Report No: 2014R013

Newton Ferrers, St Mellion, Cornwall

Archaeological assessment of proposed solar farm

Historic Environment Projects

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Client	**Soltys Brewster Consulting Limited**
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Acknowledgements

This study was commissioned by Soltys Brewster Consulting and carried out by Historic Environment Projects, Cornwall Council.

The Project Manager was Adam Sharpe.

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

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 south-east across the site from the extreme north-eastern corner of the site, showing the drop in contours and the dramatic loss from view of much of the site.

Contents

List of Figures

Abbreviations

HER	Cornwall and the Isles of Scilly Historic Environment Record
HE	Historic Environment, Cornwall Council
MCO	Monument number in Cornwall HER
OD	Ordnance Datum – height above mean sea level at Newlyn
OS	Ordnance Survey
REL	Recently Enclosed Landscape
ZTV	Zone of Theoretical Visibility

1 Summary

Historic Environment Projects, Cornwall Council, were approached by Sarah Chapple for Soltys Brewster in December 2013 with a request to provide costs for the provision of an archaeological assessment for a parcel of land at Newton Ferrers, to the south of Callington, in preparation for an application for planning consent.

The proposal (PA13/03359) is for a solar farm which would extend over an area of 30 hectares in the parish of St. Mellion, centred at 1.7km from the St. Mellion Golf Course. The site consists of land that has been a part of the Newton Ferrers estate since at least the seventeenth century, when the construction of the current Newton Ferrers House took place. A preceding Manor and estate is listed in the Domesday Book. The proposed site lies within an area of former downland, with many of the extant boundaries within and defining the site dating to the early nineteenth century or just before. The area is not densely settled, villages within the immediate area are few and farms tend to be tucked away within less exposed lower lying areas amidst boundaries topped by trees.

The assessment consisted of a desk-based assessment using historic paper maps and maps and information layers on GIS; a viewshed analysis out to 3km from the site plus selected references to significant designated and other areas beyond that; a walkover field survey of the site itself and visits to selected sites within the 3km radius to check inter-site visibility.

It was found that despite the height of parts of the site, open visibility on to and off of the site was severely restricted by a combination of woods, plantations, semi-ornamental tree planting and densely vegetated boundaries. The specific topography of the local landscape greatly restricted the Zone of Theoretical Visibility (ZTV) for the site. In addition, the local landscape contains very few designated sites. No major setting impacts were identified during the assessment, viewshed analysis or fieldwork.

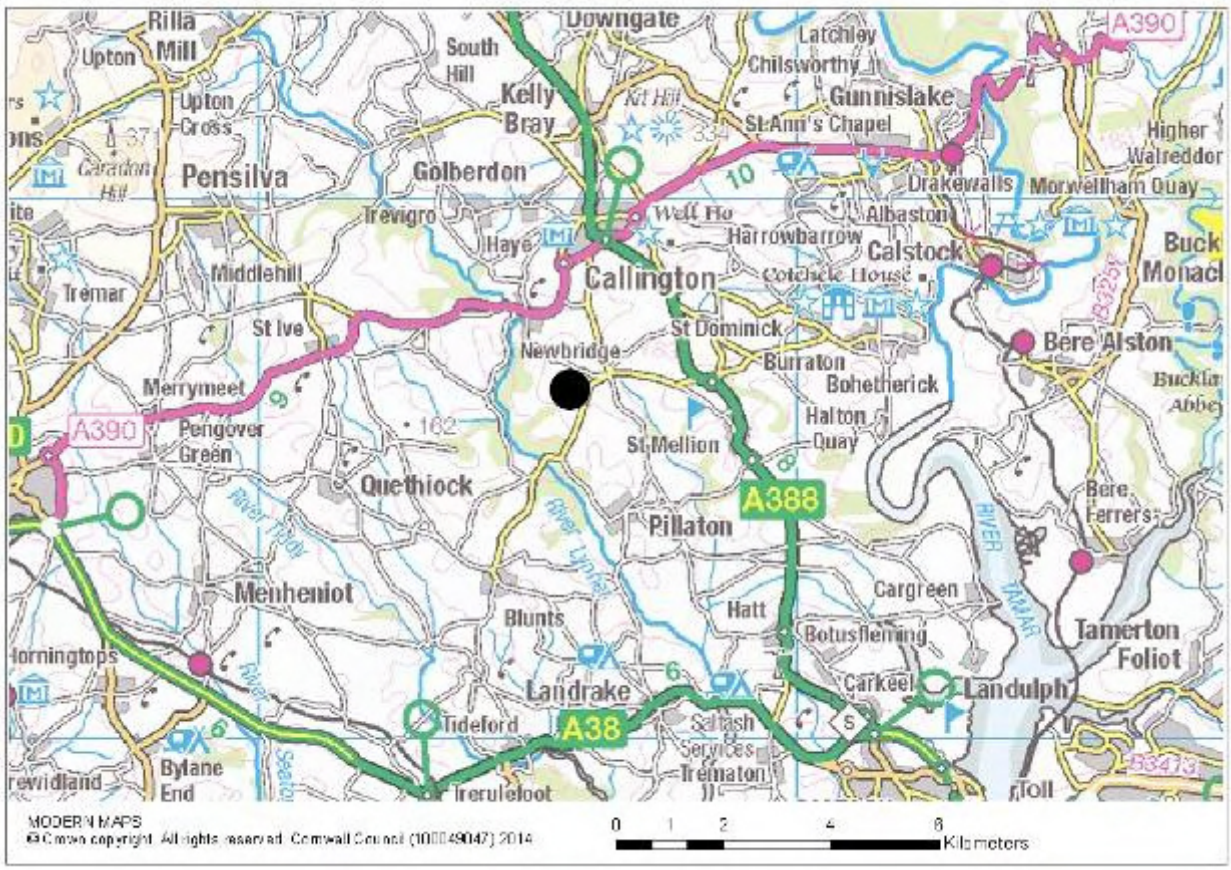

Fig 1 The location of Newton Ferrers, St. Mellion.

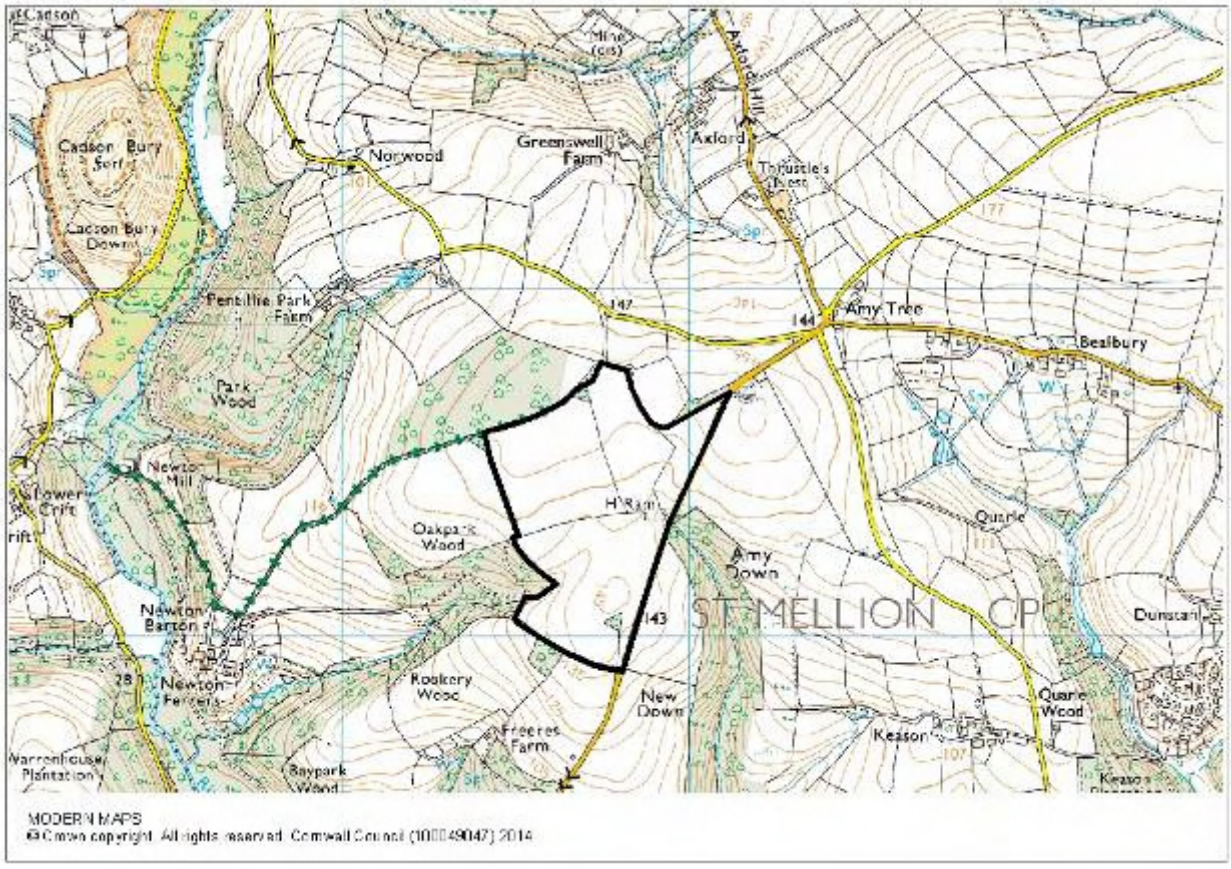

Fig 2 The extent of the Newton Ferrers solar farm project area.

2 Introduction

2.1 Project background

Historic Environment Projects, Cornwall Council, were approached by Sarah Chapple for Soltys Brewster in December 2013 with a request to provide costs for the provision of an archaeological assessment for a parcel of land at Newton Ferrers, to the south of Callington, in preparation for an application for planning consent.

The proposal is for a solar farm extending over an area of 30 hectares in the parish of St. Mellion. This consists of an area located to the west of a public highway linking Clapper Bridge and Bramble Wood to the south and Amy Tree and Trewell Farm to the north. The study area consists of four fields. The site is centred at SX 35778 66374.

Given that the proposal (PA13/03359) (Appendix 1) was at the time of writing this report at a screening stage, no specific brief for the work was available, and the scope of the Written Scheme of Investigation (Appendix 2) guiding this project was based on comparable model briefs produced by Mr. Phil Copleston (Historic Environment Planning Advice Officer, east Cornwall) for similar projects. No specific details for the proposed site layout were available prior to this project being undertaken.

The walkover survey and viewshed check were undertaken on January 30th 2014.

2.2 Aims

The site specific aims are to:

- Draw together historical and archaeological information about the site.
- Review and analyse historic map information about the site.
- Commission and report on the findings of a geophysical survey of the site.
- Inform whether archaeological evaluation or further archaeological recording of any potential buried remains might be required.
- Inform whether palaeoenvironmental sampling would be required.
- Produce a report containing the survey results.

2.3 Methods

All recording work was undertaken according to the Institute for Archaeologists *Standards and Guidance for Archaeological Investigation and Recording.* The project archaeologist followed the IfA *Code of Conduct* and *Code of Approved Practice for the Regulation of Contractual Arrangements in Archaeology.*

The Institute for Archaeologists is the professional body for archaeologists working in the UK.

2.3.1 Desk–based assessment

During the desk-based assessment historical databases and archives were consulted in order to obtain information about the history of the site and the structures and features that were likely to survive. The main sources consulted were as follows:

- Published sources
- Historic maps, including:
    - OS 1 inch survey (*c*1810).
    - Relevant parish Tithe Maps (*c*1840).
    - 1st and 2nd Editions of the OS 25 inch maps (*c*1880 and *c*1907).

- NMP aerial photo transcripts.
- Modern maps.
- Relevant GIS layers curated by Historic Environment and Cornwall Council generally.
- Creation and analysis of ZTV mapping out to an appropriate radius from the site to determine potential setting impacts on designated and undesignated sites and landscapes.

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 solar arrays 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 solar farm and key heritage assets within the surrounding landscape. A viewshed was generated for multiple 'observer points' based on the high centroids of each of the fields proposed to site solar arrays.

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 solar farm at Newton Ferrers, the bare earth ZTV viewshed was based on observer points from the three highest points plus two along the north-western ridge. Added to the 'elevation value' or height above sea level of the ground at the observer viewpoint was an additional offset of 2.5m to represent the approximate heights of the solar arrays.

This viewshed was checked on the ground, given that vegetation and other factors may currently block views to key sites, whilst significant heritage assets within the theoretical viewshed were visited (where access was possible) to determine intervisibility with the proposed development site, and hence the scale and type of any visual impacts which may affect their settings, as required by English Heritage (2011).

A viewshed radius of either 3km was used to determine potential impacts on designated heritage assets and a radius of 1km for undesignated heritage assets.

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 and 3km radii from the site, as required by English Heritage guidance.

The site types within these data sets were then analysed to determine their likely sensitivity to impacts on settings. Those site types which had no setting (documented sites) were excluded from further analysis, as were those which by their nature have very localised settings (for example, milestones, wayside crosses and fingerposts) except where in very close proximity to the application site. The resultant site lists were further filtered by close examination of the ZTV data and a 2005 vertical aerial photograph GIS layer to remove from the lists those sites where mature vegetation or proximal buildings would almost certainly block intervisibility. 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 were identified for their retention.

The resultant site list consisted of a very small number of designated sites with potential intervisibility with the proposal site. This filtered group of sites was assessed to determine impact (see below).

2.3.3 Fieldwork

Walk-over survey

A rapid walk-over survey was undertaken of the site proposed for the development to determine any direct physical impacts on upstanding archaeology and historic structures. Any areas of archaeological sensitivity were identified during the walk over survey. Digital photographs were taken for illustrative purposes. Visits were undertaken to determine the scale and nature of any setting impacts identified during the desk-based assessment. Photographs were taken from the proposed development site towards sites identified as potentially being impacted upon by the construction of the solar farm, and back towards the proposed development site to provide a visual record of the potential impacts.

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 consists of:

- Digital colour photographs stored according to HER guidelines.
- Project materials stored according to HER guidelines.
- Completion of an English Heritage/ADS OASIS online archive entry.

An archive report (this report) has been produced and supplied to the Client. All digital records will be filed on the Cornwall Council network.

3 Location and setting

The site proposed for the solar farm is centred at SX 35778 66374 on former downland (Pillaton Down and Amy Down) in the parish of St. Mellion to the south of the settlement of Callington and was enclosed to agriculture during the post-medieval period (Figs 1 and 2).

Topographically the proposed solar farm occupies an undulating landscape averaging a height of 140m OD within the agricultural heartland of south east Cornwall. The area drops from 164m above sea level in the northern tip down to 130m in the south-western corner, with raised areas on the western and eastern periphery of the site (Fig 11). Local hedge-line vegetation and more distant hills and ridges impinge on selected views from parts of the site.

The development area is characterised in the Cornwall and Scilly Historic Environment Record (HER) as a Post-Medieval enclosed farm landscape, with a small pocket of Modern Enclosed Land in the north-east. The area is abutted by Plantation and Scrub land in the south-west and by Anciently Enclosed Land in the north-west, which was enclosed during the medieval period (Fig 10).

Much of the surrounding landscape is both undulating and elevated. The more elevated parts of this landscape would, by virtue of its height and relative exposure, have remained as unenclosed downland in to the post-medieval period.

The parent bedrock underlying the application site is recorded as Teign Valley Group mudstone, siltstone and sandstone (BGS data).

A range of sites exist within the surrounding area, many of which are recorded in the Cornwall and Scilly HER. Those recorded include: a prehistoric barrow site within the field immediately to the east of the application area. The surrounding landscape contains a number of Grade I Listed churches, including that at Pillaton (2.75km from the site), St. Ive (4.8km), Quethiock (4.77km), St. Mellion (3km) and St. Dominick (4.4km); other high grade Listed Buildings within the surrounding area include Pentillie Castle (Grade II*, 5.59km) and Newton Ferrers (Grade I, various elements). There are a large number of Grade II Listed farmhouses within 5km of the site. The Scheduled Monument at Cadson Bury hillfort is 1.5km from the site, whilst the Scheduled Castlewich Henge is 2.5km from the site. The Registered Park and Garden at Cotehele is approximately 6km to the east south east of the proposed solar farm.

4 Project extent

The archaeological assessment was focussed on those heritage assets (whether designated or not) which might be physically impacted upon through activities associated with the erection of the solar farm, including cable trenching, siting of permanent infrastructure such as transformer buildings or inverter cabins and with temporary compounds, cranes or other equipment and any associated semi-permanent infrastructure.

The assessment takes into account and quantifies impacts on the settings of heritage assets (both designated and undesignated) within the viewshed of the proposed solar farm in line with current planning policies, 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). The following ZTV radii were utilised for this study:

- Non-designated heritage assets – 1km radius.
- Grade II Listed Buildings – 1km radius.
- Scheduled Monuments – 3km radius.
- Grade I, II* and II Listed Buildings – 3km radius.
- AGLV, AGHV and AONB – 3km radius.

In addition wider landscape features and areas have been briefly referred to up to a *circa* 5km radius in the generalised discussion of the site setting.

5 Designations

Where protected or defined areas extend to within 5km of the proposed site reference has been made to them as a means of setting the scene and placing the site within its wider context. Many of these are not inter-visible with and from the site, while others have inherently local settings only.

5.1 International

No international designations apply to the specific project area.

A very small part of the Tamar Valley Area Cornish Mining World Heritage Site just extends to within 5km of the site (on its north-eastern side).

5.2 National

No national designations apply to the specific project area.

Within a 5km radius of the proposed site there are ten Scheduled Monuments, although within the 3km ZTV there are only three. The nearest and largest of these is Cadson Bury hillfort, which is less than 1.5km away.

Additionally, within the 3km ZTV there is one Grade I Listed building at St Odulphus church in Pillaton, no Grade II* Listed Buildings and 37 Grade II Listed Buildings.

The Tamar Valley Area of Outstanding Natural Beauty (AONB) is located beyond the 3km radial. Its nearest western edge just runs in to within 5km of the eastern side of the site.

The Cotehele Grade II* Park and Garden (DCO10) lies just over 5.5km from the site.

5.3 Regional and Local

Two regional or county designations apply to the specific project area; the Lynher Valley Area of Great Landscape Value (AGLV); and within an Area of Great Scientific Value (AGSV).

A 5km radius includes all or part of the following areas: the Kit Hill and Hingston Down Area of Great Historic Value (AGHV); four Sites of Special Scientific Interest (SSSI) – the nearest being Park Wood which is 1.5km west of the site; Callington Historic Settlement; two Regionally Important Geological/Geomorphological Sites – both over 4km from the site to the north and south-east; the extreme western tip of the Plymouth Sound and Estuaries Special Area for Conservation (extending east away from the site).

There are in addition a number of County Wildlife Sites and Tree Preservation Orders within a 3km radius of the site.

Many HER identified sites fall within a 3km radius of the site, and these are discussed below (section 8.14)..

5.4 Rights of Way

There are no rights of way crossing the project area. Much of the site is defined by either public roads or private tracks.

6 Results of desk-based assessment

The site lies between Liskeard and the Devon county boundary, between the little medieval settlements of Pillaton in the south-east and Quethiock to the north-west, on the eastern side of the River Lynher. Both villages were formerly part of the Newton Ferrers estate, until they were sold off in the 1920s. To the north lies Callington and beyond the uplands of Bodmin Moor with Caradon Hill almost 10km to the north-west. Plymouth lies 10km to the south. The wider area is undulating, and cut through by rivers and streams feeding south in to the Tamar and coast. There is a strong agricultural character to the area, with large swathes of pasture often intermixed with steep or wooded pockets of ground amidst medieval and later farms and settlements. Seventeenth and eighteenth century mapping (Figs 3 and 4) show a regular spread of larger farms, big houses, churches and settlements throughout the area, including reference to the house, grounds and owner of the Newton Ferrers estate.

The immediate area of the site lies within ground characterised as Recently Enclosed Land (REL) of Post-medieval date (Herring 1998). This type of land was enclosed in the 17th to 20th centuries, usually from medieval common ground on Upland Rough Ground. It is frequently found on high, exposed and or poorly drained ground. Fields are distinguished by having straight or predominantly straight boundaries which support a more restricted range of plant species and

frequently enclose pasture land. The study area follows almost all these recognised REL traits. The layout of fields today is broadly that shown on the 1840s Tithe map (Fig 6). The Tithe Map Apportions lists the site fields as un-named, indicative of their recent (post-medieval) creation from former downland. The 1809 OS map extract (Fig 5) shows a track/lane running diagonally across the north-western half of the site, which had gone by circa 1840. The track shown on the Tithe Map on the eastern side of the site may represent a precursor to the current road linking Clapper Bridge to the cross roads at Amy Tree.

Anciently Enclosed Land lies along the north-western edge of the site and will have been enclosed since at least the medieval period (Fig 10). The adjacent unenclosed downs, located within former Upland rough Ground will have seen regular use since prehistory, and would have provided important summer grazing grounds for transhumant farmers; sources of fuel in the form of gorse and heather; animal bedding in the form of heather and bracken; and as the sites for communal ceremonial activities. The Cornwall and Scilly Historic Environment Record shows that the surrounding landscape contains a number of prehistoric monuments, including Castlewich, a Scheduled Late Neolithic henge at Westcott Farm located within 3km to the north-east of the site. In addition Early Bronze Age barrows and burial sites are found in the area, as seen on adjacent Amy Down (within 1km of the site) and two Scheduled barrows (among others) on Viverdon Down (within 3km to the east of the site). By late prehistory, settlement had begun to creep up onto the edges of the uplands, reflected by the presence of Iron Age/Romano-British rounds or enclosed farmsteads. Nearby is the substantial Cadson Bury hillfort which is sadly on the Scheduled Monument at Risk list. This is a univallate hillfort set in a highly defensive position on the western edge of the River Lynher.

Running along the north-eastern edge of the project area is a bulbous strip of Modern Enclosed Land which extends in to the study area and is shown on the 1809 and later OS mapping. This land was taken in from the adjacent formerly unenclosed Amey Down. The 1880 and 1907 OS maps (Figs 7 and 8) both show this intake land as unimproved within the study area. Modern mapping shows it to include the source of a spring which runs south-east from the site – its associated valley having been planted with trees since 1907. Figure 11 clearly shows the stream in its shallow valley setting, while the 2005 aerial photograph (Fig 9) shows both the 'new' woodland and the study area under a combination of pasture and cultivated land.

Plantation and Scrub land borders the southern end of the site marking the top end of a south-west running swathe of woodland shown on all mapping since 1809. It is labelled as Oakpark Wood on the 1880 and 1907 OS maps, extending down in to Rookery Wood as it approaches the great house. Its name (incorporating the element 'park' clearly relates to maintained and visible woodland associated with Newton Ferrers estate). Small triangular pockets of woodland exist within the study area and they can be seen from the historic mapping to have been in existence for in excess of two hundred years. These represent planted parkland elements associated with the visual aspect from Newton Ferrers.

The settlement and manor of Newton Ferrers is located just on the eastern side of the River Lynher and was first documented in the Domesday Book. On-line extracts from the Domesday Book for Newton Ferrers lists the population as having 51 households (implying that the actual population could well have been more than five times larger), with Aelfric listed as the Lord in 1066, and Reginald of Vautortes in 1086. The original house was in the hands of the Ferrers family until 1314. Today the manor of Newton Ferrers consists of a large house built between 1686 and 1695 for Sir William Coryton who is referred to by name on both Gascoyne's and Martyn's' maps (Figs 3 and 4). It is the earliest Cornish

mansion built to a classical design without Tudor elements, and stands close to the site of the former large house. Today the Newton Ferrers estate complex comprises a tight concentration of listed Grade I, II* and II buildings and monuments, and should be seen as a significant heritage asset for the immediate area.

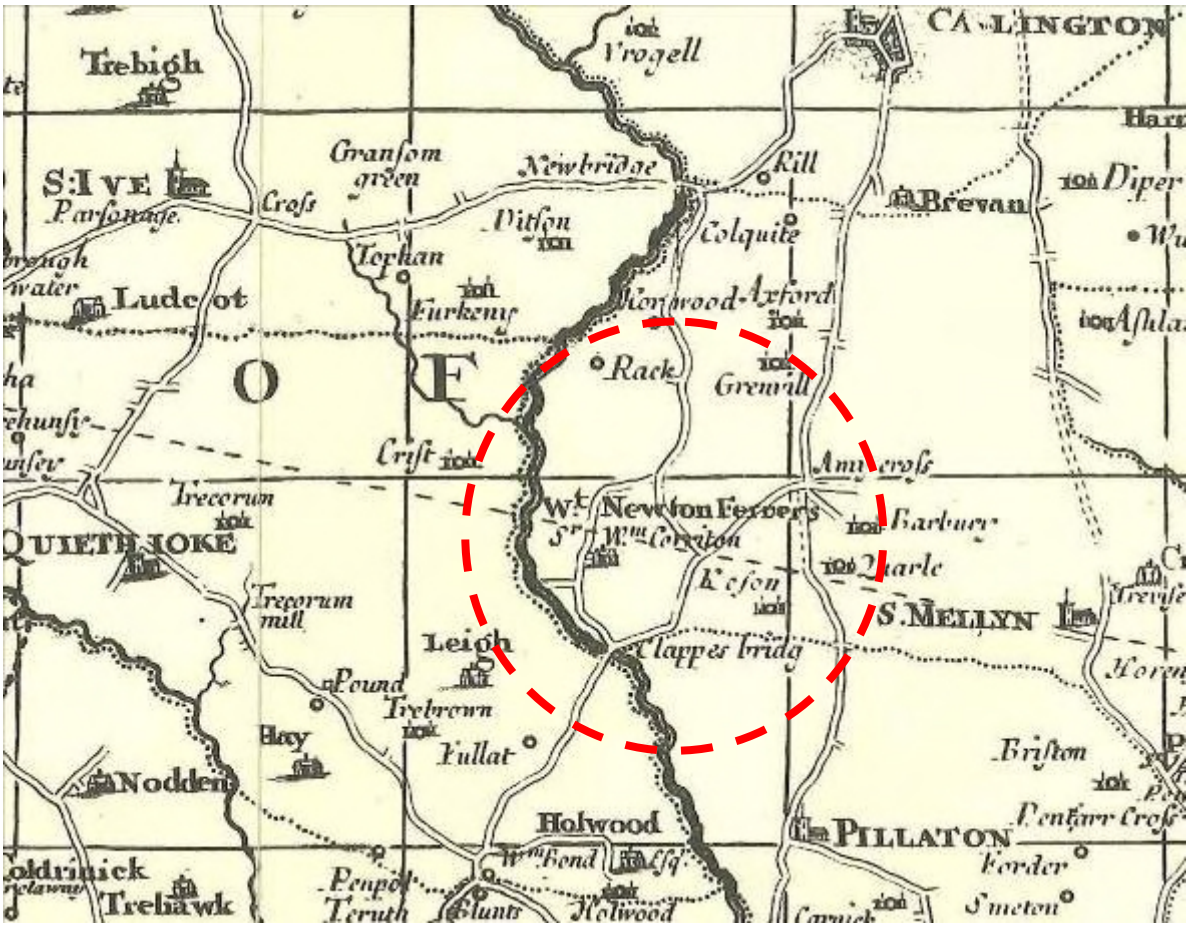

Fig 3 The project area and its surroundings, as shown on Joel Gascoyne's 1699 Map of Cornwall.

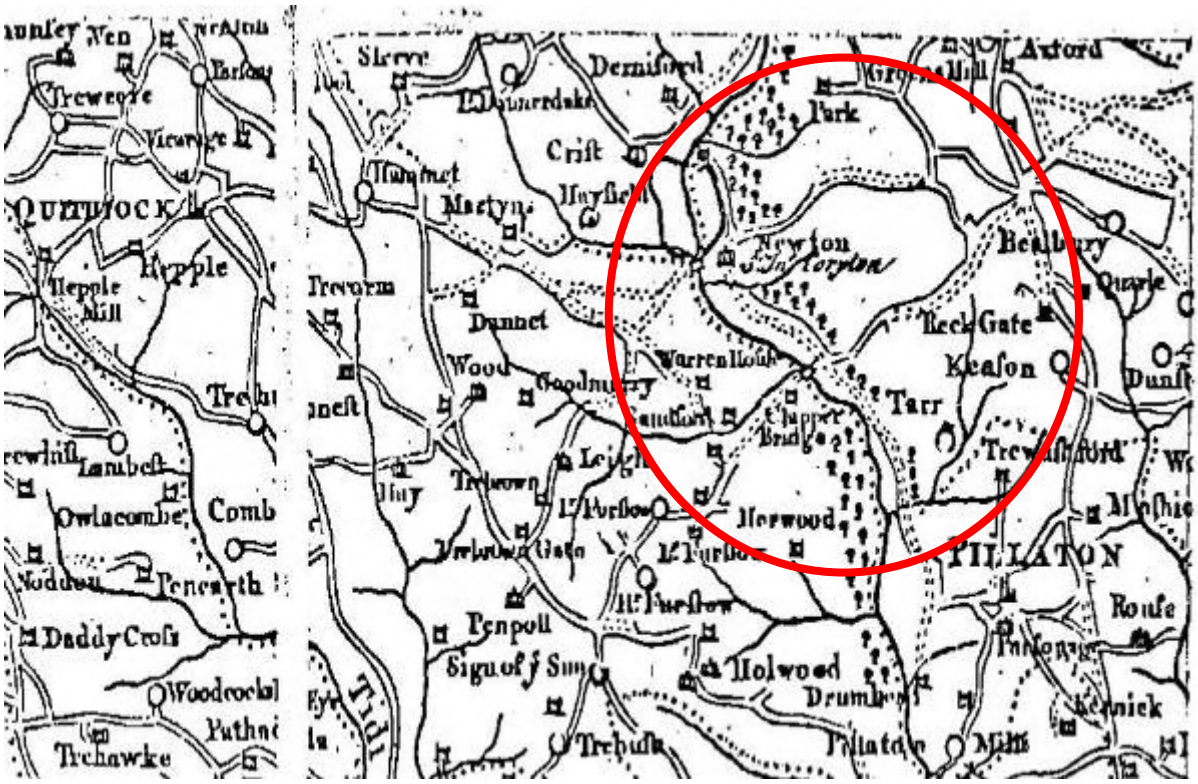

Fig 4 The project area and its surroundings, as shown on Martyn's 1748 Map of Cornwall.

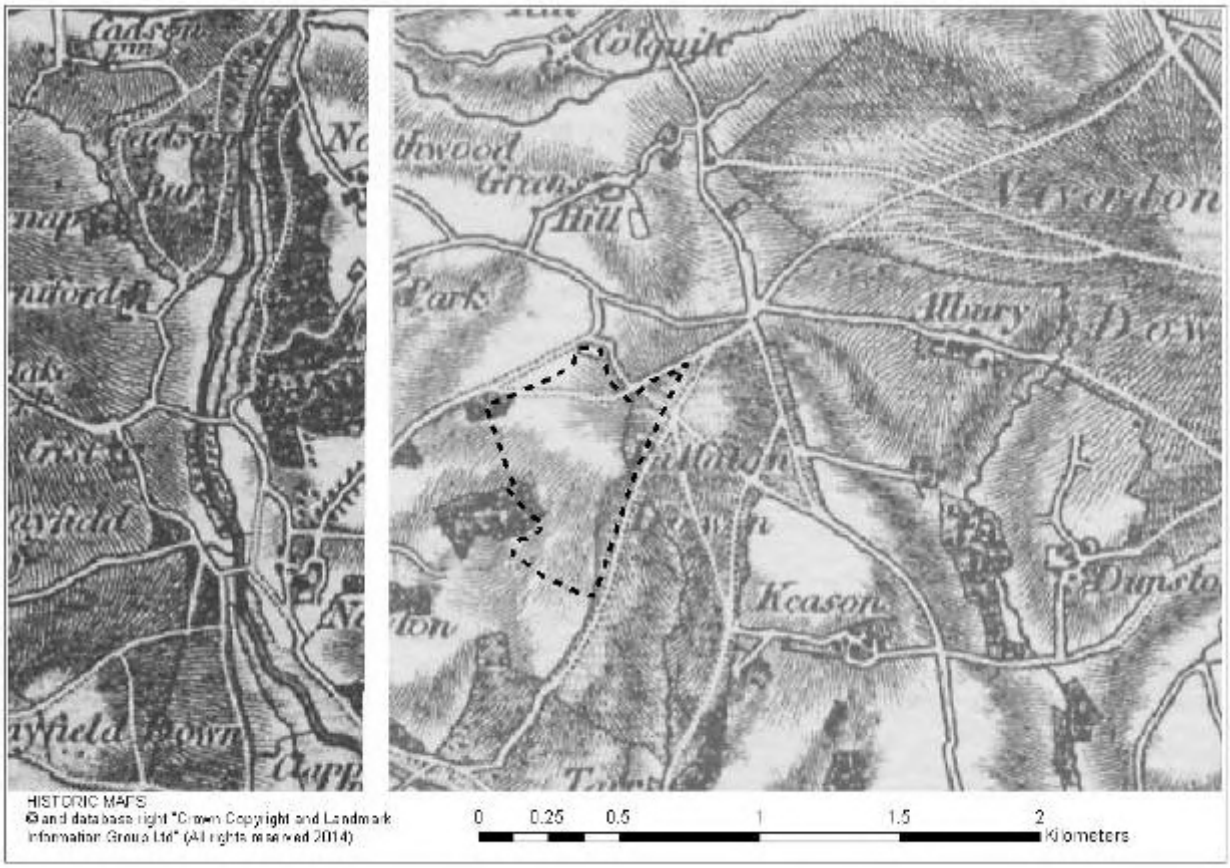

Fig 5 Extract from the OS First Edition One Inch Map c1809

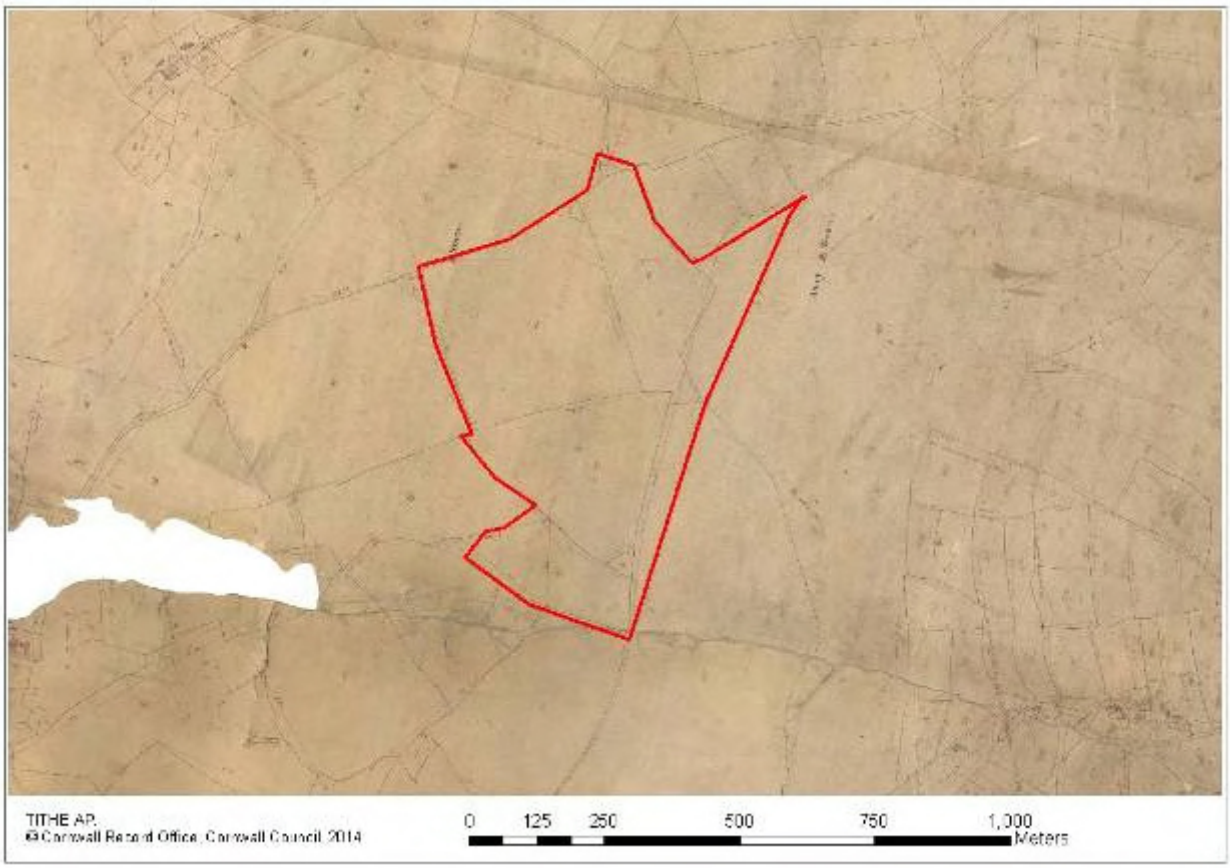

Fig 6 The project area as shown on the circa 1840 St. Mellion parish Tithe Map.

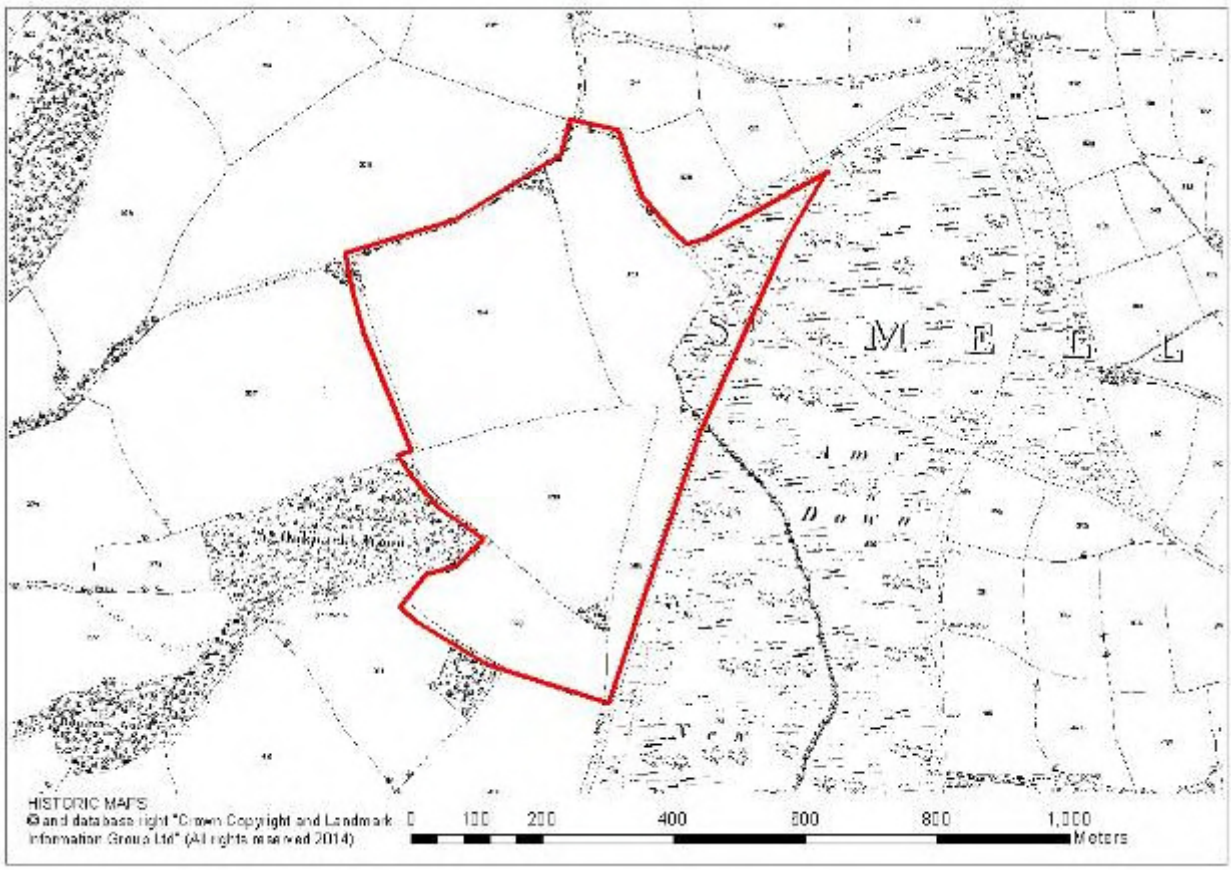

Fig 7 First Edition of the Ordnance Survey 25 Inch Map, c1880

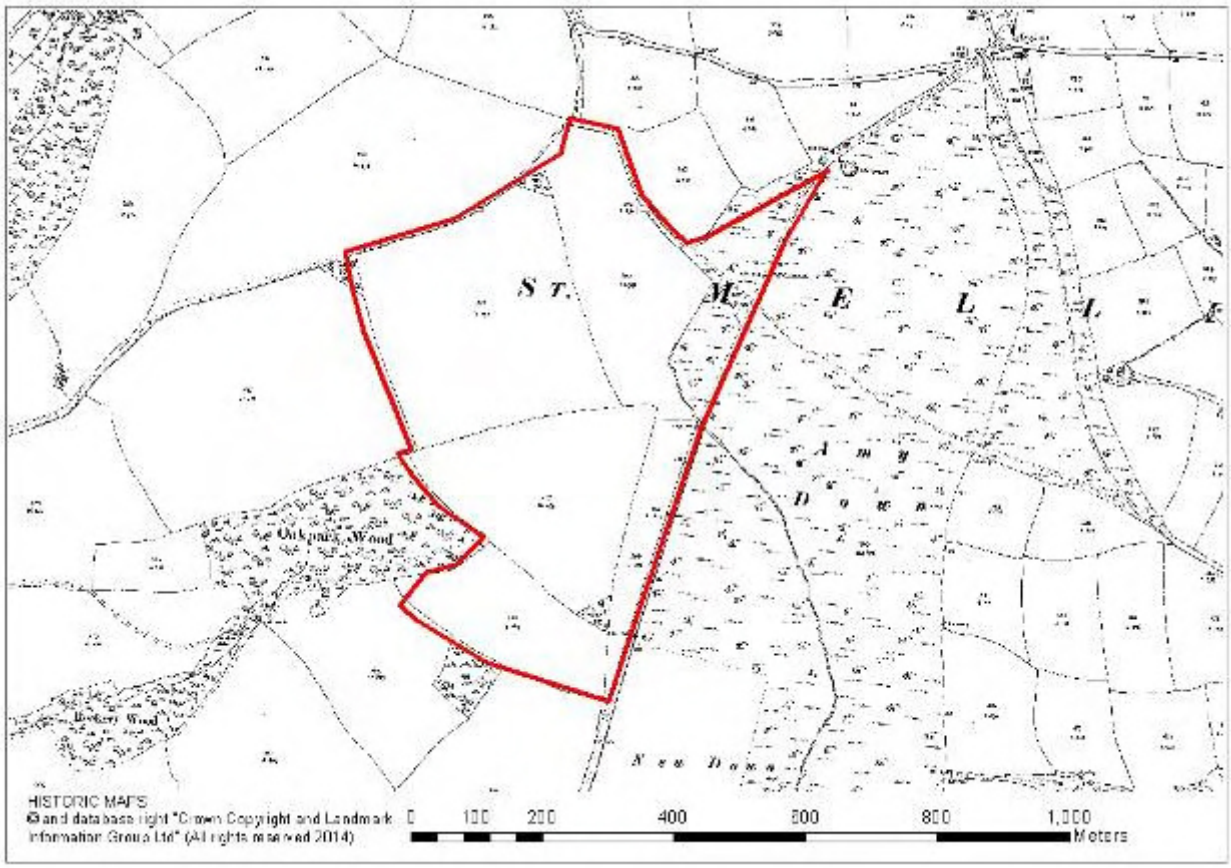

Fig 8 Second Edition of the Ordnance Survey 25 Inch Map, c1907

Fig 9 The project area as shown on a 2005 CCC aerial photograph.

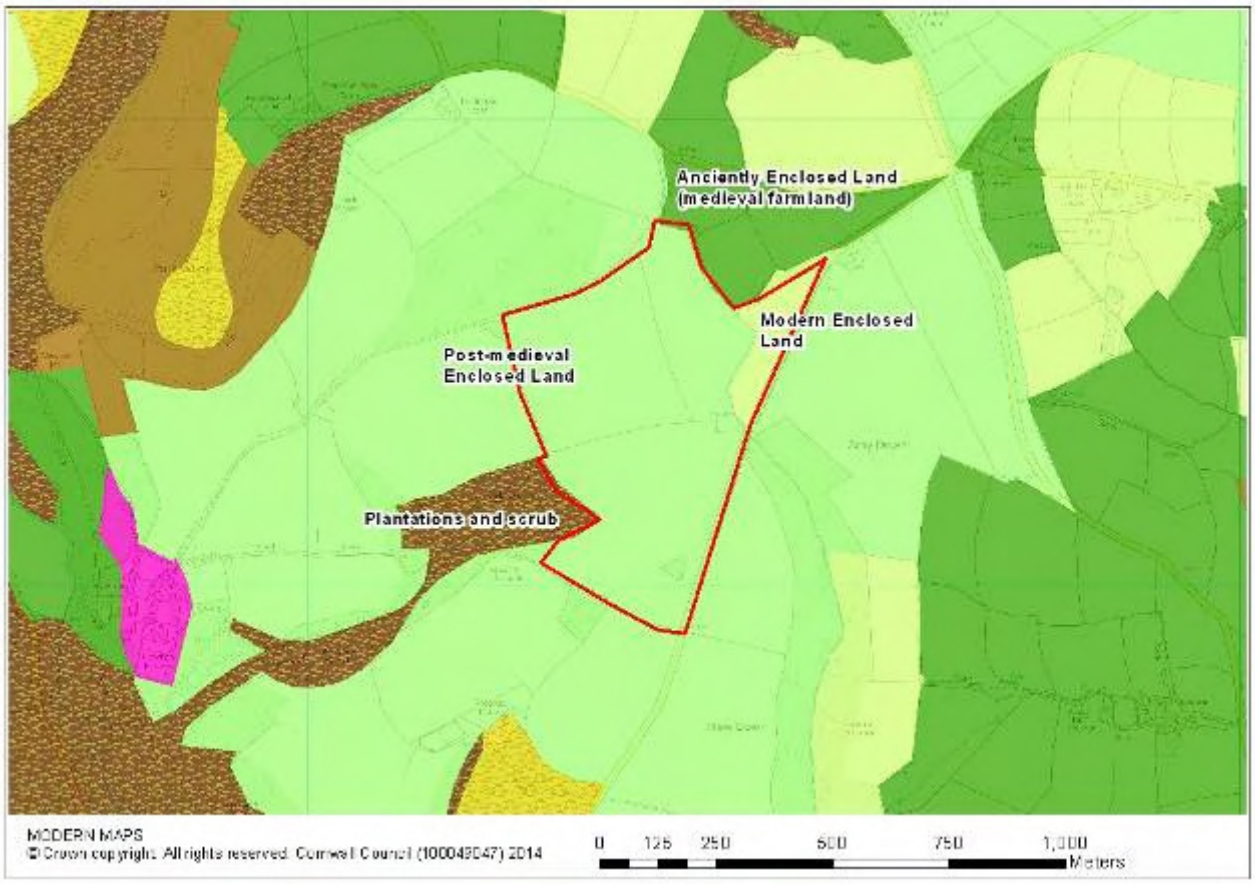

Fig 10 Historic Landscape Character mapping showing the patchwork of historically derived landscapes within and beyond the project area.

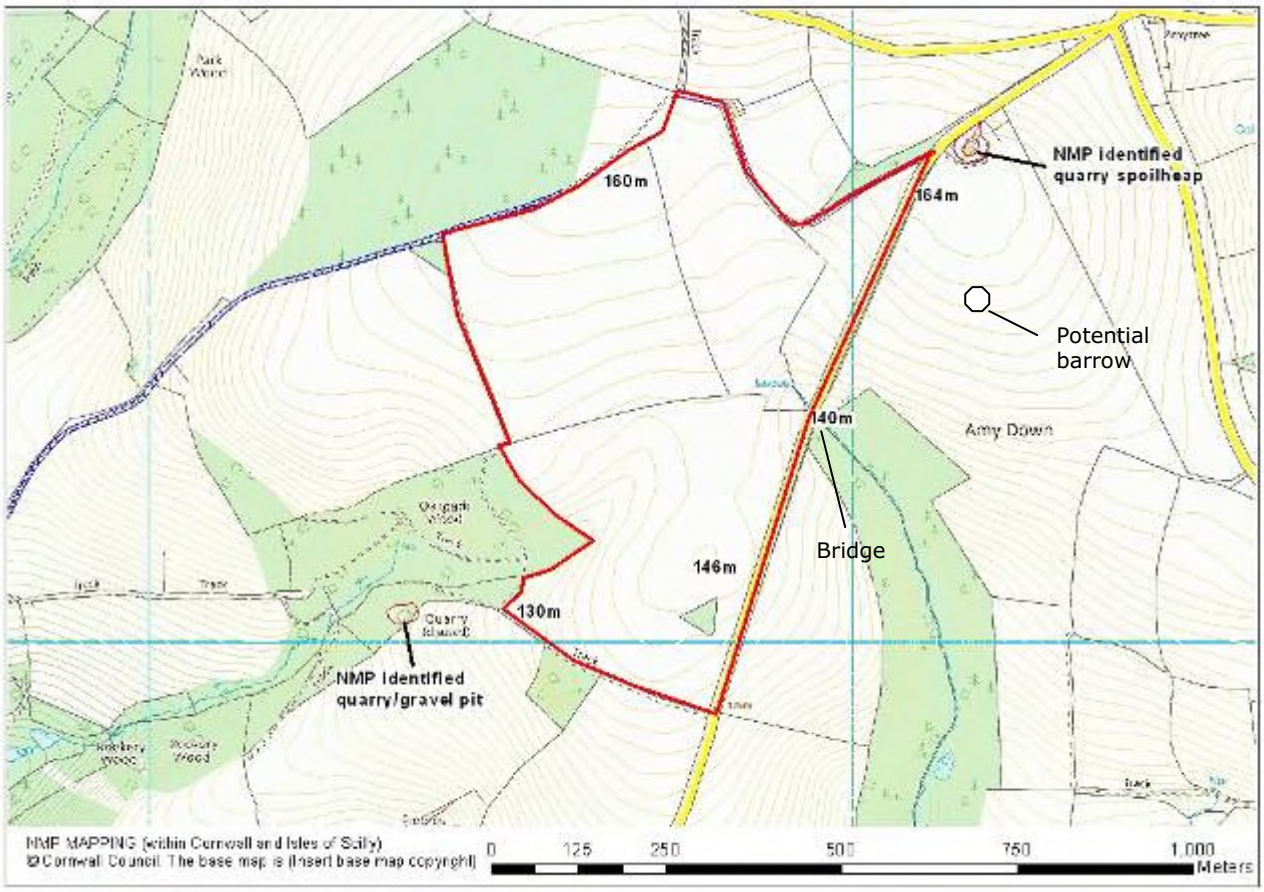

Fig 11 Archaeological sites recorded from aerial photographs by the National Mapping Programme (labelled); OS contour heights, HER identified possible barrow site and public access routes (blue).

7 Results of site walkover

A site walkover was undertaken on 30th January 2014. The weather was dry, but cloudy with a distant haze. The site of the proposed solar farm lies on high undulating ground beyond the western edge of the River Lynher and within the formerly much larger Newton Ferrers estate (Figs 19-32). The proposed site contains four fields, consisting of two larger western ones (ploughed and planted) and two smaller north-eastern pasture fields. All are broadly straight sided or angular in shape, and all (with the exception of the pointed north-eastern one) have been characterised as lying within Post-medieval Enclosed Land. The exception lies within Modern Enclosed Land (Fig 10).

The main western field is large and almost square in shape, with contours dropping from north to south, giving restricted views out to the south-east only. Its eastern, western and southern boundaries are near straight and shown on the *circa* 1840 Tithe Map (Fig 6). They are all earth and stone-faced boundaries with mechanically trimmed gorse and hawthorn ranging in height to about 2.5m maximum, with occasional much taller trees. The northern boundary is more strongly curved and follows the southern edge of the main drive down to Newton Ferrers house. It too appears largely unchanged since 1840. A track shown in 1809 running broadly west to east across the northern part of the field had gone by 1840. The change of track course at its eastern end suggests that the eastern field boundary was in existence prior to 1809. A triangle of planted trees located in the highest north-eastern corner is first shown on the Tithe Map and all subsequent mapping (Figs 6, 7 and 8). Today it contains a number of small trees. It gives the visual impression of extending the woodland located to the south and west, and the trees planted along the drive in to the site. This, in conjunction with the many tall boundary-related trees surrounding this northern part of the site, makes inter-site visibility very difficult to and from the north and the west. Glimpses could be seen out towards Frogwell and the southernmost extent of modern Callington, by standing on top of boundaries (Fig 30). Callington's Conservation Area was not visible.

Today's large southern field is shown on the Tithe Map and the *circa* 1880 and 1907 OS maps as originally having been subdivided, with a long thin strand running up its eastern edge and the southern part defined by a boundary linking a second triangle of planted trees (shown on the Tithe Map) to the pronounced angle half way down the field's western side (Figs 6, 7 and 8). The former line of this south-east running boundary can be seen on the 2005 aerial photograph (Fig 9). The western edge of the thin eastern strip of land appears on the Tithe Map extract to form a track, although it is possible that this is partly the result of survey lines. The angular western projection coincides with a very distinct drop in ground height (clearly shown on Figure 11) by the contours. In the field this is clearly visible and at the time of survey was flowing with water which ran in to a much more pronounced spring/small stream in the adjacent strand of woodland (see Figs 9 and 10). The lowest part of this field lies in the south-western corner (34m lower than the highest part of the site). Parts of this field clearly looks out towards the south-west and south-east, but because of the boundaries (see above description for the main western field), views were significantly limited, while the dips and rises found across the field as a whole meant that few places would be intervisible with large parts of the site. When looking out from the two gateways running along the south-western edge of the field the Grade I St Odulphus church tower was clearly visible (Fig 25). Views from the church yard back on to site are shown on Figures 35 and 36.The church was not visible from all parts of the field. The area of Newton Ferrers could be clearly pinpointed only because of the density of planted trees within and around its gardens. None of the buildings could be seen at all. The road linking Clapper Bridge to Amy Tree crossroads runs up the entire eastern edge of this field. It has densely vegetated

tree lined boundaries running up either side of it, making any visibility out from the eastern half of the site difficult. This is likely to be more pronounced when the trees are in leaf. At the north-eastern corner of this field, where it drops markedly down slope towards a spring-fed, deeply cut (*circa* 2m deep and sheer-edged) stream within a strand of mature woodland is a road bridge which crosses the stream (Fig 29 and 30). Close to the spring in the woodland is a modern built hut or possible pump house.

The pointed north-eastern field includes the highest point in the site. Its eastern edge is defined by the Clapper Bridge to Amy Tree crossroads and beyond. This is tree lined, as is the other side of the road, making local visibility to and from this high point surprisingly difficult from any direction, this visibility being further hampered by the drop in contours towards the south and east. An un-Scheduled potential barrow site (Fig 18) located just to the east of the site could not be seen at all, neither could the near-by quarry (Fig 11). Historic mapping shows that this whole area was taken in from the adjacent downland of Amy Downs between *circa* 1840 and 1880 (when it was still shown as unimproved ground). The western side of this field is defined by a stone-faced boundary with the fast flowing stream on its eastern side. It is quite heavily vegetated with some trees and forms a barrier to views both within the site and from beyond. The southern end of the site is protected from views by the strand of woodland surrounding the deepest part of the stream (see above). Reeds visible within this general area extending right in to the field attest to the extreme wetness of this area, despite the apparent slope. The north-eastern edge of the field is marked by barbed wire and a gorse hedge, while the lane which leads from Amy Tree crossroads to the main Newton Ferrers entrance drive cuts down about 1m through the broad grass verge. Trees along the northern edge of this lane, beyond the edge of the site shield the site from views from the north and west. Views from the extreme northern part of this field reach out beyond the 1km radius line to the south and west, but this has many 'blind spots' because of the number of woods, plantations and wooded field boundaries. Cadson Bury Hillfort, for example, looks on the mapping as if it should be visible, but its location was completely surrounded in trees and the site was not visible from anywhere across the site.

The small north-western field runs broadly from north to south. It shares the same patterning of contours as the main western field and has views out towards the south-west. These are hemmed in by the stream and trees to the south, and the tree and gorse-lines boundaries to the west and east. Views from the north-eastern part of the field are further restricted by a large new agricultural building (see Fig 11), which lies within a narrow swathe of trees planted along the eastern edge of the lane and drive approach. Views to the north and east were not possible. Along the north-western edge of the field, close to the junction with the drive the ground was very wet and reedy. Glimpsed views out towards Callington (and Kit Hill beyond) were just possible by standing on the boundary, or by leaving the field and standing at the drive entrance only. No clear views could be found to the east of Callington and views much further west of Frogwell were prevented by the wood to the west.

The ZTV suggests that inter-site visibility will be possible from a distinct and large pocket of ground to the north of the site – much of it within the 1-2km radials, however, fieldwork has shown that almost without exception any site visibility from the north is likely to be extremely patchy and limited, in large part due to the area's tree cover, but also due to the hedges and undulating character of the study area itself. The same applies to the smaller patches of potentially visible ground to the east and the west, where planted trees form a major barrier. To the south and south-east, visibility to and from the site is more easily available, but even then, use had to be made of gateways, standing on

boundaries or careful positioning within the respective fields to attain good open views. The removal of trees from within or immediately around the site would clearly alter this.

With the exception of the Grade I St Odulphus church at Pillaton, no high grade (Grade I or II*) Listed Buildings or Scheduled Monuments were clearly visible from the site. No up-standing archaeological features were recorded within the bounds of the site. The general character of the boundaries suggests that this area of former downland was probably enclosed during the early 19th century or shortly before.

8 Results of viewshed analysis

Given the combination of the elevated location of the site and the low level nature of the solar arrays, the viewshed analysis suggests that the Zone of Theoretical Visibility (ZTV) will be restricted. The ZTV patterning, given the undulating character of the surrounding topography is distinctly patchy (shown as green on all ZTV mapping). The visibility of the solar arrays will diminish rapidly away from the site, and will, at no great distance, be locally blocked by hedge-line vegetation, mature groups of trees and woods. Buildings within settlements did not significantly alter what was visible. Even if some of these trees are felled in the future, local hedges and the vegetation they support will effectively block the visibility of the proposed solar farm from some areas. Selected photographs are presented as Figures 33 to 41.

8.1 1km radius ZTV

Approximately 40% of the area contained by the 1km radial falls within the ZTV. With the exception of the area to the north-east (to the north of Amy Tree and east of Axford), south-east (Amy Down east to Keason and south-west towards Lower Trewashland) and the central study area, quite large swathes of land within the 1km zone fall outside the zone of visibility. An isolated south-western patch of theoretically inter-visible ground surrounds and includes Newton Ferrers itself (Figs 13 and 18). In practice, the northern and parts of the south-eastern areas were not clearly visible from the site.

8.2 1km to 3km radius ZTV

The ZTV within this zone is very limited indeed, with patches of theoretical inter-visibility being suggested for approximately 30% of the land within the 3km zone. The ZTV areas include a northern block of east to west running ground extending north from the 1km zone to the southern edge of Callington; an area linking Amy Down to the north and east of Pillaton; a long diagonal, patchy north-west to south-east area of ground to the west of the proposed solar farm (running from the north-west of Cadson Bury hillfort to south of Pillaton; plus other smaller areas, particularly to the east (Figs 12 and 17). In practice most of the northern, eastern and western areas within the 3km zone were either not visible or there were only severely restricted views to and from the site. Views to the south were less severely restricted, but were remarkably patchy out to 3km.

8.3 Scheduled Monuments within the 3km ZTV

Three Scheduled Monuments fall within the 3km ZTV surrounding the proposed solar farm. Their locations are shown on Figure 14.

National Record No.	Name
1004394	TWO ROUND BARROWS ON VIVERDON DOWN
1004494	CADSON BURY HILLFORT
1006634	CASTLEWICH HENGE (ON WESTCOTT FARM)

It is not felt that any of these sites will be significantly affected by the proposed construction of a solar farm, given the intensity of trees in the area (woods, tree-lined boundaries and roads). Cadson Bury Hillfort appears on paper to be at extreme risk of inter-site visibility, but the ZTV shows only the uppermost western side of the hillfort to be potentially visible (Fig 15), while during the field walkover, the project archaeologist failed to see any part of Cadson Bury hillfort because of trees on the fort itself and the intervening woodland. Removal of these trees would render the site visible from the very top of the hillfort.

8.4 Scheduled Monuments within the 1km ZTV

There are no Scheduled Monuments within the 1km ZTV.

8.5 Grade I and II* Listed Buildings within the 3km ZTV

One Grade I Listed Building falls within the 3km radius ZTV – St Odulphus Church at Pillaton, which is located approximately 2km to the south-south-east of the site (Fig 12).

There are no Grade II* Listed Buildings within the 3km radius viewshed of the solar farm.

National Record No.	Name	Grade
1311439	CHURCH OF ST ODULPHUS, PILLATON	I

St Odulphus church tower is visible from the site and parts of the site will be visible from the north-eastern part of the churchyard. There will be an impact on the site's setting, in part because churches were built and designed to dominate the local landscape and highlight concentrations of settlement within the wider area. However, the site was not visible from the front of the church, in part due to buildings within Pillaton itself. This slightly reduces the impact.

8.6 Grade I and II* Listed Buildings within the 1km ZTV

Seven high grade Listed Buildings exist within the 1km ZTV surrounding the proposed solar farm. These consist of six Grade I and one Grade II* Listed Buildings (the Grade II* site includes two separate statues). All are closely located within the Newton Ferrers estate, positioned to the south-west of the proposed site (Figs 12, 13 and 15).

National Record No.	Name	Grade
1140810	NEWTON FERRERS HOUSE	I
1140812	GATEPIERS TO SOUTH EAST OF NEWTON FERRERS HOUSE AND GARDEN WALL TO EAST	I
1140813	LOWER GATE PIERS TO SOUTH OF NEWTON FERRERS AND ADJOINING GARDEN WALLS	I
1277594	GATEPIERS TO SOUTH WEST OF NEWTON FERRERS HOUSE AND GARDEN WALL TO WEST	I
1311439	CHURCH OF ST ODULPHUS, PILLATON	I
1312304	TERRACE TO SOUTH OF NEWTON FERRERS	I
1137482	2 STATUES ON TERRACES 100M TO SOUTH OF NEWTON FERRERS HOUSE	II*

These sites are all very tightly clustered within a low-lying area, close to the River Lynher and surrounded by a mix of woodland and carefully planted trees which form an ornamental landscape setting for the seventeenth century Newton Ferrers house. The careful positioning and planting of trees within and around the immediate area of the Newton Ferrers complex (a number of which are evergreen coniferous types) renders the site almost invisible to outside viewing from any direction. The Listed Buildings were not seen from the site because of this combination of planting and the contours which drop steeply down from the site towards Newton Ferrers. This situation would change if the trees were ever removed or significantly thinned.

8.7 Grade II Listed Buildings within the 3km ZTV

Twenty nine grade II Listed Buildings lie within the 1-3km ZTV surrounding the proposed site. These include a range of farm houses and other agricultural buildings, gate posts, walls, monuments and milestones (Fig 12).

National Record No.	Name	Grade
1136279	PENCREBAR HOUSE	II
1136443	OUTBUILDING 10M EAST OF FROGWELL FARMHOUSE	II
1136871	GOODMERRY FARMHOUSE	II
1136910	OUTBUILDING 5M to NORTH OF HOLWOOD	II
1137439	STATUE 5M TO EAST OF EAST ENTRANCE OF NETON FERRERS HOUSE	II
1137514	BARN 150m TO NORTH WEST OF NEWTON FERRERS HOUSE	II
1137517	STORE AND GARAGE 105M TO NORTH OF NEWTON FERRERS HOUSE	II
1140032	ENQUIRE-THE-WAY	II
1140065	CASTLEWICH INCLUDING ADJOINING STORE ON EAST AND GARDEN WALLS TO FRONT	II
1140070	MILESTONE, 100M NORTH OF JUNCTION OF A390 WITH B3255	II
1140071	MILESTONE 300M TO SOUTH EAST OF JUNCTION A388 WITH B3255	II
1140072	TREHILL	II
1140078	BARN 10M EAST OF EAST FROGWELL FARMHOUSE	II
1140158	GATEWAY AT WEST ENTRANCE TO CHURCHYARD OF ST ODULPHUS	II
1140167	CIDER HOUSE ABOUT 10M SOUTH OF WESTCOTT	II
1140197	PAIR OF MONUMENTS TO SMITH AND SEAGE, IN THE CHURCHYARD AGAINST THE WEST WALL OF SOUTH TRANSEPT OF CHURCH OF ST ODULPHUS	II
1140811	GARDEN WALLS TO THE EAST, NORTH AND WEST OF NEWTON FERRERS HOUSE, OLD ENTRANCE ON THE EAST AND ARCH ON THE WEST	II
1140814	STABLES IN YARD 100M TO WEST OF NEWTON FERRERS HOUSE	II
1140823	MILESTONE 500M TO NORTH WEST TO CADSON	II
1158591	LYCHGATE AT THE SOUTH ENTRANCE TO THE CHURCHYARD OF CHURCH OF ST ODULPHUS	II
1158730	WESTCOTT	II
1312588	LEIGH FARMHOUSE	II
1329043	STATUE BY S JOSEPH, 25M TO SOUTH EAST OF NEWTON FERRERS HOUSE	II
1329044	BAKEHOUSE 50M NORTH WEST OF NEWTON FERRERS HOUSE	II
1329045	WELL HOUSE 250M TO EAST OF NEWTON FERRERS HOUSE	II
1329415	COACH HOUSE AND STABLE BLOCK 10M TO NORTH EAST OF PENCREBAR HOUSE	II
1329420	BARN 12M TO SOUTH OF FROGWELL FARMHOUSE	II
1329438	HOLWOOD	II
1392535	MILESTONE 400M SOUTH OF RILL FARM, ST. GERMANS ROAD	II

Impacts on the settings of Listed Buildings within the 3km zone are considered very unlikely since the majority are either peripheral to the mapped ZTV; to the north of the site where inter-site visibility was found to be restricted (see section 7 above), many are wholly or partially behind tall groups of planted trees,

woodland and tree-lined roads and boundaries. Many of the listed sites have only immediate settings, whilst the domestic buildings have inherently local settings.

8.8 Grade II Listed Buildings within the 1km ZTV

Eight grade II Listed Buildings fall within the 1km ZTV. All are to be found within the settlement of Newton Ferrers (Fig 12).

National Record No.	Name	Grade
1137439	STATUE 5M TO EAST OF EAST ENTRANCE OF NETON FERRERS HOUSE	II
1137514	BARN 150M TO NORTH WEST OF NEWTON FERRERS HOUSE	II
1137517	STORE AND GARAGE 105M TO NORTH OF NEWTON FERRERS HOUSE	II
1140811	GARDEN WALLS TO THE EAST, NORTH AND WEST OF NEWTON FERRERS HOUSE, OLD ENTRANCE ON THE EAST AND ARCH ON THE WEST	II
1140814	STABLES IN YARD 100M TO WEST OF NEWTON FERRERS HOUSE	II
1329043	STATUE BY S JOSEPH, 25M TO SOUTH EAST OF NEWTON FERRERS HOUSE	II
1329044	BAKEHOUSE 50M TO NORTH WEST OF NEWTON FERRERS HOUSE	II
1329045	WELL HOUSE 250M TO EAST OF NEWTON FERRERS HOUSE	II

The proximity of these buildings to the proposed site, like the Grade I and II* buildings in the Newton Ferrers estate complex were considered likely to be impacted upon by the proposals prior to the field visit. However, the field visit and survey has shown that this is unlikely to be the case, given landscape and vegetation factors.

8.9 Areas of Great Landscape Value within the 3km ZTV

The whole site does fall within an Area of Great Landscape Value. There will as a result be an impact on this aspect of the historic environment (Fig 16).

8.10 Areas of Outstanding Natural Beauty just within the 3km radius

The extreme western tip of the Tamar Valley Area of Outstanding Natural Beauty extends into the extreme eastern 3km radial, but does not fall within the mapped ZTV surrounding the site of the proposed solar farm (Fig 16). Given the size of the AONB it is probable that some parts of it will be inter-visible with the solar farm from further afield, but a combination of distance, trees, hedge cover, very occasionally buildings blocking views and undulating topography will render any potential impacts as low.

8.11 Cornish Mining World Heritage Site beyond the 3km radius

No part of the Cornish Mining World Heritage Site falls within the 3km ZTV surrounding the proposed solar farm.

The closest Cornish Mining World Heritage Site is the Tamar Valley area located more than 4km away to the north-east and east. Were any part of this site to be inter-visible with the World Heritage Site, a combination of distance and intervening hedge vegetation and trees in particular would significantly limit any setting impacts.

8.12 Registered Parks and Gardens beyond the 3km radius

No Registered Parks and Gardens fall within the 3km ZTV surrounding the proposed solar farm at Newton Ferrers.

The closest Registered Park and Garden is located more than 5km away to the east at Cotehele. Were any part of this site to be intervisible with the Registered grounds at Cotehele, a combination of distance and intervening hedge vegetation, tress and possibly buildings means that no significant setting impacts will arise.

8.13 Conservation Areas beyond the 3km radius

No part of a Conservation Area falls within the 3km ZTV surrounding the proposed solar farm.

The closest Conservation Area is located just beyond the 3km radial, due north of the site. It includes the historic core of Callington, which contains many Listed Buildings of all grades. The southern part of modern Callington does extend in to the 3km radial but this is not included within the Conservation Area and is not easy to see from the northern and western parts of the site. It is not visible from most of the central and southern parts of the site.

8.14 Undesignated sites within the 1km ZTV

Around 40% of the landscape within a 1km radius of the proposed Newton Ferrers solar farm will be theoretically intervisible with all or part of the site (Fig 18).

Eleven sites of all periods are listed in the Cornwall and Scilly Historic Environment Record within this zone. Five of these feature within the Listed Building indexes above. All are tightly focussed around Newton Ferrers. Of the remaining eleven, a range of site types exist, including potential sites, former sites, documented but lost sites and extant non-designated sites. They are listed below.

Prehistoric

- MCO1814 Viverdon Down – flint work find spot.
- MCO2040 Amy Down – site of a possible barrow.

Medieval

- MCO13301 Axford – medieval/post-medieval settlement. First recorded 1544.
- MCO15926 Newton Ferrers - early medieval settlement, medieval manor /settlement. First recorded in the Domesday survey of 1086.

Post-medieval

- MCO39406 Oakpark Wood – post-medieval gravel pit. Pre 1880.
- MCO46922 Reckgate – Site of post-medieval house earthworks. Mapped in c1748 on Martyn's map.
- MCO46923 Amy Tree – post-medieval probable 19th century bridge between Clapper Bridge to Amy Tree.
- MCO46924 Axfordhill – site of lost post-medieval house. Recorded on Martyn's map of 1748.
- MCO46929 Tor Wood – post-medieval pair of shallow, narrow trial adits in western Tor Wood, with slight downslope heaps.
- MCO46932 Keason – post-medieval settlement comprising two houses recorded west of Keason on *c*1842 Tithe map. Gone by 1880.

- MCO54193 Amy Tree – post-medieval milestone recorded by unclassified road, SW of Amy Tree. Mapped 1880/1907, but now lost?

Given either the lack of obvious inter-site visibility, or the inherently local setting for these sites, no significant impacts have been identified for their settings.

Note: The following ZTV mapped figures show an inner purple 1km radius zone and an outer red 3km radius zone, both of which are based on a series of selected vantage points within the proposed development area. This ensures that the 1km and 3km zones reflect the whole site rather than a central point, and take into account the pronounced undulations of the site resulting in a 34m height range across the site.

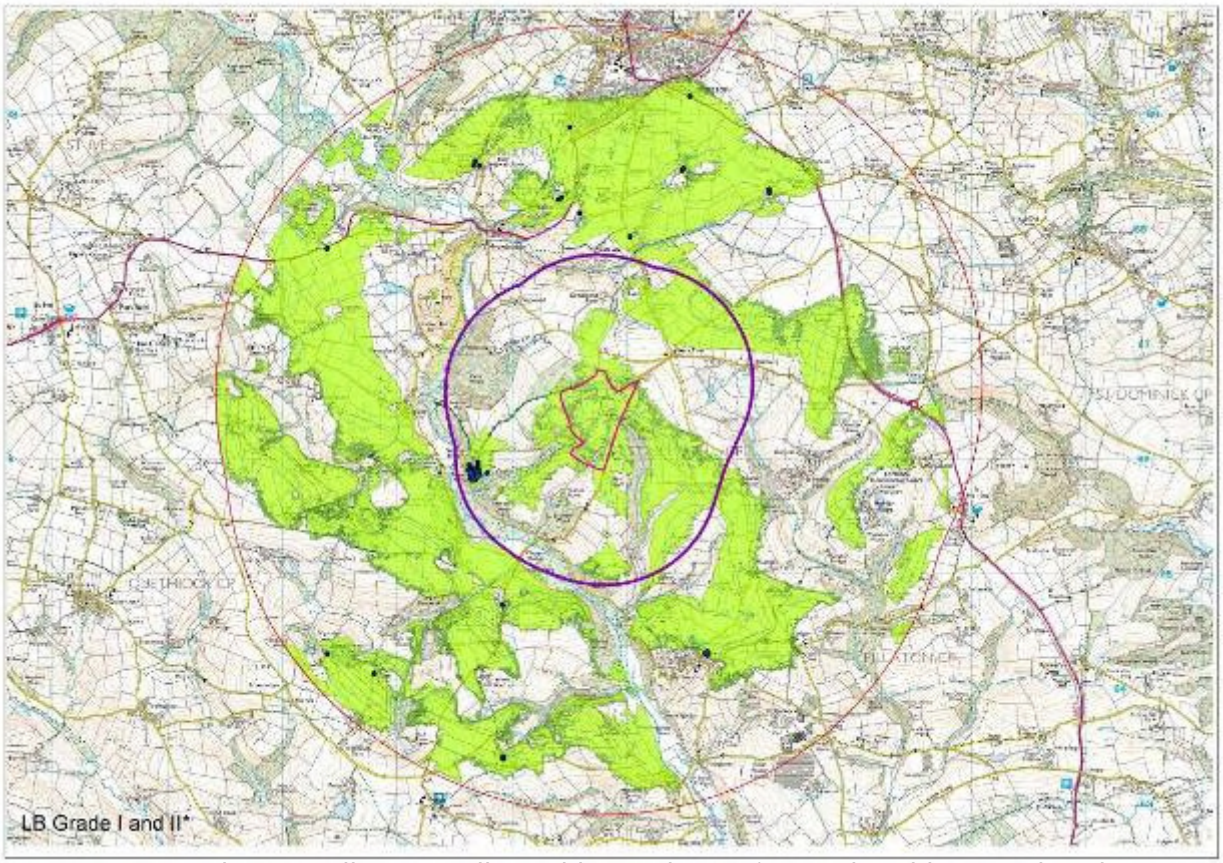

Fig 12 Map showing all potentially visible Grade I, II Listed Buildings within the 1km and 3km ZTV zones.*

Fig 13 Map showing all potentially visible Grade I and Grade II Listed Buildings within the 3km ZTV zone.*

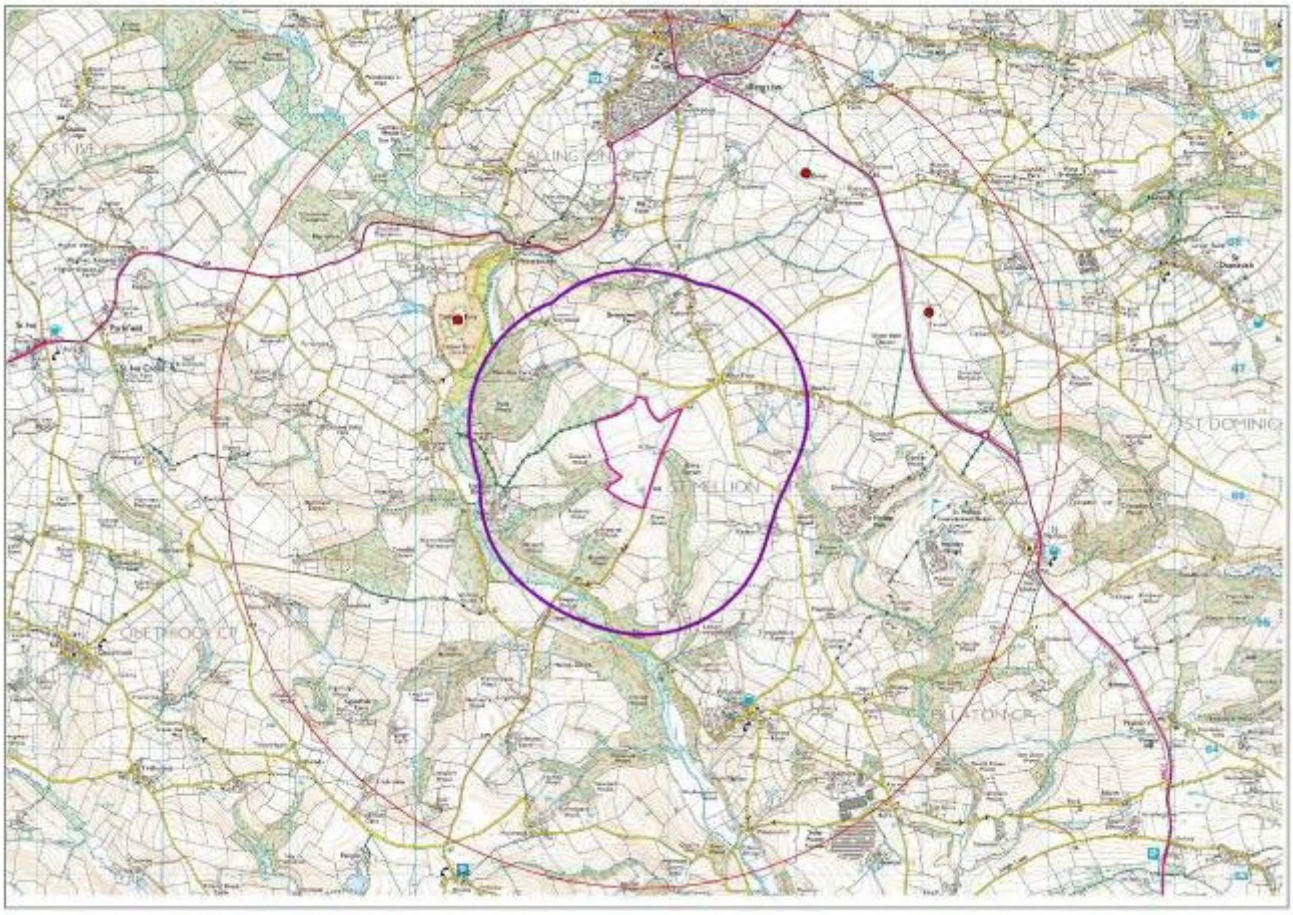

Fig 14 Map showing all Scheduled Monuments that fall within the 3km ZTV zone.

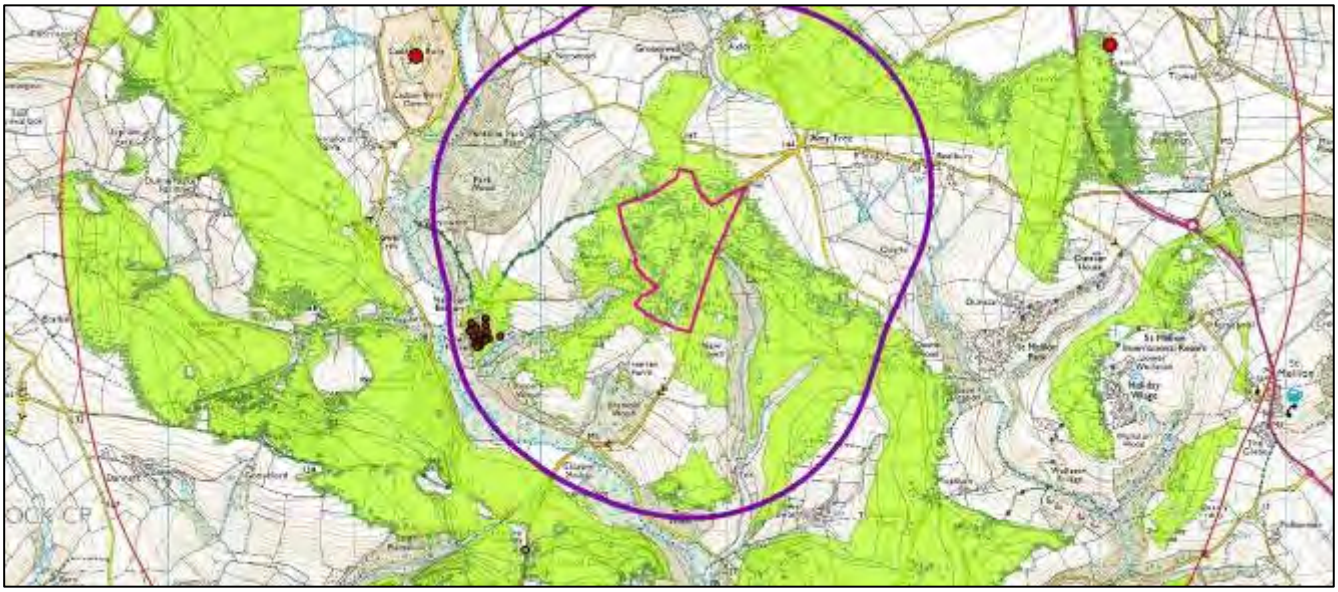

Fig 15 Map extract showing the very peripheral location of two of the three Scheduled Monuments within the 3km ZTV zone, and the very focussed concentration of Listed Buildings within the 1km ZTV at Newton Ferrers.

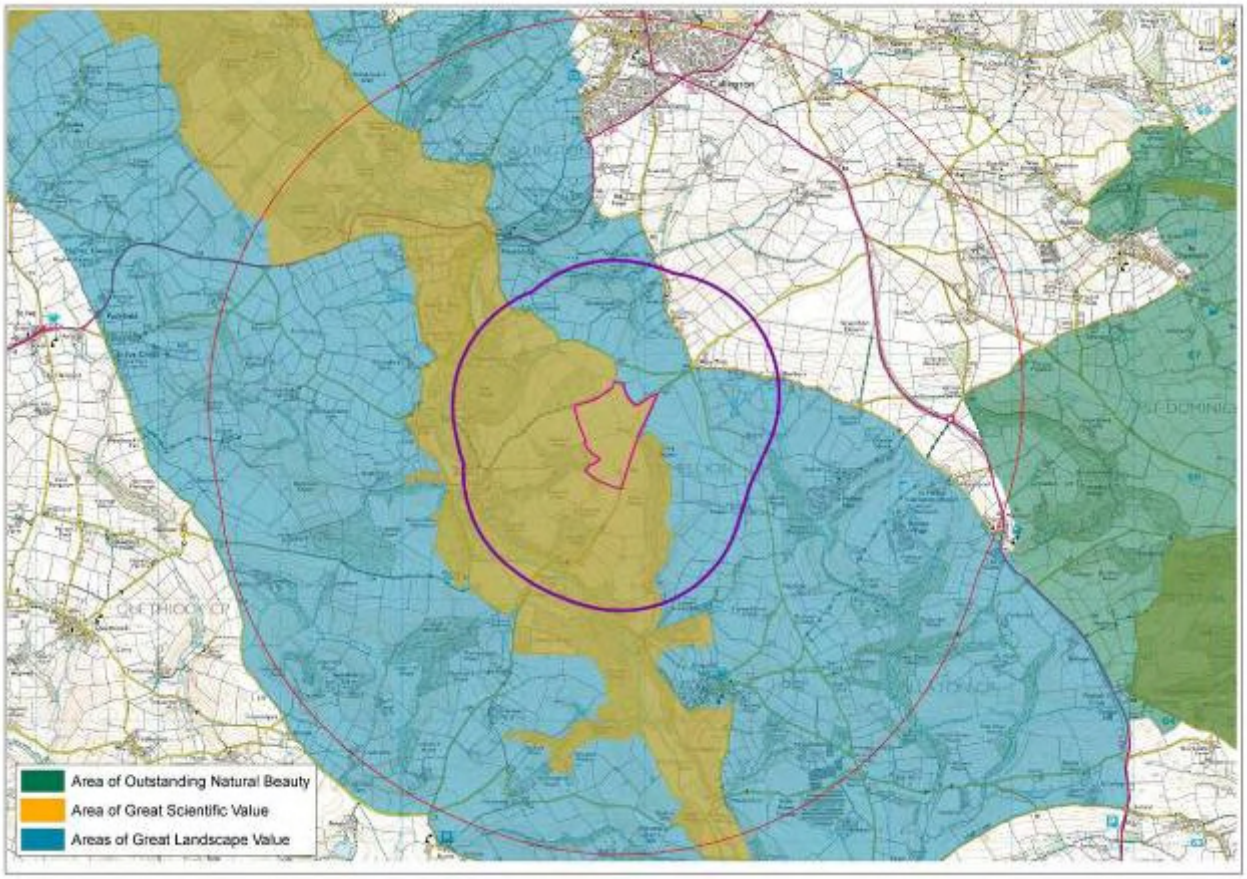

Fig 16 Map showing designated areas within the 3km ZTV radius zone.

Fig 17 Map showing all potentially visible sites recorded in the HER located within the 3km and 1km ZTV zones.

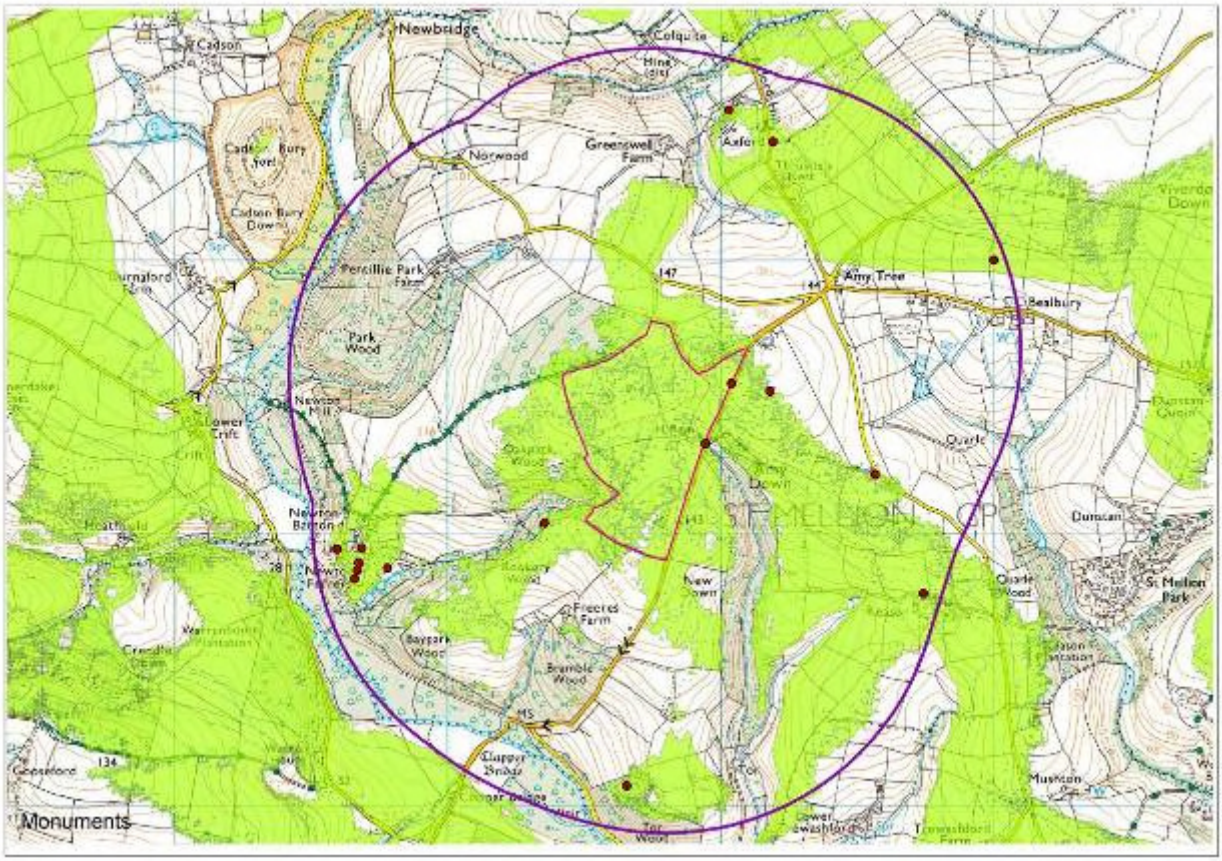

Fig 18 Map showing all potentially visible sites recorded in the HER located within the 1km ZTV zone.

Fig 19 Looking north towards the high ground around Axford from the most northerly field in the site, showing trees and modern farm buildings beyond the edge of site.

Fig 20 Looking east across the whole of the northern half of the site showing tree lined hedges. The lower lying eastern swathe of the study area is not visible as it drops down towards the road, although the southern Viverdon Down and hills around St Mellion are visible in the distance.

Fig 21 Looking towards Cadson Bury hillfort from the northern side of the north-western field-note the density of trees along this whole northern side of the site.

Fig 22 Looking west over Newton Ferrers (which is down in the valley) towards high ground between Quethiock and St Ive.

Fig 23 Looking west (from the open gateway visible in the previous photograph) over Newton Ferrers which is located beyond the trees on the left hand side of this image.

Fig 24 Looking west-south-west from the south-western edge of the southern most field, showing Rookery Wood on the right and views over Leigh Plantation and on towards Quethiock etc.

Fig 25 Looking south-south-east from the south-eastern corner of the southernmost field, showing Pillaton and its Grade I Listed church.

Fig 26 Looking north-east up along the eastern side of the site from the southernmost point. Note the density of trees which minimise views from the east towards the site.

Fig 27 Looking due north up across the site from the lowest, southernmost corner showing the hillslope which makes much of the site impossible to see.

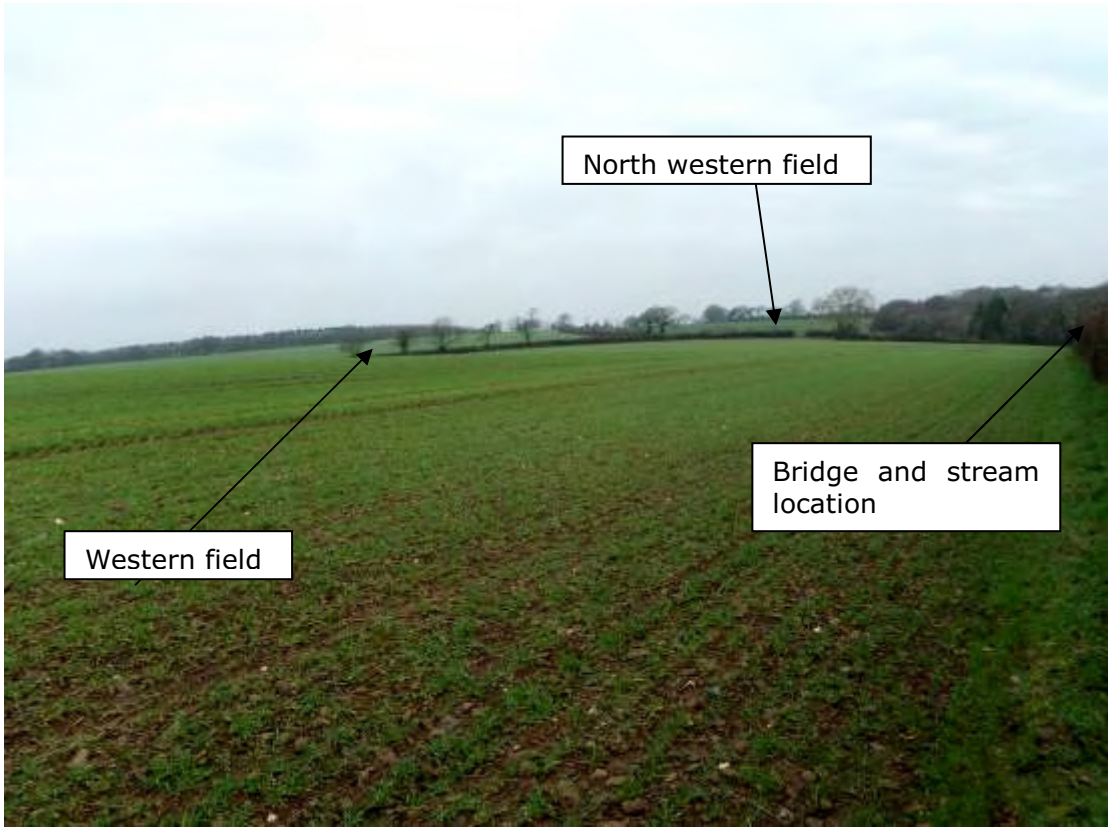

Fig 28 Looking north across the northern two thirds of site showing trees to the west and east helping to shield the site from view.

Fig 29 Looking north across the bridge and up the road towards Amy Tree crossroads, showing peripheral tree density to the immediate east of the site. The green visible through the trees is the north-eastern field – which contains the highest part of site.

Fig 30 Looking west along the stream from the bridge showing the potential area for waterlogged deposits.

Fig 31 Looking north along the stream and boundary between the north-eastern and north-western fields showing the northern most point of site on the horizon.

Fig 32 Looking south-west across the whole of the site showing high ground on the horizon.

Fig 33 Looking east-north-east from the Newton Barton turn off towards the site (positioned behind the right hand side of the large fir), showing the range and extent of planted trees around the whole Newton Ferrers complex.

Fig 34 Looking north from the lane at the extreme north-west corner of the site towards Callington and Frogwell.

Fig 35 Looking north-west across The Weary Friar public house from the edge of St. Odolphus' churchyard towards the site, which is located approximately centrally on the horizon.

Fig 36 Looking across the St Odulphus grave yard towards the site, located on the far horizon.

Fig 37 Looking west-north-west along the lane to Keason, showing the area of the site to the right of the telegraph pole.

38 Looking south from outside Axford Farm towards the site on the horizon.

Fig 39 Looking south to the site from just south of Rill Farm (located to the east of Grade II Listed Trehill). The site is located on the horizon to the right of the tree.

Fig 40 Looking south-south-west from Frogwell towards the site, which is shown behind the tree on the horizon.

Fig 41 Looking south-south-east towards the site, with the northern side of Cadson Bury hillfort shown in the middle ground and the front drive in to Skeber Cadson in the foreground.

9 Field verification of ZTV

The viewshed mapping and potential impacts were (given constraints on public access) ground checked from a number of locations (see photographs, Figures 33 and 35 to 41).

These included the medieval and post-medieval Listed Grade I, II* and II Listed Building built core of Newton Ferrers estate; Pillaton village and St Odolphus Grade I Listed church; Trewashford Farm, the road between Mushton and keason; Keason Farm; Axford Hill Farm; Rill Farm (close to the Scheduled Monument Castlewich henge on Westcott Farm); Caddapit House entrance; Frogwell settlement; and Skeber Cadson and Cadson Manor entrances looking towards the site across Cadson Bury Scheduled Monument.

Cadson Bury hillfort was not visited to check inter-site visibility because it was not visible from the site, and clearly not visible from Skeber Cadson. Scheduled Castlewich henge and the two Viverdon Down Scheduled barrows were not easily accessible and not specifically visited; although any views accessible from the site and a intervening view was sought from Rill Farm.

At each accessible designated heritage site the potential visibility (and proportional visibility) of the proposed solar farm was considered. Views out from the site towards key heritage assets were checked from locations within the area proposed for the solar farm. The general degree of openness of the views out from the site was assessed.

Given the substantial constraints on inter-visibility, few photographs were taken from locations within the surrounding landscape (other than those listed above). None show the site in its entirety; most simply show the trees adjacent to or within the site as opposed to the ground surface. In practice, field hedges and trees blocked potential views of the site from most of the surrounding area. The visibility cut-off imposed by the local topography which was suggested by the viewshed mapping was confirmed.

10 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 landscape within the surrounding 3km of the proposed solar farm contains a number of visually-prominent 21st century features, many of which fall within the ZTV.

Extant and proposed local solar farms include:

- Screening = Viverdon Down and Corneal Farm
- Pre-application = Dunstan farm
- Application (noted as 'invalid') – Rowse farm

Extant and proposed local wind farms include:

- Screening = Goodmerry Farm and Dannett Farm
- Pre-application = north west of Frogwell
- Extant = Sopers Farm
- Decommissioned = Heathfield Farmhouse

There is additionally a very prominent communications mast on Caradon Hill on Bodmin Moor, located to the north of the site but well beyond the 3km radius.

Despite the inevitable high voltage power lines, pylons and television aerial masts in the local landscape, the immediate area remains essentially open and agricultural in character.

Given the restricted visibility likely to be experienced of the proposed Newton Ferrers solar farm, cumulative effects are felt likely to be **negative/minor.**

11 Synthesis

Neither the desk-based assessment nor the walkover survey indicated the presence of any significant upstanding archaeology which might be physically impacted upon by the proposed solar farm.

Impacts on heritage assets within the local landscape resulting from the construction of the solar farm on land at Newton Ferrers will be limited and restricted to the landscape within 1km of its site. Factors influencing this include distance from the development site, state of preservation, nature, and the substantial effects of reduced or blocked inter-visibility due to local topography, vegetation (including hedge plantings), the presence of other buildings or the proximity of modern features in the landscape. Local topography significantly restricts views of the solar farm from archaeological sites in the local landscape to a very constrained area.

12 Policies and guidance

12.1 National Planning Policy Framework 2012

The following section brings together policies and guidance (or extracts from these) relating to the Historic Environment and are relevant 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.*

12.2 Former Cornwall Structure Plan

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

12.2.1 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.'

12.2.2 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*.'

12.3 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.

13 Likely impacts of the proposed development

13.1 Types and scale of impact

Two general types of archaeological impact associated with solar farm developments have been identified as follows.

13.1.1 Types of impact, construction phase

Construction of the solar farm could have direct, physical impacts on the buried archaeology of the site through the creation of foundations for inverter or transformer buildings, through the undergrounding of cables, as a result of the installation of ground anchors to support array panels, 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**. The scope of these would need to be determined by a geophysical survey of the site. Further archaeological investigation of any potentially significant features revealed by such survey might be required by the HEPAO.

13.1.2 Types of impact, operational phase

This solar farm might be expected to have a visual impact on the settings of some heritage assets within its viewshed during the operational phase, given its potential high visibility as a large modern feature within the landscape, the elevation 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 solar farm subsequently be dismantled and not re-powered or replaced.

13.1.3 Scale and duration of impact

The impacts of the solar farm 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.

13.1.4 Potential and residual impacts

Potential adverse impacts may be capable of mitigation through archaeological recording or other interventions. A proposed mitigation strategy is outlined below in Section 14.

13.2 Assessment of impact

Overall, the impacts of the proposed solar farm on the archaeological resource are assessed as having a potential scored as **neutral.**

Impacts on the settings of the designated heritage sites within 3km of the proposed solar farm has been assessed as **neutral**, with the exception of St Odulphus church at Pillaton which has been assessed as a **minor negative**.

Impacts on potential sub-surface archaeology within the development site are unquantifiable on currently-available information, but may be limited.

The assessments supporting this general statement are outlined in the following sub-sections. To comply with current policies and guidance (Section 12) 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.

13.2.1 Impacts on archaeological sites within the development area

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

Scales of impact will vary with the degree of significance of potential individual sites within the development area, and with the proportion of each site affected. On the basis of the documented history of the site there are no known sites and therefore impacts are likely to be limited. The potential impact is therefore scored as an **unknown**.

- There are minor concerns with potential direct impacts on the low lying waterlogged area located to the west of the undesignated bridge which crosses the stream running south-east from the eastern side of the site, where sub-surface organic environmental remains may exist. It is assumed that this area would be retained as it is within the proposed solar farm. If so this would be scored as a **neutral**. If it is to be altered this potentially scores as a **negative minor**.

13.2.2 Impacts on the settings of surrounding key heritage assets

The proposed solar farm is considered likely to have little appreciable negative impact on the setting of key surrounding heritage assets, the impact therefore being summarised as **neutral/negative minor** and temporary/reversible overall should the solar farm be dismantled at the end of its consented life.

- A complex of high grade Listed Buildings at the core of the Newton Ferrers estate are located within the 1km radius. All are within the ZTV, but none

appeared in practice to be visible either from the ground immediately in front of them, or from the site to them because of the intensity of planting associated with the ornamental landscape that immediately surrounds them.

- The Grade I Listed St Odulphus's church at Pillaton is the only high grade Listed Building to have a clear line of sight to the proposed solar farm, though visibility would largely only be from the northern part of the graveyard because of intervening buildings within Pillaton itself. Only parts of the site would be visible from the church.
- Two Scheduled barrows are sited just over 2km from the site at Viverdon Down. These would have been intended, when constructed, to be highly visible focal points within the local landscape. Inter-visibility between these sites and the proposed solar farm would be patchy due to the density of intervening tree cover and field boundaries. Given their distance from the site. Setting impacts would be very limited.
- The Scheduled Castlewich henge at Wescott Farm is located some 2km north-east of the proposed site and was designed to be a visible feature in the Late Neolithic landscape. Inter-visibility between the solar farm and this site would be patchy and the henge is arguably sufficiently distant from the proposed solar farm to limit any setting impacts. However, the very limited number of this particular site type within Cornwall gives it a particular significance and vulnerability.
- Cadson Bury Hillfort is the closest and the largest of the Scheduled Monuments to the proposed solar farm site. It is located within 2km of the site. However, only the uppermost part of the hillfort might theoretically be inter-visible with the solar farm, and in practice this inter-visibility has been lost due to the density of intervening trees and vegetation-rich earth and stone boundaries.
- As a result of the process of enclosure within the surrounding countryside during the medieval and post-medieval periods, the character and appearance of the landscape within which these prehistoric monuments now stand has changed considerably from that where they were originally designed to be seen and understood.
- During the operational phase the solar farm is unlikely to impact to any significant degree on the setting of the Scheduled Monuments or high grade Listed Buildings designated within 3km of the site. This is largely due to the constraints on inter-visibility. The exception is St Odulphus's church whose setting will be slightly impacted upon.
- The only other identified potential impacts will be on a very small number of Grade II designated farms to the south-west of the site, most of which have intervening buildings, trees and boundaries, or undesignated farmsteads and isolated houses, some of which may have uninterrupted views of part of the solar farm.
- Any impacts on heritage assets within the landscape surrounding the proposed solar farm would be temporary and reversible should it be dismantled at the end of its consented lifespan.

13.2.3 Designated heritage assets within the 3km radius viewshed

Scheduled Monuments and high grade Listed Buildings have been assessed separately with regard impacts from the proposed solar farm.

Other sites have been dealt with collectively as applicable.

<u>Scheduled Monuments within 3km</u>

Of the three Scheduled Monuments within 3km of the proposed solar farm, the impact was considered to be neutral for two on the basis of distance and lack of clear visibility due to hedges and trees. Cadson Bury hillfort is just over 1km from the proposed site but is not visible from the site because of the density of trees. The ZTV shows that only part of its uppermost area would be visible if the trees were to be totally removed both from the hillfort and all the intervening area.

National Record No.	Name/description	Impact
1004394	TWO ROUND BARROWS ON VIVERDON DOWN	**Neutral**
1004494	CADSON BURY HILLFORT	**Neutral to negative minor**
1006634	CASTLEWICH HENGE (ON WESTCOTT FARM)	**Neutral**

Grade I Listed Buildings within 3km

Only a single Grade I Listed Building exists within the 3km ZTV of the proposed solar farm. This is considered to be likely to be visibly impacted upon because part of the solar farm will be visible from the graveyard. The angle of the church, plus some buildings in Pillaton around the church's immediate periphery, plus trees reduces the impact on the church itself.

National Record No.	Name/description	Grade	Impact
1311439	CHURCH OF ST ODULPHUS, PILLATON	I	**Negative minor**

Grade I and II* Listed Buildings within 1km

All seven of these sites lie in very close proximity to the proposed solar farm, in a low lying area shrouded by trees. Despite their high grade listings and their proximity to the proposed site they could not be clearly seen from the site, and as such have not been graded as having a significant impact.

National Record No.	Name/description	Grade	Impact
1140810	NEWTON FERRERS HOUSE	I	**Neutral**
1140812	GATEPIERS TO SOUTH EAST OF NEWTON FERRERS HOUSE AND GARDEN WALL TO EAST	I	**Neutral**
1140813	LOWER GATE PIERS TO SOUTH OF NEWTON FERRERS AND ADJOINING GARDEN WALLS	I	**Neutral**
1277594	GATEPIERS TO SOUTH WEST OF NEWTON FERRERS HOUSE AND GARDEN WALL TO WEST	I	**Neutral**
1311439	CHURCH OF ST ODULPHUS, PILLATON	I	**Neutral**
1312304	TERRACE TO SOUTH OF NEWTON FERRERS	I	**Neutral**
1137482	2 STATUES ON TERRACES 100M TO SOUTH OF NEWTON FERRERS HOUSE	II*	**Neutral**

Grade II Listed Buildings within 3km

Twenty nine grade II Listed Buildings exist within the 3km ZTV radius. None were positively identified as being at a significant risk of visible impact. They have collectively been ascribed a **neutral** level of impact. The majority of the sites fall within areas which are shielded from view by trees, boundaries and buildings; in areas where only very limited parts of the site could ever be visible (due to the site's undulations); or because they are on the periphery of the ZTV.

Grade II Listed Buildings within 1km

Eight sites have been identified. All lie within the tightly positioned Newton Ferrers built complex and all have been assessed as likely to experience a **neutral setting** impact due to the intensity of tree planting around Newton Ferrers itself, around the proposed site and within the intervening area. The effect of this planting is exaggerated by the natural low lying setting of these buildings.

Landscape designations

The following designated areas fall within 3km of the proposed solar farm.

The AGLV and AGHV both extend across the whole proposed development area. The proposed solar farm would have a **negative moderate impact** on these County designated landscape areas.

The AONB extends into the eastern side of the 3km radius but lies outside the ZTV. This has been assessed as likely to experience a **neutral** impact.

13.2.4 Undesignated heritage assets within the 1km radius viewshed

The eleven sites that fall within 1km of the proposed solar farm are largely sites with an inherently local setting significance. The exception is the possible barrow site, which is located close to the proposed solar farm. However, this is only close to the highest, northern part of the site, (meaning that most areas of the site would be out of view). The potential barrow is very peripheral to the ZTV and has intervening trees between it and the site proposed for the solar farm. If this is the site of a barrow it would have been designed to have a dominant location within the wider prehistoric landscape. However, for the reasons outlined above, a **neutral impact** on its setting is though most likely.

MCO number	Name/description	Impact
MCO1814	Viverdon Down – Flint find spot.	**Neutral**
MCO2040	Amy Down – Site of a possible barrow.	**Neutral**
MCO13301	Axford – settlement.	**Neutral**
MCO15926	Newton Ferrers - Early medieval settlement, Medieval manor /settlement.	**Neutral**
MCO39406	Oakpark Wood - Post Medieval gravel pit.	**Neutral**
MCO46922	Reckgate – Site of Post Medieval house earthworks.	**Neutral**
MCO46923	Amy Tree - Probable C19th bridge.	**Neutral**
MCO46924	Axfordhill – Site of lost Post Medieval house.	**Neutral**
MCO46929	Tor Wood - Post Medieval pair of shallow, narrow trial adits in western Tor Wood,	**Neutral**
MCO46932	Keason - Post Medieval settlement of two houses recorded west of Keason on c1842 Tithe map.	**Neutral**
MCO54193	Amy Tree - ?Site of Post Medieval milestone SW of Amy Tree. Mapped 1880/1907, but now lost?	**Neutral**

13.2.5 Impacts on Historic Landscape Character

A solar farm erected on the elevated land at Newton Ferrers can be predicted to have an impact on the historic character of the landscape to some degree. The

expected effect on HLC has been assessed as **negative/moderate** to **negative/minor**. Factors contributing to this assessment are as follows;

- The land-take for the proposed development is relatively substantial.
- There would be no known impacts in terms of physical loss during the construction phase of features which form the visible components of this type of HLC.
- Some visual impact throughout the operational phase would occur, affecting the integrity of this area as mostly former downland which has now largely been enclosed.
- There are already a number of wind turbines and other tall modern features such as pylons and aerials within the landscape.
- Any impacts on the legibility of HLC would be temporary and reversible should the solar farm be dismantled at the end of its consented lifespan.

14 Mitigation Strategy

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

14.1 Geophysical survey

Whilst the present assessment has allowed the determination of impacts on the settings of both designated and undesignated sites and landscapes to be determined, as also the potential for impacts on upstanding archaeology, the information currently available is insufficient to determine whether groundworks or other activities involved in the construction of the solar farm would impact on any significant below ground archaeology.

The Cornwall Council's Historic Environment Planning Advice Officer has recommended that all or part of the area proposed for the solar farm should be subjected to a geophysical (magnetometer) survey. Whilst such an approach would not be capable of detecting all sub-surface archaeological features, it would be capable of informing the likely extent, nature and character of any significant underlying features.

14.2 Site redesign

In the case where a geophysical survey were to reveal the existence of archaeological sites within the development area which are judged by the HEPAO to be of significance and vulnerable to disruption or damage, it may be recommended that the areas with which they lie are excluded from development, or alternatively that methods are employed which can be proven to prevent any damage to them during both the construction and operational phases of the solar farm (for instance ground-mounted concrete pads on which solar arrays may be sited within sensitive areas of the site). Such a proposed site redesign would be discussed in detail between the HEPAO and the developer as part of the pre-application process in the light of available information.

14.3 Archaeological evaluation

Where geophysical survey indicates the presence of potentially significant sub-surface archaeology, the HEPAO might require the evaluation of such features through evaluation trenching by suitably qualified archaeologists to confirm the identification of such features and to determine their susceptibility to the impacts likely to result from the construction of the solar farm. The scope for this work would be determined by the HEPAO in the form of a brief following discussion with the developer. An approved WSI would be required before such work could

take place, and the results of the investigation would have to be set out in a written report, which would form the basis for any further discussions regarding potential mitigation of the development.

14.4 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 Planning Advice Officer (East), setting out its scope. A Written Scheme of Investigation (WSI) to meet the brief would need to be prepared and agreed to establish and direct a programme of mitigating archaeological work.

Archaeological recording in the form of the recording of upstanding elements of the site which might be negatively impacted upon by the works, or a watching brief (observation by an archaeologist during mechanical ground reduction activities) might be required either where any significant features or areas of ground are to be disturbed (for instance by the foundations for permanent buildings, during cable trenching, where ground reduction activities are proposed for temporary infrastructure), in areas where significant features had been identified through the site walkover or a geophysical survey, or where the balance of probability suggests that sub-surface archaeology might survive.

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

15 References

15.1 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 St. Mellion* (digital copy available from CRO)

15.2 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

15.3 Websites

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

http://domesdaymap.co.uk/place/SX3465/newton-ferrers/

16 Project archive

The HE project number is **146334**

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

1. A project file containing site records and notes, project correspondence and administration.
2. Digital photographs stored in the directory R:\Historic Environment (Images)\SITES.M-P\NEWTON FERRERS solar fm 2014
3. English Heritage/ADS OASIS online reference: cornwall2-170714
4. This report text is held in digital form as: G:\TWE\Waste & Env\Strat Waste & Land\Historic Environment\Projects\Sites\Sites N\NEWTON FERRERS-SOLAR FM

17 Appendices

17.1 Appendix 1: Planning brief

PROPOSED SOLAR FARM
LAND AT NEWTON FERRERS, ST MELLION
ARCHAEOLOGICAL SERVICES
BRIEF

DEC 2013

The Development
The application site occupies an area of approximately 76 acres (30 hectares) and is located to the south of Callington, Cornwall, centred at OS grid reference 235501, 066302. The site consists of a number of fields, bounded by hedgerows. Access is gained along a designated private track into the Newton Ferrers estate. Permissions would be sought for you to carry out any on site assessment. The attached plan shows the proposed site and development boundary.

Screening Opinion
A screening opinion request has been sought from Cornwall County Council by Tenth Solar Project Ltd to construct a 20MW Solar Park on land at Newton Ferrers, St Mellion, Callington, Cornwall.

The screening response dated 29th April 2013, states the following:

The development proposed is not considered to be an EIA development within the meaning of the EIA Regulations. The decision is based on the information known at the time and selection criteria for screening Schedule 2 development (Schedule 3) and paragraph A2 and A11 of circular 02/99 (Environmental Impact Assessment). This decision is given without prejudice to any final determination of the planning application.

The development therefore does not require an Environmental Impact Assessment (EIA) because although it comprises a Schedule 2 development which exceeds the relevant threshold however, it is not considered to be likely to have significant effects on the environment by virtue of the location and limited cumulative impact of the development proposed.

We set out below our brief for archaeological services for the above site ***based on the following advice notes from Phil Mason, Head of Planning and Regeneration.***

"I do not have any comments provided by the Council's Historic Environment Service or English Heritage. The council would normally expect applications to be supported by the results of an assessment of the significance of the historic assets affected and the impact of such development on that significance.

This work should include an archaeological desk based assessment and walk over survey, and include an assessment of the 'zone of visual influence' of the proposal. Such work should provide further information on the presence of undesignated and designated heritage assets such as may be affected (either directly or indirectly by 'setting') by the proposal.

It is likely on this site that such an assessment would indicate the need for a geophysical survey of the site to provide factual information regarding the presence or absence of buried archaeological remains. Such information should be sought from the developers as supporting information to an application in accordance with Policy 6 of PPS5 dealing with 'information requirements'. It is likely that direct impacts of the scheme could

be reduced or avoided through sensitive design; farming practice and fragmentation of landholdings; loss of farmland to amenity uses, especially golf courses and extension around existing settlements.

The proposed site lies approx. 1.7 Km from the existing St Mellion Golf Course and there are various residential properties in the general area the impacts on both of these including but not restricted to the potential visual impacts would need to be taken into account in the planning application process.

Please provide a fee for the required tasks. Tasks may include, but not exclusively so:

- Desktop Study
- Site Walk Over Survey and Zone of Visual Influence'
- Assessment Report with subsequent assessment findings.

Please outline the scope of work broken down into component tasks required to comply with Cornwall Council's screening opinion. This may include further consultation with the county archaeological unit in further defining a detailed scope of requirements, however, your quoted costs must take into account any likely scope of work based on previous experience and your expertise in working within Cornwall.

Your quoted fee should be broken down into component tasks with your total fee quoted as a lump sum, inclusive of expenses, excluding VAT. Costs for anticipated Geophysical Work should be identified separately along with a unit cost (per hectare). Please also provide hour and day charge rates.

Please note that it is likely that your commission would be as a sub-consultant to Soltys Brewster Consulting Limited.

17.2 Appendix 2: Written Scheme of Investigation

Land at Newton Ferrers, St. Mellion: Written Scheme of Investigation for archaeological assessment

Client: Soltysbrewster Consulting

Client contact : Sarah Chapple

Client tel : 029 2040 8476

Client email: Sarah.Chapple@Soltysbrewster.co.uk

Project background and site history

Historic Environment projects were contacted on 16 December 2013 with a request for a costs schedule for undertaking a desk-based assessment of a parcel of land extending to 30 Hectares at Newton Ferrers, St. Mellion, centred at SX 35778 66374. These four fields are proposed for the development of a solar farm. Planning application PA13/03359 applies. At the date of writing this WSI, no details relating to the layout of the solar farm were available from the client.

No archaeological brief for this work is currently available. This WSI is based on comparable model briefs produced by Mr. Phil Copleston (Historic Environment Planning Advice Officer, east Cornwall) for similar projects. Phil Copleston will need to approve this WSI,

This Written Scheme of Investigation (WSI) sets out the methodology to be used to achieve the general objectives in briefs prepared for undertaking assessments on large-scale renewables applications, the approach being taken being in line with NPPF guidance: *An assessment of the archaeological potential of the site and the potential impacts of the development on surrounding historic assets will be required to provide information in support of a planning application for the proposed development in accordance with the requirements of National Planning Policy Framework paragraph 128.*

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

The site occupies an area of former downland (Pillaton Down and Amey Down) in the parish of St. Mellion to the south of the settlement of Callington which was enclosed to agriculture during the post-medieval period. The location of the proposed solar farm occupies an elevated area at an average height of 140m OD in the agricultural heartland of south east Cornwall.

The Cornwall and Scilly HER records a prehistoric barrow site within the field immediately to the east of the application area and the surrounding landscape contains a number of Grade I Listed churches, including that at Rillaton (2.75km from the site), St. Ive (4.8km), Quethiock (4.77km), St. Mellion (3km) and St. Dominick (4.4km); other high grade Listed Buildings within the surrounding area include Pentillie Castle (Grade II*, 5.59km) and Newton Ferrers (Grade I, various elements). There are a large number of Grade II Listed farmhouses within 5km of the site. The Scheduled Monument at Cadson Bury hillfort is 1.5km from the site, whilst the Scheduled Castlewich Henge is 2.5km from the site. The Registered

Park and Garden at Cotehele is 6.5km to the east south east of the proposed solar farm.

Requirement for work and project extent

Ground works may disturb buried archaeological remains. In order to better understand the site and its potential for archaeological remains a desk-based survey and walkover survey are to be undertaken.

Aims and objectives

The site specific aims are to:

- Draw together historical and archaeological information about the site.
- Review and analyse historic map information about the site.
- Commission and report on the findings of a geophysical survey of the site.
- Inform whether archaeological evaluation or further archaeological recording of any potential buried remains might be required.
- Inform whether paleo-environmental sampling would be required.
- Produce a report containing the survey results.

Working methods

All recording work will be undertaken according to the Institute for Archaeologists *Standards and Guidance for Archaeological Investigation and Recording.* Staff will follow the IfA *Code of Conduct* and *Code of Approved Practice for the Regulation of Contractual Arrangements in Archaeology.* The Institute for Archaeologists is the professional body for archaeologists working in the UK.

Desk-based assessment

A brief desk-based assessment will be carried out. This will comprise:

- Published sources
- Historic maps, including
    - OS 1 inch survey (*c*1810)
    - Relevant parish Tithe Maps (*c*1840)
    - 1st and 2nd Editions of the OS 25 inch maps (*c*1880 and *c*1907)
- NMP aerial photo transcripts
- Modern maps
- Relevant GIS layers curated by Historic Environment and Cornwall Council generally.
- Creation and analysis of ZTV mapping out to an appropriate radius from the site to determine potential setting impacts on designated and undesignated sites and landscapes.

Fieldwork: walkover survey

A rapid walk-over survey will be undertaken of the site proposed for the development to determine any direct physical impacts on upstanding archaeology. Any areas of archaeological sensitivity will be identified during the walk over survey. Digital photographs will be taken for illustrative purposes. Visits will also be undertaken to determine the scale and nature of any setting impacts identified during the desk based assessment. Photographs taken with a lens of a suitable focal length will be taken from the proposed development site towards sites identified as potentially being impacted upon by the construction of the solar

farm, and back towards the proposed development site to provide a visual record of the potential impacts.

Fieldwork: geophysical survey

A specialist sub-contractor will be commissioned to undertake a magnetometer survey of the site to nationally agreed standards for this type of work. The survey results will be supplied to Historic Environment Projects, and will be summarised in the archive report.

Creation of site archive

This will include:

- Digital colour photographs stored according to HER guidelines.
- Project materials stored according to HER guidelines.
- Completion of an English Heritage/ADS OASIS online archive entry.

Archive report

The written report will include:

- A concise non-technical summary of the project results;
- The aims and methods adopted in the course of the investigation;
- A discussion of the archaeological findings setting out a brief background history to the project area, designations applying to it and heritage assets within it;
- Recommendations as to whether archaeological evaluation or further archaeological recording of any potential buried remains might be required;
- A location map, a plan showing those areas examined as part of the archaeological recording and copies of any historic maps and plans consulted. All plans will be tied to the national grid;
- A summary of the archive contents;
- References;
- Supporting illustrations: location map, historic maps, photographs.

A paper copy and a digital (PDF) copy of the report, illustrations and any other files will be deposited with in the Cornwall HER. Paper copies of the report will be distributed to the client, to local archives and national archaeological record centres.

Archive deposition

An index to the site archive will be created and the archive contents prepared for long term storage, in accordance with HE standards.

An ordered and integrated site archive will be prepared in accordance with Management of Research Projects in the Historic Environment (MoRPHE) English Heritage 2006 upon completion of the project. As the project is likely to produce solely a documentary archive this will be deposited with the Cornwall Record Office as well as the Courtenay Library of the Royal Institution of Cornwall.

A summary of the contents of the archive shall be supplied to the HEPAO.

The archiving will comprise the following:

1. All correspondence relating to the project, the WSI, a single paper copy of the report together with an electronic copy on CD, stored in an archive standard (acid-free) documentation box.

2. The project archive will be deposited initially at ReStore PLC, Liskeard and in due course (when space permits) at Cornwall Record Office.

Timetable

The study is anticipated to be commenced during Early 2014. HE Projects will require adequate notice before commencement of work, in order to allocate field staff time and arrange other logistics.

The archive report will be completed following the completion of the desk based assessment and fieldwork. The deposition of the archive will be completed within 3 months of the completion of the archive report.

Monitoring and Signing Off Condition

Monitoring of the project will be carried out by Phil Copleston, HEPAO.

Monitoring points during the study will include:

- Approval of the WSI
- Completion of archive report
- Deposition of the archive

Historic Environment Projects

Historic Environment Projects is the contracting arm of Historic Environment, Cornwall Council (HE). HE employs some 20 project staff with a broad range of expertise, undertaking around 100 projects each year.

HE is committed to conserving and enhancing the distinctiveness of the historic environment and heritage of Cornwall and the Isles of Scilly by providing clients with a number of services including:

- Conservation works to sites and monuments
- Conservation surveys and management plans
- Historic landscape characterisation
- Town surveys for conservation and regeneration
- Historic building surveys and analysis
- Maritime and coastal zone assessments
- Air photo mapping
- Excavations and watching briefs
- Assessments and evaluations
- Post-excavation analysis and publication
- Outreach: exhibitions, publication, presentations

Standards

HE is a Registered Organisation with the Institute for Archaeologists and follows their Standards and Code of Conduct.

As part of Cornwall Council, HE has certification in BS9001 (Quality Management), BS14001 (Environmental Management), OHSAS18001 (Health, Safety and Welfare), Investors in People and Charter Mark.

Terms and conditions

Contract

The HE projects team is part of Historic Environment, Cornwall Council. If accepted, the contract for this work will be between the client and Cornwall Council.

The views and recommendations expressed will be those of the HE projects team and will be presented in good faith on the basis of professional judgement and on information currently available.

Project staff

The project will be managed by a nominated Senior Archaeologist (Adam Sharpe BA MIfA) who will:

- Discuss and agree the detailed objectives and programme of each stage of the project with the client, including arrangements for health and safety.
- Liaise with the client regarding the budget and related issues.

Report distribution

Paper copies of the report will be distributed to the client, to local archives and national archaeological record centres.

A digital copy of the report, illustrations and any other files will be held in the Cornwall HER and also supplied to the client on CD or other suitable media.

Copyright

Copyright of all material gathered as a result of the project will be reserved to the Historic Environment, Cornwall Council. Existing copyrights of external sources will be acknowledged where required.

Use of the material will be granted to the client.

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.

HE will ensure that all information arising from the project shall be held in strict confidence to the extent permitted under the Act. However, the Act permits information to be released under a public right of access (a "Request"). If such a Request is received HE may need to disclose any information it holds, unless it is excluded from disclosure under the Act.

Health and safety statement

Historic Environment is within the Environment, Planning and Economy Directorate of Cornwall Council. The HE projects team follows Cornwall Council's *Statement of Safety Policy*.

Prior to carrying out on-site work HE will carry out a Risk Assessment.

Insurance

As part of Cornwall Council, HE is covered by Public and Employers Liability Insurance and Professional Negligence Insurance.

Adam Sharpe BA MIfA, Senior Archaeologist

December 2013

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