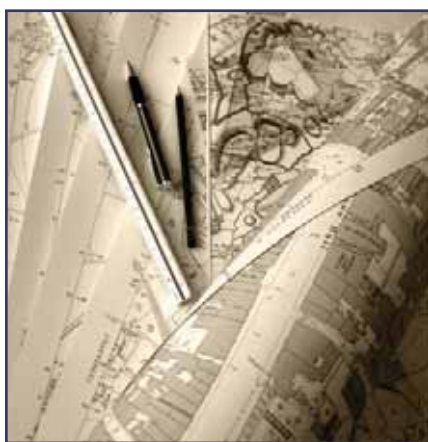


# Manor Farm Pertenhall Bedfordshire



## Desk-Based and Heritage Impact Assessment



March 2014

**Client: Prosolia UK Ltd.**

OA East Report No: 1592

OASIS No: oxfordar3-172393

NGR: 507777, 264447

**Manor Farm, Pertenhall, Bedfordshire**

*Desk-Based and Heritage Impact Assessment*

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*Report Date: March 2014*

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**Site Name:** Manor Farm, Pertenhall, Bedfordshire  
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**Date of Works:** February 2014  
**Client Name:** Prosolia UK Ltd.  
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## Table of Contents

<b>Summary</b> .....	<b>7</b>
<b>1 Introduction</b> .....	<b>9</b>
1.1 Planning Background.....	9
1.2 Location, Geology and Topography .....	9
1.3 Aims.....	9
1.4 Methodology.....	10
1.5 Acknowledgements.....	10
<b>2 Archaeological and Historical Sources</b> .....	<b>11</b>
2.1 Secondary Historical Sources .....	11
2.2 The Historic Environment Record (HER).....	11
2.3 Cartographic Evidence.....	15
2.4 Aerial Photographs.....	16
2.5 Walkover Survey.....	17
2.6 Geophysical Survey.....	17
2.7 Previous Archaeological Investigations.....	17
<b>3 Deposit Mapping</b> .....	<b>19</b>
3.1 Introduction.....	19
3.2 Mesolithic and Neolithic.....	19
3.3 Bronze Age.....	19
3.4 Iron Age and Roman.....	19
3.5 Anglo-Saxon.....	20
3.6 Medieval.....	20
3.7 Post-medieval.....	20
3.8 Rating.....	21
<b>4 Degree of Survival</b> .....	<b>21</b>
<b>5 Impact of Development</b> .....	<b>22</b>
5.1 Proposed Development.....	22
5.2 Potential Impact to Below Ground Remains.....	22
<b>6 Conclusions</b> .....	<b>23</b>

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6.1 Discussion.....	23
6.2 Potential Impact on Heritage Assets.....	24
<b>7 Recommendations for Managing Archaeological Risk.....</b>	<b>24</b>
<b>8 Impact Assessment of Designated Assets and the Historic Landscape.....</b>	<b>25</b>
8.1 Introduction.....	25
8.2 Methodology.....	25
8.3 Landscape Viewpoint.....	27
8.4 Assessment of Effect.....	28
<b>9 Conclusions.....</b>	<b>35</b>
9.1 Significance of Effect.....	35
9.2 Discussion.....	35
<b>Appendix A. HER Information.....</b>	<b>36</b>
<b>Appendix B. Aerial Photographs.....</b>	<b>50</b>
<b>Appendix C. Bibliography .....</b>	<b>59</b>
<b>Appendix D. OASIS Report Form .....</b>	<b>61</b>

## List of Figures

- Fig. 1 Site location map showing proposed development area and HER entries within a 1km radius
- Fig. 2 Site location map showing proposed development area and designated sites within a 4km radius
- Fig. 3 Thomas Jeffreys' Map of the County of Bedford, 1765
- Fig. 4 Enclosure Map of Keysoe, 1806
- Fig. 5 Bryant's Map of the County of Bedford, 1826
- Fig. 6 Tithe Map of Keysoe, 1844
- Fig. 7 Estate Map of Corpus Christi College Estates in the parishes of Pertenhall, Keysoe and Swineshead, 1869
- Fig. 8 1st Edition 6 inch Ordnance Survey Map, 1879
- Fig. 9 2nd Edition 6 inch Ordnance Survey Map, 1902
- Fig. 10 Results of geophysical survey
- Fig. 11 Plan of archaeological evaluation immediately north of Site
- Fig. 12 Plan of viewpoint locations

## List of Plates

- Plate 1 Oblique aerial photograph NMR 27094\_21, taken 30th June 2011, showing a number of circular cropmarks close to the Middle Lodge Buildings in the field west of Site
- Plate 2 Vertical aerial photograph RAF/106G/UK/635/4027, taken 10th August 1945, showing Site at the top right and circular moat HER 4474
- Plate 3 Oblique aerial photograph NMR 27094\_25, taken 30th June 2011, showing an Iron Age cropmark enclosure in the field immediately north of Site
- Plate 4 Oblique aerial photograph NMR 23739/00A, taken 19th July 2005, showing the western part of Site
- Plate 5 Oblique aerial photograph NMR 23739/08, taken 19th July 2005, showing the north-westernmost field of Site and circular moat HER 4474
- Plate 6 Oblique aerial photograph NMR 23983/09, taken 19th July 2005, showing Site
- Plate 7 Landscape viewpoint
- Plate 8 Landscape viewpoint
- Plate 9 View across Site toward moat and Middle Lodge Buildings (looking west-northwest)
- Plate 10 View from centre of Site to Kimbolton Road (looking east)
- Plate 11 View from Kimbolton Road across Site (looking west)
- Plate 12 View across Site toward Swineshead Road, taken from south-western part of Site (looking north)

- 
- Plate 13 View to St Peter's Church spire, Pertenhall and houses at Green End, from southern part of Site (looking north)
- Plate 14 View to houses at Green End, from north-eastern part of Site (looking north-east)
- Plate 15 View from outside Clover Cottage, Green End across to north-western corner of Site (looking south-east)
- Plate 16 View toward houses on Kimbolton Road, Brook End from south-western part of Site (looking south-east)
- Plate 17 View to St Mary the Virgin Church spire, Keysoe from the the eastern part of Site (looking south)
- Plate 18 View from Church Road, Keysoe toward Site (looking north)
- Plate 19 View from Swineshead Road across to Site with St Mary the Virgin Church spire (looking south)
- Plate 20 View to All Saints Church spire, Little Staughton from the eastern part of Site (looking east)

### List of Tables

- Table 1 Predicted rating for archaeological remains within the Site
- Table 2 Criteria for evaluating the importance of the cultural heritage resource
- Table 3 Magnitude of impact on the cultural heritage resource
- Table 4 Significance of environmental effects on the cultural heritage resource
- Table 5 Overall significance of effect
- Table 6 All heritage assets within a 1km radius of Site
- Table 7 Designated heritage assets within a 4km radius of Site
- Table 8 List of all oblique aerial photographs held by English Heritage's NMR for a 2km radius of Site
- Table 9 List of all vertical aerial photographs held by English Heritage's NMR for a 2km radius of Site

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## Summary

*This desk-based assessment and heritage statement appraises the potential impacts upon the Archaeology and Cultural Heritage resource from a proposed solar farm on land south of Manor Farm, Pertenhall, Bedfordshire (507777, 264447).*

*The proposed 30.36 hectare (75 acre) Site consists of five fields occupying a generally flat area of land at the base of a ridge, situated at around 31m OD. The Site is located approximately 1.3km south-west of the medieval core of Pertenhall. The surrounding historic villages of Brook End, Keysoe, Little Staughton, Swineshead and Riseley are located within a 4km radius of the Site.*

*Evidence for archaeological remains (in the form of find spots and features) from the Mesolithic through to the post-medieval period have been identified within a 1km radius of the Site.*

*This report demonstrates that there is the potential for archaeological remains within the proposed scheme area, in particular of the Iron Age and Roman periods. The majority of the proposed Site has been subject to little modern disturbance, and as such archaeological deposits are likely to be in a good state of preservation, although they may have been affected by arable farming techniques from the medieval and post-medieval periods.*

*The construction of the proposed solar modules, associated substations, inverter cabins, cable trenches and access track have the potential to have a Moderate/Large effect upon archaeological deposits. A mitigation strategy, comprising intrusive works (most likely in the form of an archaeological trial trench evaluation) would result in preservation by record.*

*There are no Listed Buildings, Scheduled Monuments, Conservation Areas or Historic Parks and Gardens within the Site itself but there are seven Listed Buildings within a 1km radius. Therefore there may also be a Moderate/Minor effect upon the setting of Historic Buildings close to the proposed Site and a Minor effect on the Historic Landscape, although the proposed planting of new hedgerows will help to reduce the effect of the development on these cultural resources to Neutral/Slight for Historic Buildings and Neutral for the historic Landscape.*





## 1 INTRODUCTION

### 1.1 Planning Background

- 1.1.1 A planning application (13/01621/MAF) has been submitted for a proposed Solar Farm at land south of Manor Farm, Pertenhall, hereafter referred to as 'the Site'. An archaeological Desk-Based Assessment and Heritage Statement has been requested by the Historic Environment Team of Bedford Borough Council (BBC HET), in accordance with the requirements of the National Planning Policy Framework (NPPF) 2012.
- 1.1.2 This report comes as a result of a previous pre-planning application (13/00164/PREAPP) for a 38 hectare site to the immediate north of the present Site. A Desk-Based Assessment and Heritage Statement (Clover 2013) was undertaken along with a trial trench evaluation (Bush 2013) which revealed archaeological features dating from the Late Iron Age to Early Roman period. This consisted of a large boundary ditch enclosing a series of smaller ditches along with a number of ring gullies and associated postholes. High levels of Saxo-Norman and medieval activity was also encountered in the form of a potential cobbled courtyard with drainage ditch abutting to it and a trackway seen on the 1879 OS map. As an effect of these works, the proposed development has been moved to its present location.
- 1.1.3 The following report incorporates both the Desk-Based Assessment and the Heritage Statement. It will form part of the documentation submitted with the planning application. The results will enable decisions to be made by BBC HET with regards to mitigating the impact of the proposed development upon any heritage assets.

### 1.2 Location, Geology and Topography

- 1.2.1 The 30.36 hectare Site is centred on National Grid Reference 507777, 264447. It is located approximately 15km north of Bedford and 10km north-west of St Neots. The Site comprises four fields and part of a fifth field which are currently under arable cultivation and forms part of a larger holding at Manor Farm. The Site is segmented by two farm tracks and small copse of trees called Galley Oak Spinney.
- 1.2.2 The Site is in Bedford Borough, the District of St Neots and within the parish of Keysoe and Bolnhurst. The 1km search area around the Site includes parts of Pertenhall and Swineshead parishes.
- 1.2.3 The Site lies on a mostly flat area of land lying at around 38.1m OD. As the Site travels west the land gently rises up to a height of 58.1m OD at its most north-western point. The geology on the Site consists of Oxford Clay Formation Mudstone with superficial deposits of River Terrace sand and gravel (BGS 2014).

### 1.3 Aims

- 1.3.1 The purpose of the archaeological Desk-Based Assessment is to define the character, extent and significance of known heritage assets within and close to the Site, taking into account any past impacts which may have affected the survival of any archaeology present on the Site itself. It identifies any heritage constraints on the proposed development and provides an outline assessment of any potential impacts which may result from the proposal.

## 1.4 Methodology

### **Data Capture**

- 1.4.1 For the assessment of the potential archaeology a 1km radius of the Site, centred on 507777, 264447 was studied (hereafter 'the search area'), in order to put the Site in context. For historic landscapes and designated assets (Listed Buildings, Scheduled Monuments, Historic Parks and Gardens and Conservation Areas) a 4km radius was requested by BBC HET, in order to assess impacts to their settings (see Section 8).
- 1.4.2 The Desk-Based Assessment and Heritage Statement draw on secondary historical sources, cartographic evidence, the Bedford Borough Historic Environment Record (HER), aerial photographs, a walkover survey and previous archaeological work.
- 1.4.3 The Desk-Based Assessment has been carried out according to standards set by the Institute for Archaeologists (IfA) in their guidance paper *Standards and Guidance for Archaeological Desk-Based Assessment* (2012). The assessment of setting has been carried out with reference to English Heritage's Guidance Document *The Setting of Heritage Assets* (2010).

## 1.5 Acknowledgements

- 1.5.1 The project was managed by Richard Mortimer. The walkover survey was undertaken by the author. The visit to the Bedford and Luton Archives and Records Service was carried out by Kate Clover. Neil Adam collected the aerial photographic data from the English Heritage NMR.
- 1.5.2 Vanessa Clarke and Geoff Saunders of Bedford Borough Council Historic Environment Team supplied the HER data and other useful information. Thanks are extended to English Heritage for allowing the reproduction of the aerial photographs.

## 2 ARCHAEOLOGICAL AND HISTORICAL SOURCES

### 2.1 Secondary Historical Sources

- 2.1.1 The Site lies at the northern end of the parish of Keysoe, adjacent to Pertenhall village, both within the Stodden Hundred. Pertenhall was recorded in the Domesday Survey of 1086 as Partenhale which means Pearta's *healh*, or nook of land. Place-name evidence implies that this may have been a polyfocal parish as the Domesday Book mentions two other settlements, Elvedon and Shirton, in the parish of Pertenhall. Both these settlements are now lost. Each Hundred has a court which met every four weeks and there is evidence to suggest that the court in Stodden Hundred met at Pertenhall (Godber 1969).
- 2.1.2 Chadwell End is mentioned in a Terrier of 1607 where it was called Chadwell brak. It almost certainly derives from the Old English *ceald-wielle* meaning 'cold spring' (Mawer & Stenton 1969). Although not mentioned in the Domesday Book, its Old English name indicates that the spring was in use during the Anglo-Saxon period. The great frequency of the word 'End' is a marked feature of Bedfordshire nomenclature denoting the outlying districts in a parish (Mawer & Stenton 1969).
- 2.1.3 Keysoe is called Chaisot or Caissot in the Domesday Survey of 1086. It means 'Caeg's spur of land' and derives from Old English *hoh* meaning 'hill spur' (Godber 1969).
- 2.1.4 The Victoria County History (VCH) of Bedfordshire Volume 3 is a useful source of historical information about Pertenhall and Keysoe parishes, however it was written originally in the early 20th century and thus its content is deficient compared to more modern VCH volumes such as the Cambridgeshire VCH series. The parish of Pertenhall is watered by the River Kym and its tributaries and various wells provide a good water supply. Pertenhall village is the centre of the parish with St Peters Church, the rectory and the old manor house at its core. There are surrounding outlying hamlets or 'ends', such as Wood End in the north, Chadwell End in the west and Green End in the south (Page 1912).
- 2.1.5 No entry in the Domesday Book has been identified for the manor of Pertenhall and it is possible that the property was considered to be part of Kimbolton. The Peyvre Family were lords of the manor from the mid 13th century to at least the mid 14th century and Nicholas Peyvre was granted rights of free warren in 1253. By the time of the dissolution of the monasteries in the 1530s Pertenhall Manor was the property of Corpus Christi College, Oxford (Page 1912).

### 2.2 The Historic Environment Record (HER)

- 2.2.1 The Bedford Borough HER is the main repository of cultural heritage data for the borough. On the 11th June an HER search was undertaken of the proposed development area and a 1km radius around it. Records of designated Heritage Assets from a 4km radius were also provided. The records include monuments, findspots, historic buildings and conservation areas. The HER is not a record of *all* surviving elements of the historic environment and does not preclude the subsequent discovery of further elements of the historic environment that are, at present, unknown.
- 2.2.2 The 1km radius search area around the Site contains 33 HER records including finds, monuments and historic buildings (Fig. 1). The 4km radius search area contains 151 HER records made up of Listed Buildings, Conservation Areas and Scheduled Monuments (Fig. 2). Each record has an individual identifying HER number, which is

referred to in the text. A complete list of all the HER data can be found in Tables 6 and 7 in Appendix A.

***Mesolithic (c.10,000-3500BC), Neolithic (c.3500-2000BC) and Bronze Age (c.2000-700BC)***

- 2.2.3 The earliest heritage assets within the search area are 55 struck flints found during a fieldwalking survey in 2004 and 2005 in a field north of Pertenhall Brook near Chadwell End, Pertenhall (HER 21276-83, 21285, 21297-99, 21302-16, 21319-32, 21462-69, 21470-76 and 21479). The group includes cores, flakes, microliths, scrapers, blades and a possible arrowhead. The assemblage has been identified as being of a Mesolithic to Early Bronze Age date, which confirms the presence of prehistoric activity within the immediate area.
- 2.2.4 No cropmarks of prehistoric monuments or field systems are recorded in the search area. The ploughed-out remains of Bronze Age barrows have, however been recorded in some of the tributary valleys in the wider locality. Further to this, a number of circular barrow-like cropmarks can be seen on aerial photographs to the north-west of site (see paragraph 2.4.3). These barrow monuments would have been highly visible markers in the landscape and attest to the presence of groups of people setting in the area during the Bronze Age. Settlement remains are less easy to detect in the archaeological record but no doubt exist in the vicinity.

***Iron Age (c.700BC-AD43)***

- 2.2.5 No finds of features of an Iron Age date have been previously recorded in the search area. The PAS however does have a record for an Iron Age gold stater found somewhere within Pertenhall parish. Evidence of Iron Age activity was uncovered during the archaeological evaluation, carried out in June and July 2013 (EBB 827), in the field to the immediate north of the Site during the initial pre-planning works for the proposed solar farm (see section 2.6).

***Roman (AD43-410)***

- 2.2.6 By the Late Iron Age and Roman period, the landscape was extensively settled and would have been comparatively open. Numerous enclosures of this date have been identified from aerial photographs, usually located on the top of the Boulder Clay ridges or spur ends, or on the gravels in the lower reaches of the tributary valleys (Land Use Consultants 2007). No evidence of this has previously been recorded within the search area. The only Roman finds recorded being four Roman coins which were found by a metal detector in 2004 at Chadwell End (HER 21480-83).
- 2.2.7 During the 2013 archaeological works in the field to the immediate north of Site, for the original location of the proposed solar farm, evidence for Roman settlement activity was also identified (section 2.6).

***Anglo-Saxon (AD410-1066)***

- 2.2.8 As a result of post-Roman woodland regeneration, the woodland would have dominated the ridges in the surrounding area. Settlement would have been focused on the lower valley floors and it is likely that Pertenhall village and its scattered 'Ends' had their origins in this period.
- 2.2.9 Pertenhall Brook and Chadwell Spring would have provided much needed water sources. The name Chadwell almost certainly derives from the Old English *Ceald-wielle* meaning Old Spring. Chadwell Spring (first recorded in 1607) is believed to have

its origins in the Saxon period. It is still in existence today but is now set in modern brickwork (HER 8428).

- 2.2.10 Evidence for early to mid Anglo-Saxon settlement is provided by a 7th century mount which was found by metal detecting in 1997 at Chadwell End (HER 21477). Very close by a Saxon hanging bowl disc was found just north of Chadwell Farm (HER 16304). Further to the west an Anglo-Saxon brooch of 5th-6th century date was also found south-west of Grange Farm (HER 16325).
- 2.2.11 During the archaeological works in the field to the immediate north, a total of 250 sherds of Late Saxon pottery were collected from features (see section 2.6), further confirming the presence of Saxon settlement within the area of Pertenhall.

### ***Medieval (AD1066-c.1500)***

- 2.2.12 Woodland clearance ('assarting') in the medieval period resulted in a pattern of small irregular fields. The medieval villages tended to be located in the valley floors, surrounded by small irregular closes, often containing the earthwork remains of shrunken and shifting villages and hamlets. The settlement pattern is dispersed in Pertenhall and Keysoe historic parishes. The open fields were not extensive, occupying the gaps between the settlements and the woodland assart areas (Land Use Consultants 2007). Moated sites punctuated the landscape e.g. Hoo Farm Pertenhall (HER 4983), College Farm Keysoe (HER DBD454) and Hall Close Riseley (HER DBD1305). Norman mottes are also common in the area e.g. Castle Hill in Kimbolton Park and a motte and bailey at Yelden.
- 2.2.13 Medieval settlement in Pertenhall is clustered around the church of St Peter (HER 966) and also around the three outlying hamlets of Green End, Chadwell End and Wood End. These settlements contain evidence of medieval occupation in the form of earthworks, medieval metal finds, documentary evidence, place-name evidence and wells. Medieval fields surviving as ridge and furrow (HER 3313) have been plotted in between the habitation areas. In Green End and Chadwell End there are earthworks of medieval house platforms and holloways now in pasture – evidence of shrinkage and desertion of settlement in the later medieval period (HER 8438, 17086 and 17084). Interestingly, the Knights Templar are said to have held a manor in Pertenhall (VCH 3, 154) but the location of their manor house is not clear.
- 2.2.14 A probable rabbit warren is known from place-name evidence just to the west of the Site (HER 7822). A 'cunnygrass' or 'grays' is mentioned here in 1712, the Tithe Map of 1840 mentions a field called 'Coneygears' and Bryant's map of 1826 shows 'Coneygay Wood' – all medieval terms meaning rabbit warren. As mentioned in paragraph 2.1.5, the Lord of the Manor in Pertenhall, Nicholas Peyvre, was granted rights of free warren in 1253.
- 2.2.15 Medieval moated sites are a common feature in the landscape of this area. They normally enclosed manor houses and associated buildings but were sometimes built to enclose monasteries, granges and farmsteads. There is one possible moat within the search area, immediately west of Site. This sub-circular homestead moat which is still extant as an earthwork (HER 4474) can be seen on Google Earth and other aerial photos. Little information exists for the moat and it may be associated with the rabbit warren to the west (HER 7822).
- 2.2.16 Despite woodland clearance in the medieval period, tracts of woodland did survive as private deer parks. The Site is partly situated in an area thought to have been such a deer park. An area of woodland known as Beavers Park Wood is thought to have been

associated with a deer park (HER 3041). 'Beavers' seems to be a corruption of 'Peyvre', the Lords of the manor in Pertenhall, are known to have held land in Keysoe in the medieval period, and it is possible that the wood and the other enclosed areas attached to it formed the Peyvre estate.

- 2.2.17 Deer parks were areas of land, usually enclosed, set aside and equipped for the management and hunting of deer and other animals. They were generally located in open countryside on the edge of the parish. They varied in size between 3 hectares and 1,600 hectares and usually comprised a combination of woodland and grassland which provided a mixture of cover and grazing for deer. Pollarded trees or enclosed areas of coppice are also a feature of deer parks. Parks could contain a number of features, including hunting lodges (sometimes moated), a park-keeper's house, towers from which people could observe the hunt or use as archery firing platforms, rabbit warrens, fishponds, dovecotes and enclosures for game. They were usually surrounded by a park pale – a massive fenced or hedged bank, often with an internal ditch. The peak period for the laying-out of parks, between AD1200 and 1350, coincided with a time of considerable prosperity amongst the nobility (Lasdun 1991).
- 2.2.18 Local field and place names include Middle Lodge Buildings (HER 12034 and 7604), which may refer to earlier deer park lodge buildings. The current Middle Lodge Farmhouse is 16th century in date but may, if the Site was a deer park, have been built on the site of an earlier lodge, or there may be associated medieval deer park features near it. The evidence for rabbit warrens near the Site may also lend weight to a deer park interpretation. However the VCH which has examined all the primary historical documents for the Pertenhall and Keysoe parishes does not make any mention of a deer park here. Similarly the manorial records for Keysoe do not mention a deer park (Bigmore 1979). Nor does it appear on Speed's Map of 1610, therefore it may be that it went out of use within a century or two.

### ***Post-medieval***

- 2.2.19 Evidence for the area around the Site from the early post-medieval period is scant. Middle Lodge Farmhouse was built in the 16th century and is still extant (HER 7604). On 18th and 19th century maps it is shown as 'Keysoe Hill House' and the name did not change until sometime in the early 20th century, which might be an argument against it having been built as a park lodge. There may be other associated structures or buildings close to the Farmhouse which are no longer standing but which survive below ground.
- 2.2.20 Enclosure of the open fields took place between 1796 and 1806 in Pertenhall and Keysoe parishes. A turnpike road was constructed at this time from Kimbolton south through Pertenhall and Keysoe.
- 2.2.21 Maps show the sites of sand quarries (HER 7689) and brick kilns (HER 8420 and 7692), to provide bricks for the houses and agricultural buildings being built in the 18th, 19th and 20th centuries in Pertenhall and surrounding villages.
- 2.2.22 There are seven Listed Buildings within the 1km search area. All of these historic buildings are post-medieval or 20th century in date and (with the exception of Middle Lodge Buildings) are located within the settlement centres of Green End and Pertenhall village.

## 2.3 Cartographic Evidence

- 2.3.1 Historic maps covering the search area were consulted and copied at the Bedford and Luton Archives and Records Service on the 21st June 2013. The maps covering the Site range in date from 1610 to 1902. A complete list of the maps consulted can be found in the bibliography.
- 2.3.2 The study of maps and associated historical sources helps to clarify the archaeological potential of the site in two ways. Firstly, it suggests aspects of the medieval and later land-use prior to any modern development. Secondly, it pinpoints areas within the site that may have been previously disturbed (such as by development or quarrying).
- 2.3.3 Speed's map of 1610 and other 17th century county maps were consulted but have not been included as figures as they are not detailed and do not show any landscape features.
- 2.3.4 Jeffreys' map of 1765 (Fig. 3) is an extract of a county map. It shows some interesting features however the cartography is not as accurate as the later maps. Settlement is focussed around the lower areas of the river valleys. These villages are generally very dispersed and, particularly in the case of Pertenhall and Keysoe, are formed of various scattered hamlets interconnected by roads and tracks. Pockets of woodland remain on the higher ground to the south of the Site, the only one labelled on this map being Keysoe Park.
- 2.3.5 The Enclosure map of Keysoe from 1806 (Fig. 4) only show part of the Site. It demonstrates how the Site is divided up into a number of irregular shaped fields. The shape of which is little different to the present day layout.
- 2.3.6 Bryant's map of 1826 (Fig. 5) is not dissimilar in style to that of Jeffreys map. Here, the Site is seen to be bisected by an almost north-south trackway. This farm track is still in existence today. A footpath can be seen winding its way up and across the Site, this too is still in existence today, although it has been rerouted slightly. Areas of woodland can still be seen, such as Beaver Park Wood, Coneygay Wood and Keysoe Park to the south and Honey Lane Wood, Tilbrook Bushes and others to the north. Scattered farm buildings are seen to the west of the Site. It should be noted however that the map puts Keysoe Hill Farm too far to the north. The map shows a trackway running broadly east to west to the north of the Site, this track runs westwards from Green End towards Swineshead and is still a track/footpath today. It is also the parish boundary between Keysoe and Pertenhall.
- 2.3.7 The Tithe map of Keysoe from 1844 (Fig. 6) is not very detailed, however it can be seen that the field layout identified in the 1806 Enclosure map remains untouched at this point. It also highlights that the majority of the Site was under the ownership of Trinity College, Cambridge. The map also shows a road to the immediate south of the Site which travels to Beaver Park, this route is only in existence now as a public footpath.
- 2.3.8 The 1869 Estate map of Corpus Christi College (Fig. 7) still shows the majority of the Site to be under the control of Trinity College. At the centre of the Site, Galley Oak Spinney is illustrated (although not labelled), which is still located on the Site today. Beyond the limits of the Site, few changes can be seen since the survey on the Keysoe Enclosure map of 1806.
- 2.3.9 The First Edition Ordnance Survey map of 1879 (Fig. 8) shows the Site to have been further enclosed, with the easternmost open field now comprising four fields. Outside of the Site, the village of Pertenhall and the surrounding landscape and footpaths



resemble that which can be seen today. The Second Edition Ordnance Survey of 1902 (Fig. 9) shows exactly the same layout to Site, as the First Edition.

## 2.4 Aerial Photographs

- 2.4.1 The National Monuments Record (NMR) in Swindon is English Heritage's public archive. They hold collections of aerial photographs ranging in date from the Second World War to the present day. An area of 2km around the Site was searched on the 4th July 2013. All the aerial photographs held were examined and these comprise 74 oblique photographs dated 1984 to 2011 and 99 vertical photographs dated from 1945 to 1998. Lists of all aerial photographs consulted can be found in Tables 8 and 9 in Appendix B. Aerial photographs on Google Earth have also been examined.
- 2.4.2 Crops growing on clayland are usually considered to be poor at indicating sub-surface features although recent photographs over Bedfordshire have shown that they can be as good as those on lighter soils if conditions are dry enough when the photographs are taken (Palmer, 2007).
- 2.4.3 Several aerial photographs show a series of circular cropmarks in the field adjacent to the Middle Lodge Buildings (Plate 1). It is possible that these are Bronze Age barrows. As stated in paragraph 2.2.4, no cropmarks of prehistoric monuments are recorded on the HER within the search area, however this location would favour such features.
- 2.4.4 Plate 2 shows a 1945 aerial photograph of the Site (in the extreme north-east of the shot), Galley Oak Spinney can be seen at the top right. On the western edge of Site the circular moat (HER 4474), which still stands today, can be seen. On this photograph it is free from tree cover.
- 2.4.5 A 2011 aerial photograph (Plate 3) shows some of the more interesting cropmarks in the field to the immediate north of Site. By the trackway, there can be seen a group of linear, enclosure-type cropmarks. The linear cropmarks can clearly be seen travelling toward the Site. During the archaeological evaluation in this field, a large number of Late Iron Age and Roman ditches were uncovered, several of which corresponded with these cropmarks.
- 2.4.6 The cropmarks seen in an aerial photograph of 2005 (Plate 4) show the removed field boundaries on the Site and in the adjoining larger field. A few pale linear features can be seen in the most western field of the Site. There is also a large dark patch adjoining the track which is potentially some kind of natural spring. What is also noticeable, is between the moat and the copse of trees are various other linear cropmarks. These do not correspond with post-medieval field boundaries and seem to be on different alignments to each other. Although this is just outside of the Site, it is possible that they would continue into the Site. Plate 5 shows the most western field of the Site in closer detail.
- 2.4.7 Plate 6 shows the Site from the west along with the adjoining large field, which was evaluated in 2012. In the field next to the copse of trees (in the far right of the photograph) the old field boundary can clearly be seen. Overlapping with this former field boundary are two sides of another cropmark. This potentially ties in with the findings from the geophysical survey (see paragraph 2.6.9). The only other noticeable marking on this photograph is in the centre of the large field (top right corner of photograph), this shaped dark area is most likely to be a change in the natural geology.

## 2.5 Walkover Survey

- 2.5.1 A walkover survey was carried out on the 25th February and the 6th March 2014, at which time the fields within the Site were supporting two crops around 0.1m high. Weather conditions were poor, with grey skies and heavy rain at times.
- 2.5.2 The object of the walkover survey was to view on the ground any recorded heritage assets such as demolished buildings and cropmarks as well as any heritage assets that had so far remained unrecorded. The walkover survey also aimed to find any areas of modern disturbance that might have destroyed heritage assets. The whole of the Site, including its perimeter and the surrounding fields, was accessible. Photographs were taken of the Site and of views from the Site to the surrounding villages (Plates 7 to 20).
- 2.5.3 No unrecorded heritage assets were visible during the walkover survey and no cropmarks were seen. No new features were seen and no areas of modern disturbance were visible during the walkover survey.
- 2.5.4 The walkover also included visits to the surrounding settlements within a 4km radius of the Site – Pertenhall, Brook End, Keysoe, Little Staughton, Swineshead and Riseley in order to assess the visibility of the Site from these settlements (see Section 8).
- 2.5.5 Due to the high levels of rain over the preceding weeks, the ground on Site was extremely wet and soft underfoot. This meant that nothing was visible whilst scanning the ground for possible finds. However during the evaluation works on the original proposed Site location to the north, a fieldwalking exercise was undertaken across the field adjacent to the farm track (the most north-western field of Site). This produced low levels of Roman pottery and building material, along with two Neolithic flint flakes.

## 2.6 Geophysical Survey

- 2.6.1 A geophysical survey has been undertaken on the Site (Bartlett 2014). The eastern portion of Site has revealed little of archaeological interest, however it cannot be ruled out that archaeological features or deposits could still be surviving beneath the modern overburden.
- 2.6.2 The north-western field produced the most positive results (Fig. 10). The geophysical survey shows distinct rectilinear enclosures with internal features orientated north-west to south-east. The initial results here give potential for this to be a Roman building. These findings tie in with the Roman pottery and ceramic building material found in the field during fieldwalking.
- 2.6.3 Prior to the geophysical survey, the whole of this field was included in the proposed development area. However as a result of the findings, it was decided that the area around this building be subject to mitigation through preservation *in situ* and thus has been removed from the proposed Site.

## 2.7 Previous Archaeological Investigations

- 2.7.1 No previous archaeology work has been undertaken on the Site itself, however a trial trench evaluation was carried out in the field to the immediate north for the original proposed location of the solar farm (Fig. 11).
- 2.7.2 A total of 104 trenches were excavated, within which archaeological features were found predominantly dating from the Late Iron Age to Early Roman periods. High levels of Saxo-Norman and Medieval activity were also encountered.

- 2.7.3 Two main focus areas were evident on the site. An area of Late Iron Age activity was seen in the south-east corner. Here a large boundary ditch (which corresponded with cropmarks) enclosed a number of smaller ditches, pits and drip gullies. The most extensive area of activity was located just below the crest of the hill, mid way across the site. Several substantial boundary ditches containing Late Iron Age and Early Roman pottery were identified as enclosing further settlement activity.
- 2.7.4 The south-western trenches revealed a number of small, parallel ditches running north-west to south-east. These are most likely to be the remains of Roman cultivation strips. These were situated on the south-east facing slope and followed the natural topography down hill. This location along with the soil conditions (in that they are sandier and chalkier just on this slope) mean these cultivation rows are perfect for viticulture.
- 2.7.5 Features dating from the Saxon and medieval period dominated the trenches along the crest of the hill. A cobbled surface with a ditch bounded up to it was seen here. High levels of Late Saxon and medieval pottery were collected from this location. A further extensive area of cobbling was also uncovered to the west of this. A very large amount of unabraded medieval pottery was retrieved from this cobbled surface, implying the potential for some sort of courtyard activity.
- 2.7.6 Overall, a high level of archaeological remains were identified during the archaeological works, showing that this area has been settled on almost continuously since the Late Iron Age period.

### 3 DEPOSIT MAPPING

#### 3.1 Introduction

- 3.1.1 In this section, based on the mapping of all surrounding monuments and events, an attempt has been made to predict the existence of further remains, specifically within the Site.
- 3.1.2 It should be borne in mind that no archaeological investigations or development has been carried out within the Site. The opportunity therefore for archaeological remains to have come to light and be recorded within the Site is slight. This may be the reason for the scarcity of archaeological features, rather than an actual absence of archaeology.

#### 3.2 Mesolithic and Neolithic

- 3.2.1 Mesolithic and Neolithic remains generally appear at low levels within the local landscape. Struck flints including cores, blades, scrapers and microliths have been found during fieldwalking in Chadwell Green, approximately 1km north of the Site. This shows that there is Mesolithic and Neolithic activity in this area. However these are located at such a distance that the potential for there being remains of this date is low.

#### 3.3 Bronze Age

- 3.3.1 Early Bronze Age activity is attested by flint implements found during the fieldwalking at Chadwell Green. Whilst most of the flints are dated to the Mesolithic and Neolithic, two are dated to the Early Bronze Age.
- 3.3.2 Cropmarks of ploughed-out barrows have not been formally identified within the search area. However they have been previously recorded on aerial photographs in some of the tributary valleys in the wider vicinity, indicating that the wider landscape was settled in this era. Possible cropmarks of such monuments can be seen on aerial photographs to the north-west of the Site. It cannot be ruled out that similar remains or remains associated with settlement from this period may survive undetected on the Site and therefore the likelihood of Bronze Age remains is considered low to moderate.

#### 3.4 Iron Age and Roman

- 3.4.1 Evidence of field ditches and enclosures of Late Iron Age and Roman date have been recorded nearby to the Site on areas of similar topography and geology. An Iron Age gold coin has also been found within Pertenhall parish and four Roman coins have been found at Chadwell Green.
- 3.4.2 No features of an Iron Age and Roman date have been previously recorded from the Site. However the archaeological investigations undertaken in the adjacent field in 2013 revealed evidence for Late Iron Age and Early Roman settlement and associated agricultural activity. The pottery recovered during the evaluation dates from the end of the Iron Age through to the 2nd century AD.
- 3.4.3 Fieldwalking across part of the Site collected Roman pottery and ceramic building material. Overall the potential for there being Iron Age and Roman remains on the Site is considered high.

### **3.5 Anglo-Saxon**

- 3.5.1 Known Saxon settlements are focused around lower valley floors, such as around the Pertenhall Brook and the springs, where Pertenhall and its scattered 'Ends' grew up. Place-name evidence indicates Saxon dates for the origins of the settlements at Pertenhall and Keysoe and there is certainly evidence that the well at Chadwell Green was in use during this period.
- 3.5.2 The fact that the Site lies near the parish boundary between Pertenhall and Keysoe may be significant in archaeological terms as parish boundaries are often inherited from land holdings that date back to the middle Saxon period or earlier. The track that appears on maps from the late 18th century onwards running westwards from Green End towards Swineshead forms the parish boundary and may feasibly have been in use as a routeway from a much earlier date.
- 3.5.3 The trial trench evaluation to the immediate north of the Site produced 250 sherds of Late Saxon pottery collected from ditches and a cobbled surface. This activity was concentrated across four trenches (Trenches 54 and 59 to 61) just 80m north-west of the Site. The potential for Saxon remains on the site is therefore considered as moderate.

### **3.6 Medieval**

- 3.6.1 The Site is in a location where it is surrounded by medieval activity, such as the rabbit warren, deer park and moat to the immediate west. Middle Lodge Farmhouse (approximately 500m west of Site) is 16th century in date but may be on the site of an earlier building.
- 3.6.2 The evaluation north of the Site revealed a medieval cobbled courtyard, not too far from the Middle Lodge buildings. It is quite likely that any medieval buildings which stood on the site would have had a cobbled courtyard, especially if they were farm buildings.
- 3.6.3 The likelihood of there being a medieval courtyard here are reinforced by the evidence of a trackway being uncovered to the immediate north. This track can be seen on the 1879 1st Edition Ordnance Survey Map running across site from the south-west corner over to the north-east where it joins another east-west trackway.
- 3.6.4 This east-west roadway is known to have been in place since the medieval period, joining the settlement at Green End to the settlement at Swineshead, where it then continues all the way to Raunds (in Northamptonshire). Thus, there would most certainly have been a trackway running from the farm (situated where the remains of the Middle Lodge buildings are) to the main road during the medieval period and the trackway seen here is the remnant of it.
- 3.6.5 Therefore, with all this medieval activity within 500m, the probability of encountering medieval remains within the Site are considered moderate to high.

### **3.7 Post-medieval**

- 3.7.1 Backfilled field boundary ditches dating to the late 18th or early 19th century can be seen on aerial photographs and are thus very likely to be encountered on the Site, as indeed they have been during the archaeological trial trenching work in the adjacent field.

### 3.8 Rating

3.8.1 Based on the description of known finds and sites within the search area, as defined in the previous sections, a rating of low, moderate or high can be predicted for the survival of further remains within the Site.

<b><i>Period</i></b>	<b><i>Rating</i></b>
Mesolithic/Neolithic	Low
Bronze Age	Low/moderate
Iron Age and Roman	High
Saxon	Moderate
Medieval	Moderate/high
Post-medieval	High

*Table 1: Predicted rating for archaeological remains within the Site*

## 4 DEGREE OF SURVIVAL

4.1.1 This section broadly assesses the degree of survival of archaeological remains within the Site or in other words, what actions (either natural or man-made) may have affected any potential remains.

4.1.2 It is not known for exactly how long the Site has been under arable cultivation, but it likely to have been so since the post-medieval period (if not potentially even earlier). Ploughing will have truncated the tops of archaeological features, but will not have completely destroyed them. This type of survival is evidenced by cropmarks of filled in post-medieval field boundary ditches on the aerial photographs of the Site. Shallow features such as small pits and postholes may well have been completely destroyed, depending on the depth of ploughing.

4.1.3 Ploughing will also have disturbed artefacts within the tops of features and brought them to the surface. As a result, it is likely that below ground features, if present, would be detected by fieldwalking the Site after harrowing.

4.1.4 Overall, any archaeological features within the Site are considered to have the potential to be relatively well preserved. The only real factor affecting the survival of below-ground remains will be the effect of ploughing.

## 5 IMPACT OF DEVELOPMENT

### 5.1 Proposed Development

- 5.1.1 The proposal at Manor Farm is for a commercial solar farm generating a capability of between 15 and 20 megawatts, that will feed into the National Grid. The Site would be a maximum of 30.36 hectares (75 acres) and will be developed and operated by Prosolia UK Ltd.
- 5.1.2 If the maximum megawatts are installed, the Site will contain 69,226 solar panels (modules) arranged in a grid pattern. The panels measure 1.6m x 0.99m and would be arranged in arrays and set out in long rows running east-west across the Site. The panels will be constructed of dark blue/black glass coated with a non-reflective coating to allow the panels to absorb and not reflect irradiation, and to capture the maximum amount of light energy.
- 5.1.3 Where there is no evidence of significant archaeology, the arrays will be mounted on a simple metal piled framework. No concrete or foundations are required for these supports. An alternate mounting structure will be used where there is evidence of significant archaeology. This will be a ballasted system, rather than piled, and will only require excavation of the top 100mm of soil. The modules on both types of structure will be mounted at 30 degrees to the horizontal. The arrays will have a maximum height of 2.2m.
- 5.1.4 A number of associated buildings will be constructed on the Site in order to serve it. These will consist of two substations (measuring 4.8m long, 3.8m wide and 2.7m high), twelve inverter housings (measuring 8m long, 2.2m wide and 2.3m high) and one kiosk (measuring 3.6m long, 2.7m wide and 2.5m high).
- 5.1.5 Small combiner boxes will be mounted to the frames below the panels. The arrays will be connected to the inverters and then via underground electrical cables to the substations. From the substation the electricity will be stepped up again to 33kV for transmission directly on to the national grid.
- 5.1.6 The Site will be enclosed by security fencing measuring 2m in height. Along the Site access there will also be security cameras mounted on poles at a height of 3m. A system of hedgerow planting will also be introduced at various positions around the Site.

### 5.2 Potential Impact to Below Ground Remains

- 5.2.1 The proposed development has the potential to have a direct and permanent impact upon any archaeological remains. Based on similar schemes, these impacts can be from the construction of the solar arrays (driving of piles or anchors) and associated control plant. The building of generator buildings and transformers will also have an adverse effect as well as the installation of underground cables in linear trenching.
- 5.2.2 The use of any temporary works compound during the construction phase and permanent or temporary vehicle access ways into and within the site can involve considerable ground disturbance to a significant depth.
- 5.2.3 The archaeological trial trenching evaluation on the field to the north of the Site has proved that archaeological remains survive here and are sealed by approximately 300mm of topsoil, apart from at the bottom of the slope in the eastern part of the field where features are sealed by topsoil and subsoil deposits up to 700mm thick. If similar

cover is encountered on the present Site, most groundworks therefore will impact on the buried remains.

## 6 CONCLUSIONS

### 6.1 Discussion

- 6.1.1 The 1km radius search area around the Site contains 33 HER records including finds, monuments and historic buildings. Study of historic maps has clarified the historic land use of the Site and its wider area including locating 19th century demolished buildings, filled in post-medieval field boundary ditches and also highlighting the configuration of early roads and trackways. Analysis of aerial photographs has located previously unrecorded below ground features in the form of cropmarks, both within the Site and in the search area.
- 6.1.2 There are seven Listed Buildings within the search area, all Grade II listed, but no other designated heritage assets. None of the Listed Buildings are within the Site itself. The closest Listed Buildings are located to the north of Site in Green End, Pertenhall such as the 17th century Green End Farmhouse and The Cottage (HER 4988 and 4989), which are approximately 250m north of the northern limits of Site.
- 6.1.3 Part of the Site is thought to have been within a deer park in the medieval period and there are several medieval monuments or places nearby. These include a moated site, a rabbit warren and the medieval settlements of Pertenhall, Swineshead and Keysoe. Middle Lodge Farmhouse is a 16th century building and may be on the site of earlier deer park buildings or structures. Anglo-Saxon settlement has been demonstrated to the north-east of the Site at Chadwell End, Pertenhall through finds made there by metal detecting. Flint implements, also found at Chadwell End, indicate use of an area around Pertenhall Brook in the Mesolithic, Neolithic and Bronze Age.
- 6.1.4 The assessment has made use of the archaeological trial trenching evaluation results undertaken on the original proposed location of the solar farm. This has confirmed some of the findings shown from the aerial photography assessment. It revealed Late Iron Age enclosure ditches and roundhouse gullies surrounded by a large enclosure ditch in the south-east corner of the field (closest to the present Site location) as well as pits and ovens. Two cobbled surfaces and a trackway, all of probable medieval date have also been exposed to the north-east of Middle Lodge buildings and a ring ditch for a possible dovecote of post-medieval date has been recorded in this vicinity.
- 6.1.5 The results of the geophysical survey on the Site have also been employed to determine the potential of preserved archaeological remains. This has revealed a large set of distinct rectilinear enclosures with internal features, giving potential for this to be a building.
- 6.1.6 This assessment demonstrates that there is the potential for archaeological remains within the proposed scheme area, in particular those of Late Iron Age, Early Roman, medieval and post-medieval date. Archaeological remains of the Neolithic and Bronze Age periods have also been recovered from the search area, but the potential for archaeological remains from this period is lower than for later periods. The majority of the Site has been subject to little modern disturbance, and as such archaeological deposits are likely to be in a good state of preservation.
- 6.1.7 Construction of the solar panels and associated buildings and cable trenches would have a permanent impact on any *in situ* archaeological deposits. Using the criteria in



Table 2 (page 26) the rating of the importance of the potential archaeological heritage resource within Site and its 1km search area is considered **Medium**.

## 6.2 Potential Impact on Heritage Assets

- 6.2.1 The National Planning Policy Framework (2012, 50) defines archaeological interest. It states that 'There will be archaeological interest in a heritage asset if it holds, or potentially may hold, evidence of past human activity worthy of expert investigation at some point. Heritage assets with archaeological interest are the primary source of evidence about the substance and evolution of places, and of the people and cultures that made them'.
- 6.2.2 The proposed solar farm development would take the Site out of arable cultivation for 25 to 30 years which would temporarily halt the damage being done by ploughing. An alternate mounting structure can be used for arrays where there is evidence of significant archaeology. This would be a ballasted system, rather than piled, and would only require excavation of the top 100mm of soil.
- 6.2.3 Taking this possibility into account, there would still be an adverse and permanent effect on below-ground archaeological remains, namely from the foundations to the generator buildings and transformers, as well as the undergrounding of linear cabling. The use of any temporary works compounds during the construction phase and permanent or temporary vehicle access ways into and within the Site can also involve considerable ground disturbance to a significant depth.
- 6.2.4 Based on current knowledge the magnitude of impact as per Table 3 (page 26) is considered to be of **Moderate** severity on below ground remains.
- 6.2.5 The significance of environmental effects on below ground remains as set out in Table 4 (page 27) is considered to be **Moderate/Large** adverse.

## 7 RECOMMENDATIONS FOR MANAGING ARCHAEOLOGICAL RISK

- 7.1.1 The nature of the nearby known archaeological remains and the identification of potential archaeological remains via geophysical survey means a programme of archaeological investigation (almost certainly a trial trench evaluation) would be required across the whole Site. The geophysical survey has highlighted the north-western field of the Site to contain the most profitable results. However, the lack of features identified across the remainder of Site cannot confirm their complete absence.
- 7.1.2 Dependant upon the results of these investigations further mitigation may need to be employed. This would comprise further intrusive archaeological works in the form of a targeted open-area excavation (resulting in preservation by record), or by the retention of archaeological deposits *in situ* where feasible (and where the importance of such deposits warrants this strategy). This could be fulfilled either by not building on certain areas of the Site or by using an alternate mounting structure for the solar panels where a ballasted rather than piling system could be employed.

## 8 IMPACT ASSESSMENT OF DESIGNATED ASSETS AND THE HISTORIC LANDSCAPE

### 8.1 Introduction

- 8.1.1 This section assesses the potential impacts upon the Cultural Heritage resource within the proposed scheme area and a 4km surrounding area. This has been achieved by combining existing information already known about the search area with new information gathered during the course of this study. This provides an assessment of the potential construction and operational impacts upon archaeological deposits and historic monuments. Previous archaeological work within the search area has identified archaeological remains mainly dating to the late Iron Age and Roman periods, although evidence of archaeology from the Neolithic through to the post-medieval has also been identified.
- 8.1.2 Several pieces of legislation recognise the importance of the historic environment and provide protection for heritage assets of particular importance. For archaeology, the Ancient Monuments and Archaeological Areas Act of 1979, which covers Scheduled Monuments, is key. For the built heritage the Planning (Listed Buildings and Conservation Areas) Act of 1990 provides protection mechanisms for buildings or areas of architectural or historical significance.
- 8.1.3 At a national level, the National Planning Policy Framework (NPPF) 2012 replaces the 2010 Planning Policy Statement (PPS) 5. It covers all aspects of the historic environment within a common set of policies, which recognise that heritage assets are a non-renewable resource and that heritage conservation has wider benefits, while accepting that the level of conservation should be proportionate with the significance of the assets concerned.
- 8.1.4 The following paragraph is taken from the Bedford Borough Landscape Character Assessment (Land Use Consultants 2007, 42). The Site lies within 'The Riseley Clay Farmland Character Area, which is a rural area with gently rolling landforms ranging from 30m to 90m OD...The area is dominated by arable farmland but scattered woodlands (some ancient) give variety. The large and medium fields are bounded by hedges and ditches, the former in mixed condition. Smaller fields and occasional horse pastures are clustered around settlements...This is a peaceful, rural area with a dispersed but regular pattern of scattered farmsteads and small villages, with frequent medieval earthworks and tall stone churches. The sections of open elevated ground are the areas of greatest visual sensitivity, offering wide views to the surrounding settlements, in particular to the church towers'.
- 8.1.5 Thus, development undertaken within rural areas necessitates a number of considerations to be taken into account. These include the potential impact on the landscape, highway implications, impact on rights of way, impact on any neighbouring properties and impact on archaeological and heritage assets.

### 8.2 Methodology

#### *Assessment Methodologies*

- 8.2.1 The importance of the cultural heritage resource, identified from the existing baseline knowledge of the search area, has been assessed using the definitions established in Part 5 (5.26-5.31) of the Design Manual for Roads and Bridges, Volume 11, Section 3, HA 208/07, 'Screening, Scoping, Simple and Detailed Assessments'.

8.2.2 DMRB HA 208/07 provides separate tables for assessing the potential and importance of Archaeological Remains (Table 5.1), Historic Buildings (Table 6.1) and Historic Landscapes (Table 7.1). For ease of reference, these tables have been combined into Table 2 below.

<b>Importance of resources</b>	<b>Equivalent to</b>
Very High	World Heritage Sites (including nominated sites): Sites, buildings or landscapes of acknowledged international importance
High	Sites of National Importance, Scheduled Monuments, Grade I and Grade I* Listed Buildings and Registered Parks and Gardens: Designated historic landscapes or those of outstanding interest or well preserved
Medium	English Heritage Grade II Registered Parks and Gardens, Conservation Areas, Historic or Archaeological sites of Regional or County Importance, Grade II Listed Buildings and locally designated buildings of historical importance: Designated special historic landscapes or undesignated landscapes of regional value or of average preservation, areas of Ancient Woodland (Ancient semi-natural woodland as mapped and designated by Defra) with demonstrated ecological value
Low	Locally Important Historic or Archaeological Sites: Sites with a local value for education or cultural appreciation, Sites that are so badly damaged that too little remains to justify inclusion into a higher grade, robust undesignated historic landscapes.
Negligible	Sites or features with no significant value or interest: Sites that are so badly damaged that too little remains to justify inclusion into a higher grade

Table 2: Criteria for evaluating the importance of the cultural heritage resource

8.2.3 The potential impacts of the scheme on the cultural heritage set has been considered using the definitions laid out in HA 208/07, Section 3 (5.32-5.34) as set out in Table 3 below.

<b>Magnitude of Impact</b>	<b>Description of Change</b>
Major	Complete destruction or change to the site or feature resulting in fundamental change in our ability to understand and appreciate the resource and its historical context and setting
Moderate	Change to the site or feature resulting in an appreciable change in our ability to understand and appreciate the resource and its historical context and setting
Minor	Change to the site or feature resulting in a small change in our ability to understand and appreciate the resource and its historical context and setting
Negligible	Negligible or no material changes to the site or feature. No real change in our ability to understand and appreciate the resource and its historical context and setting
No Change	Site or feature remains unchanged by the development. Context of monument remains entirely unchanged

Table 3: Criteria for evaluating the magnitude of impact on the cultural heritage resource

8.2.4 The effects of the scheme on the Site have been addressed using the definitions laid out in HA 208/07, Section 3. The significance of the effect may be defined as adverse, beneficial or neutral and is laid out in Table 4 below. The effect is dependent upon:

- The importance of the cultural heritage resource
- The magnitude of the impacts

<b>Magnitude of Impact</b>	<b>Importance of Resource</b>				
	<b>Very High</b>	<b>High</b>	<b>Medium</b>	<b>Low</b>	<b>Negligible</b>
<b>Major</b>	Very large	Large or very large	Moderate / large	Slight / moderate	Slight
<b>Moderate</b>	Large or very large	Moderate / large	Moderate	Slight	Neutral / slight
<b>Minor</b>	Moderate / large	Moderate / slight	Slight	Neutral / slight	Neutral / slight
<b>Negligible</b>	Slight	Slight	Neutral / slight	Neutral / slight	Neutral
<b>No Change</b>	Neutral	Neutral	Neutral	Neutral	Neutral

Table 4: Significance of environmental effects on the cultural heritage resource

- 8.2.5 Effects to be assessed are direct and indirect, temporary and permanent.
- 8.2.6 A direct impact is an impact that will occur to the physical fabric or land of an asset and its curtilage, and will include any impact upon the setting of that asset.
- 8.2.7 An indirect impact is an impact that might arise as a consequence of the operation or construction of the scheme. For example it may affect viability of land, leading to changes in the management or land use of archaeological or historic landscape features.
- 8.2.8 A temporary effect (primarily upon the setting of archaeological monuments or historic landscape features) may occur during the construction and operation of the scheme. These developments may be removed following the completion of the construction process or the decommissioning of the scheme and their effect upon the historic environment is therefore reversible.
- 8.2.9 A permanent effect will occur for example as a result of the construction and operation of the scheme including landscaping, land take, excavation of a reservoir and associated drains, culverts and water control structures. A permanent effect is not reversible and will therefore include a below ground impact (upon archaeological deposits) of some temporary elements of the scheme, including soil storage, contractor site compounds and access routes and erection of other facilities.
- 8.2.10 Relevant aspects of the Historic Landscape and Historic Buildings will be considered and the degree of potential impact from the development. Figure 12 illustrates the locations from which photographic views to and from the Site were taken.

### 8.3 Landscape Viewpoint

- 8.3.1 The Site is located at the base of a dominant ridge in the landscape. The result of this being that the views to and from the proposed Site come predominantly from the south and east of the Site. Views to the north and west are taken over by the rise in topography and existing tree cover, thus no distant views toward the Site can be seen from these directions. Plates 7 and 8 show a panoramic view across the Site, taking in the surrounding landscape. These photographs were taken from just beyond the westernmost corner of Site on the public bridleway.

- 8.3.2 Within the view, the spire of St Peter's Church, Pertenhall can be seen nestled amongst the trees at the northern extent of the view. From no direction can the Site and the church spire be seen together. Continuing across the viewpoint, the modern metal buildings of Manor Farm and the roofs of several of the houses at Green End can be seen. In the wider landscape behind Pertenhall, a line of electricity pylons can be identified running through the landscape. When taking in the view eastward, the flatter ground allows long distance views. The B660 Kimbolton Road is situated in the middle ground of the aspect, behind the tree line. Beyond this in the wider landscape, the wind turbines from Cotton Wind Farm, Graveley (approximately 16km away) can be seen on the horizon. The Great Staughton Road which travels east away from Pertenhall is likely to have intermittent views of the westernmost edge of Site. Views from the network of public footpaths are screened by topography and vegetation.
- 8.3.3 As the topography rises to the south-east of the Site, All Saints' Church in Little Staughton can be seen dominating this highpoint in the landscape. There is no viewpoint in the surrounding landscape from which Little Staughton Church and the Site can be seen together. The roofs of houses in Little Staughton village can also be seen at the base of this ridge along with a large grey metal farming warehouse. The hill crest upon which All Saints' Church is situated continues running southward to the village of Keysoe. Between these two villages, views of farmland divided by mature tree belts and a single small wind turbine are taken in from this viewpoint.
- 8.3.4 The landscape view directly south of the Site is taken over by the dispersed village of Keysoe which is situated on the north-facing slope of the surrounding ridge. On the outskirts of the village of Keysoe is the church of St Mary the Virgin. This church is an extremely prominent landscape feature. As the landscape viewpoint continues past the church, the topography drops into a valley and disappears behind trees.
- 8.3.5 Overall, this landscape viewpoint from the Site into the surrounding landscape shows that the Site will be situated in a predominantly green and open landscape. Where there are modern structures, they predominantly consist of residential houses (both listed and unlisted), along with farming structures. The presence of wind turbines on the horizon however does show a modern industrial influence on the landscape.
- 8.3.6 For further discussion of the churches and the importance of their setting within the landscape, see section Section 8.4 below.

## 8.4 Assessment of Effect

### *Construction and Decommissioning*

#### **Historic Landscape**

- 8.4.1 The Site is located within a preserved medieval and post-medieval agricultural landscape. The proposed 30.36 hectare solar farm would lead to the loss of a mix of Grade 2 and Grade 3 agricultural land on which crops can be grown. However, at Grade 3, it is not prime land. It has been acknowledged by Prosolia UK Ltd. that subject to the design of the solar panels, the land can still be used for animal grazing. Further to this, once the solar farm is decommissioned, the land can be returned to full agricultural use without harming the quality of the soil.
- 8.4.2 The construction of the solar farm (estimated to take between 16 and 20 weeks) will create a temporary moderate visual impact on the Historic Landscape through the introduction into the landscape of construction traffic (including delivery lorries) and other construction activities.

- 8.4.3 Further to this, a period of roadworks in order to lay approximately 6km of cabling from the solar farm Site to the substation on Easton Road, North Stonely will introduce into the landscape sections of temporarily closed off or narrowed roads using fencing, with a possible system of temporary traffic lights, as well as noise from the cutting of tarmac and associated construction traffic. Thus it is advised that a traffic management scheme be implemented for the duration of the construction period.
- 8.4.4 The Site is surrounded by a network of public rights of way (footpaths and bridleways). The public footpaths can only be used by people on foot. Public bridleways however are used by walkers, people on horseback and cyclists. The Site is bounded to the north by a public bridleway (BW37). Therefore, there is a concern for the safety of horses and riders during the construction (and decommissioning) phase, arising from noise and construction traffic. It is advised that traffic management also be employed here, through such means as the landowner considering additional permissive routes for the duration of the works.
- 8.4.5 Overall this will cause a temporary **Moderate** visual impact on the Historic Landscape.

### **Historic Buildings**

- 8.4.6 The construction of the solar farm may create a (temporary) visual impact on the Historic Buildings of the area. The effects will be limited to the 16 to 20 week construction programme. Key effects will include visual impacts from the movement of HGVs and site traffic. Further impacts will arise from an increase in noise. There is an area wide HGV ban on the minor roads to the north of the Site, thus all heavy commercial vehicles obtaining access to the Site over the construction period will do so from the A421/A428 via Bedford to the B660 Kimbolton Road. Affected buildings would be those situated along the main road through the village of Keysoe (such as HER 5608-11, 12022, 5613, 5618-20, 5607, 7804, 12025 and 12026).
- 8.4.7 Effects will be temporary and of likely **Minor** severity (small change in the historical context and setting). The overall environmental effect (using the matrix laid out in Table 4) would be **Slight** adverse.
- 8.4.8 The overall effect of the scheme during the construction and decommissioning programme is therefore likely to be **Moderate/Slight**.

### **Operational**

#### **Historic Landscape**

- 8.4.9 The Site is located on a broadly flat area of land on the south-eastern side of a high ridge (Plate 9). Due to its low-lying location, the Site is provided with some visual barriers. Looking from the west, the Site is shielded by a copse of trees and the trees around the moat (HER 4474). The land to the west and north-west rises up sharply to a height of around 70m OD, the result of which means that the Site cannot be seen from the village of Swineshead. Site is not visible from Riseley either as it lies in a valley bottom, thus views are obscured by the rising ridge of land.
- 8.4.10 Travelling toward the Site from the north along the B660, due to topography and mature trees/hedgerows, the Site is completely obscured from view until you are right next to it. The Site can most easily be seen from the immediate east when travelling on the B660 Kimbolton Road. There are also some partial views from Green End in Pertenhall, Little Staughton and the northern part of Keysoe.

- 8.4.11 In regard to the historic landscape, it is important to consider whether the development would impact or alter the way in which people experience any heritage assets within this landscape, and whether it has the ability to reduce the positive contribution of their existing setting. The development by its very nature would introduce a non-agricultural element into a rural landscape. However, the Landscape and Visual Impact Assessment (LVIA) identifies the Site as being located within a working landscape with views of roads and a limited sense of tranquillity (Ludlow & Burton 2013), meaning the landscape is reasonably tolerant to change.
- 8.4.12 The LVIA also states that the topography of the area creates a relatively confined visual envelope. It has no statutory or informal designation and is not considered to be of high landscape value. The development has also been specifically designed so as to minimise the impact upon the landscape. The panels, substations and inverters are all limited in height so that there are no strong individual features intruding on the landscape.
- 8.4.13 The Site already has a series of partial hedgerows along its eastern (Plate 10) and northern border which act as a visual barrier and a system of planting has been proposed to further shelter the Site from public view. The proposed new planting will consist of young and semi-mature (at least 1.5m tall) hedgelines consisting of a mix of thorn, sloe, spindle, hazel, maple and hornbeam.
- 8.4.14 The walkover survey highlighted that the Site is most prominent from the B660 Kimbolton Road (Plate 11) immediately adjacent to the Site. It has been agreed that semi-mature hedges will be planted along this eastern boundary. However, it will take approximately five years for this landscaping to become mature (and thus fully effective), therefore these mitigation measures would be limited in terms of the effectiveness in the short term. But once mature, the hedge planting and hedgerow trees would form a screen for both long and short distance views to the Site.
- 8.4.15 The walkover survey also noted that the western portion of Site could be seen from the Swineshead Road, located approximately 1.2km to the north (Plate 12). Thus it is advised that semi-mature hedge be planted along this boundary.
- 8.4.16 As stated in paragraph 8.3.4, the Site is surrounded by a network of footpaths and bridleways. During the walkover survey, footpaths 26, 35 and 36 were visited along with bridleways 26, 37 and 40 to assess the potential impact of the development on the historic landscape and on walkers ability to understand/experience it. From FP26 and 36 (located to the east of Site travelling from Great Staughton Road south-west to Pertenhall Road) the Site cannot be seen at all. The topography falls away as it travels eastward, meaning that this footpath is between 3m and 8m lower than the Site. It is also sheltered from the Site by mature trees and scrub situated on the banks of the Pertenhall Brook tributary, which the footpath follows.
- 8.4.17 The footpath which will be most adversely affected is FP35 which runs through the Site itself. The development will not cause the need for any rerouteing of the footpath. Mitigation will have hedgerows planted along both sides of the footpath so as to obscure the view of the solar panels. As stated in paragraph 8.3.14 though, it will take time for this planting system to take hold.
- 8.4.18 Also highlighted in paragraph 8.3.4 is the use of bridleways by horses. BW26 and 37 form the northern limits of the Site. Due to the topography, BW37 travels down hill as it moves eastward toward Site. The result of which is that the eastern portion of the Site is somewhat visible and as a result will impact on the riders experience of the historic landscape. Hedges will be planted along this boundary, but it is worthy of note that as

a rider, your aspect is higher than that of walkers, so even with a hedgerow shielding the Site, it may still be visible to those on horseback. BW40 is located around 180m away from the south-western boundary of the Site. A slightly higher ridge in the land obscures the Site from this bridleway, however there is a possibility for the top of the panels to be seen once in place. Again, a system of hedge planting should remove any impact the solar panels may have.

- 8.4.19 Highway implications during the operation of the solar farm are considered to be negligible. The panels will be constructed of dark blue/black glass coated with a non-reflective coating which allows the panels to absorb rather than reflect the light. Therefore the potential for passing drivers to be distracted by glare is extremely unlikely.
- 8.4.20 During operation, the development will generate very little traffic and no staff will be based on the Site. After commissioning, approximately one visit would be made per month for maintenance purposes (with maintenance equipment being brought to the Site and taken away on completion) and the substation would be visited by a single vehicle every three to four months.
- 8.4.21 Overall, the historic landscape is a robust undesignated landscape and as such, using the criteria laid out in Table 2 (page 26), the importance of the historic landscape is considered to be **Medium/Low**.
- 8.4.22 Using the criteria in Table 3 (page 26) the magnitude of impact to the historic landscape is **Minor**. The overall significance of environmental effects to the historic landscape (Table 4, page 27) is considered to be **Slight/Neutral**.

#### **Conservation Areas and Scheduled Monuments**

- 8.4.23 The conservation areas for Swineshead and Riseley villages would not be directly affected by the proposed Site and thus their setting would not be altered.
- 8.4.24 There are three Scheduled Monuments within the 4km radius of the Site, namely Castle Hill motte in Kimbolton, College Farm moated site in Keysoe (DBD 454) and Hall Close moated site in Riseley (DBD 1305). Due to topography and existing tree cover, there is no inter-visibility between these Scheduled Monuments and the Site, thus their setting would not be altered in any way by the development.
- 8.4.25 Using the criteria laid out in Table 2, the importance of the Conservation Areas and Scheduled Monuments is **High**, but the magnitude of impact from the development (Table 3) is **No Change**. Thus making the significance of the effect, as laid out in Table 4, **Neutral**.

#### **Historic Buildings**

- 8.4.26 The NPPF (2012, 56) defines setting as, 'The surroundings in which a heritage asset is experienced. Its extent is not fixed and may change as the asset and its surroundings evolve. Elements of a setting may make a positive or negative contribution to the significance of an asset, and may affect the ability to appreciate that significance or may be neutral'. Thus, the potential impact which this development may have on the setting in which historic buildings sit must be assessed, and whether their visual dominance in the landscape contributes positively to their significance in illustrating the historic status of the buildings.



- 8.4.27 In assessing the significance of the asset and how it will be affected by the proposed development we need to consider the heritage values of the asset itself. These can be broken down into four categories:
- Evidential – does (or might) the asset contain evidence which could contribute to research and understanding about the past
  - Historical – does the asset and what we know about it tell or illustrate a historical narrative, or an aspect of history or life in the past. Or is it associated with a well-known person from the past
  - Aesthetic – does the asset define the historic character of a place or trigger emotional responses, through its beauty, its impressive character or other aesthetic characteristics
  - Communal – the asset may be associated with a past event or communal activity which may continue to the present day. There needs to be a real communal association with the place or assets history, not just a fortuitous use
- 8.4.28 There are a total of 147 Listed Buildings within a 4km radius of the Site. The majority of these are located within the settlements of Pertenhall, Brook End, Keysoe, Little Staughton, Riseley and Swineshead. As stated previously (in paragraph 8.3.9) views from the the villages of Riseley and Swineshead toward the Site were obscured by the terrain and woodland.
- 8.4.29 Pertenhall is the closest settlement to the Site containing 23 Listed Buildings, mainly clustered around Green End, Chadwell End and Wood End. The Grade I listed medieval Church of St Peter (HER 966), constructed from coursed limestone rubble with ashlar dressings, has its origins in the 12th century but is mainly of a 15th century date, is located 1.2km north-east of Site and its spire is visible from the south-western side of Site (Plate 13). The church, which has an historical and communal significance within the historic landscape, is set within a churchyard which is bordered by trees on its north-west and south-east sides.
- 8.4.30 To the south-west of the churchyard is the 16th century with 19th century modifications, Grade II Listed Manor House (HER 480). This provides a visual shield in the general direction of Site. Due to the low lying location of the Site, there would be no impact on views close to and out of the churchyard and grounds of St Peter's Church or The Manor. There are no locations where the Site and the church spire can be seen in conjunction with one another. Therefore in the wider view of St Peter's Church, there would be a negligible impact in our ability to understand this asset within the historic setting.
- 8.4.31 The historic buildings at Green End (approximately 190m away from the north-eastern boundary of Site), which have an aesthetic significance to the area, have the potential to be minorly impacted by the development. Plate 14 shows the view from within the north-eastern boundary of the Site looking toward the cross roads. The upper floors of three properties can be seen, and thus, in turn can see the Site. These properties are The Old Forge, College Cottages and the Grade II Listed Quinbrells (HER 4990).
- 8.4.32 Further along Green End is a cluster of Grade II Listed Buildings. Yew Tree Cottage (HER 9592), Ridge Cottage (HER 12192), Green End Farm House (HER 4988) all have the potential of partial views of the Site. The undesignated properties of Clover Cottage (Plate 15), The Green and The Elms also have possible partial views. The varying degrees of enclosure via the matures trees and hedges surrounding these properties

will however afford some visual shield. The Site is not visible from any further historic buildings within Pertenhall village.

- 8.4.33 The undesignated assets within the area, although not listed, have the potential to be impacted by the development and therefore deserve consideration. These buildings still provide value to the aesthetic significance of the historic landscape in the area and contribute positively to their setting.
- 8.4.34 It is worthy of note at this point that the views from these historic buildings will alter throughout the year. All the photographs illustrated within this assessment were taken in late winter, thus tree and hedge cover is minimal. This means that as the year progresses and the foliage blossoms, impacts on views will be reduced.
- 8.4.35 To the south-east of the Site, properties along the Kimbolton Road in Brook End on the outskirts of Keysoe have the potential to be moderately impacted by the development. Pentland House is situated just 70m beyond the south-eastern corner of Site. Although not listed, its upper floor will have clear views of the development. Grange Court and Grange Court Barn (next door) will also have partial views. Neighbouring property The Grange, is a large aesthetically significant undesignated property approximately 190m south of Site. It is set back from the road and thus the first storey has an unrestricted view across the Site (Plate 16). The two Grade II Listed Buildings, The Manor (HER 5608) and the tithe barn to the rear of The Manor (HER 3212) cannot see the Site as they are shielded by mature trees and hedgelines.
- 8.4.36 In Keysoe, which is to the south of the Site, there are 52 Listed Buildings, most of which are spread along the main streets. The topography rises from c.40m OD up to c.66m OD as you travel southward through the village along the B660. The result of this is there is an extremely minor chance of being able to see glimpses of the Site.
- 8.4.37 The Church of St Mary the Virgin (HER 1083) on the south-western outskirts of Keysoe is a Grade I Listed Building. It is constructed from coursed limestone rubble with ashlar dressings and has its origins in the Late 12th to 15th century. This church is situated at a height of around 73m OD and dominates the landscape. It has historical, aesthetic and communal significance in the historic landscape. Because it is located in such a prominent position, it can be seen from all areas of the Site (Plate 17). Due to the church and churchyard being enclosed by tall mature trees, the Site cannot be seen from the church itself, although there is minor potential for it to be seen from a section of Church Road, c.150m away from the church back toward Keysoe village where the trees thin out (Plate 18).
- 8.4.38 In terms of the wider view of the Church of St Mary the Virgin, there is the potential for a moderate impact in our ability to understand this asset within this historical landscape setting. Plate 19 is taken from the Swineshead Road (c.3.4km directly north). In the centre of the photograph the north-western corner of Site and the copse of trees adjacent to it can just be seen, and the Church of St Mary the Virgin is shown in the distance. Planting of mature hedges along this north-eastern Site boundary has the potential to reduce this moderate impact to negligible. The presence of these church spires in the the landscape makes a particular contribution to their significance and thus it is importance to ensure that the development does not have a harmful impact on this.
- 8.4.39 The village of Little Staughton is located 3.4km east-southeast of the Site. All Saints Church (HER 1128) is a Grade I Listed Building constructed out of coursed limestone rubble and brown cobbles with ashlar dressing. The structure predominantly dates to the 15th century but has 13th and 14th century details remaining. The church is visible from the Site (Plate 20). From the church and churchyard there is minor potential to

see the Site. This church does visually dominate the landscape and has an historical, aesthetic and communal significance, but as the Site is not particularly visible from the church itself, the way in which one would experience this asset is not adversely impacted. It is worthy of note that the wind farm at Chelveston airfield (to the south-west) can be seen from this church. There are eight other Listed Buildings in this village, none of which can see the Site.

- 8.4.40 Overall, using the criteria laid out in Table 2 (page 26), the importance of the Listed Buildings for all Grade I and Grade II\* Listed Buildings is **High**. The importance of other Listed Buildings (which are all Grade II) is **Medium**.
- 8.4.41 Using the criteria laid out in Table 3 (page 26), the magnitude of impacts upon the setting of Listed Buildings is **Moderate/Minor** for those with views to the Site.
- 8.4.42 Thus the overall significance of environmental effects upon the historic landscape (Table 4, page 27) is considered to be **Moderate** for Grade I Listed Buildings with a view of Site, such as St Mary the Virgin Church, Keysoe. For all other heritage assets, the environmental effects are believed to be **Slight**.

## 9 CONCLUSIONS

### 9.1 Significance of Effect

9.1.1 When all the potential construction and operational impacts are assessed, the proposed development is considered to have the following magnitude of impact and significance of effect as defined by Tables 2, 3 and 4:

<b>Resource</b>	<b>Importance</b>	<b>Magnitude of Impact</b>	<b>Significance of Effect without Mitigation</b>
Archaeology	Medium	Moderate	Moderate/Large
Historic Landscape	Medium/Low	Minor	Slight/Neutral
Historic Buildings	Medium	Moderate/Minor	Slight

Table 5: Overall significance of effect

9.1.2 Table 5 above shows that the archaeological resource has a Medium importance due to the identified remains present in close proximity to the Site and the good potential for remains within the Site. The magnitude of impact will be Moderate due to the total and permanent removal of the resource. The significance will therefore be Moderate/Large.

9.1.3 The Site is located within an area of partially preserved robust medieval and post-medieval agricultural landscape. The site contains a number of historic hedgerows. The coherence and integrity of the Historic Landscape has already been affected by the area having no statutory or informal designation, meaning it is not considered to be of high landscape value. The landscape around the Site is also considered to be a working landscape with views of roads and a limited sense of tranquillity. This means that the landscape is reasonably tolerant to change.

9.1.4 The operation of a solar farm will introduce a Minor visual impact on the Historic Landscape. This Minor effect upon a landscape of Medium/Low importance will result in an overall effect of Slight/Neutral significance.

9.1.5 The proposed development Site contains no Historic Buildings although the surrounding area contains a number of Listed historic buildings. The Site will have a visual effect of varying significance upon these buildings. It will have a Moderate adverse effect upon the Grade I listed Churches of St Mary the Virgin at Keysoe and All Saints at Little Staughton, a Moderate adverse effect upon the undesignated assets at Brook End, a Moderate/Minor adverse effect upon the Listed Buildings and undesignated assets at Green End Pertenhall, a Minor/Negligible affect upon the Grade I Listed St Peter's Church, Pertenhall and no effect upon the Listed Buildings at Chadwell End or Wood End, Pertenhall.

### 9.2 Discussion

9.2.1 This assessment has demonstrated that there is the potential for the proposed solar farm to have a Slight impact on the Historic Landscape and on Historic Buildings of Pertenhall and the surrounding villages. The provision of new landscaping in the form of hedgerows will help to reduce this impact particularly from closer vantage points such as adjacent rights of way, nearby roads and closely located Historic Buildings.

9.2.2 The ultimate aim of this development is to introduce a non-agricultural element harmoniously into the Historic Landscape so as not to affect the way in which it, or the assets within it are experienced and understood.



## APPENDIX A. HER INFORMATION

Table 6: All heritage assets within a 1km radius of Site

HER ID	Type	Name	Period	Easting	Northing
21308	Findspot	Flint implement, Pertenhall	Mesolithic - 10000 BC to 6500 BC	508100	265600
21320	Findspot	Flint implement, Pertenhall	Mesolithic - 10000 BC to 6500 BC	508100	265500
21311	Findspot	Flint implement, Pertenhall	Mesolithic - 8300 BC to 4500 BC	508100	265600
21325	Findspot	Flint implement, Pertenhall	Mesolithic - 8300 BC to 4500 BC	508100	265500
21326	Findspot	Flint implement, Pertenhall	Mesolithic - 8300 BC to 4500 BC	508100	265500
21327	Findspot	Flint implement, Pertenhall	Mesolithic - 8300 BC to 4500 BC	508100	265500
21465	Findspot	Flint implement, Pertenhall	Mesolithic - 8300 BC to 4500 BC	507900	265500
21466	Findspot	Flint implement, Pertenhall	Mesolithic - 8300 BC to 4500 BC	507900	265500
21467	Findspot	Flint implement, Pertenhall	Mesolithic - 8300 BC to 4500 BC	507900	265500
21468	Findspot	Flint implement, Pertenhall	Mesolithic - 8300 BC to 4500 BC	507900	265400
21469	Findspot	Flint implement, Pertenhall	Mesolithic - 8300 BC to 4500 BC	507900	265400
21474	Findspot	Flint implement, Pertenhall	Mesolithic - 8300 BC to 4500 BC	508000	265500
21475	Findspot	Flint implement, Pertenhall	Mesolithic - 8300 BC to 4500 BC	508000	265500
21476	Findspot	Flint implement, Pertenhall	Mesolithic - 8300 BC to 4500 BC	508000	265500
21307	Findspot	Flint implement, Pertenhall	Mesolithic - 8300 BC to 6500 BC	508100	265600
21316	Findspot	Flint implement, Pertenhall	Mesolithic - 8300 BC to 6500 BC	507900	265500
21321	Findspot	Flint implement, Pertenhall	Mesolithic - 8300 BC to 6500 BC	508100	265500
21322	Findspot	Flint implement, Pertenhall	Mesolithic - 8300 BC to 6500 BC	508100	265500
21309	Findspot	Flint implement, Pertenhall	Mesolithic - 8300 BC to 6500 BC	508100	265600
21463	Findspot	Flint implement, Pertenhall	Mesolithic - 8300 BC to 4500 BC	507900	265400
21464	Findspot	Flint implement, Pertenhall	Mesolithic - 8300 BC to 4500 BC	507900	265400



<b>HER ID</b>	<b>Type</b>	<b>Name</b>	<b>Period</b>	<b>Easting</b>	<b>Northing</b>
21462	Findspot	Flint implement, Pertenhall	Mesolithic - 8300 BC to 4500 BC	507900	265400
21319	Findspot	Flint implement, Pertenhall	Mesolithic - 8300 BC to 6500 BC	508100	265500
21324	Findspot	Flint implement, Pertenhall	Early Mesolithic to Middle Neolithic - 10000 BC to 3500 BC	508100	265500
21315	Findspot	Flint implement, Pertenhall	Early Mesolithic to Middle Neolithic - 8300 BC to 3500 BC	507900	265500
21276	Findspot	Flint implement, Pertenhall	Early Mesolithic to Middle Neolithic - 8300 BC to 3500 BC)	508000	265400
21314	Findspot	Flint implement, Pertenhall	Early Mesolithic to Middle Neolithic - 8300 BC to 3500 BC)	507900	265500
21303	Findspot	Flint implement, Pertenhall	Early Mesolithic to Late Neolithic - 8300 BC to 2900 BC	508100	265600
21479	Findspot	Flint implement, Pertenhall	Late Mesolithic to Early Neolithic - 6000 BC to 4000 BC	508200	265600
21310	Findspot	Flint implement, Pertenhall	Late Mesolithic to Late Neolithic - 6500 BC to 2900 BC	508100	265600
21313	Findspot	Flint implement, Pertenhall	Late Mesolithic to Late Neolithic - 6500 BC to 2900 BC	507900	265500
21323	Findspot	Flint implement, Pertenhall	Late Mesolithic to Late Neolithic - 6500 BC to 2900 BC	508100	265500
21328	Findspot	Flint implement, Pertenhall	Late Mesolithic to Late Neolithic - 6500 BC to 2900 BC	508100	265500
21329	Findspot	Flint implement, Pertenhall	Late Mesolithic to Late Neolithic - 6500 BC to 2900 BC	508100	265500
21332	Findspot	Flint implement, Pertenhall	Late Mesolithic to Late Neolithic - 6500 BC to 2900 BC	508000	265400
21470	Findspot	Flint implement, Pertenhall	Late Mesolithic to Late Neolithic - 6500 BC to 2900 BC	508000	265500
21471	Findspot	Flint implement, Pertenhall	Late Mesolithic to Late Neolithic - 6500 BC to 2900 BC	508000	265500



<b>HER ID</b>	<b>Type</b>	<b>Name</b>	<b>Period</b>	<b>Easting</b>	<b>Northing</b>
21472	Findspot	Flint implement, Pertenhall	Late Mesolithic to Late Neolithic - 6500 BC to 2900 BC	508000	265500
21280	Findspot	Flint implement, Pertenhall	Early Mesolithic to Early Bronze Age - 8300 BC to 2100 BC	508000	265500
21283	Findspot	Flint implement, Pertenhall	Early Mesolithic to Early Bronze Age - 8300 BC to 2100 BC	508000	265500
21473	Findspot	Flint implement, Pertenhall	Early Mesolithic to Early Bronze Age - 8300 BC to 2100 BC	508000	265500
21277	Findspot	Flint implement, Pertenhall	Late Mesolithic to Early Bronze Age - 6500 BC to 2100 BC	508000	265400
21279	Findspot	Flint implement, Pertenhall	Late Mesolithic to Early Bronze Age - 6500 BC to 2100 BC	508000	265400
21331	Findspot	Flint implement, Pertenhall	Late Mesolithic to Early Bronze Age - 6500 BC to 2100 BC	508000	265400
21281	Findspot	Flint implement, Pertenhall	Middle Neolithic to Early Bronze Age - 3500 BC to 2100 BC	508000	265500
21282	Findspot	Flint implement, Pertenhall	Middle Neolithic to Early Bronze Age - 3500 BC to 2100 BC	508000	265500
21304	Findspot	Flint implement, Pertenhall	Middle Neolithic to Early Bronze Age - 3500 BC to 2100 BC	508100	265600
21282	Findspot	Flint implement, Pertenhall	Middle Neolithic to Early Bronze Age - 3500 BC to 2100 BC	508000	265500
21304	Findspot	Flint implement, Pertenhall	Middle Neolithic to Early Bronze Age - 3500 BC to 2100 BC	508100	265600
21306	Findspot	Flint implement, Pertenhall	Middle Neolithic to Late Neolithic - 3500 BC to 2900 BC	508100	265600
21306	Findspot	Flint implement, Pertenhall	Middle Neolithic to Late Neolithic - 3500 BC to 2900 BC	508100	265600
21305	Findspot	Flint implement, Pertenhall	Late Neolithic to Early Bronze Age - 2500 BC to 2000 BC	508100	265600



HER ID	Type	Name	Period	Easting	Northing
21312	Findspot	Flint implement, Pertenhall	Late Neolithic to Early Bronze Age - 2500 BC to 2100 BC	508100	265600
21330	Findspot	Flint implement, Pertenhall	Early Bronze Age - 2200 BC to 2000 BC	508000	265400
21278	Findspot	Flint implement, Pertenhall	Early Bronze Age 2100 BC to 2000 BC	508000	265400
21481	Findspot	Roman coin, Pertenhall	Roman	508100	265500
21482	Findspot	Roman coin, Pertenhall	Roman	508100	265500
21483	Findspot	Roman coin, Pertenhall	Roman	508100	265500
21480	Findspot	Roman coin, Pertenhall	Roman	508100	265500
16304	Monument	Saxon hanging bowl disc, north of Chadwell Farm	Anglo-Saxon	508189	265553
21477	Findspot	7th century mount, Pertenhall	Anglo-Saxon	508200	265600
8428	Monument	Chadwell spring, Pertenhall. Now set in modern brickwork. First recorded 1607, but name probably of Old English derivation.	Anglo-Saxon to modern	507934	265394
16325	Monument	Anglo-Saxon brooch, SW of grange farm	Anglo-Saxon, 5th-6th century	507172	265920
8426	Monument	Pound Green, village green	Medieval	508400	265319
8447	Monument	A series of hollows and earthworks located near a linear pond. Hall Farm, Pertenhall	Medieval to post-medieval	508150	265188
8427	Monument	Green End, village green	Medieval	508105	264806
3313	Monument	Ridge and furrow earthworks, Pertenhall parish	Medieval	508439	265217
4474	Monument	?Moat or rabbit warren, east of Middle Lodge buildings, Keysoe	Medieval	507226	264479
7822	Monument	?Rabbit warren. Levelled earthwork. A "cunnygrass" or "grays" is mentioned in 1712, a tithe map of 1840 mentions a field called "Coneygears"	Medieval	507053	264454
3041	Monument	Conjectural evidence for deer park	Medieval	506828	264328
17086	Monument	Green End medieval settlement earthworks	Medieval	508057	264871
8946	Monument	St Peter's parish churchyard	Medieval	508418	265433





HER ID	Type	Name	Period	Easting	Northing
17083	Monument	Church End deserted settlement	Medieval	508459	265404
17084	Monument	Chadwell End deserted settlement. Earthworks	Medieval	508234	265514
8438	Monument	Earthworks, Green End, Pertenhall. House platform, road, ridge and furrow	Medieval	508140	264692
21478	Findspot	14th century key, Pertenhall	Medieval	508200	265500
21285	Findspot	Pottery vessel, Pertenhall	Medieval	508000	265400
346	Monument	23 skeletons found in the grounds of Pertenhall Manor House. Others had also been found in common land nearby in 1797. These were thought to be evidence of a Civil War skirmish, but they may be either plague burials, or other medieval burials which had to be made in unconsecrated ground.	Medieval or post-medieval	508370	265380
8409	Monument	Well, Nuns Well Close. Place-name evidence for a well	Medieval, post-medieval	508432	265066
8424	Monument	Trackway - old access road showing on enclosure map of 1796. Earthwork	Post-medieval	508155	265264
7689	Monument	Site of old sand pit	Post-medieval	507150	264635
7620	Monument	Site of demolished buildings. Showing on 1806 map	Post-Medieval	507004	264743
7038	Monument	Landscaped grounds Pertenhall Manor. Showing on Bryant's map of Bedfordshire 1826	Post-medieval	508434	265338
8420	Monument	Brick kiln field, site of demolished brickworks	Post-medieval	507127	266036
12034	Monument	Farm buildings Middle Lodge farm Keysoe	Post-Medieval	506720	264560
8436	Monument	Building (site of) Town Close, Pertenhall	Post-Medieval	508182	265297
12197	Monument	Rosemary Cottage Green End, Pertenhall	Post-Medieval	507830	265042
8437	Monument	Building (site of), Pertenhall	Post-Medieval	507980	265060
12196	Monument	Farm buildings Manor Farm, Green End, Pertenhall	Post-Medieval	507900	264900



HER ID	Type	Name	Period	Easting	Northing
4989	Listed Building	The Cottage, Green End, Pertenhall	Post-Medieval	508108	264966
12193	Monument	The Green, Farmhouse, Green End, Pertenhall	Post-Medieval	508060	264904
4988	Listed Building	Green End Farmhouse, Green End, Pertenhall	Post-Medieval	508109	264897
12195	Monument	Clover Cottage, Green End, Pertenhall	Post-Medieval	508098	264846
12194	Monument	The Elms Green End, house, Pertenhall	Post-Medieval	508129	264771
12192	Listed Building	Ridge Cottage, Green End, Pertenhall	Post-Medieval	508244	264795
9592	Listed Building	Yew Tree Cottage, Green End, Pertenhall	Post-Medieval	508272	264779
4990	Listed Building	Quinbrells, house, Green End, Pertenhall	Post-Medieval	508297	264745
4981	Listed Building	Fuchsia Cottage & adjoining Cottage Chadwell End	Post-Medieval	508234	265708
8422	Monument	Building (site of)/?Farm Cottage	Post-Medieval	508213	265629
12191	Monument	Pair of cottages opposite Chadwell Farm Chadwell End	Post-Medieval	508240	265482
12189	Monument	Outbuildings Chadwell Farm Chadwell End	Post-Medieval	508210	265470
4982	Listed Building	Chadwell Farmhouse, Chadwell End	Post-Medieval	508217	265460
12190	Monument	Chadwell House Chadwell End	Post-Medieval	508149	265424
8441	Monument	Buildings (site of) Chadwell End	Post-Medieval	508200	265420
12188	Listed Building	Hall Farmhouse, Chadwell End	Post-Medieval	508160	265230
12187	Listed Building	Manor Cottage, Kimbolton Road	Post-Medieval	508290	265230
8440	Monument	Buildings (site of) south of manor house	Post-Medieval	508310	265310
12186	Monument	Stable block, the Manor, Kimbolton Rd	Post-Medieval	508380	265400
8227	Monument	Building (site of), 19th century	Post-Medieval	506930	265999
21297	Findspot	Copper Alloy vessel, Chadwell End, Pertenhall (cauldron leg)	Post-medieval	508100	265600
21298	Findspot	Copper Alloy vessel, Pertenhall (cauldron leg)	Post-medieval	508100	265600
21299	Findspot	Copper Alloy chain, Pertenhall	Post-medieval	508100	265500
21302	Findspot	Copper Alloy vessel, Pertenhall (cauldron leg)	Post-medieval	508200	265600



HER ID	Type	Name	Period	Easting	Northing
7604	Monument	Middle Lodge Farmhouse, Keysoe	Post-Medieval 16th century	506726	264524
4980	Listed Building	Manor House, Kimbolton Road	Post-Medieval 16th century	508380	265376
8435	Monument	Group of buildings shown at The Broad on a map of 1888. Buildings demolished c.1909-1912.	Post-medieval to 20th century	507857	265036
7692	Monument	Brick pastures (field name), brickworks	Modern	506520	265075
8404	Monument	Lionhead standpipe with pail rest, Pertenhall	Modern	508270	264750
8405	Monument	Lionhead standpipe, Pertenhall	Modern	508240	264760
8421	Monument	Gravel pit, Pertenhall	Modern	508260	264820
7674	Monument	Site of demolished agricultural and other buildings and well. Showing on Ordnance Survey 6" Map, 1st Edition	Modern 19th century	507488	264986

Table 7: Designated heritage assets within a 4km radius of Site

HER ID	Address	Easting	Northing
<b>Scheduled Ancient Monuments</b>			
	Motte castle in Kimbolton Park, known as Castle Hill, Kimbolton	509368	267374
DBD1305	Hall Close Moated Site, fishponds, trackway, field system and dovecote, Riseley	50435	26335
DBD454	College Farm Moated Site and associated banked enclosure and fishpond, Keysoe	50708	26156
<b>Conservation Areas</b>			
DBD3419	Upper Dean Conservation Area		
DBD2736	Riseley Conservation Area		
DBD3417	Swineshead Conservation Area		



<b>Listed Buildings (all are Grade II unless otherwise stated)</b>			
<b>HER ID</b>	<b>Address</b>	<b>Easting</b>	<b>Northing</b>
5586	Kynance Cottage, Keysoe Row West, Keysoe	506767	261247
5585	Cottage (opposite the Windrush) Keysoe Row West Keysoe	506745	261238
5584	Fern cottage Keysoe Row West Keysoe	506758	261271
7708	Temple Farmhouse, formerly Doddshole Farm, Keysoe	508107	262486
1083	St Mary the Virgin's Church, Church Road, Keysoe – <i>Grade I listed</i>	507389	262490
5602	Weir Cottage Keysoe Row East Keysoe	509025	261851
5601	Toby Cottage, Keysoe Row East, Keysoe	509015	261814
5600	Oxford Farmhouse, Keysoe Row East, Keysoe	509119	261809
5599	Homesteads, Keysoe Row East, Keysoe	508970	261720
5598	Row farmhouse, Keysoe Row East, Keysoe	508950	261650
5597	Willow Cottage, Keysoe Row East, Keysoe	508581	261317
5596	Southview Cottage, Keysoe Row East, Keysoe	508509	261263
1085	Baptist free church, Keysoe Row East	508448	261226
12033	Chapel House, Keysoe Row East, Keysoe	508432	261232
12032	Barn (SW of baptist free church), Keysoe Row East, Keysoe	508440	261220
5595	Yeoman Farmhouse Keysoe Row East Keysoe	508395	261209
5594	The White Horse public house, Keysoe Row East, Keysoe	508340	261120
5593	Wych Tree Farmhouse, Keysoe Row West, Keysoe	508250	261100
12012	Rose Cottage, Keysoe Row West, Keysoe	508178	261125
5592	Elm Tree Farmhouse, Keysoe Row West, Keysoe	508061	261124
5591	Glen Cottage & Wayside, Keysoe Row West, Keysoe	507712	261119
5589	Summer Song, Keysoe Row West, Keysoe	507353	261048
5590	Kaltenkeller Keysoe Row West Keysoe	507366	261046
12028	College Farmhouse, church Road, Keysoe	507070	261540



<b>HER ID</b>	<b>Address</b>	<b>Easting</b>	<b>Northing</b>
12024	Corner Cottage, Wybridge, Keysoe Row West, Keysoe	507000	261360
5587	Cottage (W of Fox Inn) Keysoe Row, Keysoe	506823	261271
12026	Cottage (opposite Church Road), Mill Hill, Keysoe	507640	262690
7804	Village schoolroom, Mill Hill, Keysoe	507647	262687
12025	Glebe Cottage, Wybridge, Keysoe	507620	262640
2471	Cottage (approx 250 metres SW of the Elms, Riseley Road), Brook End, Keysoe	506986	262900
12027	The Elms, Riseley Road, Keysoe Brook End	507180	263030
5614	Cottage W of baptist chapel, adjoining 6/9 Brook End, Keysoe	507291	263111
5615	Meeting Cottage, Riseley Road, Brook End, Keysoe	507327	263124
1084	The Old Chapel House, Riseley Road, Keysoe Brook End	507346	263105
8477	Baptist sunday school, Riseley Road, Keysoe Brook End	507362	263115
5612	Westview Cottage Riseley Road Brook End Keysoe	507465	263273
5617	Brook End Farmhouse, Brook End, Keysoe	507510	263170
5618	Corner house, Riseley Road, Brook End, Keysoe	507573	263155
5619	Brook Farmhouse Brook End Keysoe	507610	263160
12023	Barns bordering Road at Brook End Farm, Riseley Road, Keysoe Brook End	507539	263167
5620	Circus Farmhouse Mill Hill Keysoe	507620	263050
5613	Old Brook House, Pertenhall Road, Brook End Keysoe	507614	263228
12022	The Little Pyghtle, Pertenhall Road, Keysoe Brook End	507688	263338
5609	Cottage (N of Last Straw Cottage, approx 50 metres N of Lavender Cottage), Keysoe	507730	263473
5610	Last straw Cottage Pertenhall Road Brook End Keysoe	507728	263439
5611	Lavender Cottage, Pertenhall Road, Brook End Keysoe	507721	263411
3212	(Tithe) barn to rear of Manor,Grange Farm, Pertenhall Road, Brook End, Keysoe	507778	263696
5608	The Manor, Pertenhall Road, Brook End, Keysoe	507813	263685
7983	Keysoe Park Farm Cottages (now Kylemore Cottage), Hardwick End, Keysoe	506170	262369



HER ID	Address	Easting	Northing
5583	The Windrush (cottage W of Fern Cottage) Keysoe row Keysoe	506717	261254
5588	Virginia Cottage Keysoe Row Keysoe	507361	261024
5607	Mill Hill Cottage, Mill Hill, Keysoe	507614	262766
2392	Manor Farmhouse, Colmworth Road, Little Staughton	510499	262810
2395	Hill Farmhouse, Spring Hill, Little Staughton	510380	262860
12068	Corner Cottage & Greenbanks, Church Lane, Little Staughton	510450	262900
1128	All Saints Church, Church Lane, Little Staughton – <i>Grade I listed</i>	510735	262984
12072	Green End House, Green End, Little Staughton	510270	263190
5749	Green End Cottage, Green End, Little Staughton	510226	263196
5750	Tudor Rose Cottage, Green End, Little Staughton	510280	263260
5751	The Cottage, West End, Little Staughton	510078	262579
5748	The Crown public house Green End, Little Staughton	510138	263190
4985	Farmhouse SE of chapel, Pertenhall	509368	265683
4983	Hoo Farmhouse, Pertenhall	509521	265241
4989	The Cottage, Green End, Pertenhall	508108	264966
4988	Green End Farmhouse, Green End, Pertenhall	508109	264897
12192	Ridge Cottage, Green End, Pertenhall	508244	264795
9592	Yew Tree Cottage, Green End, Pertenhall	508272	264779
4990	Quinbrells Green End, Pertenhall	508297	264745
4981	Fuchsia Cottage & adjoining cottage Chadwell End, Pertenhall	508234	265708
4982	Chadwell Farmhouse, Chadwell End, Pertenhall	508217	265460
12188	Hall Farmhouse, Chadwell End, Pertenhall	508160	265230
12187	Manor Cottage, Kimbolton Road, Pertenhall	508290	265230
4980	Manor House, Kimbolton Road, Pertenhall	508380	265376
966	St Peter's Church, Pertenhall – <i>Grade I listed</i>	508426	265416



HER ID	Address	Easting	Northing
4986	The Lodge Cottage (old rectory), Kimbolton Road, Pertenhall	508613	265380
12208	Barn N of lodge Cottage (old rectory), Kimbolton Road, Pertenhall	508608	265409
8439	Dovecote NW of lodge Cottage (old rectory), Kimbolton Road, Pertenhall	508592	265409
12204	1 Wood End, Pertenhall	508870	265890
12200	Lodge to Wood End House, Kimbolton Road, Wood End, Pertenhall	509020	266060
12201	Garden House at Wood End House, Kimbolton Road, Wood End, Pertenhall	509000	266070
4987	Wood End House Kimbolton Rd, Wood End, Pertenhall	509000	266100
1097	The Old Rectory, Kimbolton Road, Pertenhall. <i>Grade II* Listed</i>	508471	265422
12203	Wood End Farmhouse Wood End, Pertenhall	508791	265923
12222	Brook Farmhouse, Riseley Road, Pertenhall	506020	265750
5371	Lower Farmhouse, High Street, Swineshead	505950	265720
2822	Pear tree Farmhouse, High Street, Swineshead	505960	265780
5369	The three horseshoes Cottage High St, Swineshead	505920	265790
5372	Shepherds Cottage High Street, Swineshead	505890	265780
15134	K6 telephone kiosk, N of the old post office - High Street, Swineshead	505870	265790
5373	The Old Post Office (formerly listed as post office), High Street, Swineshead	505850	265780
5367	School house (formerly listed as Cottage opposite five bells), High Street, Swineshead	505820	265820
1139	St Nicholas' Church, High Street, Swineshead. <i>Grade I listed</i>	505790	265850
12224	Cottage N of parish church, Sandye Lane, Swineshead	505793	265874
5374	Close Cottage 1 & 2 High St, Swineshead	505739	265829
8645	Lilac Cottage, High Street, Swineshead	505773	265817
12219	Barn SE of Farmhouse, Moat Farm, Sandye Lane, Swineshead	505728	265859
12220	Barn E of Farmhouse, Moat Farm, Sandye Lane, Swineshead	505755	265861
5365	Moat Farmhouse Sandye Lane, Swineshead	505724	265876
5364	Manor Farmhouse, High Street, Swineshead	505660	265860



HER ID	Address	Easting	Northing
12221	Green End Farm Cottage, Green Lane, Swineshead	505337	265598
5362	Manor house, Green Lane, Swineshead	505536	265748
5363	The Rectory, Swineshead	505679	265783
2364	Brook End, Brook Lane, Upper Dean	504490	267650
12051	Pear Tree Cottage, Brook Lane, Upper Dean	504520	267660
12057	Lodge Farmhouse, High Street, Upper Dean	504699	267413
2359	Dean house, High Street, Upper Dean	504531	267561
925	All Saints' Church, Upper Dean	504678	267643
2363	1 & 2 Orchard Cottages, Brook Lane, Upper Dean	504540	267690
12067	Dean Croft, brook Lane, Upper Dean	504536	267708
2361	Dalton Cottage, High Street, Upper Dean	504710	267670
2360	Dean House Farmhouse, Upper Dean	504560	267790
12053	Farm building at Dean House Farm, Brook Lane, Upper Dean	504548	267808
12054	Barn (n of dean house Farmhouse), Brook Lane, Upper Dean	504565	267815
2362	Mill Cottage, Brook Lane, Upper Dean	504600	267870
5127	United reformed church (Congregational chapel), High Street, Upper Dean	504840	267950
12088	Eastfield Farmhouse, Swineshead Road, Upper Dean	504471	266241
1167	All Saints Church, Riseley. <i>Grade I listed</i>	503944	263067
4228	14-16 Church Lane, Riseley	503927	262954
4218	The Old Vicarage, Church Lane, Riseley	503906	263030
4173	Lodge to Melchbourne Park, Swineshead Road, Riseley	504702	263550
4174	163 High Street, Riseley	504689	263389
4175	Low Thatch, 161 High Street, Riseley	504699	263379
4176	White Gates, 153 High Street, Riseley	504669	263352
4177	Rafters, 151 High Street, Riseley	504639	263319





HER ID	Address	Easting	Northing
4183	170 High Street, Riseley	504674	263286
4185	162 High Street, Riseley	504651	263277
4186	160 High Street (formerly listed as 156 - 160 High Street), Riseley	504628	263255
12209	Outbuilding to 135 High Street, Riseley	504582	263229
4179	135 High Street, Riseley	504578	263221
4180	133 High Street, Riseley	504549	263169
4189	Maple Cottage, 124 High Street, Riseley	504480	263030
4190	Ivy lodge & Dove Cottage, 120 & 122 High Street, Riseley. <i>Grade II* Listed</i>	504441	263021
4191	118 High Street, Riseley	504425	263006
4194	110 High Street, Riseley	504418	262968
4181	111 High Street (house to rear of former Moravian chapel), Riseley	504382	263026
4208	Royal Oak Public House, 107 High Street, Riseley	504369	262989
4209	105 High Street, Riseley	504340	262977
4210	103 High Street, Riseley	504327	262961
4211	Swan Cottage, 101 High Street, Riseley	504299	262949
4212	The White House (formerly the Swan Inn), 99 High Street, Riseley	504295	262934
4196	Cobblestones, 100 High Street, Riseley	504305	262907
4214	95 High Street, (formerly listed as 95 & 97), Riseley	504256	262909
4198	Methodist Chapel, High Street, Riseley	504194	262821
4199	86 High Street, Riseley	504187	262817
4200	Old Mill Cottage, 82-84 High Street, Riseley	504175	262810
4201	Mistletoe Cottage, 80 High Street, Riseley	504159	262799
4202	76 - 78 High Street, Riseley	504149	262779
4216	75-77 High Street, Riseley	504189	262859
4217	61-67 High Street, Riseley	504109	262789



<b>HER ID</b>	<b>Address</b>	<b>Easting</b>	<b>Northing</b>
4203	Brook House, 72 High Street, Riseley	504108	262746
2447	Rose Bank, 57 High Street, Riseley	504049	262739
4204	68-70 High Street, Riseley	504071	262726
4207	58 High Street, Ashton Cottage, Riseley	504011	262684
4205	62 High Street, Riseley	504039	262689
4206	60 High Street, Riseley	504026	262694
2451	Field House, 59 High Street, Riseley	503949	262809
2443	38-40 High Street, Riseley	503899	262599
2444	The Old Boot, 42 High Street, Riseley	503920	262614
2445	Cannon Cottage, 44-46 High Street, Riseley	503929	262622
2446	Fox & Hounds public house, 50 High Street, Riseley	503975	262638
2450	8,10, 12 Gold St, Riseley	503861	262711
4226	18-22 Gold Street (formerly listed as 18-20), Riseley	503827	262723
1104	Riseley Lodge Farmhouse, Bowers Lane, Riseley	504729	262799
4234	Granary, Riseley Lodge Farm, Bowers Lane, Riseley	504745	262826
2452	Red Lion House (formerly red lion public house) 1 Church Lane, Riseley	503769	262789
2456	2 Rotten Row, Riseley	503639	262854
4231	Highbarn House, 39 High Street, Riseley	503849	262619
4232	35 High Street (formerly 37), Riseley	503812	262548
1406	Keysoe Bier-House, Church Road, Riseley	507425	262457



## APPENDIX B. AERIAL PHOTOGRAPHS

Table 8: List of all oblique photographs held by English Heritage's NMR for a 2km radius of Site

<b>Photo reference (NGR and Index number)</b>	<b>Film and frame number</b>		<b>Date</b>	<b>Film type</b>		<b>Map Reference (6 figure grid ref)</b>
TL 0565 / 1	NHC 3009	/ 20	25 JAN 1986	Black& white	70mm,120,220	TL 059659
TL 0565 / 2	NHC 3009	/ 21	25 JAN 1986	Black& white	70mm,120,220	TL 058656
TL 0565 / 3	NHC 2532	/ 19	29 JUL 1984	Black& white	70mm,120,220	TL 058653
TL 0565 / 4	NMR 21067	/ 07	14 NOV 2000	Black& white	70mm,120,220	TL 056657
TL 0565 / 5	NMR 21067	/ 08	14 NOV 2000	Black& white	70mm,120,220	TL 059656
TL 0565 / 6	NMR 21067	/ 09	14 NOV 2000	Black& white	70mm,120,220	TL 059656
TL 0565 / 7	NMR 18984	/ 17	14 NOV 2000	Colour neg	35 mm	TL 058656
TL 0565 / 8	NMR 18984	/ 18	14 NOV 2000	Colour neg	35 mm	TL 058656
TL 0565 / 9	NMR 18833	/ 24	14 NOV 2000	Colour slide	35 mm	TL 057656
TL 0566 / 20	NMR 18984	/ 16	14 NOV 2000	Colour neg	35 mm	TL 057660
TL 0663 / 1	NHC 3062	/ 20	28 JUL 1986	Black& white	70mm,120,220	TL 065635
TL 0663 / 3	NMR 26063	/ 14	21 JUL 2008	Digital colour	35 mm	TL 060631
TL 0663 / 4	NMR 26063	/ 15	21 JUL 2008	Digital colour	35 mm	TL 060631
TL 0664 / 1	NMR 23739	/ 04	19 JUL 2005	Colour neg	35 mm	TL 069646
TL 0664 / 2	NMR 23739	/ 16	19 JUL 2005	Colour neg	35 mm	TL 069646
TL 0664 / 3	NMR 23983	/ 17	19 JUL 2005	Black& white	70mm,120,220	TL 069646
TL 0664 / 4	NMR 27094	/ 18	30 JUN 2011	Digital colour	35 mm	TL 065643
TL 0664 / 5	NMR 27094	/ 19	30 JUN 2011	Digital colour	35 mm	TL 066643
TL 0664 / 6	NMR 27094	/ 20	30 JUN 2011	Digital colour	35 mm	TL 066643



<b>Photo reference (NGR and Index number)</b>	<b>Film and frame number</b>		<b>Date</b>	<b>Film type</b>		<b>Map Reference (6 figure grid ref)</b>
TL 0664 / 7	NMR 27094	/ 21	30 JUN 2011	Digital colour	35 mm	TL 065644
TL 0664 / 8	NMR 27094	/ 22	30 JUN 2011	Digital colour	35 mm	TL 065644
TL 0665 / 1	NMR 26063	/ 16	21 JUL 2008	Digital colour	35 mm	TL 066654
TL 0665 / 2	NMR 26063	/ 17	21 JUL 2008	Digital colour	35 mm	TL 066654
TL 0665 / 3	NMR 26063	/ 18	21 JUL 2008	Digital colour	35 mm	TL 066654
TL 0665 / 4	NMR 26063	/ 19	21 JUL 2008	Digital colour	35 mm	TL 066654
TL 0665 / 5	NMR 26063	/ 20	21 JUL 2008	Digital colour	35 mm	TL 067655
TL 0666 / 1	NMR 18984	/ 15	14 NOV 2000	Colour neg	35 mm	TL 060660
TL 0764 / 1	NMR 23739	/ 00	19 JUL 2005	Colour neg	35 mm	TL 072647
TL 0764 / 2	NMR 23739	/ 00A	19 JUL 2005	Colour neg	35 mm	TL 071647
TL 0764 / 3	NMR 23739	/ 01	19 JUL 2005	Colour neg	35 mm	TL 070647
TL 0764 / 4	NMR 23739	/ 02	19 JUL 2005	Colour neg	35 mm	TL 071647
TL 0764 / 5	NMR 23739	/ 03	19 JUL 2005	Colour neg	35 mm	TL 073646
TL 0764 / 6	NMR 23739	/ 05	19 JUL 2005	Colour neg	35 mm	TL 071644
TL 0764 / 7	NMR 23739	/ 06	19 JUL 2005	Colour neg	35 mm	TL 073645
TL 0764 / 8	NMR 23739	/ 07	19 JUL 2005	Colour neg	35 mm	TL 073645
TL 0764 / 9	NMR 23739	/ 08	19 JUL 2005	Colour neg	35 mm	TL 073645
TL 0764 / 10	NMR 23739	/ 09	19 JUL 2005	Colour neg	35 mm	TL 074649
TL 0764 / 11	NMR 23739	/ 10	19 JUL 2005	Colour neg	35 mm	TL 074649
TL 0764 / 12	NMR 23739	/ 11	19 JUL 2005	Colour neg	35 mm	TL 073645
TL 0764 / 13	NMR 23739	/ 12	19 JUL 2005	Colour neg	35 mm	TL 073645
TL 0764 / 14	NMR 23739	/ 13	19 JUL 2005	Colour neg	35 mm	TL 071647
TL 0764 / 15	NMR 23739	/ 14	19 JUL 2005	Colour neg	35 mm	TL 072646



<b>Photo reference (NGR and Index number)</b>	<b>Film and frame number</b>		<b>Date</b>	<b>Film type</b>		<b>Map Reference (6 figure grid ref)</b>
TL 0764 / 16	NMR 23739	/ 15	19 JUL 2005	Colour neg	35 mm	TL 070646
TL 0764 / 17	NMR 23983	/ 09	19 JUL 2005	Black& white	70mm,120,220	TL 073647
TL 0764 / 18	NMR 23983	/ 10	19 JUL 2005	Black& white	70mm,120,220	TL 075648
TL 0764 / 19	NMR 23983	/ 11	19 JUL 2005	Black& white	70mm,120,220	TL 076648
TL 0764 / 20	NMR 23983	/ 12	19 JUL 2005	Black& white	70mm,120,220	TL 076647
TL 0764 / 21	NMR 23983	/ 13	19 JUL 2005	Black& white	70mm,120,220	TL 076647
TL 0764 / 22	NMR 23983	/ 14	19 JUL 2005	Black& white	70mm,120,220	TL 074647
TL 0764 / 23	NMR 23983	/ 15	19 JUL 2005	Black& white	70mm,120,220	TL 074647
TL 0764 / 24	NMR 23983	/ 16	19 JUL 2005	Black& white	70mm,120,220	TL 071646
TL 0764 / 25	NMR 23983	/ 18	19 JUL 2005	Black& white	70mm,120,220	TL 070645
TL 0764 / 26	NMR 27094	/ 23	30 JUN 2011	Digital colour	35 mm	TL 075647
TL 0764 / 27	NMR 27094	/ 24	30 JUN 2011	Digital colour	35 mm	TL 075647
TL 0764 / 28	NMR 27094	/ 26	30 JUN 2011	Digital colour	35 mm	TL 075647
TL 0764 / 29	NMR 27094	/ 25	30 JUN 2011	Digital colour	35 mm	TL 075647
TL 0764 / 30	NMR 27094	/ 27	30 JUN 2011	Digital colour	35 mm	TL 075647
TL 0764 / 31	NMR 27094	/ 28	30 JUN 2011	Digital colour	35 mm	TL 074649
TL 0764 / 32	NMR 27094	/ 29	30 JUN 2011	Digital colour	35 mm	TL 074648
TL 0764 / 33	NMR 27094	/ 30	30 JUN 2011	Digital colour	35 mm	TL 074648
TL 0764 / 34	NMR 27094	/ 31	30 JUN 2011	Digital colour	35 mm	TL 074648
TL 0764 / 35	NMR 27094	/ 32	30 JUN 2011	Digital colour	35 mm	TL 074648
TL 0764 / 36	NMR 27094	/ 33	30 JUN 2011	Digital colour	35 mm	TL 075648
TL 0764 / 37	NMR 27094	/ 34	30 JUN 2011	Digital colour	35 mm	TL 075648
TL 0764 / 38	NMR 27094	/ 35	30 JUN 2011	Digital colour	35 mm	TL 075647



<b>Photo reference (NGR and Index number)</b>	<b>Film and frame number</b>		<b>Date</b>	<b>Film type</b>		<b>Map Reference (6 figure grid ref)</b>
TL 0864 / 1	NMR 27277	/ 23	20 JUL 2010	Digital colour	35 mm	TL 083644
TL 0864 / 2	NMR 27277	/ 24	20 JUL 2010	Digital colour	35 mm	TL 083644
TL 0864 / 3	NMR 27277	/ 25	20 JUL 2010	Digital colour	35 mm	TL 085643
TL 0864 / 4	NMR 27060	/ 24	29 JUN 2011	Digital colour	35 mm	TL 087643
TL 0864 / 5	NMR 27060	/ 25	29 JUN 2011	Digital colour	35 mm	TL 087642
TL 0864 / 6	NMR 27060	/ 26	29 JUN 2011	Digital colour	35 mm	TL 088642
TL 0864 / 7	NMR 27060	/ 27	29 JUN 2011	Digital colour	35 mm	TL 087643
TL 0864 / 8	NMR 27060	/ 28	29 JUN 2011	Digital colour	35 mm	TL 087642
TL 0864 / 9	NMR 27060	/ 29	29 JUN 2011	Digital colour	35 mm	TL 087642

Table 9: List of all vertical aerial photographs held by English Heritage's NMR for a 2km radius of Site

<b>Sortie number</b>	<b>Library number</b>	<b>Camera position</b>	<b>Frame number</b>	<b>Held</b>	<b>Centre point</b>	<b>Run</b>	<b>Date</b>	<b>Sortie quality</b>	<b>Scale 1:</b>	<b>Focal length (in inches)</b>	<b>Film details (in inches)</b>
RAF/106G/UK/635	37	RS	4025	P	TL 066 634	9	10 AUG 1945	A	10600	20	Black and White 8.25 x 7.5
RAF/106G/UK/635	37	RS	4026	P	TL 066 638	9	10 AUG 1945	A	10600	20	Black and White 8.25 x 7.5
RAF/106G/UK/635	37	RS	4027	P	TL 066 642	9	10 AUG 1945	A	10600	20	Black and White 8.25 x 7.5
RAF/106G/UK/635	37	RS	4028	P	TL 066 646	9	10 AUG 1945	A	10600	20	Black and White 8.25 x 7.5
RAF/106G/UK/635	37	RS	4029	P	TL 066 650	9	10 AUG 1945	A	10600	20	Black and White 8.25 x 7.5



<b>Sortie number</b>	<b>Library number</b>	<b>Camera position</b>	<b>Frame number</b>	<b>Held</b>	<b>Centre point</b>	<b>Run</b>	<b>Date</b>	<b>Sortie quality</b>	<b>Scale 1:</b>	<b>Focal length (in inches)</b>	<b>Film details (in inches)</b>
RAF/106G/UK/6 35	37	RS	4030	P	TL 066 654	9	10 AUG 1945	A	10600	20	Black and White 8.25 x 7.5
RAF/106G/UK/6 35	37	RS	4031	P	TL 067 657	9	10 AUG 1945	A	10600	20	Black and White 8.25 x 7.5
RAF/106G/UK/6 35	37	RS	4032	P	TL 067 661	9	10 AUG 1945	A	10600	20	Black and White 8.25 x 7.5
RAF/106G/UK/6 35	37	RS	4148	P	TL 070 663	11	10 AUG 1945	A	10600	20	Black and White 8.25 x 7.5
RAF/106G/UK/6 35	37	RS	4149	P	TL 071 657	11	10 AUG 1945	A	10600	20	Black and White 8.25 x 7.5
RAF/106G/UK/6 35	37	RS	4150	P	TL 072 652	11	10 AUG 1945	A	10600	20	Black and White 8.25 x 7.5
RAF/106G/UK/6 35	37	RS	4151	P	TL 072 647	11	10 AUG 1945	A	10600	20	Black and White 8.25 x 7.5
RAF/106G/UK/6 35	37	RS	4152	P	TL 073 642	11	10 AUG 1945	A	10600	20	Black and White 8.25 x 7.5
RAF/106G/UK/6 35	37	RS	4153	P	TL 073 637	11	10 AUG 1945	A	10600	20	Black and White 8.25 x 7.5
RAF/CPE/UK/19 25	549	RS	4275	P	TL 068 670	30	16 JAN 1947	A	9840	20	Black and White 8.25 x 7.5
RAF/CPE/UK/19 25	549	RS	4276	P	TL 074 669	30	16 JAN 1947	A	9840	20	Black and White 8.25 x 7.5
RAF/CPE/UK/19 25	549	RS	4277	P	TL 080 668	30	16 JAN 1947	A	9840	20	Black and White 8.25 x 7.5
RAF/541/483	1062	RP	3351	P	TL 084 639	10	07 APR 1950	A	10100	20	Black and White 8.25 x 7.5
RAF/541/483	1062	RP	3352	P	TL 078 640	10	07 APR 1950	A	10100	20	Black and White 8.25 x 7.5
RAF/541/483	1062	RP	3353	P	TL 072 640	10	07 APR 1950	A	10100	20	Black and White 8.25 x 7.5



<b>Sortie number</b>	<b>Library number</b>	<b>Camera position</b>	<b>Frame number</b>	<b>Held</b>	<b>Centre point</b>	<b>Run</b>	<b>Date</b>	<b>Sortie quality</b>	<b>Scale 1:</b>	<b>Focal length (in inches)</b>	<b>Film details (in inches)</b>
RAF/541/483	1062	RP	3354	P	TL 067 640	10	07 APR 1950	A	10100	20	Black and White 8.25 x 7.5
RAF/541/483	1062	RP	3355	P	TL 062 640	10	07 APR 1950	A	10100	20	Black and White 8.25 x 7.5
RAF/541/483	1062	RS	4204	P	TL 082 642	21	07 APR 1950	A	10100	20	Black and White 8.25 x 7.5
RAF/541/483	1062	RS	4205	P	TL 076 642	21	07 APR 1950	A	10100	20	Black and White 8.25 x 7.5
RAF/541/483	1062	RS	4206	P	TL 070 643	21	07 APR 1950	A	10100	20	Black and White 8.25 x 7.5
RAF/541/483	1062	RS	4207	P	TL 064 643	21	07 APR 1950	A	10100	20	Black and White 8.25 x 7.5
RAF/541/483	1062	RS	4208	P	TL 058 643	21	07 APR 1950	A	10100	20	Black and White 8.25 x 7.5
RAF/541/483	1062	RS	4352	P	TL 079 657	24	07 APR 1950	A	10100	20	Black and White 8.25 x 7.5
RAF/541/483	1062	RS	4353	P	TL 074 658	24	07 APR 1950	A	10100	20	Black and White 8.25 x 7.5
RAF/541/483	1062	RS	4354	P	TL 068 658	24	07 APR 1950	A	10100	20	Black and White 8.25 x 7.5
RAF/541/483	1062	RS	4355	P	TL 063 658	24	07 APR 1950	A	10100	20	Black and White 8.25 x 7.5
OS/73316	10429	V	350	N	TL 085 639	1	16 JUN 1973	A	7500	12	Black and White 9 x 9
OS/73316	10429	V	351	N	TL 077 639	1	16 JUN 1973	A	7500	12	Black and White 9 x 9
OS/73316	10429	V	352	N	TL 069 639	1	16 JUN 1973	A	7500	12	Black and White 9 x 9
OS/73316	10429	V	353	N	TL 060 639	1	16 JUN 1973	A	7500	12	Black and White 9 x 9
OS/73316	10429	V	370	N	TL 055 653	2	16 JUN 1973	A	7500	12	Black and White 9 x 9
OS/73316	10429	V	371	N	TL 063 653	2	16 JUN 1973	A	7500	12	Black and White 9 x 9
OS/73316	10429	V	372	N	TL 071 652	2	16 JUN 1973	A	7500	12	Black and White 9 x 9
OS/73316	10429	V	373	N	TL 079 652	2	16 JUN 1973	A	7500	12	Black and White 9 x 9
OS/73316	10429	V	374	N	TL 087 652	2	16 JUN 1973	A	7500	12	Black and White 9 x 9
OS/73316	10429	V	458	N	TL 081 665	3	16 JUN 1973	A	7500	12	Black and White 9 x 9
OS/73316	10429	V	459	N	TL 074 665	3	16 JUN 1973	A	7500	12	Black and White 9 x 9
OS/73316	10429	V	460	N	TL 066 665	3	16 JUN 1973	A	7500	12	Black and White 9 x 9





<b>Sortie number</b>	<b>Library number</b>	<b>Camera position</b>	<b>Frame number</b>	<b>Held</b>	<b>Centre point</b>	<b>Run</b>	<b>Date</b>	<b>Sortie quality</b>	<b>Scale 1:</b>	<b>Focal length (in inches)</b>	<b>Film details (in inches)</b>
OS/75015	12086	V	75	N	TL 092 659	3	20 APR 1975	A	10200	6	Black and White 9 x 9
OS/75015	12086	V	76	N	TL 083 659	3	20 APR 1975	A	10200	6	Black and White 9 x 9
OS/75174	12120	V	175	P	TL 079 641	3	06 JUN 1975	A	10200	6	Black and White 9 x 9
OS/75174	12120	V	176	P	TL 070 641	3	06 JUN 1975	A	10200	6	Black and White 9 x 9
OS/75174	12120	V	177	P	TL 061 641	3	06 JUN 1975	A	10200	6	Black and White 9 x 9
OS/75174	12120	V	199	P	TL 063 660	4	06 JUN 1975	A	10200	6	Black and White 9 x 9
OS/75174	12120	V	200	P	TL 071 660	4	06 JUN 1975	A	10200	6	Black and White 9 x 9
OS/75174	12120	V	201	P	TL 079 659	4	06 JUN 1975	A	10200	6	Black and White 9 x 9
OS/96587	15168	V	74	P	TL 054 654	2	04 JUN 1996	A	7900	12	Black and White 9 x 9
OS/96587	15168	V	75	P	TL 054 650	2	04 JUN 1996	A	7900	12	Black and White 9 x 9
OS/96587	15168	V	76	P	TL 055 645	2	04 JUN 1996	A	7900	12	Black and White 9 x 9
OS/96587	15168	V	77	P	TL 055 640	2	04 JUN 1996	A	7900	12	Black and White 9 x 9
OS/96587	15168	V	155	P	TL 065 659	4	04 JUN 1996	A	7900	12	Black and White 9 x 9
OS/96587	15168	V	156	P	TL 065 654	4	04 JUN 1996	A	7900	12	Black and White 9 x 9
OS/96587	15168	V	157	P	TL 065 649	4	04 JUN 1996	A	7900	12	Black and White 9 x 9
OS/96587	15168	V	158	P	TL 065 645	4	04 JUN 1996	A	7900	12	Black and White 9 x 9
OS/96587	15168	V	159	P	TL 065 640	4	04 JUN 1996	A	7900	12	Black and White 9 x 9
OS/96587	15168	V	160	P	TL 065 635	4	04 JUN 1996	A	7900	12	Black and White 9 x 9
OS/96587	15168	V	237	P	TL 075 659	6	04 JUN 1996	A	7900	12	Black and White 9 x 9
OS/96587	15168	V	238	P	TL 075 655	6	04 JUN 1996	A	7900	12	Black and White 9 x 9
OS/96587	15168	V	239	P	TL 075 650	6	04 JUN 1996	A	7900	12	Black and White 9 x 9
OS/96587	15168	V	240	P	TL 075 645	6	04 JUN 1996	A	7900	12	Black and White 9 x 9
OS/96587	15168	V	241	P	TL 074 639	6	04 JUN 1996	A	7900	12	Black and White 9 x 9



<b>Sortie number</b>	<b>Library number</b>	<b>Camera position</b>	<b>Frame number</b>	<b>Held</b>	<b>Centre point</b>	<b>Run</b>	<b>Date</b>	<b>Sortie quality</b>	<b>Scale 1:</b>	<b>Focal length (in inches)</b>	<b>Film details (in inches)</b>
OS/96587	15168	V	242	P	TL 074 634	6	04 JUN 1996	A	7900	12	Black and White 9 x 9
OS/96588	15169	V	53	P	TL 084 635	2	04 JUN 1996	A	7900	12	Black and White 9 x 9
OS/96588	15169	V	54	P	TL 084 640	2	04 JUN 1996	A	7900	12	Black and White 9 x 9
OS/96588	15169	V	55	P	TL 084 645	2	04 JUN 1996	A	7900	12	Black and White 9 x 9
OS/96588	15169	V	56	P	TL 084 650	2	04 JUN 1996	A	7900	12	Black and White 9 x 9
OS/96588	15169	V	57	P	TL 084 655	2	04 JUN 1996	A	7900	12	Black and White 9 x 9
OS/96588	15169	V	58	P	TL 084 660	2	04 JUN 1996	A	7900	12	Black and White 9 x 9
OS/98634	22757	V	48	N	TL 084 654	3	20 JUL 1998	A	7600	12	Black and White 9 x 9
OS/98634	22757	V	49	N	TL 079 654	3	20 JUL 1998	A	7600	12	Black and White 9 x 9
OS/98634	22757	V	50	N	TL 074 654	3	20 JUL 1998	A	7600	12	Black and White 9 x 9
OS/98634	22757	V	51	N	TL 069 654	3	20 JUL 1998	A	7600	12	Black and White 9 x 9
OS/98634	22757	V	52	N	TL 064 654	3	20 JUL 1998	A	7600	12	Black and White 9 x 9
OS/98634	22757	V	53	N	TL 059 654	3	20 JUL 1998	A	7600	12	Black and White 9 x 9
OS/98634	22757	V	54	N	TL 054 654	3	20 JUL 1998	A	7600	12	Black and White 9 x 9
ADA/084	26123	V	15	N	TL 049 628	1	27 APR 1982	A	15000	6	Black and White 9 x 9
ADA/084	26123	V	16	N	TL 050 642	1	27 APR 1982	A	15000	6	Black and White 9 x 9
ADA/084	26123	V	17	N	TL 050 655	1	27 APR 1982	A	15000	6	Black and White 9 x 9
ADA/131	26197	V	12	N	TL 050 660	1	13 JUN 1983	A	14000	6	Black and White 9 x 9
ADA/131	26197	V	13	N	TL 049 646	1	13 JUN 1983	A	14000	6	Black and White 9 x 9
ADA/131	26197	V	14	N	TL 050 634	1	13 JUN 1983	A	14000	6	Black and White 9 x 9
ADA/220Z	26341	V	12	N	TL 050 660	1	29 JUL 1984	A	15000	6	Black and White 9 x 9
ADA/220Z	26341	V	13	N	TL 049 646	1	29 JUL 1984	A	15000	6	Black and White 9 x 9
ADA/220Z	26341	V	14	N	TL 049 634	1	29 JUL 1984	A	15000	6	Black and White 9 x 9



<b>Sortie number</b>	<b>Library number</b>	<b>Camera position</b>	<b>Frame number</b>	<b>Held</b>	<b>Centre point</b>	<b>Run</b>	<b>Date</b>	<b>Sortie quality</b>	<b>Scale 1:</b>	<b>Focal length (in inches)</b>	<b>Film details (in inches)</b>
ADA/261	26407	V	40	N	TL 047 630	1	07 JUL 1985	AC	15000	6	Black and White 9 x 9
ADA/261	26407	V	41	N	TL 045 641	1	07 JUL 1985	AC	15000	6	Black and White 9 x 9
ADA/261	26407	V	42	N	TL 046 650	1	07 JUL 1985	AC	15000	6	Black and White 9 x 9
ADA/261	26407	V	43	N	TL 047 661	1	07 JUL 1985	AC	15000	6	Black and White 9 x 9
ADA/282Z	26454	V	215	N	TL 049 661	5	19 MAY 1986	A	15000	6	Black and White 9 x 9
ADA/282Z	26454	V	216	N	TL 050 647	5	19 MAY 1986	A	15000	6	Black and White 9 x 9
ADA/282Z	26454	V	217	N	TL 050 634	5	19 MAY 1986	A	15000	6	Black and White 9 x 9
ADA/338	26536	V	24	N	TL 051 662	1	30 JUN 1987	A	14000	6	Black and White 9 x 9
ADA/338	26536	V	25	N	TL 051 647	1	30 JUN 1987	A	14000	6	Black and White 9 x 9
ADA/338	26536	V	26	N	TL 051 633	1	30 JUN 1987	A	14000	6	Black and White 9 x 9

## APPENDIX C. BIBLIOGRAPHY

### **Publications**

- Bush, L. 2012 *Late Iron Age to Early Roman and Medieval Activity at Manor Farm, Pertenhall, Bedfordshire: Archaeological Evaluation Report*. OA East Report no. 1493. Unpublished
- Bigmore, P. 1979 *The Bedfordshire And Huntingdonshire Landscape*. Hodder & Stoughton
- Clover, K. 2012 *Manor Farm, Green End, Pertenhall, Bedfordshire: Desk-Based Heritage Assessment*. OA East Report no. 1487. Unpublished
- Godber, J. 1969 *History of Bedfordshire 1066-1888*. Bedfordshire County Council
- Land Use Consultants 2007 *Bedford Borough Landscape Character Assessment*. Bedfordshire County Council
- Ludlow, H. & Burton, A. 2013 *Proposed Solar Farm, Manor Farm, Pertenhall, Bedfordshire: Landscape and Visual Impact Assessment, Revised Layout*. Greenwillows Associates Ltd. Report no. G57.13. Unpublished
- Lasdun, S. 1991 *The English Park: Royal, Private and Public*. Andre Deutsch Ltd
- Mawer, A. & Stenton, F.M. 1969 *The Place-names of Bedfordshire and Huntingdonshire*. Cambridge University Press
- Palmer, R. 2007 'Aerial Photographic Assessment' in Atkins, R. *Stow Longa to Tilbrook (Huntingdonshire), Anglian Water Pipeline: Desktop assessment and Air Photo Report*. OA East Report no. 964. Unpublished

### **Online Sources**

- British Geological Survey Available: <http://mapapps.bgs.ac.uk/geologyofbritain/home.html>  
Accessed 26 February 2014
- Dept. for Communities and Local Government 2012 *National Planning Policy Framework*.  
Accessed 3 March 2014. Available:  
[https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/6077/2116950.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/6077/2116950.pdf)
- English Heritage 2010 'The Setting of Heritage Assets'. Accessed 24 February 2014.  
Available: <http://www.english-heritage.org.uk/publications/setting-heritage-assets/setting-heritage-assets.pdf>
- Heritage Gateway Available: <http://www.heritagegateway.org.uk/gateway/> Accessed  
24 February 2014
- Highways Agency 2007 'Design Manual for Roads and Bridges, Volume 11, Section 3, HA208/07'. Accessed 26 February 2014. Available:  
<http://www.dft.gov.uk/ha/standards/dmrb/vol11/section3/ha20807.pdf>
- Institute for Archaeologists 2012 'Standards and Guidance for Archaeological Desk-Based Assessment'. Accessed 24 February 2014. Available:  
<http://www.archaeologists.net/sites/default/files/node-files/DBA2012-Working-draft.pdf>
- Page, W. 1912 'Parishes: Pertenhall', *A History of the County of Bedford: Volume 3* (1912), pp. 153-157. Available: <http://www.british-history.ac.uk/report.aspx?compid=42404> Accessed 24 February 2014

***Historic Maps Consulted***

Speed's Map of Bedfordshire, 1610 (MC 2/2)

Thomas Jeffreys' Map of the County of Bedford, 1765 (2/11, 12, 12a)

A. Bryant's Map of the County of Bedford, 1826

Plan of part Part of the Parish of Pertenhall previous to its enclosure, 1796(X1432)

Plan of Part of the Parish of Pertenhall as divided and enclosed, 1796 (MA6/2)

Estate Map of Bolnhurst, Keysoe and Pertenhall (WG915/A and B)

Enclosure Map of Keysoe, 1806 (MA48)

1st Edition OS, 1 inch, c 1813 (Bedford and Northampton, Sheet 53)

Tithe Map of Pertenhall, 1840 (MAT 35/1) and Apportionment (AT27)

Tithe Map of Keysoe 1844 (MAT27) and Apportionment (AT27)

Estate Map of Corpus Christi College Estates in the parishes of Pertenhall, Keysoe and Swineshead, 1869 (Z236/11)

1st Edition OS, 6 inch, 1879-84

1st Edition OS, 25 inch, 1879-84

2nd Edition OS, 6 inch, 1902

2nd Edition OS, 25 inch, 1901

## APPENDIX D. OASIS REPORT FORM

All fields are required unless they are not applicable.

### Project Details

OASIS Number	<input type="text" value="oxfordar3-172393"/>		
Project Name	<input type="text" value="Manor Farm, Pertenhall, Bedfordshire"/>		
Project Dates (fieldwork)	Start <input type="text"/>	Finish	<input type="text"/>
Previous Work (by OA East)	<input type="text" value="Yes"/>	Future Work	<input type="text" value="Unknown"/>

### Project Reference Codes

Site Code	<input type="text" value="XBDMFP13"/>	Planning App. No.	<input type="text" value="13/01621/MAF"/>
HER No.	<input type="text" value="BEDFM 2014.19"/>	Related HER/OASIS No.	<input type="text" value="oxfordar3-145226"/>

### Type of Project/Techniques Used

Prompt	<input type="text" value="Direction from Local Planning Authority - PPG16"/>
Development Type	<input type="text" value="Rural Commercial"/>

**Please select all techniques used:**

#### DBA

<input checked="" type="checkbox"/> Aerial Photography - interpretation	<input checked="" type="checkbox"/> Documentary Search
<input type="checkbox"/> Aerial Photography - new	<input checked="" type="checkbox"/> Visual Inspection (Site Visit)

### Monument Types & Period

List feature types using the [NMR Monument Type Thesaurus](#) together with their respective periods. If no features were found, please state "none".

Monument	Period
<input type="text" value="Moated Manor"/>	<input type="text" value="Medieval (1066 to 1540)"/>
<input type="text" value="Cropmarks"/>	<input type="text" value="Uncertain"/>
<input type="text" value="Historic Building"/>	<input type="text" value="Post Medieval (1540 to 1901)"/>
<input type="text"/>	<input type="text" value="Select period..."/>

### Project Location

County	<input type="text" value="Bedfordshire"/>	Site Address (including postcode if possible)
District	<input type="text" value="St. Neots"/>	<input type="text" value="Manor Farm&lt;br/&gt;Green End&lt;br/&gt;Pertenhall MK44"/>
Parish	<input type="text" value="Pertenhall"/>	
HER	<input type="text" value="Central Bedfordshire"/>	
Study Area	<input type="text" value="4km"/>	National Grid Reference <input type="text" value="510786, 264596"/>

## Project Originators

Organisation	OA EAST
Project Brief Originator	Vanessa Clarke
Project Design Originator	Richard Mortimer
Project Manager	Richard Mortimer
Supervisor	Louise Bush

## Project Archives

Physical Archive	Digital Archive	Paper Archive
Bedford Museum	OA East	Bedford Museum
XBDMFP13	XBDMFP13	XBDMFP13

## Archive Contents/Media

	Physical Contents	Digital Contents	Paper Contents
Animal Bones	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ceramics	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Environmental	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Glass	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Human Bones	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Industrial	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Leather	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Metal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stratigraphic		<input type="checkbox"/>	<input type="checkbox"/>
Survey		<input type="checkbox"/>	<input type="checkbox"/>
Textiles	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wood	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Worked Bone	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Worked Stone/Lithic	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
None	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Digital Media	Paper Media
<input type="checkbox"/> Database	<input type="checkbox"/> Aerial Photos
<input type="checkbox"/> GIS	<input type="checkbox"/> Context Sheet
<input type="checkbox"/> Geophysics	<input type="checkbox"/> Correspondence
<input checked="" type="checkbox"/> Images	<input type="checkbox"/> Diary
<input checked="" type="checkbox"/> Illustrations	<input type="checkbox"/> Drawing
<input type="checkbox"/> Moving Image	<input type="checkbox"/> Manuscript
<input type="checkbox"/> Spreadsheets	<input type="checkbox"/> Map
<input type="checkbox"/> Survey	<input type="checkbox"/> Matrices
<input checked="" type="checkbox"/> Text	<input type="checkbox"/> Microfilm
<input type="checkbox"/> Virtual Reality	<input type="checkbox"/> Misc.
	<input checked="" type="checkbox"/> Research/Notes
	<input type="checkbox"/> Photos
	<input type="checkbox"/> Plans
	<input checked="" type="checkbox"/> Report
	<input type="checkbox"/> Sections
	<input type="checkbox"/> Survey

### Notes:





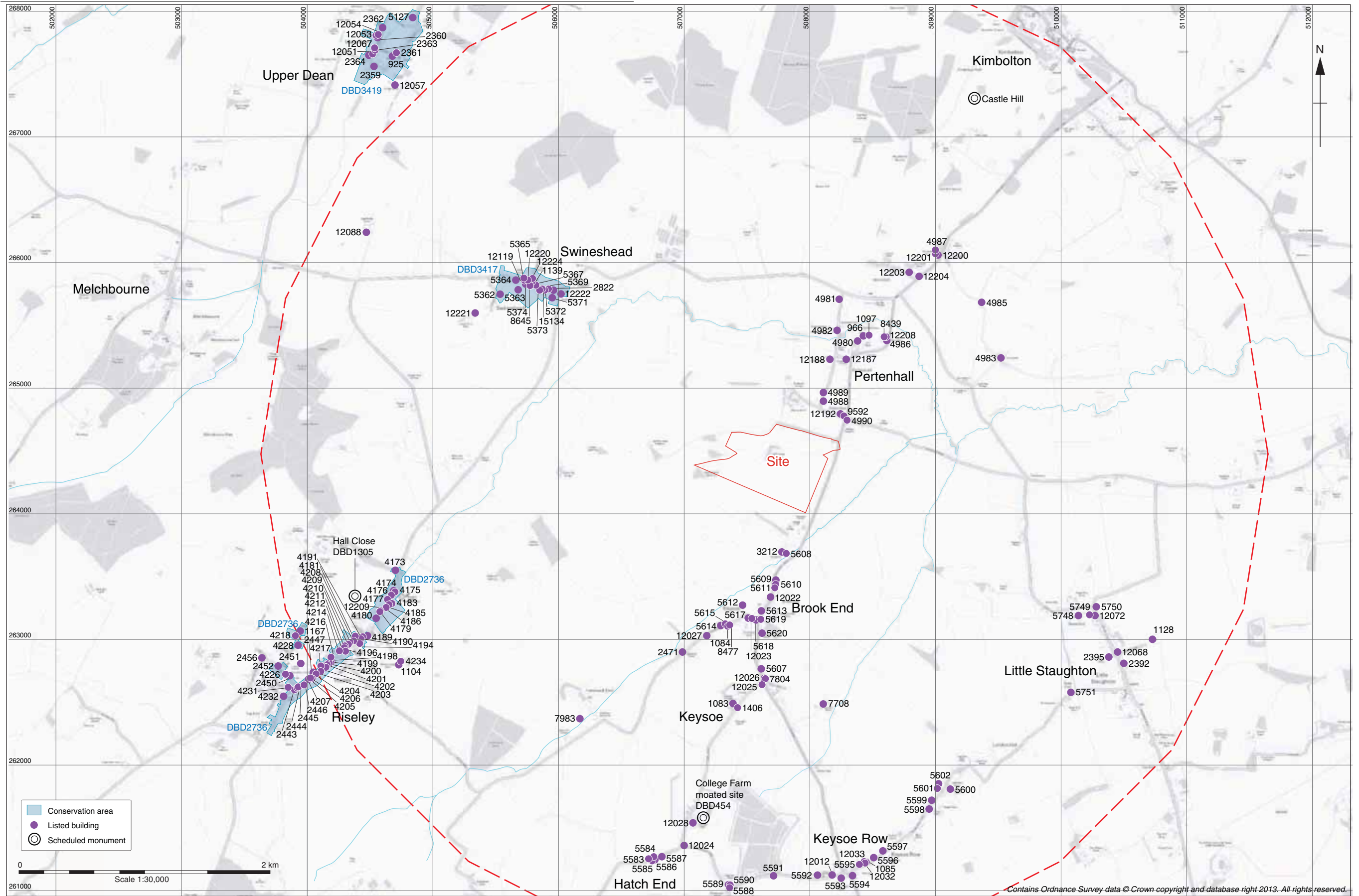


Figure 2: Site location map showing proposed development and designated sites within a 4km radius



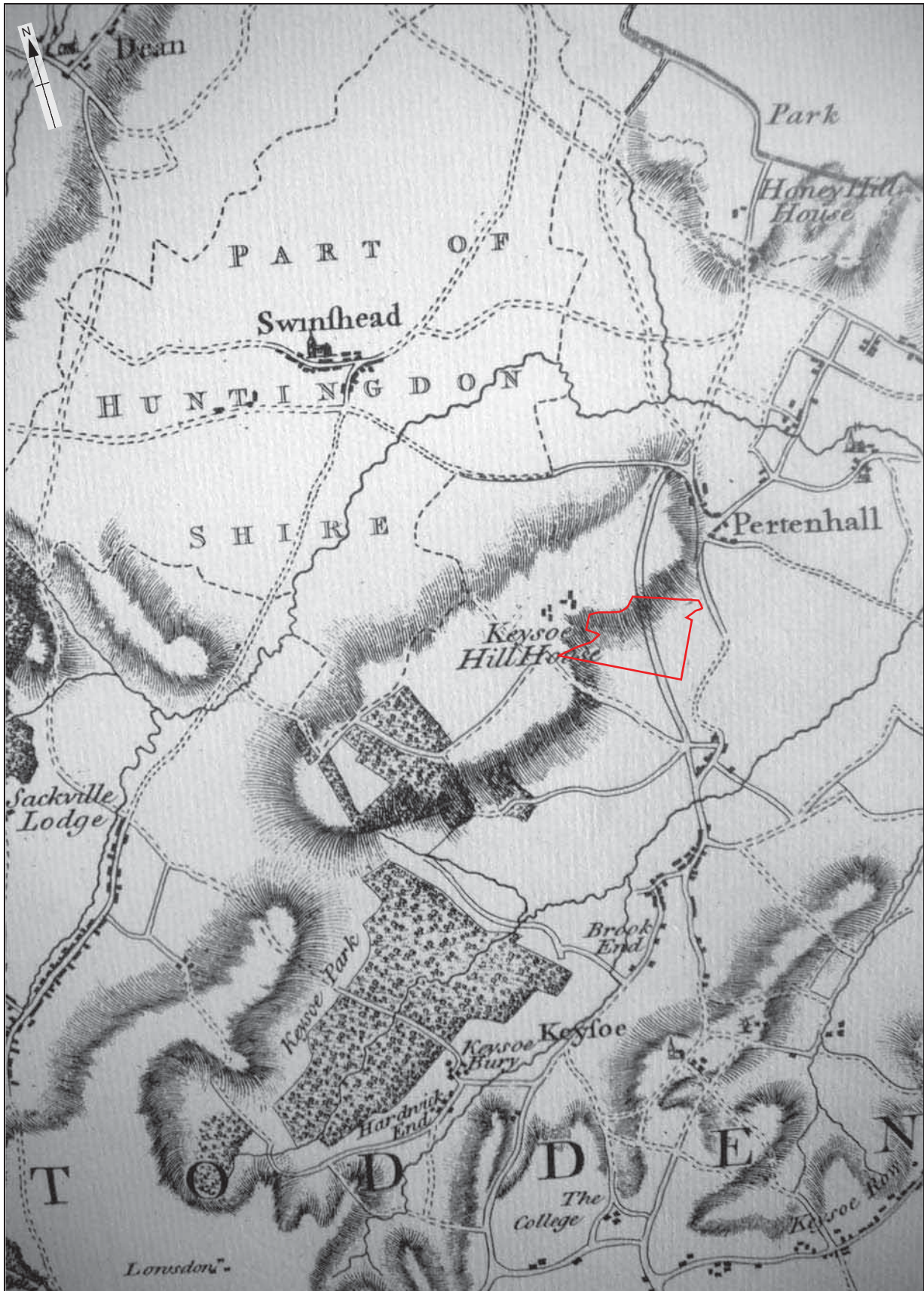


Figure 3: Thomas Jeffreys' Map of the County of Bedford, 1765



Figure 4: Enclosure Map of Keysoe, 1806





Figure 5: Bryant's Map of the County of Bedford, 1826



Figure 6: Tithe Map of Keysoe, 1844



Figure 7: Estate Map of Corpus Christi College Estates in the parishes of Pertenhall, Keysoe and Swineshead, 1869



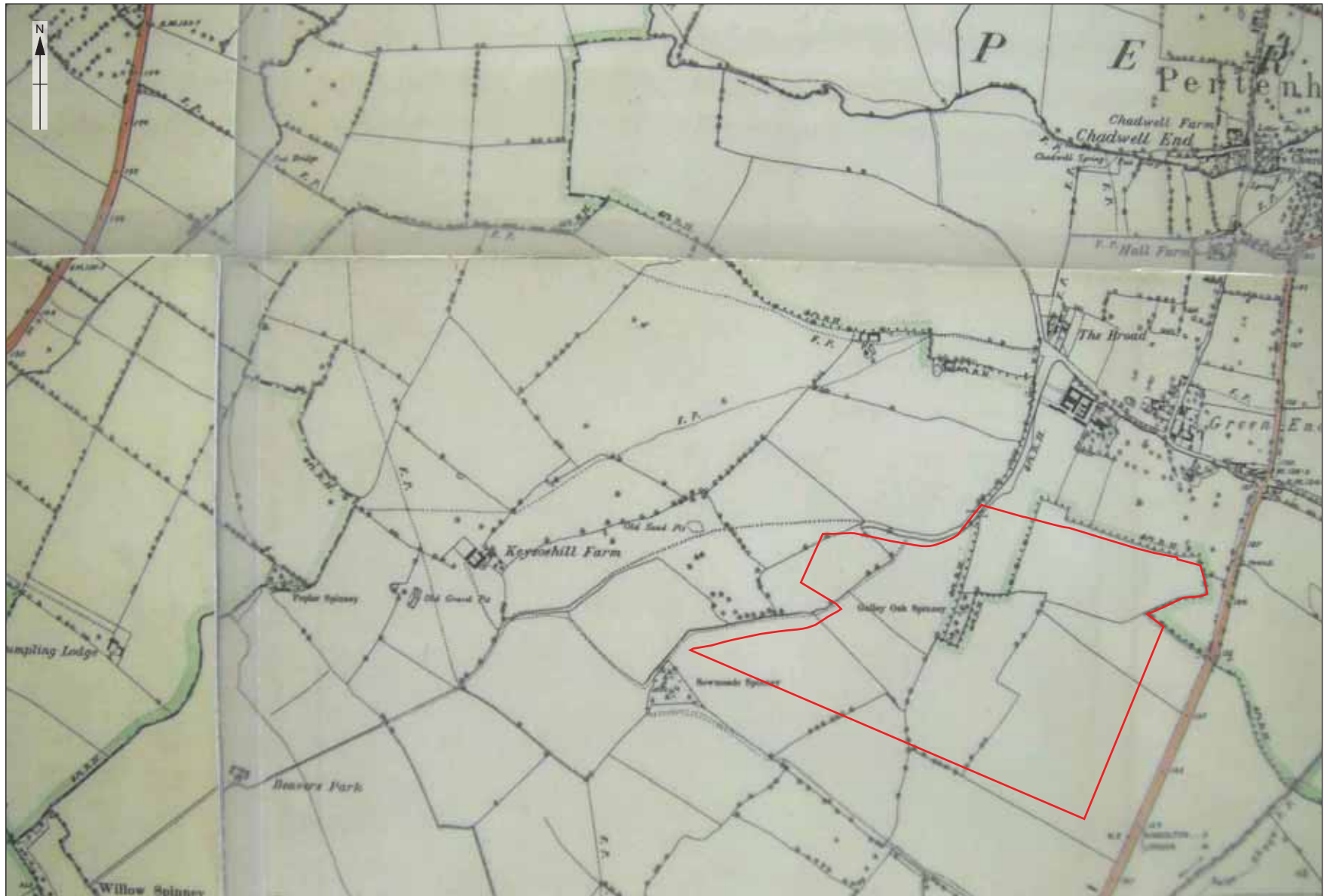


Figure 8: 1st edition 6 inch Ordnance Survey Map, 1879

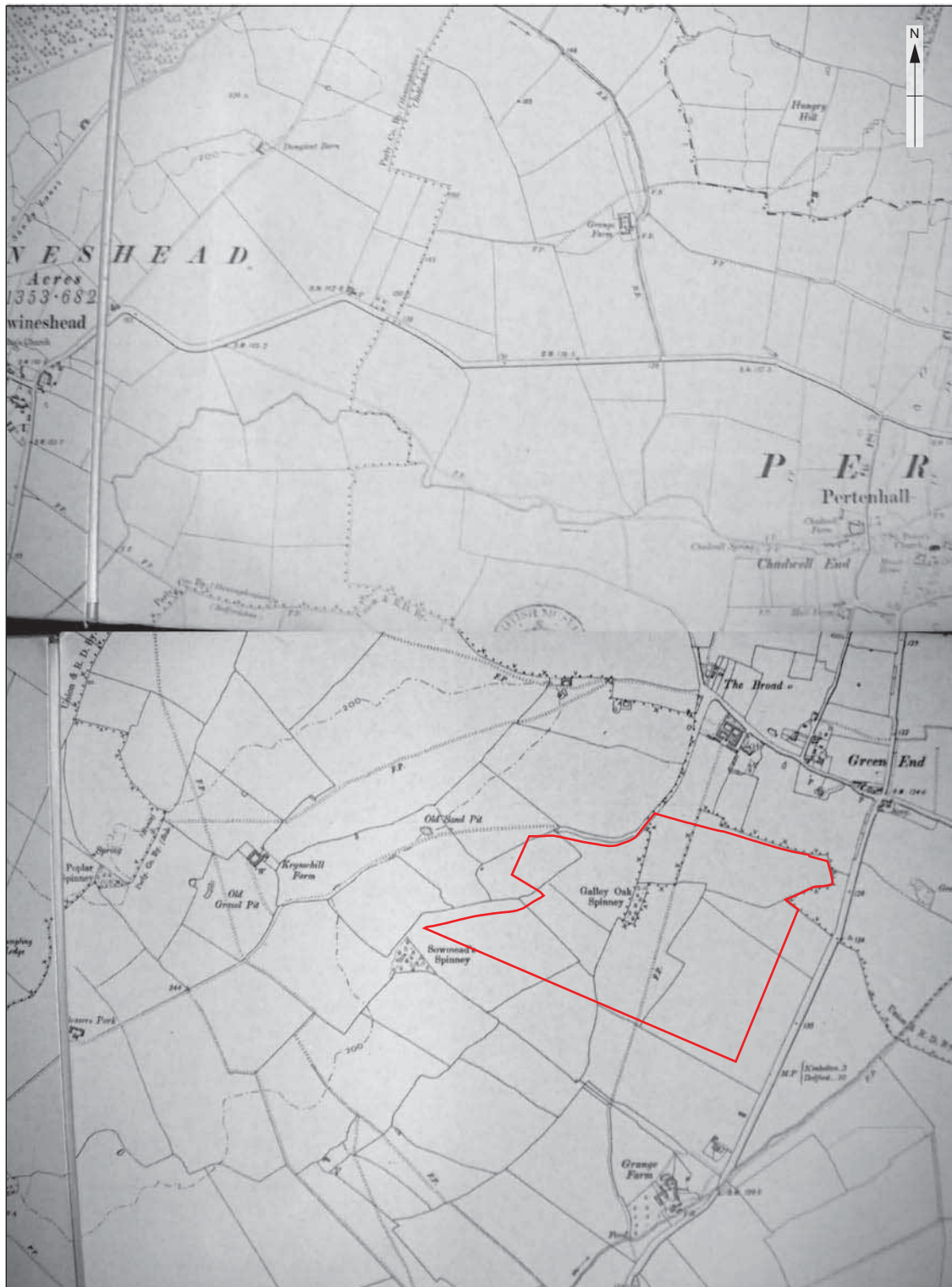


Figure 9: 2nd Edition 6 inch Ordnance Survey Map, 1902



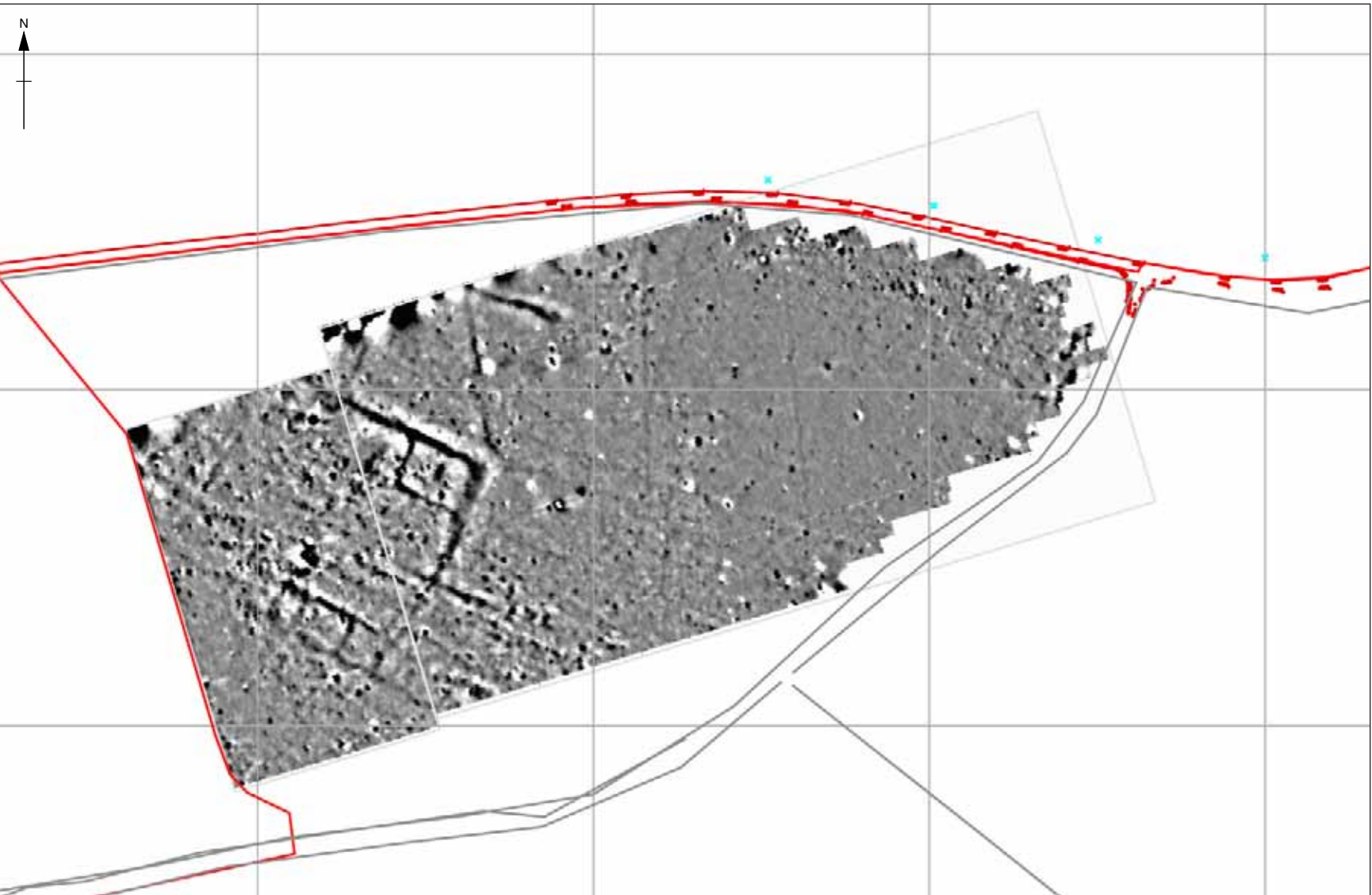


Figure 10: Geophysics results

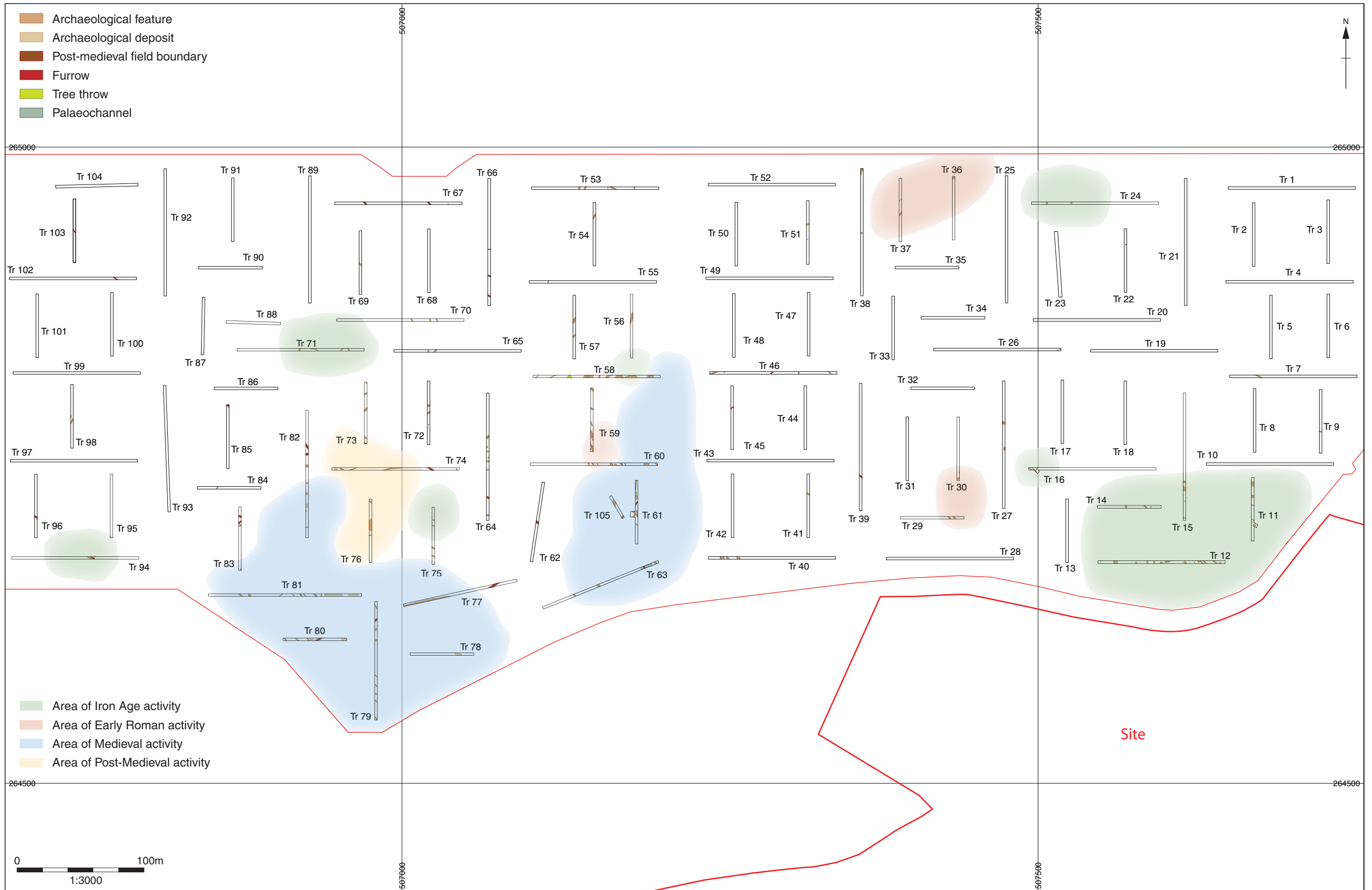


Figure 11: Plan of archaeological evaluation immediately north of Site

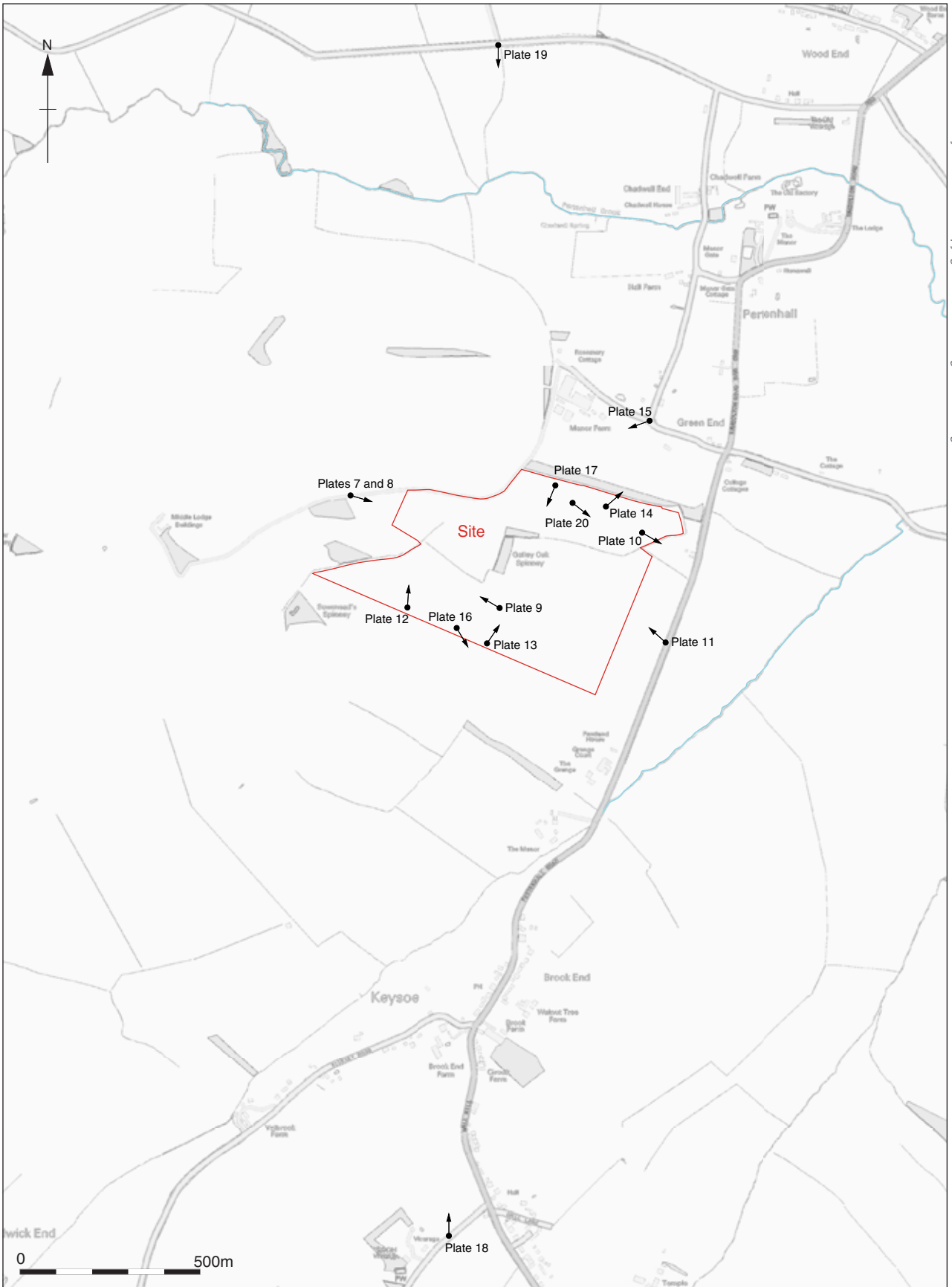


Figure 12: Plan of viewpoint locations



Plate 1: Oblique aerial photograph NMR 27094\_21, taken 30th June 2011, showing a number of circular cropmarks close to the Middle Lodge Buildings in the field west of Site



Plate 2: Vertical aerial photograph RAF/106G/UK/635/4027, taken 10th August 1945, showing Site at the top right and circular moat (HER 4474)





Plate 3: Oblique aerial photograph NMR 27094\_25, taken 30th June 2011, showing an Iron Age cropmark enclosure in the field immediately north of Site



Plate 4: Oblique aerial photograph NMR 23739/00A, taken 19th July 2005, showing the western part of Site



Plate 5: Oblique aerial photograph NMR 23739/08, taken 19th July 2005, showing the north-westernmost field of Site and circular moat (HER 4474)



Plate 6: Oblique aerial photograph NMR 23983/09, taken 19th July 2005, showing Site





Plate 7: Landscape viewpoint



Plate 8: Landscape viewpoint



Plate 9: View across Site toward moat and Middle Lodge Buildings (looking west-northwest)



Plate 10: View from centre of Site to Kimbolton Road (looking east)





Plate 11: View from Kimbolton Road across Site (looking west)



Plate 11: View across Site toward Swineshead Road, taken from south-western part of Site (looking north)



Plate 13: View to St Peter's Church spire, Pertenhall and houses at Green End, from southern part of Site (looking north)



Plate 14: View to houses at Green End, from north-eastern part of Site (looking north-east)



Plate 15: View from outside Clover Cottage, Green End across to north-western corner of Site (looking south-east)



Plate 16: View toward houses on Kimbolton Road, Brook End from south-western part of Site (looking south-east)





Plate 17: View to St Mary the Virgin Church spire, Keysoe from the eastern part of Site (looking south)



Plate 18: View from Church Road, Keysoe toward Site (looking north)



Plate 19: View from Swineshead Road across to Site with St Mary the Virgin Church spire (looking south)



Plate 20: View to All Saints Church spire, Little Staughton from the eastern part of Site (looking south-east)



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