneration, restoration, enhancement or conservation of the area;*
- *Positively relate to townscape and landscape character through siting, design, use of local materials and landscaping.*
- *The conservation and enhancement of sites, areas, or interests, of recognised international or national importance for their landscape, nature conservation, archaeological or historic importance, including the proposed World Heritage Site, should be given priority in the consideration of development proposals*.'

13.4 Former Carrick Local Plan

Although now part of Cornwall Council, Carrick District Council's policies listed in its local plan continue to be relevant. The Carrick District Wide Local Plan 1998 contains policies designed to protect the archaeological resource, using the following elements of policy framework:

Carrick Policy 3A states: The District Planning Authority will enhance and protect the countryside by refusing planning permission for development which would have a significant adverse impact upon its biodiversity, its beauty, diversity of landscape, the character and setting of settlements, the wealth of its natural resources, its nature conservation and agricultural, historic and recreational value.

Carrick Policy 4S states: Where nationally important archaeological remains, whether scheduled or not, are affected by proposed development, there will be a presumption against proposals which would involve significant alteration or cause damage, or which would have a significant impact on the setting of visible remains.

Carrick Policy 4T states: Where proposed development is likely to significantly affect sites of 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 District Planning Authority may impose conditions or seek planning obligations to ensure that adequate archaeological records are prepared before development commences.

Carrick Policy 4X states: Proposals for development affecting the Historic Gardens

and Parks listed by English Heritage below 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;

Carrick Policy 4Y states: In considering proposals for development in Areas of Great Historic Value, high priority will be attached to the need to avoid disturbance to features of archaeological or historic significance, and to the need to conserve the particular character of the area. Proposals which would have a significant adverse affect upon the archaeological or historic character of the area will not be approved.

Carrick Local Development Framework Policy 3 (Protection of the Countryside) notes that: *The District Planning Authority will enhance and protect the countryside by refusing planning permission for development which would have a significant adverse impact upon its biodiversity, its beauty, diversity of landscape, the character and setting of settlements, the wealth of its natural resources, its nature conservation and agricultural, historic and recreational value.*

13.5 Hedgerow Regulations

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

14 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

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

14.1.2 Types of impact, operational phase

This wind turbine might be expected to have a visual impact on the settings of some key heritage assets within their viewshed during the operational phase, given its height (76 metres), the topography of the site and the open nature of the local landscape. Such factors also make it likely that the development would have an impact on Historic Landscape Character. These impacts would be **temporary** and **reversible** should the turbine subsequently be dismantled and not re-powered or replaced.

14.1.3 Scale and duration of impact

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

positive/substantial

positive/moderate

positive/minor

neutral

negative/minor

negative/moderate

negative/ substantial

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

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

14.1.4 Potential and residual impacts

Potential adverse impacts may be capable of mitigation through archaeological recording or other interventions. In the assessments forming Section 14.2, where appropriate, both 'potential' and 'residual' impacts are given; that is, expected impacts

'before' and 'after' such work, principally in relation to the development phase. A 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 are assessed as having a potential scored as **neutral** to **negative/minor**. In one case, the Church of St. Ladoca, the impact has been determined to be **negative/moderate**, principally dependant on its proximity to the proposed turbine site and the particular sensitivity of its setting to impacts of this type.

Impacts on the settings of designated heritage sites within 10km of the proposed turbine site have been assessed as **neutral** to **negative/minor** overall. There is some potential for impacts on sub-surface archaeology within the development site, given the documentary evidence, the wealth of cropmark features already recorded within their immediately surrounding landscape and the circular features revealed through the geophysical survey.

The assessments supporting this general statement are outlined in the following sub-sections. To comply with current policies and guidance (Section 13) these provide assessments of impact in terms of different aspects of the 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, cabling or ancillary works during the construction phase can result in permanent, irreversible loss of below ground remains of archaeological sites within the development area, or of elements of these. The works, if deeper than current ground levels, might affect undetected buried cut features.

Scales of impact will vary with the degree of significance of individual sites, and with the proportion of the whole site which would be affected. The possible presence of a group of Bronze Age barrows not far from upper edge of the enclosure proposed for the wind turbine and the suggestion that a late prehistoric earthwork crosses this field, together with the nearby prehistoric trackWay recorded in the Cornwall and Scilly HER and the circular feature revealed through geophysical survey indicates some potential for impacts on potentially significant sub-surface archaeology to take place.

14.2.2 Impacts on the settings of surrounding key heritage assets

The proposed wind turbine are considered likely to have an impact on the setting of key surrounding heritage assets, this being summarised as **negative/moderate** (in one case – The Church of St. Ladoca) **to negative/minor** in the case of a small number of Scheduled Monuments and **temporary/reversible** overall should the wind turbine be dismantled in the future and not be replaced:

- There are a number of Scheduled and one high grade Listed sites located within 5km of the site proposed for the wind turbine which would have been intended, when constructed, to be highly visible focal points within the local landscape. These include the barrow groups to the north of Homer Downs, the barrow near Carnwinnion and the barrow group near Besowsa (all Scheduled Monuments) and the Church of St. Ladoca with its prominent tower (a Grade I Listed Building). There will be substantial intervisibility between these sites and the proposed wind turbine at New Mills. There may also be an impact on the setting of Trewithen House, given the potential for intervisibility between the main façade of the building and the proposed wind turbine to its north, though given the five km distance between the two, any negative impacts are considered

likely to be no more than slight in degree, and intervisibility will probably be blocked by trees within Trewithen Park.

- Because of the process of enclosure within the countryside surrounding the barrow groups during the medieval period, the character and appearance of the landscape within which these prehistoric monuments now sit has changed from those within which they were originally designed to be seen and understood, and these examples are no longer prominent hilltop features, able to be appreciated from surrounding locations. As a result of this factor and the effects of plough denudation, their settings are considered to have diminished in extent, and are now considerably more local than was originally the case. Impacts on their settings are therefore likely to be **negative/minor** at worst and are more likely to be **neutral**.
- The Church of St. Ladoca is currently (and has long been) the most prominent building within the local landscape, given its vertical tower, as was deliberately designed to be the case. The introduction of a 50m high, white-painted turbine mast on an upper hillslope at New Mills less than 2km to its north with its rotating blades extending to 76m from ground level will inevitably compete for visual attention with the church within open areas in the vicinity of Ladock. For this reason it has been judged that the construction of the wind turbine would have a **negative/moderate** impact on the setting of the church. There are, however, few publicly-accessible places within the local landscape where the church tower and the wind turbine are likely to be seen within the same view.
- Other Scheduled Monuments within the 5km viewshed are either types which have only limited settings are at distances from the proposed wind turbine where their settings are unlikely to be impacted upon or are in localities where intervisibility will be blocked by hedges, trees or topography, as at Resugga Castle or Carvossa.
- During its operational phase the wind turbine is unlikely to impact to any significant degree on the settings of the majority of the Listed Buildings within its viewshed, given the distances between the wind turbine and those designated structures and constraints on intervisibility.
- There are no Registered Battlefields within the 10km radius viewshed of the proposed wind turbine.
- There are unlikely to be any impacts on the settings of intervisible Conservation Areas within the 5km radius viewshed of the proposed wind turbine.
- Some negative impacts on settings are anticipated for built elements of the environment in and near the settlement of New Mills, given its proximity to the proposed wind turbine site, as the wind turbine will introduce an unavoidably noticeable modern structure into views of what remains to this day an agricultural hamlet of essentially early to mid 19th century character.
- Any impacts on heritage assets within the landscape surrounding the proposed wind turbine would be temporary and reversible should the wind turbine be dismantled in the future.

14.2.3 Designated heritage assets within the 5km radius viewshed

Preliminary filtering of the potential for the likelihood of impacts on these sites is discussed above (Section 8). 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 Fig 20.

Identifier	Site	NGR	Impact
1019064	3 barrows near Homer Downs	SW 89543 53405	Neutral given the nature of their

Identifier	Site	NGR	Impact
			locations.
1020797	Round near Trethurffe	SW 89659 50515	Neutral given local topography and local tree cover.
1020751	Barrow near Carnwinnion	SW 92231 51700	Neutral given topographic situation and existing nearby wind turbines.
1020750	4 barrows near Besowsa	SW 91103 54648	Neutral given topography and local tree cover.

Despite the ready intervisibility between these sites and the proposed wind turbine, the effects of distance and the diminution of the setting of these sites due to changes within the agricultural landscape will reduce any intrusive effects resulting from the construction of the wind turbine in views of and from these sites. The impacts on their settings are therefore assessed as **neutral** to **negative/minor**.

Grade 1 Listed Buildings - see Fig 17.

Identifier	Site	NGR	Impact
1310553	Church of St. Ladoca	SW 89485 50977	Negative/moderate
1141100	Trewithen House	SW 91308 47513	Neutral given distance and likelihood of blocking of intervisibility.

Whilst there will be intervisibility between the proposed turbine and the church tower at Ladock, no appreciation of this will occur at ground level where there will be blocking of views between the two by intervening buildings and vegetation. However, the wind turbine will compete with the church tower for visual dominance in some immediately local views and the impact on its setting is therefore assessed as **negative/moderate**.

Grade II* Listed Buildings

No Grade II* Listed Buildings were considered likely to experience negative impacts on their settings from the construction of the proposed wind turbine.

Conservation Areas

Of the two Conservation Areas which fall within the 5km ZTV, none are considered as lying close enough to the site proposed for the wind turbine at New Mills or having a sufficient degree of intervisibility or shared views for there to be any likelihood of negative impacts on their settings.

14.2.4 Designated heritage assets within the 3km radius viewshed.

Grade II Listed Buildings – see Fig 16.

Identifier	Site	NGR	Impact
11441129	Ladock School	SW 89508 50969	Neutral, given surrounding tree cover and localised setting.
1160400	Trendeal	SW 89237 52456	Neutral given mature tree cover and nature of setting.
1141125	Trendeal Vean	SW 89048 52490	Neutral given mature tree cover and nature of setting.

Given the topography of the area within which these designated structures are sited, and the locally often quite abundant tree cover and high, vegetated hedges, intervisibility with the wind turbine will be partial, and views within which both the designated structures and the wind turbine occupy the same views are likely to be very limited in number. Overall, the impacts on the settings of these structures are judged likely to be neutral.

14.2.5 Undesignated heritage assets within the 1km radius viewshed

See Fig 15.

Identifier	Site	NGR	Impact
MCO3229	Non-conformist chapel in New Mills	SW 89984 52375	Negative/minor
MCO10818	Cottage in New Mills	SW 89962 52353	Negative/minor
MCO25621	New Mills corn mill	SW 90082 52293	Negative/moderate
MCO45494	Three possible barrows on White Downs	SW 91289 52331	Neutral
MCO54643	Possible prehistoric bank on White Downs	SW 90487 52116	Negative/minor
MCO45550 MCO45501	Possible prehistoric trackWay across White Downs	SW 91116 52160	Neutral
None	Circular feature revealed within the development site by geophysical survey	SW 90618 52288	Negative/unknown

As noted above, given the proximity of the settlement of New Mills to the proposed wind turbine site and the considerable height of the proposed wind turbine, negative impacts on the setting of the hamlet and its components are inevitable. The turbine will form the backdrop to views of New Mills Farm and its corn mill from the valley side to the west – these impacts are judged to be **negative/moderate**. The cottages and chapel on the western side of the road through New Mills are unlikely to experience such negative impacts, given the closed-in nature of the road, as this tends to constrain views along it in a north north east to south south west direction. From the south, the wind turbine will be visible to the north east when approaching the hamlet, though close to it, vegetation and buildings on the eastern side of the road will reduce its impact. Approaching the hamlet from the north, the dense willow carr in the former tin streamworks would block most views of the wind turbine until the viewer is more or less level with the chapel, so views including both the hamlet and the wind turbine gained from this direction are likely to be fleeting. Occupants of the houses, farm and corn mill in New Mills will experience the wind turbine as an unavoidable presence on the hillside to the east, however. Impacts on the settings of the chapel and cottage noted in the HER are therefore considered likely to be **negative/minor** for those passing through the hamlet on the road, but could be experienced as **negative/significant** for its occupants.

The impacts on the settings of the potentially prehistoric features noted within the Cornwall and Scilly HER on and near White Downs are likely to be **negative/minor** at most and most probably **neutral**. Impacts on the circular feature revealed through geophysical survey in the north eastern corner of the field are currently **negative/unknown** but could potentially be significant. This potential may need to be tested.

14.2.6 Impacts on Historic Landscape Character

A wind turbine installation erected at New Mills can be predicted to have some degree of negative impact on the historic character of the landscape. The expected effect on HLC has been assessed as **negative/moderate**, the scale of impact being dependant

on the scope and scale of views of and within this landscape. Factors contributing to this assessment are as follows;

- Some significant visual impact throughout the operational phase would occur, affecting the integrity of this area as a block of former downland within a matrix of medieval farmland through the introduction of a highly visible modern feature.
- The land-take for the proposed development is small in comparison with the area of the HLC Units of former downland within the surrounding landscape.
- There would be no impacts in terms of physical loss during the construction phase of features which form the visible components of this type of HLC.
- The wind turbine will be a tall and highly visible modern intrusion into an agricultural landscape of medieval origins from viewpoints over this landscape.
- Any impacts on the legibility of HLC would be *temporary and reversible* should the wind turbine be dismantled in the future.

15 Mitigation Strategy

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

15.1 Protection of sub-surface archaeology

In the instance of the site at New Mills, the geophysics results suggest that there is a possibility of below ground remains being directly impacted upon by the proposal to construct a wind turbine at this location.

It is recommended that the developer should set out how it is proposed to protect sub-surface archaeological features identified through geophysical survey during the construction and operational phases of the wind turbine (in particular the circular feature identified in the north eastern corner of the field).

15.2 Archaeological recording

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

The Historic Environment Planning Advice Officer may require a programme of targeted archaeological evaluation in advance of development to determine the types and scales of such impacts and any requirement for further recording, or alternative methods to mitigate probable impacts. This might include the controlled excavation of sub-surface archaeology and/or the recording of upstanding elements of the site.

Alternatively, a watching brief (observation by an archaeologist during mechanical ground reduction activities) may be required in areas where significant features have been identified through geophysical survey, or where the balance of probability suggests that sub-surface archaeology might survive. These approaches provide for preservation by record of upstanding or buried archaeological features or artefacts and reduce any impacts on the archaeology of the site to **negative/minor**. Any resultant impacts would be reduced to **permanent** and **irreversible**.

16 References

16.1 Primary sources

Cornwall County Council 2005 aerial mapping of Cornwall.

Joel Gascoyne's 1699 Map of Cornwall

Martyn's 1748 Map of Cornwall

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

Ordnance Survey, *c*1880. *25 Inch Map* First Edition (licensed digital copy at HE)

Ordnance Survey, *c*1907. *25 Inch Map* Second Edition (licensed digital copy at HE)

Ordnance Survey, 2007. *Mastermap Digital Mapping*

Tithe Map and Apportionment, *c*1840. *Parish of Ladock* (digital copy available from CRO)

16.2 Publications

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

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

Herring, P. 1998, *Cornwall's historic landscape: presenting a method of historic landscape character assessment,* Cornwall Archaeological Unit

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

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

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

16.3 Websites

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

17 Project archive

The HE project number is **PR146201**

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

1. A project file containing site records and notes, project correspondence and administration.
2. Digital photographs stored in the directory R:\Historic Environment (Images)\SITES.I-L\Ladock wind turbine assessment 2012
3. English Heritage/ADS OASIS online reference: cornwall2-137957
4. This report text is held in digital form as: G:\TWE\Waste & Env\Strat Waste & Land\Historic Environment\Projects\Sites\Sites L\Ladock community wind turbine assessment 2012\Report\Ladock community wind turbine assessment.doc

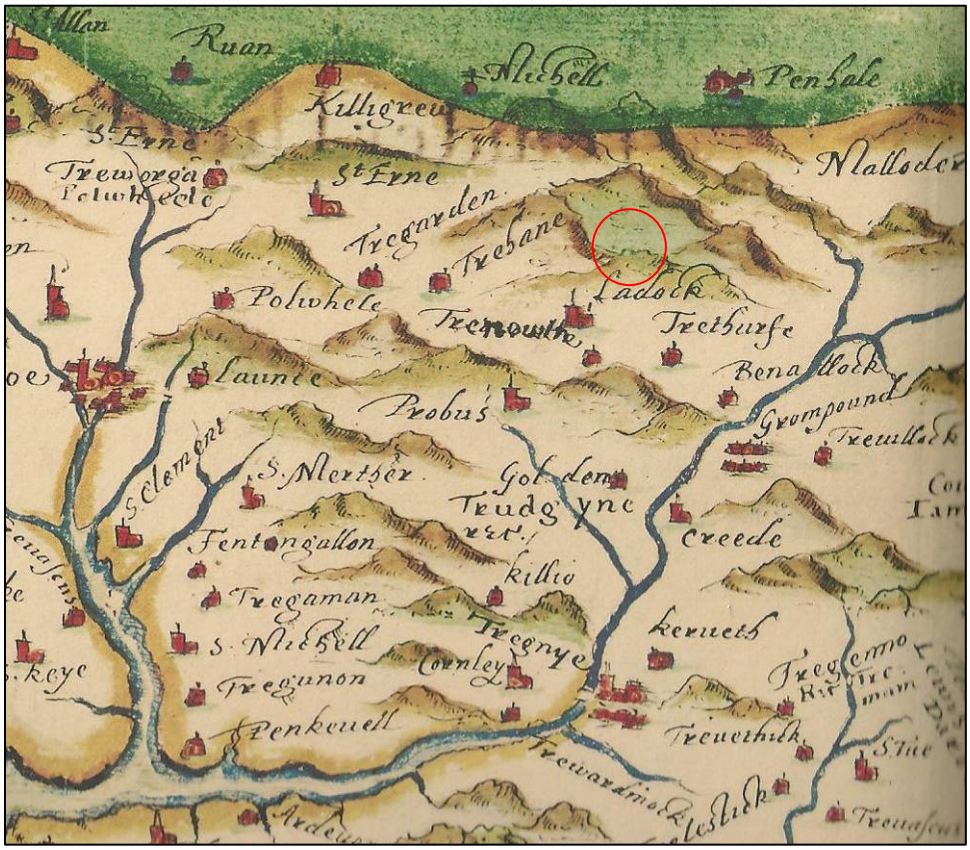

Fig 3. The proposed turbine site and its surroundings, as shown on John Norden's Map of Cornwall, published in 1724 but drawn circa 1600. The project area is circled in red.

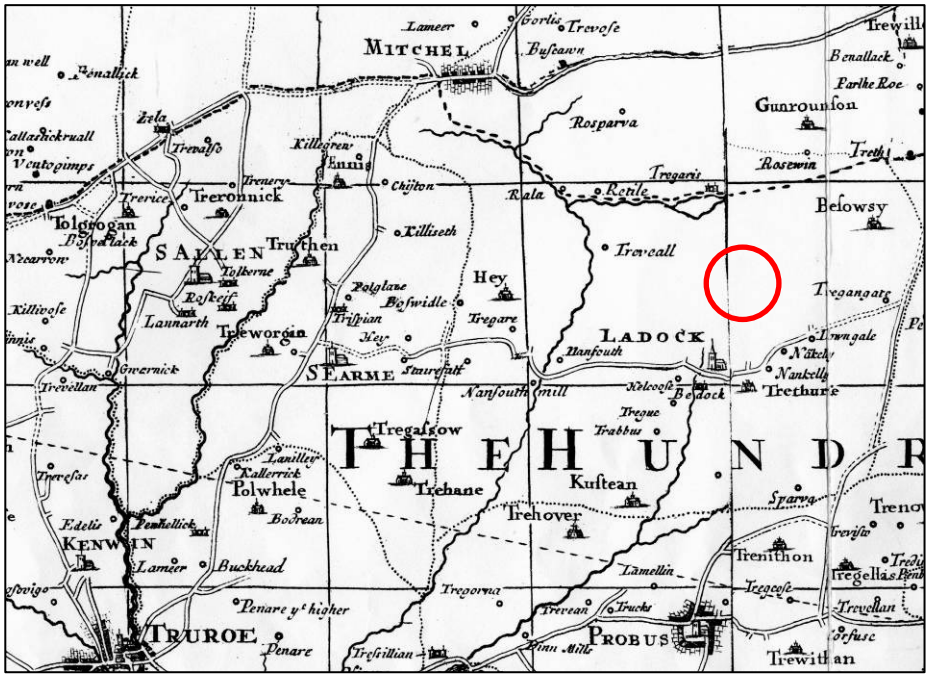

Fig 4. The project area and its surroundings, shown on Joel Gascoyne's 1699 Map of Cornwall. The project area is circled in red.

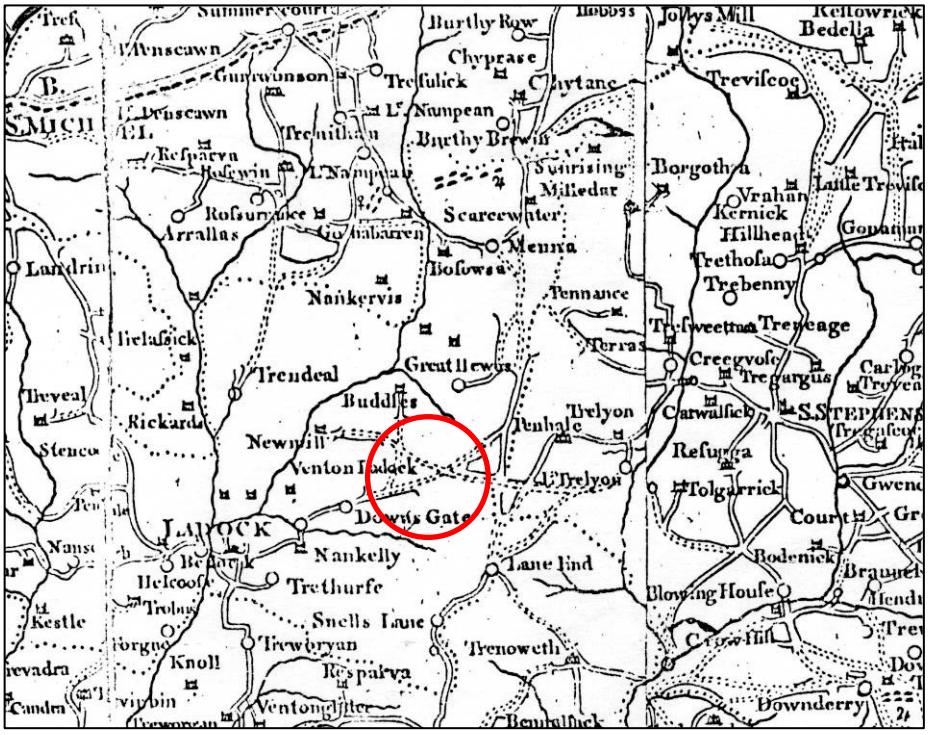

Fig 5. The proposed turbine site and its surroundings, as shown on Martyn's 1748 Map of Cornwall. The project area is circled in red.

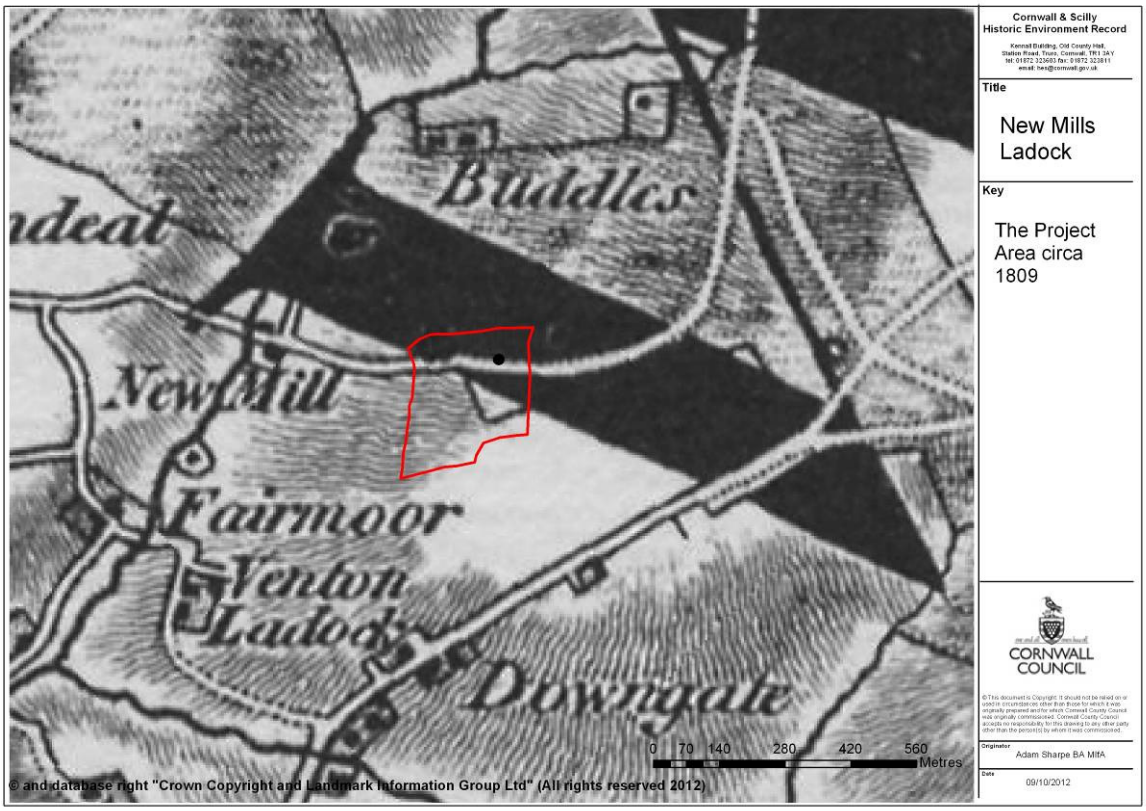

Fig 6. The project area and its surroundings as shown on the circa 1809 1st Edition OS mapping. The turbine project areas are slightly offset because of the differing projections used by the 19th century OS surveyors and modern mapping.

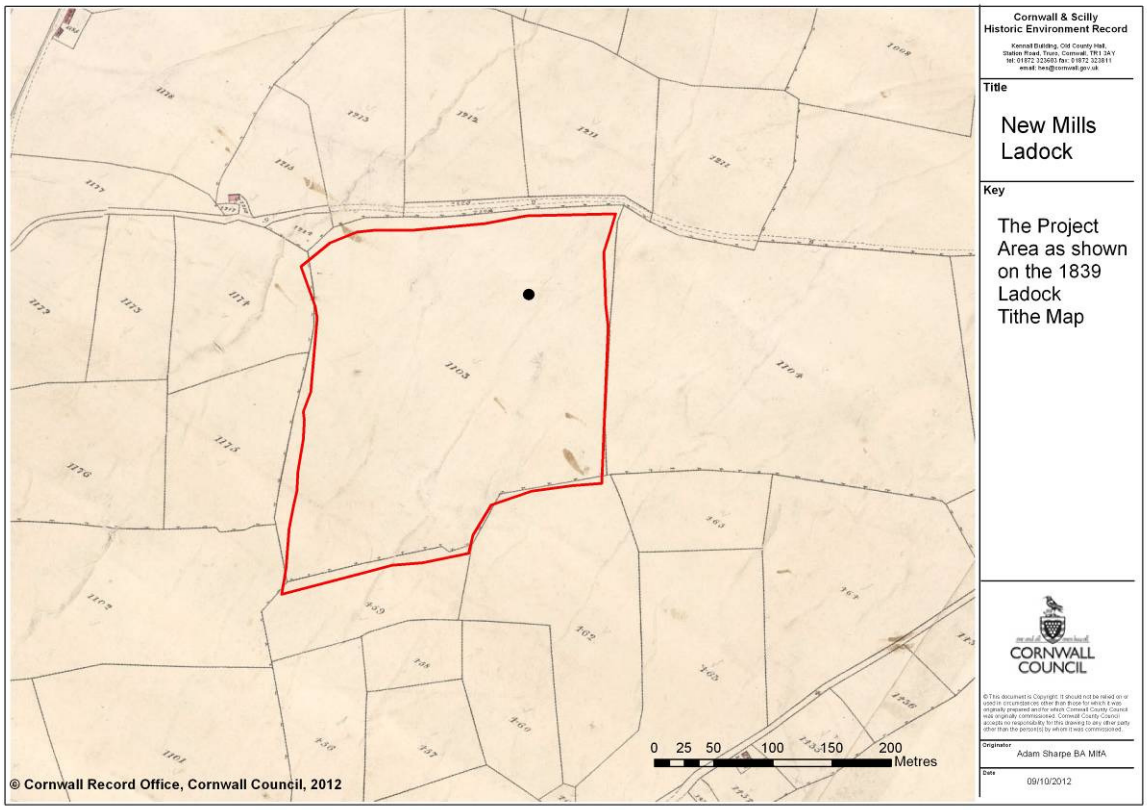

Fig 7. The project areas as shown on the circa 1840 Ladock Tithe Map. The proposed turbine site is indicated by the black dot.

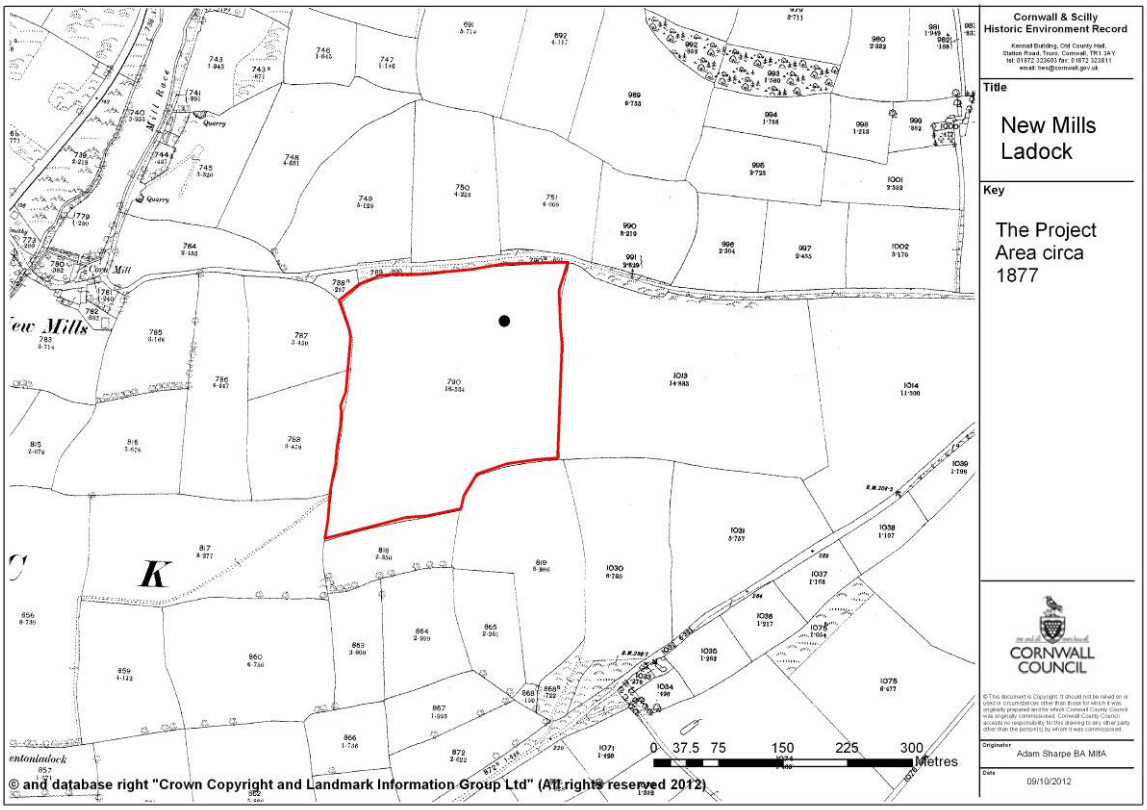

Fig 8. The project area as shown on the circa 1877 1st Edition OS 25" to the mile mapping.

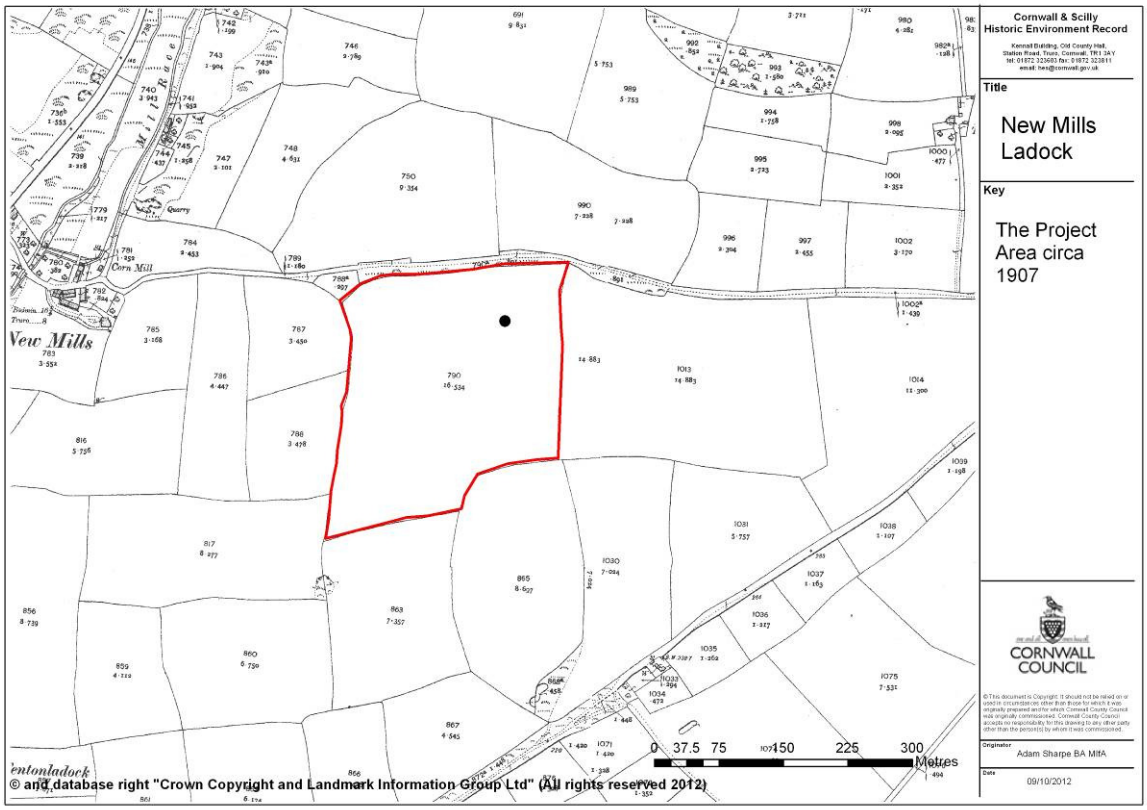

Fig 9. The project area as shown on the circa 1908 2nd Edition OS 25" to the mile mapping.

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

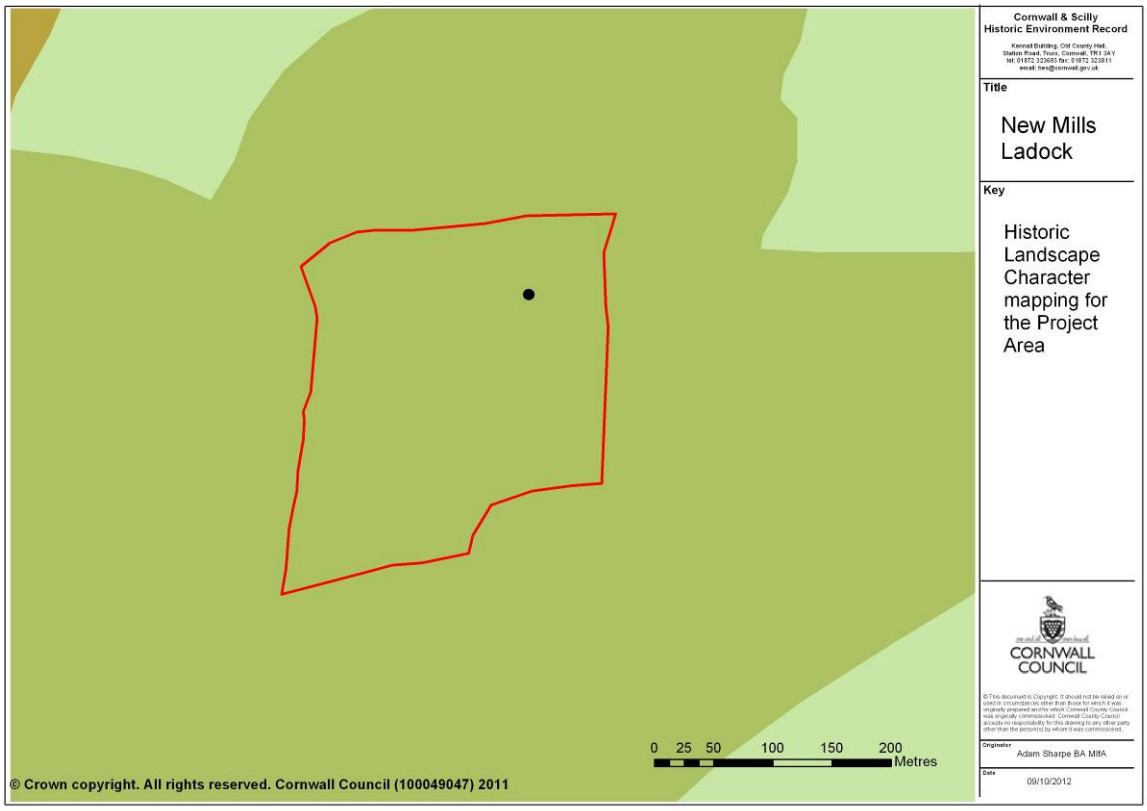

Fig 11. Historic Landscape Character mapping showing how this area of countryside is mapped as entirely derived from medieval farmland (green).

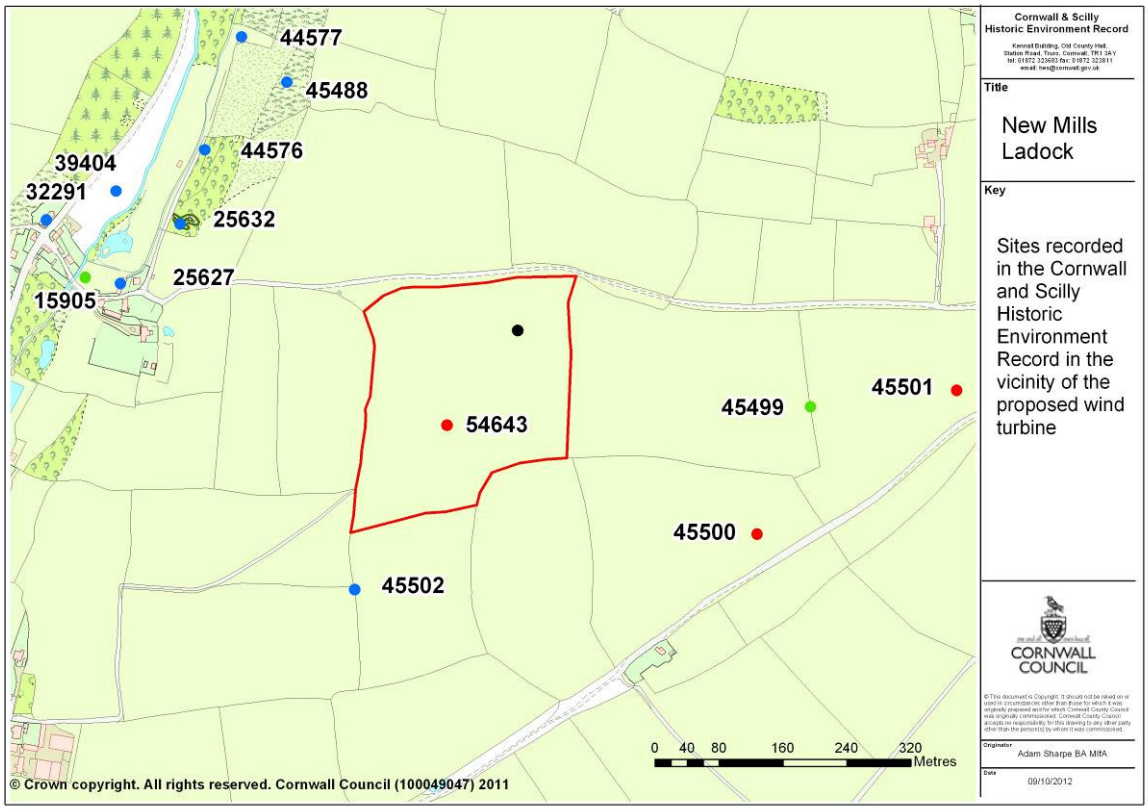

Fig 12. Sites recorded in the Cornwall and Scilly Historic Environment Record in the immediate vicinity of the proposed turbine sites.

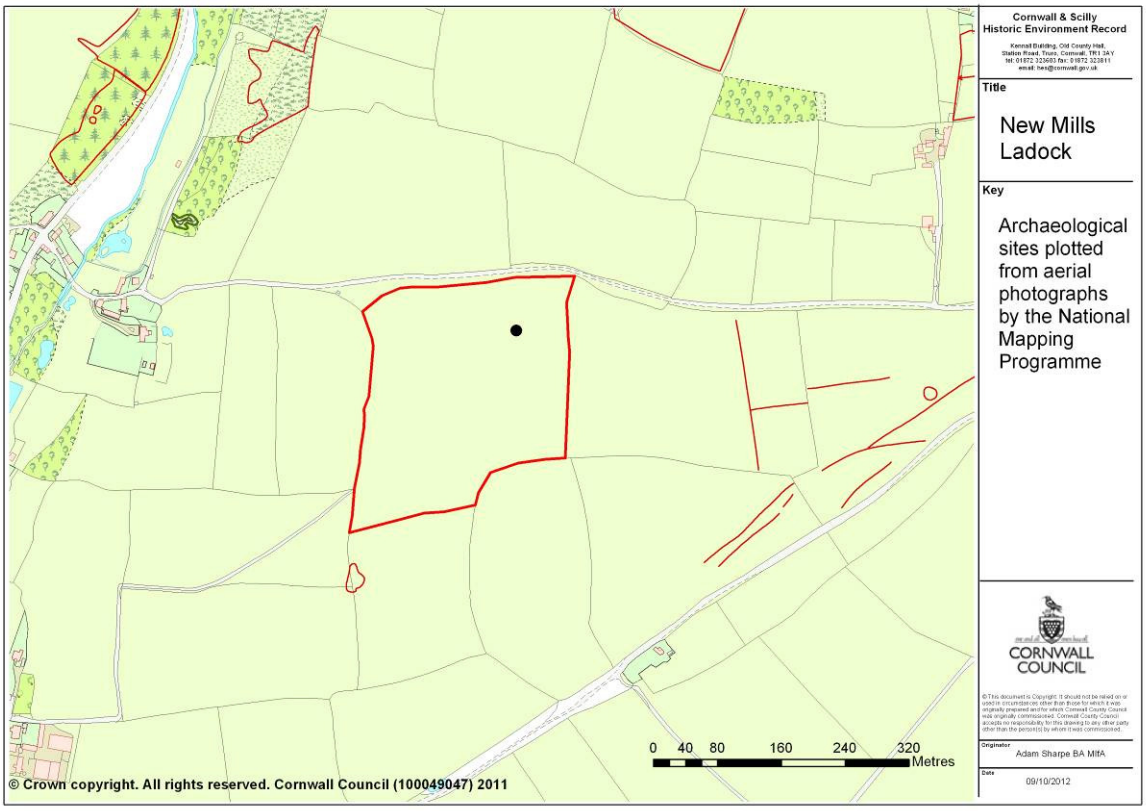

Fig 13. Archaeological sites recorded from aerial photographs by the NMP team include a possible barrow (centre right), a trackWay and several removed boundaries.

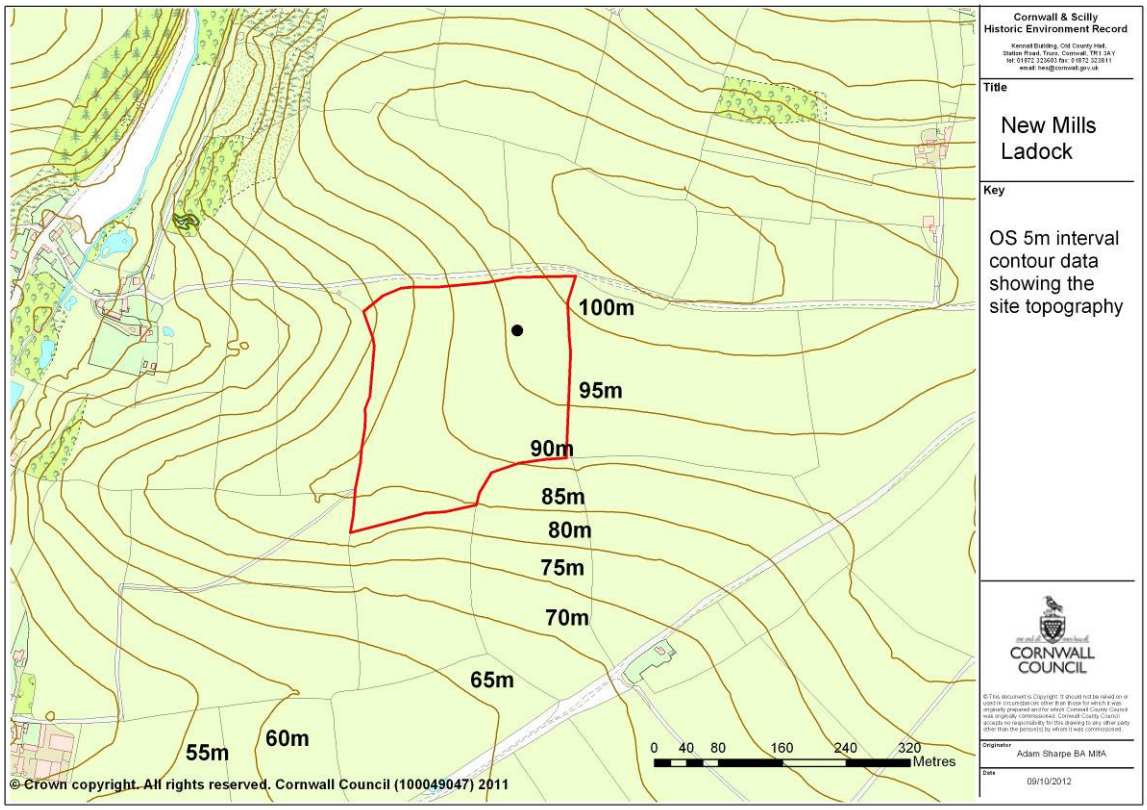

Fig 14. OS contour data for the area immediately surrounding the proposed wind turbine shows its site located on a west-facing valley side.

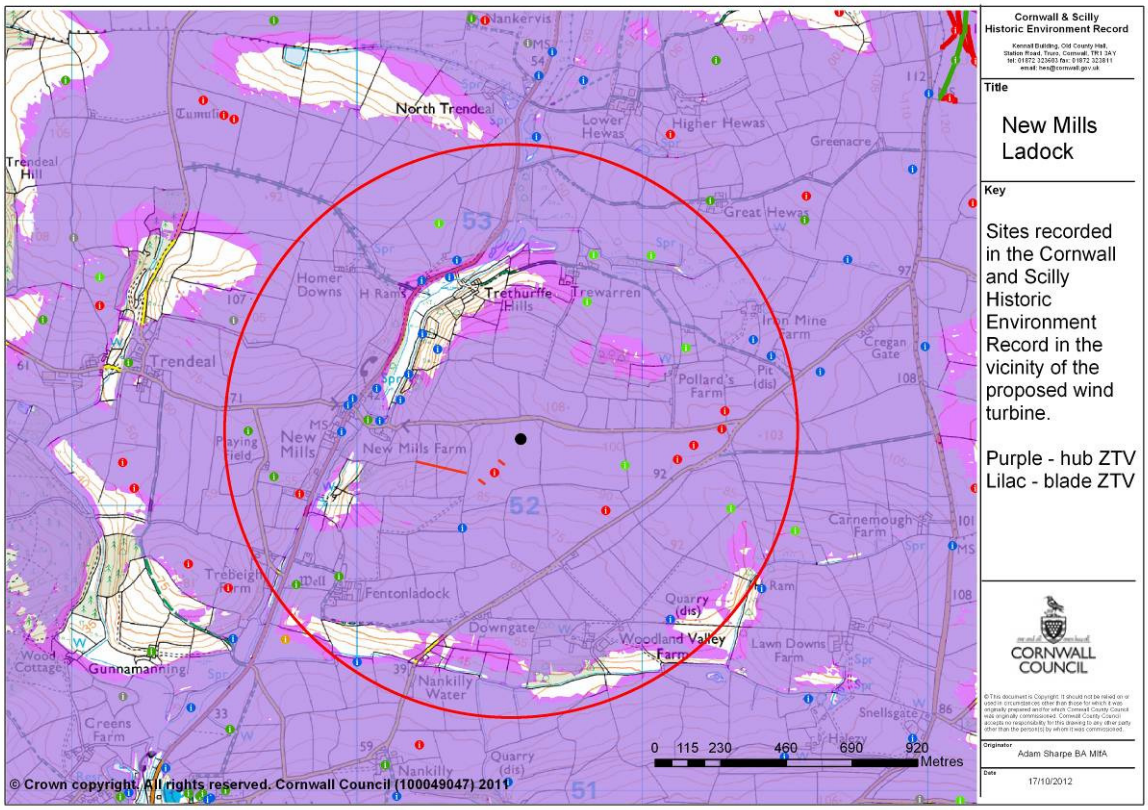

Fig 15. Mapping showing the ZTV within a 1Km radius of the site proposed for the wind turbine, showing potentially intervisible sites recorded in the HER.

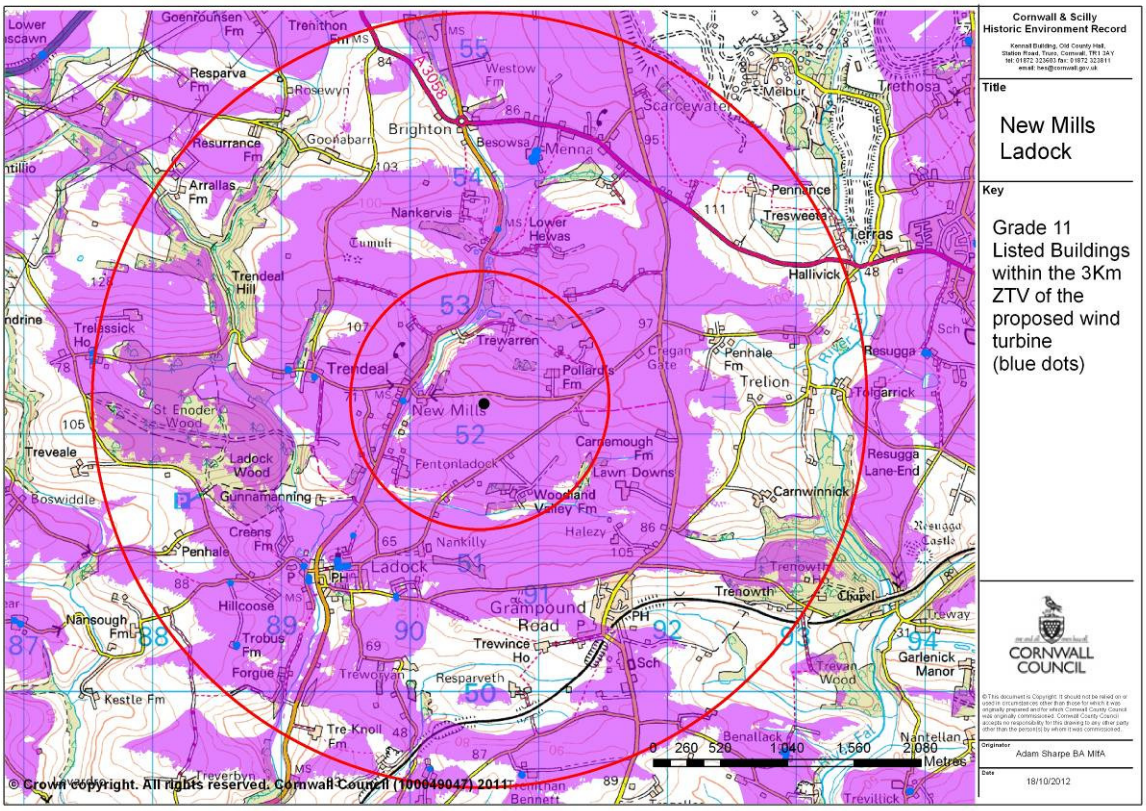

Fig 16. Grade II Listed Buildings within the 3Km ZTV of the proposed wind turbine site, mostly clustered within Ladock.

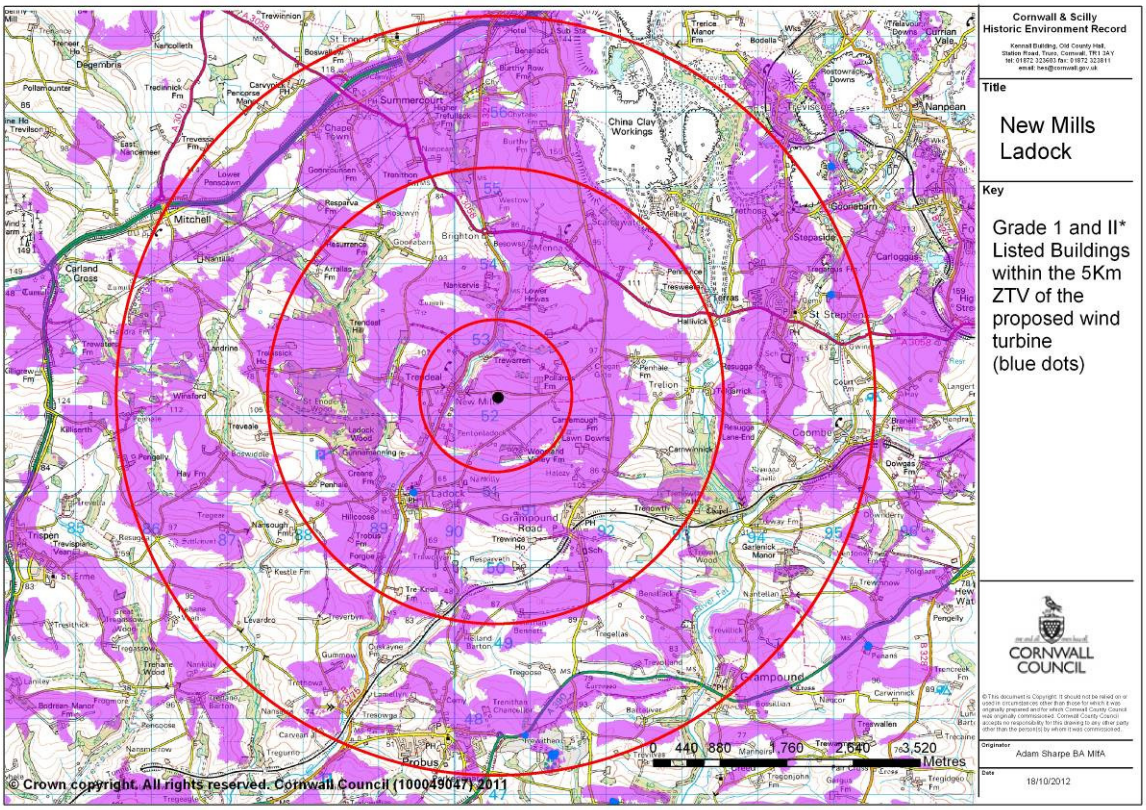

Fig 17. Grade I and II Listed Buildings within the 5Km ZTV of the proposed wind turbines, these being the Church of St. Ladoca and structures at Trewithen.*

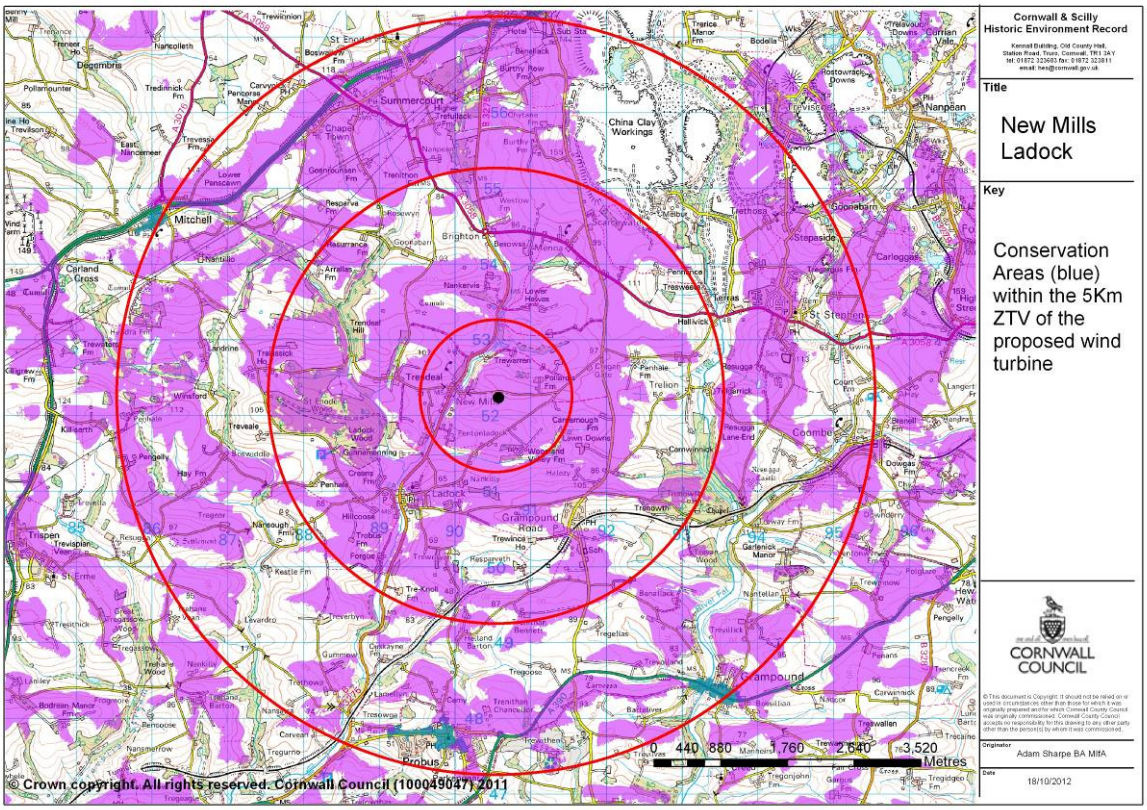

Fig 18. Conservation Areas (Probus and Grampound) within the 5Km ZTV around the proposed wind turbine.

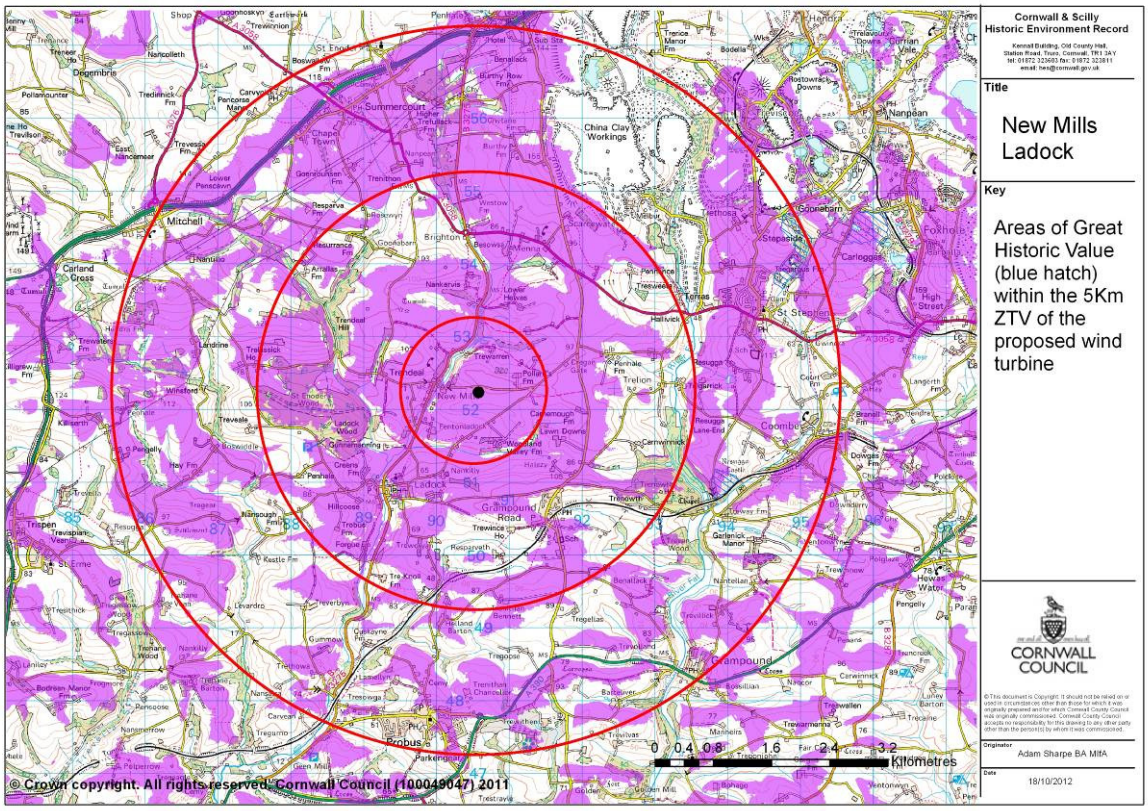

Fig 19. Areas of Great Historic Value within the 5Km ZTV around the site of the proposed wind turbine.

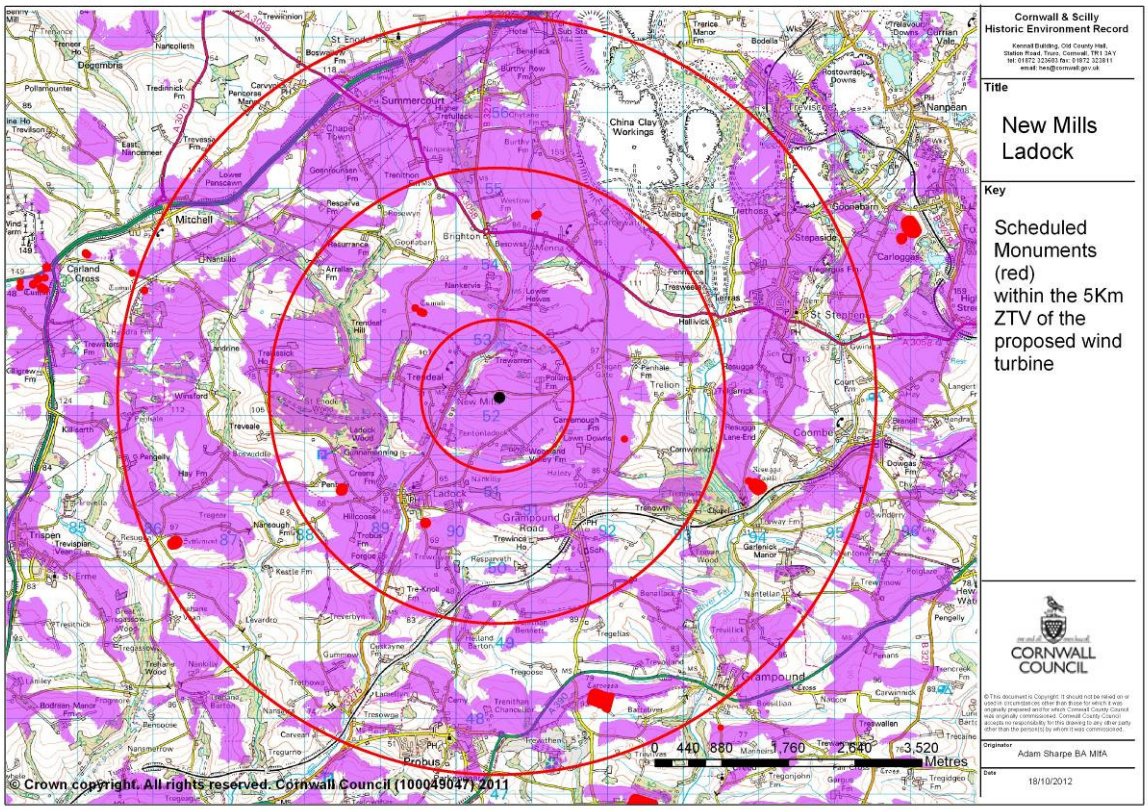

Fig 20. Scheduled Monuments within the 5Km ZTV around the proposed wind turbine.

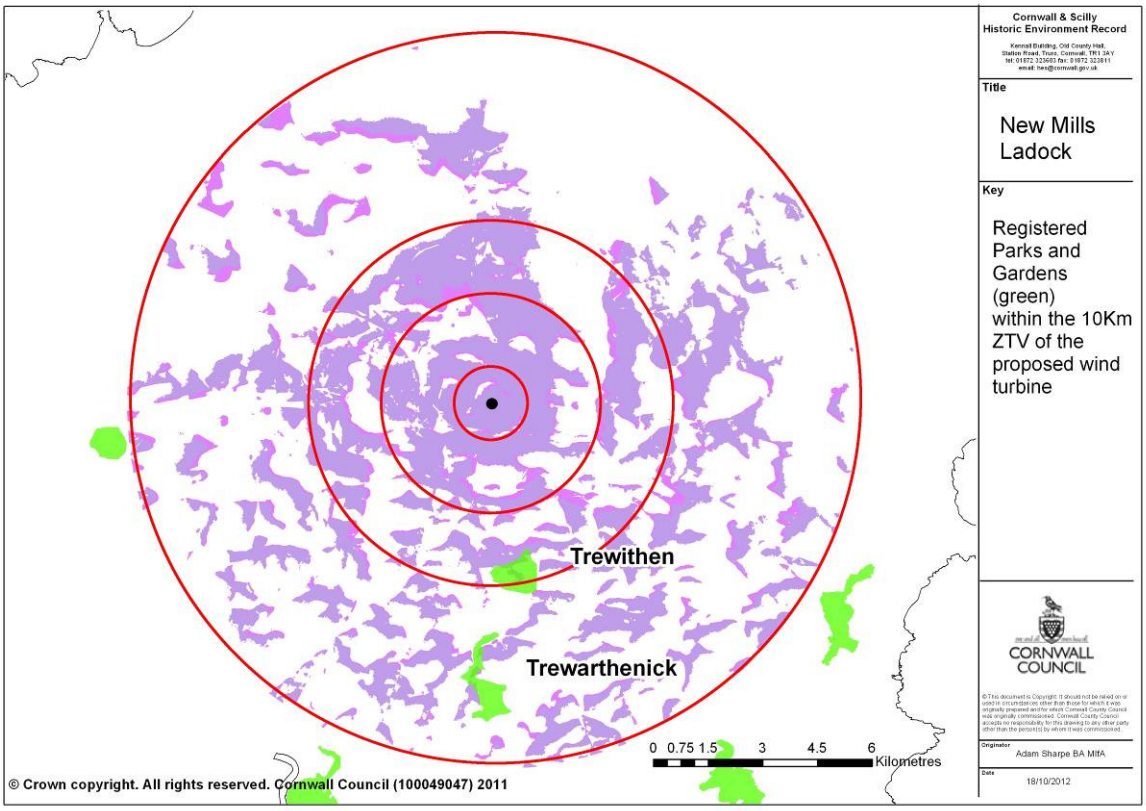

Fig 21. Registered Parks and Gardens within the 10Km radius ZTV around the proposed wind turbine.

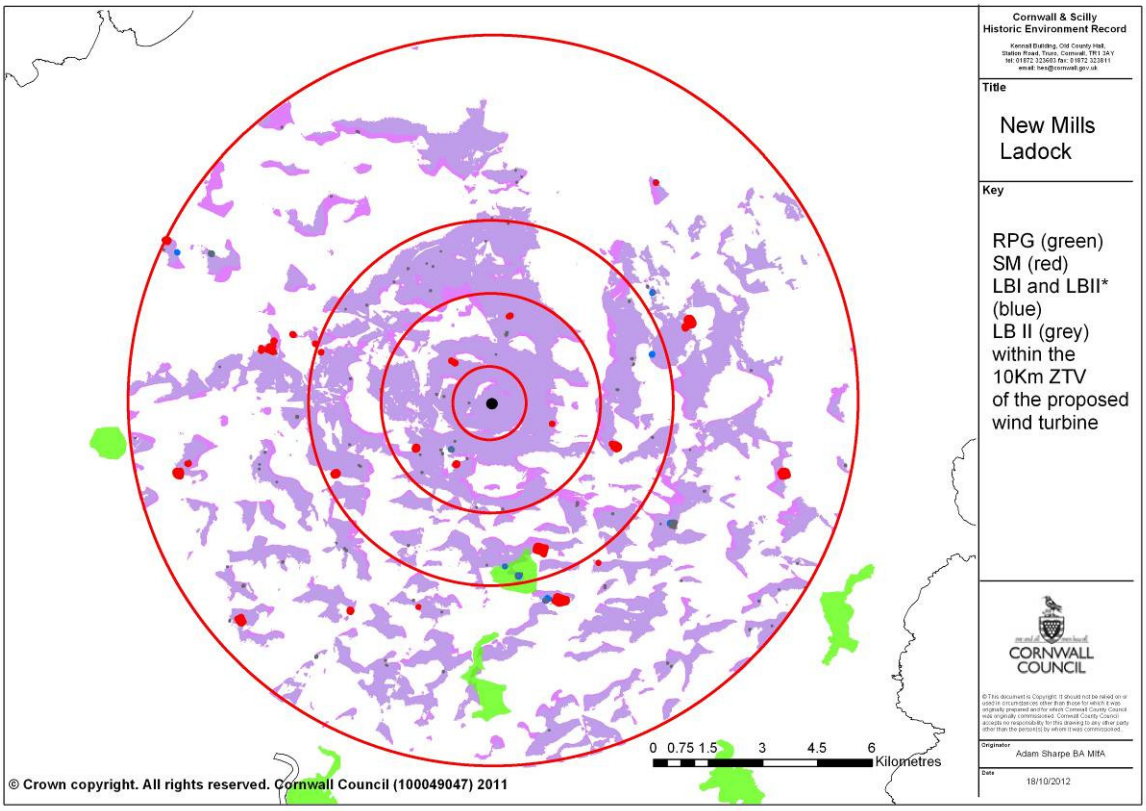

Fig 22. Designated sites falling within the 10Km ZTV around the proposed wind turbine.

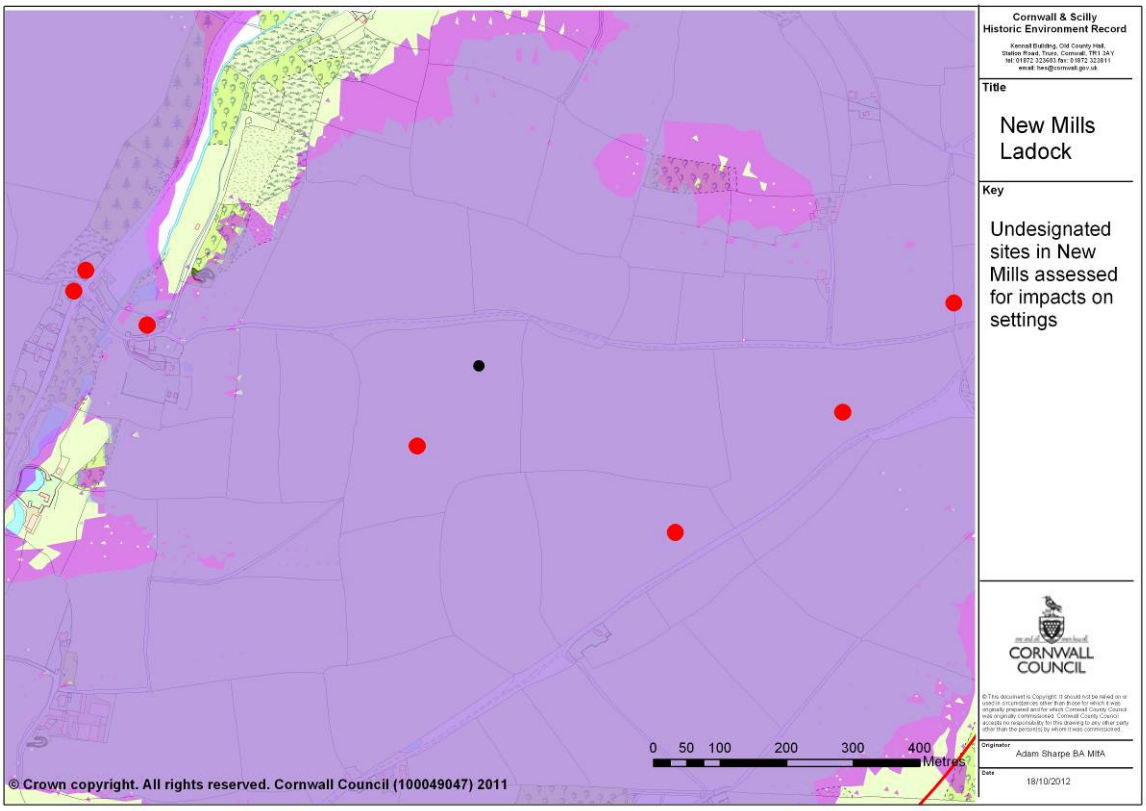

Fig 23. Undesignated sites in New Mills assessed for potential impacts on settings.

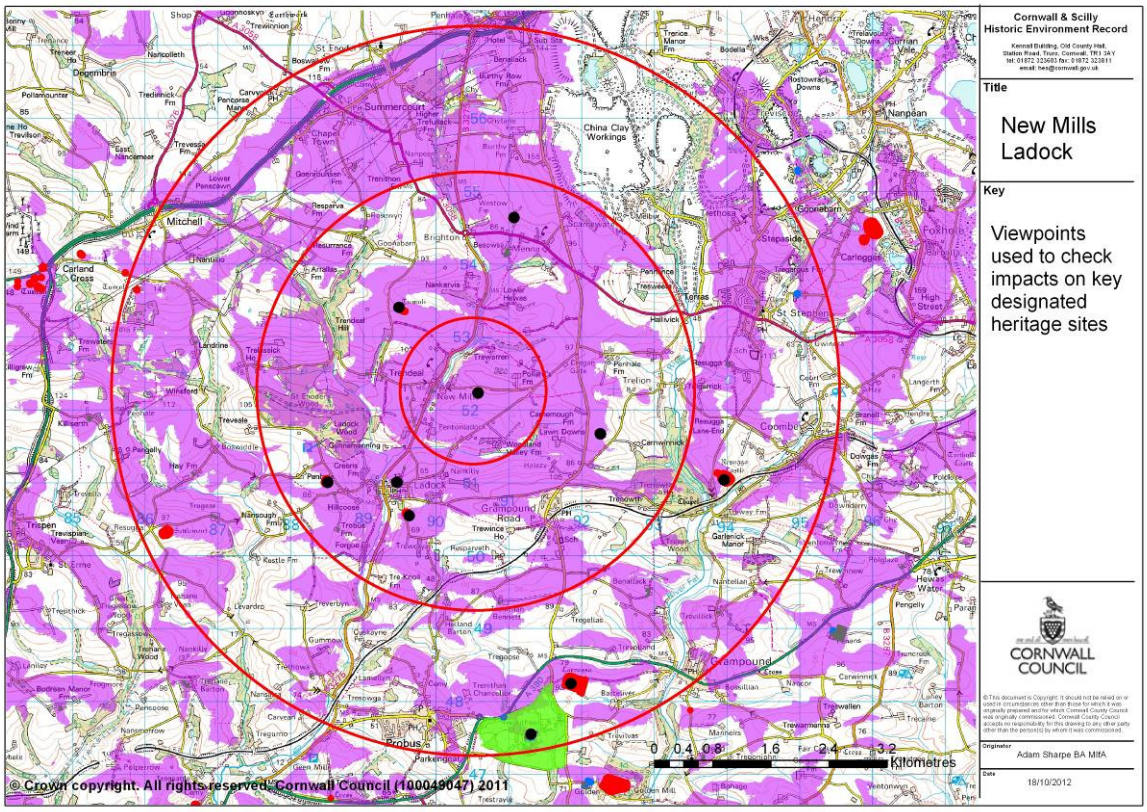

Fig 24. Viewpoints used in considering the assessments of impact on identified designated heritage assets within 5Km of the proposed wind turbine.

Fig 25. Looking south west across White Downs from near the site entrance. The proposed wind turbine would be just left of centre in this view.

Fig 26. Looking south west towards Ladock (left of centre) from the field proposed for the wind turbine. The wooded nature of the area around the church tower is evident.

Fig 27. Looking south from the application site, showing Probus church tower on the skyline.

Fig 28. Looking east from the application field, showing the skylining Cregan Gate wind turbines.

Fig 29. Looking south east from the application field showing the skylining Halezy wind turbines.

Fig 30. Looking north west across the application field towards the site of the barrows on Homer Downs (skyline right centre).

Fig 31. Looking west from the application site towards the Carland Cross barrow cemetery just under 6Km away on the skyline.

Fig 32. The view from Lawn Downs near the Carnemough barrows looking west towards the applications site (centre skyline). The southern wind turbine at Cregan Gate is already a prominent feature of this view.

Fig 33. Looking north east from Hillcoose above Ladock towards the application site (centre mid skyline). Wind turbines at Cregan Gate (left) and Halezy (right) already appear in this view.

Fig 34. Looking west north west towards the application site (centre skyline) from near Resugga Castle. The Cregan Gate wind turbines appear in this view (skyline left).

Fig 35. Ladock church from Hillcoose to its west, showing how the wooded nature of its surroundings reduces its visual impact in the local landscape. Note the Halezy wind turbine on the skyline behind it.

Fig 36. Ladock Church from the south. Trees in the churchyard will block intervisibility with the proposed wind turbine from ground level.

Fig 37. The Grade II Listed Ladock schoolhouse from the east, with Ladock Church in the background.

Fig 38. Looking east across the New Mills valley with the application site forming the skyline. Although the proposed wind turbine will be visually dominating from this viewpoint, trees visible in this image are likely to block many local views from within the hamlet.

Fig 39. One of the scheduled barrows on Homer Downs 1.5Km to the north west of the application site. White Downs lie off to the right of this view, which includes one of the Cregan Gate wind turbines.

Fig 40. Looking south from the application site. The wind turbine in this view lies to the south of Ladock, which is just to the right of this view.

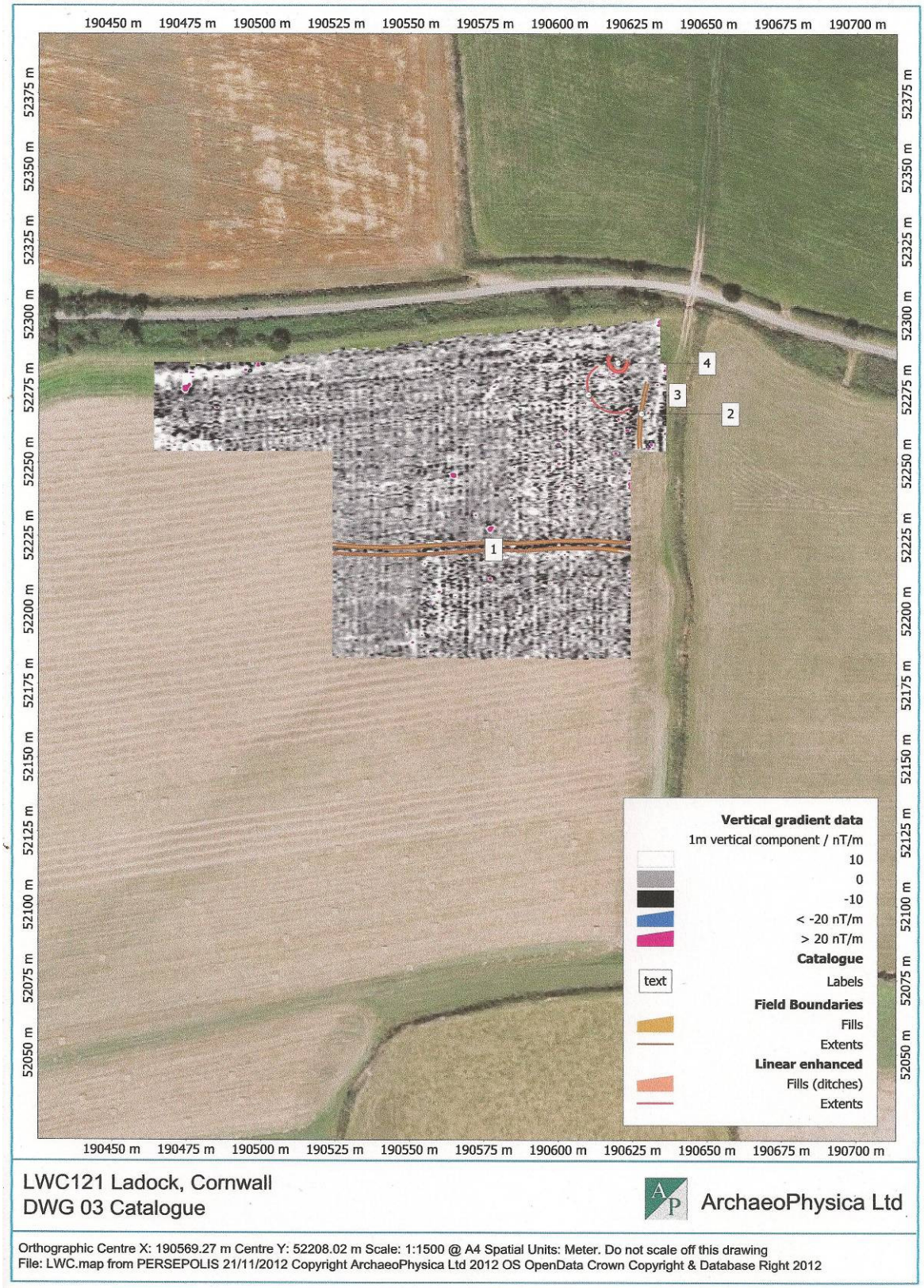

Fig 41. Geophysical survey results at White Downs, New Mills, Ladock. Feature 4 appears to represent a prehistoric barrow or roundhouse, whilst Feature 3 may be associated. Feature 1 represents a ploughed out Cornish Hedge and Feature 2 a removed boundary.