Medieval Ridge and Furrow Cultivation at Pulloxhill Water Treatment Works

Earthwork Survey and Desk-Based Assessment

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Medieval Ridge and Furrow Cultivation at Pulloxhill Water Treatment Works

Earthwork Survey and Desk-Based Assessment

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Summary

In October 2012 Oxford Archaeology East undertook an earthwork survey and desk-based assessment to examine the available historical and archaeological resources relating to a 1.68ha plot of land at the Anglian Water Pulloxhill water treatment works at Sand Lane, Silsoe, Bedfordshire (centred on TL 0803 3353). The site lies 1.5km to the south of the village of Silsoe and 1.7km to the east of Pulloxhill. The work was commissioned by Anglian Water before a planning application had been submitted. The aim of the assessment was to define the archaeological potential of the site in advance of potential redevelopment. The desk-based assessment will be used to determine whether an archaeological evaluation of the area is required.

The assessment consisted of consultation of all data held in the Central Bedfordshire Historic Environment Record (HER) with in 1km of the site, an analysis of aerial photographs and historic mapping and a survey of the extant earthworks on the site. Two HER entries relate directly to the site: HER3322 refers to medieval ridge and furrow cultivation; HER16353 refers to the water treatment works building itself.

Analysis of aerial photographic evidence shows that ridge and furrow covered the entire plot prior to the construction of the water treatment works in the mid 20th century.

The earthwork survey was carried out between the 17th and 18th October in order to assess the character and survival of any earthworks on the site. The survey consisted of topographic and interpretive elements and conformed to the English Heritage Level 2 survey standard.

The site is separated into two plots, front and rear, by a modern fence. Extant medieval ridge and furrow cultivation, present on 17% of the plot, was located on both parts of the site surviving to a maximum height of 0.5m and a maximum length of 89m. It is concentrated in two areas; north centre of the front plot and the central area of the rear plot. No other archaeological features were identified. Features associated with activity relating to the water treatment works were identified in both the front and rear plots. These features cover or truncate any archaeological remains.
1 INTRODUCTION

1.1 Planning Background

1.1.1 Oxford Archaeology East has been commissioned by Anglian Water to produce a desk-based study and earthwork survey for a plot of land at the Pulloxhill water treatment works to the south of Silsoe (Figure 1; centred on TL 0803 3353). The aim of this assessment is to determine the nature and extent of any archaeological remains within the proposed development area in accordance with the guidelines set out in Planning Policy Statement 5: Planning for the Historic Environment recently revised in National Planning Policy Framework (Department for Communities and Local Government 2012). The work was carried out in compliance with a Brief produced by Martin Oake and in line with OA East's Specification for the work (Connor, October 2012).

1.1.2 This document comprises desk-based research as well as a description of the results of a Level 2 earthwork survey. On completion a copy of this report will be held at the Central Bedfordshire HER.

1.2 Location, Geology and Topography

1.2.1 The site lies predominantly on Gault Formation Grey Mudstone overlain to the south-east of the site by alluvial deposits and along the south-west by Head deposits (BGS 1992). Sloping from north to south, the site lies at a maximum height of 57m OD, falling to 53m in the south-east corner. The River Flit runs west to east 4km to the north.

1.2.2 The proposed development area lies in the east of the parish of Pulloxhill, 1.5km to the south of the village of Silsoe. It consists of a field aligned north-west to south-east encompassing a total area of 1.68ha, separated into two plots, front and rear, by a fence. The site is bounded to the north-west by Sand Lane, to the north-east by New Inn Farm and to the south-east and south-west by a brook which forms a natural boundary with the surrounding farm land.

1.3 Acknowledgements

1.3.1 The author would like to thank Stuart Proudlock of Anglian Water who commissioned and funded the work. Aileen Connor managed the project and edited the report. Sam Mellonie and Stephen Coleman of the Central Bedfordshire HER provided information of nearby sites, find-spots and listed buildings as well as access to aerial photographs and historic mapping. Thanks also go to Nigel Lutt and Pamela Birch of the Bedfordshire and Luton archives and records service for locating the historic mapping and to Severine Bezie for producing the final illustrations.
2 ARCHAEOLOGICAL AND HISTORICAL SOURCES

2.1 Historical Sources

2.1.1 The site lies at the eastern limit of the parish of Pulloxhill but in the medieval period it is likely to have fallen in to the lands of the now deserted village that lies at Kitchen End (HER17015), 0.5km to the south-west. There is no historical evidence making direct reference to the site, however the place name, which appears in the 13th century as Kechynge, may have an Anglo-Saxon origin, deriving from Cyccingas, the followers of Cuca (HER787). Historical reference to the nearby manor of Upbury (HER244) appears for the first time after the Dissolution as part of the lands of Dunstable Priory, but is likely to have had an earlier origin as the manor of Pulloxhill, recorded in the Domesdays survey (Page 1908).

2.2 The Historic Environment Record (HER)

2.2.1 A search was carried out of the Central Bedfordshire Historic Environment Record for all records within 1km of the site (Figure 2). All of the records identified in this area relate to the medieval period or later with no evidence of prehistoric or Roman activity thus far having been recorded.

Deserted medieval villages

2.2.2 Three deserted medieval villages lie within 1km of the current site. The site of Faldo (HER241), 775m to the south-west, survives as earthworks, whilst those of Gagmansbury (HER17014), 700m to the north-west, and Kitchen End (HER17015; HER4351; HER12852; HER 1488) 500m to the east, survive primarily as cropmarks seen on aerial photographs.

2.2.3 These villages probably had their origins in the 9th to 11th century when widespread nucleation of settlement occurred across the champion land of central England (Jones and Lewis 2012: 190). These nucleated villages typically had a series of planned rectangular fields associated with them. Abandonment of the villages appears to have occurred from the mid 14th century onwards although field systems may have remained in use.

Manors

2.2.4 The moated site of Upbury Manor (HER244), which is a scheduled monument (24416), survives as substantial earthworks adjacent to the remains of the Gagmansbury deserted medieval village, whilst cropmarks indicate that another moated site may lie 340m to the north-north-east of the current site (HER15089). It is likely that it was these manors which controlled the land which lies within the current site in the medieval period.

Ridge and Furrow

2.2.5 Medieval agricultural use of the land in the proposed development area has been identified in the form of ridge and furrow cultivation (HER3322; Section 3 below). This type of cultivation has been recorded by aerial photography on ten other sites in the search area and is particularly prominent in the fields adjacent to the north-east and south of the site, where 'S' shaped ridges typical of medieval 'open field' cultivation can be seen. This type of cultivation most commonly originated around the time of village nucleation at the beginning of the medieval period (Edgeworth 2007:93; Williamson 2003: 65).

Listed Buildings

2.2.6 Two listed buildings exist within 500m of the site. Both Kitchen End Farmhouse (HER13814; 19/89) and New Inn Farmhouse (HER3790; 347/5/125) date to the post-medieval period.
Other sites

2.2.7 The Pulloxhill waterworks buildings themselves are recorded in the HER (HER16307; Plate 1).

2.2.8 The modern A6 road runs north to south 175m to the east of the site. This road (HER19561) was built as part of the turnpike toll road system in the early 18th century and was used as such until the later 19th century. It was probably due to the construction of this road that the **New Inn** was built directly to east of the current site. A designated ancient woodland stands 800m to the north of the site at Buckle Grove (HER13237). The site of a demolished post-medieval barn lies adjacent to the turnpike road to the north of the site (HER7798). A post-medieval wheelhouse (HER15314) is situated 300m south-east of the site. A brooch dating to the medieval period has been recovered from a field to the north-east of the site.

Archaeological Excavations

*Cranfield University, Silsoe (Thatcher 2011)*

2.2.9 No archaeological excavation have been carried out within 1km of the site, but extensive excavations at Cranfield University in Silsoe (TL 0791 3550), 1.5km to the north, have uncovered evidence of occupation dating from the Late pre-Roman Iron Age up to the post-medieval period. The majority of the features on the site appeared to date to the medieval period (AD1066 – AD1500).

2.2.10 A portion of a putative relict Roman field system lay in the northern part of the site, in close proximity to an Early - Middle Saxon Sunken Featured Building with associated pits, which may represent the re-use of pre-existing land boundaries by the Saxon populace.

2.2.11 During the medieval period it appears that the focus of activity shifted to the south with the loci of settlement activity appearing to be West End Road. A series of plot boundaries were recorded on either side of the road and lying within these a number of quarry and cess pits were recorded. In the southern part of the site a mettled surface was recorded that was aligned perpendicular to the road and this may have formed a trackway leading southwards.

2.2.12 The site climaxed during the 12th to 14th centuries and it seems that the medieval field boundaries and plots largely fell out of use during the post medieval period.

2.2.13 Neolithic and Bronze Age (FDB 8831) artefacts have been recovered elsewhere in the village whilst Roman roof tile, indicative of a substantial building in the vicinity, was recovered from Cranfield University playing field.

2.3 Cartographic Evidence

2.3.1 The field in which the site is located appears on historic mapping dating back to 1765 (Table 1). No buildings are depicted on any map up until the waterworks are shown on the 1977 Ordnance Survey 1:2500 map. The New Inn to the west of the site in the adjacent field is shown on the **Jeffreys Map** of 1765 along with the turnpike road (Figure 3).

2.3.2 The **Enclosure Map** of 1826 (Figure 4) show the current course of Sand Lane, called Kitchen End Lane, with the field in which the site is located having the same boundaries that exist today. The field is ascribed as the 6th allotment of **Countess de Grey** who also owned a plot on the opposite side of Kitchen End Lane which is labelled as **Kitchen End Field**. This name may relate the historic link to the farm and perhaps the deserted village at Kitchen End.

2.3.3 These two fields are marked on a sketched map (L33/12c/1 1826?) which ascribes the land to **Ma. Bucley** and shows it to be in use as arable land. The field is labelled as **The Lower Field**.
2.3.4 The 6 inch to 1 mile Ordnance Survey maps of 1880-84 (Figure 5), 1890, 1901, 1924, 1925, 1948 and 1960 all show the site as an open field in its current form with no features or annotations. The first features to be mapped in the field are the buildings and tracks of the waterworks which appear on the 1:2500 published in 1977.

<table>
<thead>
<tr>
<th>Map</th>
<th>Ref.</th>
<th>Date</th>
<th>Scale</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jeffreys Map</td>
<td>-</td>
<td>1765</td>
<td>2&quot;:1 mile</td>
<td></td>
</tr>
<tr>
<td>Flitton: Map of the parishes of Flitton cum Silsoe and Pulloxhill in the C of B</td>
<td>MA56/1/1</td>
<td>1826</td>
<td>13.3&quot;:1 mile</td>
<td>6th allotment of Countess de Grey</td>
</tr>
<tr>
<td>Rough plan of Pulloxhill; ink on paper</td>
<td>L33/12c/1</td>
<td>c.1826?</td>
<td>26.6in:1 mile</td>
<td>The Lower Field, 199, Ma Bucley, f.8</td>
</tr>
<tr>
<td>Ordnance Survey first edition</td>
<td>-</td>
<td>c1880-1884</td>
<td>25&quot; 270</td>
<td>Plot 205</td>
</tr>
</tbody>
</table>

Table 1

3 AERIAL PHOTOGRAPHS

3.1.1 Five aerial photographs were available for consultation which showed the proposed development area (Table 2).

<table>
<thead>
<tr>
<th>Date</th>
<th>Reference</th>
<th>Scale</th>
<th>Format</th>
</tr>
</thead>
<tbody>
<tr>
<td>13th June 1947</td>
<td>CPE_UK_2159</td>
<td>20&quot; to 16,400'</td>
<td>Black and White</td>
</tr>
<tr>
<td>14th October 1968</td>
<td>HSLUKBED68806</td>
<td>6&quot; to 6,000'</td>
<td>Black and White</td>
</tr>
<tr>
<td>8th April 1969</td>
<td>HSLUKBED69859</td>
<td>1:10,000</td>
<td>Black and White</td>
</tr>
<tr>
<td>18th July 1996</td>
<td>AerofilmS96C_564</td>
<td>1:10,000</td>
<td>Colour</td>
</tr>
<tr>
<td>1st June 2002</td>
<td>CUCAP22_121</td>
<td>1:10,000</td>
<td>Colour</td>
</tr>
</tbody>
</table>

Table 2

3.1.2 Ridge and furrow can be seen at least in part of the site on four of the photographs but this was entirely masked by undergrowth in 1996. The ridge and furrow can be seen most clearly on the 1947 and 1968 photographs (Figure 6). It appears to have been in an 'S' shaped form which can be seen in the field adjacent to the east. This pattern is reflected in the field boundary to the north-east of the plot indicating that this boundary was most likely added after cultivation had begun and that the plot of the current site was once part of a larger field. Eight ridges can be seen on these photographs and the interpretation is transcribed onto Figure 7.

3.1.3 The water-works first appears on the photograph from 1968.

3.1.4 A large amount of disturbance can be seen to have taken place to the rear of the site between 1968 and 1969. This disturbance includes a track which runs from north-west to south-east of the rear plot.

3.1.5 The rear plot was covered with undergrowth in the photographs from 1996 and 2002 indicating that very little activity was taking place there. Additional buildings appear in the front plot which mask and truncate the ridge and furrow which survived there.
4 EARTHWORK SURVEY

4.1 Introduction
4.1.1 Based on a site visit and an inspection of aerial photographic evidence by Martin Oake of Central Bedfordshire Council, a Brief was issued requiring an English Heritage Level 2 earthwork survey of the site of the Pulloxhill water treatment works. The survey was carried out over two days from the 17th to the 18th of October 2012.

4.2 Methodology
4.2.1 The work was carried out in accordance with guidelines set out by English Heritage (2007) for a level 2 earthwork survey. The survey was conducted using a Leica 1200 survey grade GPS using a fixed base station located over a reference point with a known 3D coordinate equivalent to that of the Ordnance Survey. A topographic survey was conducted over the whole site. Areas unaffected by the water treatment works (0.88ha) were surveyed, where possible, in a 1-2m grid supplemented by readings at the top and base of slopes. In areas where services, roads, tracks, buildings and other modern features had significantly disturbed the historic topography (0.8ha) only boundaries, detail and contours had height detail recorded.

4.2.2 Site conditions in the rear plot meant that the grid system could not be carried out in all parts of the site (Plate 2). These included significant undergrowth including hawthorns, roses and brambles as well as small stands of trees and shrubs, uneven ground and long grass. Where obstacles were encountered points were recorded at approximately 1m intervals around them to minimise data loss.

4.2.3 The GPS was also used to produce an interpretive plan of the features visible on the site. This was supplemented by site photography and the results of the topographic survey to produce a comprehensive interpretive record of all earthworks on the site.

4.2.4 Survey data was processed using Leica Geo office and topographic detail was produced and analysed using AutoCAD and Surfer. A digital hachured plan was produced using AutoCAD and Adobe Illustrator. Due to the natural topography of the site, sloping from north to south, and the height of the surviving earthworks, a contour map alone did not adequately illustrate the earthworks that were recorded. Visual representation of the earthworks was achieved through digital terrain modelling (D.T.M.) in AutoCAD and Surfer.

4.3 Results
4.3.1 The topographic survey of the site allowed for the creation of a digital terrain model from which interpretation could be made. Two different types of features could be identified from on-site visual inspection and analysis of the D.T.M. (Figure 8). The primary remains are ridge and furrow cultivation strips aligned north-west to south-east with the field. The remaining features appear to have been made by later, 20th century disturbance associated with the construction of the Water Treatment Works (Figure 10).

Ridge and Furrow

4.3.2 Six linear mounds were identified surviving as earthworks on the site. These ridges are thought to represent the ridges of a medieval ridge and furrow cultivation system. Three ridges with associated furrows were recorded in the south-eastern part of the front plot (Plate 3). A fourth ridge may be present to the north-east but it is truncated and covered by the modern fence line.

4.3.3 These features are truncated by services and the modern access road to the north-west. The two central ridges continue, in a denuded state, to the south-east into the rear plot. They are truncated at their south-eastern end by a modern access track.
maximum dimensions of ridge and furrow features in the front plot is 68m long (north-west to south-east), 7.5m wide (furrow to furrow) and 0.30m high.

4.3.4 Four ridges and associated furrows were identified in the rear plot (Plate 4). These features could be traced from a north-east to south-west aligned modern access track in the front plot for approximately 75m to the south-east. Their south-eastern limits being highly truncated by later activity. These features measure a maximum of 7.5m wide (furrow to furrow) and 0.5m high.

**Earthen Mound**

4.3.5 Located to the south-east of the plot, a large earthen mound (Plate 5) was located. This feature measures 55m in length, 30m wide and survives to a height of 1.50m.

**Other Features**

4.3.6 Several features, surviving as earthworks, appear to truncate the ridge and furrow in the rear plot. A modern track runs from a gate in the fence to a building associated with the water works which has been built on an artificial raised platform measuring 12.5m from north to south. Both the track and the platform cover or truncate the archaeological features.

4.3.7 An area of low-ground was identified to the south of the rear plot. This was associated with a mound, measuring 13m across, and two small hollows, 9m across, which may have been the remains of truncated ridge and furrow.

4.4 **Interpretation**

4.4.1 Taking all of the available evidence in to account a certain amount of phasing can be attributed to the features surviving as earthworks on the site.

4.4.2 Aerial photographic evidence indicates that most of the site was covered with ridge and furrow prior to the construction of the water works in the mid 20th century; therefore it is probable that all other features post-date the ridge and furrow and that they were associated with activities in the water works.

4.4.3 The ridge and furrow, most likely dating from the medieval period, can be seen on the 1947 aerial photograph to follow an 'S' shaped course. This course can be seen on the interpretive terrain model (Figure 9). This figure also highlights the continuation of the north-easternmost ridge in the rear plot as the south-westernmost ridge in the front plot, giving a total length for this earthwork of 89m.

4.4.4 The earthen mound located at the south-east of the site initially appeared to take the form of a 'headland' associated with medieval agriculture; however, given that it does not appear on the pre-1969 aerial photographs it is more likely to be a modern feature.

4.4.5 The area of low ground to the south of the plot, as well as the mound to the south-east are consistent with features caused by the modern disturbance seen on the 1969 aerial photograph.
5 DEPOSIT MAPPING

5.1 General
5.1.1 In this section, following mapping of the distribution of all known finds, ancient monuments, events, and earthworks, attempts are made to predict the existence of further remains within the study area. These predictions should not be used to produce ‘constraint maps’.

5.2 Prehistoric and Roman
5.2.1 No evidence of prehistoric or Roman activity has been located within 1km of the site, however the field system uncovered nearby at Silsoe indicates that there was activity in this area during this period. Given the often low-impact character of early prehistoric activity it is possible that some archaeology of this date exists on the site. Ridge and furrow cultivation, which is present on and around the site, tends to mask earlier features leading to an under-representation of earlier periods in areas where this type of cultivation was prevalent. Where earlier periods are present preservation of features tends to be moderate to good.

5.2.2 Furrows located to the west of the western site boundary can be seen to run perpendicular to those identified within the site. This may be an indication that this field boundary pre-dates the ridge and furrow and so the boundary may be prehistoric in origin.

5.2.3 In summary prehistoric and Roman activity could be present in any part of the proposed development site but is likely to be on only a small scale.

5.3 Saxon and Medieval
5.3.1 Place name evidence from the surrounding villages, including Kitchen End, Pulloxhill and Silsoe indicates a Saxon presence in this area although no direct evidence of Saxon occupation has been uncovered.

5.3.2 Medieval archaeology in the form of up to eight ‘S’ shaped ridge and furrow cultivation strips are the primary remains known to be present on the site. Although disturbance occurred in the mid-late 20th century, earthworks still survive both to the front and rear of the site.

5.3.3 In summary evidence of medieval agriculture is present on the site to the east of the front plot and in the western part of the rear plot. The ridge and furrow survives to a maximum height of 0.50m and a maximum length of 89m. It is not only a good example of medieval cultivation of this type but may also seal earlier archaeology beneath it.

5.4 Post-Medieval
5.4.1 Post-medieval remains relating to the agricultural use of the land (ridge and furrow, field boundaries and drainage works) could be present on any part of the site. However cartographic evidence indicates that no significant changes took place to the site in this period.

5.4.2 In summary there is potential for post-medieval archaeology across all undeveloped areas of the site but it likely to relate to agriculture rather than settlement.
6 DEGREE OF SURVIVAL

6.1 Assessment of Survival
6.1.1 This section broadly assesses the degree of survival of archaeological remains in the areas defined by deposit mapping. The assessment takes the form of a predictive model based on probability and not certainty. It is intended as a guide only.
6.1.2 The degree of preservation of potential buried remains within the study area is likely to have been significantly disturbed and destroyed in areas where building has already taken place. In areas unaffected by 20th century development preservation of earthworks is good due to the fact that modern agricultural methods have not been used here. The medieval agriculture may have impacted on the preservation of earlier deposits along the furrows, but equally the ridges are likely to have protected any underlying archaeological deposits.

6.2 Rating
6.2.1 Based on the distribution of known finds and their degree of survival in the study area, as defined in the previous sections, rating can be summarised as follows:

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<thead>
<tr>
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<th>Survival</th>
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<td>unknown</td>
</tr>
<tr>
<td>Roman</td>
<td>low</td>
<td>unknown</td>
</tr>
<tr>
<td>Saxon</td>
<td>low</td>
<td>unknown</td>
</tr>
<tr>
<td>Medieval</td>
<td>very high</td>
<td>very good</td>
</tr>
<tr>
<td>Post Medieval</td>
<td>moderate\high</td>
<td>unknown</td>
</tr>
</tbody>
</table>
7 Discussion

7.1 Earthworks

7.1.1 A topographic and interpretive survey of the proposed development area has identified six extant ridge and furrow cultivation beds most-likely dating to the medieval period (1066-1500). Construction of the water treatment works and associated infra-structure and services has removed any evidence of archaeological earthworks from much of the site, particularly in the north, west and south of the front plot.

7.1.2 None of the features survives in its entirety, the best preservation being situated in the centre of the site where ridges survive up to 0.5m in height. The surviving earthworks preserve the original 'S' shaped plan which is reflected in the field boundary to the north-east.

7.1.3 The survey also identified several areas in the rear plot where modern disturbance had affected the ridge and furrow. The archaeological features were truncated to the south of the rear plot, whilst they were covered by a mound of material, 1.5m high, to the south-east. Ridge and furrow may be preserved below this mound.

7.2 Archaeological Potential

7.2.1 Aerial photographic evidence shows ridge and furrow cultivation, relating to medieval open fields, surviving over the entire site prior to the construction of the water treatment works. Eight ridges are evident from the 1947 and 1968 photographs. Cartographic evidence does not show any significant changes to land-use on this plot since 1765 (Jeffreys map). Given that the site has not been subject to modern agricultural techniques and that the site had only been used for agriculture prior to the construction of the water treatment works there is a potential for moderate to good archaeological preservation on the site.

7.2.2 No sites pre-dating the medieval period have been uncovered in the vicinity of the site however, there is still potential for earlier remains to be present. Prehistoric, Roman and Saxon remains have been uncovered in the village of Silsoe, 1.5km to the north indicating that activity was present in this area at these times. It is possible that the ridge and furrow is masking evidence of earlier activity.
8 CONCLUSIONS

8.1.1 The objective of this study was to assess the archaeological potential of the Pulloxhill water treatment works by drawing together all known documentary, cartographic and archaeological evidence from the surrounding area and carrying out a survey of extant earthworks within the proposed development area.

8.1.2 Extant earthworks relating to medieval activity are present on 17% of the site, primarily located in the rear plot and an area to the north of the front plot. Earthwork remains in the rest of the site, that can be seen on aerial photographs, have been disturbed by activity relating to the water treatment works.

8.1.3 There is potential for the survival of archaeological remains on all parts of the site unaffected by modern buildings and services with the highest potential in those areas where ridge and furrow can be seen to survive.
## APPENDIX A.  BIBLIOGRAPHY

<table>
<thead>
<tr>
<th>Author</th>
<th>Year</th>
<th>Title</th>
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<tr>
<td>Connor, A.</td>
<td>2012</td>
<td>Written scheme of investigation for archaeological earthwork survey and desk based assessment: Pulloxhill WTW. OA East WSI.</td>
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<tr>
<td>English Heritage</td>
<td>2007</td>
<td>Understanding the archaeology of landscapes: A guide to good recording practice</td>
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<tr>
<td>Page, W.</td>
<td>1908</td>
<td>A history of the county of Bedford: Volume 2. Victoria County History. 376-381</td>
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<tr>
<td>Thatcher, C.</td>
<td>2011</td>
<td>Saxon and Medieval settlement at Cranfield University, Silsoe, Bedfordshire. Post-Excavation Assessment and Updated Project Design. OA East PXA report no. 1262</td>
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## Project Details

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### Type of Project/Techniques Used

- **Prompt**: Direction from Local Planning Authority - PPS 5
- **Development Type**: Service Infrastructure

### Please select all techniques used:

- [x] DBA
  - Aerial Photography - interpretation
  - Aerial Photography - new
  - Documentary Search
  - 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”.

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<td>Study Area</td>
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---

© Oxford Archaeology East  Page 18 of 19  Report Number 1418
### Project Originators

<table>
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<tr>
<th>Organisation</th>
<th>OA EAST</th>
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<tr>
<td>Project Brief Originator</td>
<td>Martin Oake</td>
</tr>
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<td>Project Design Originator</td>
<td>Aileen Connor</td>
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<td>Supervisor</td>
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### Digital Media

- Database
- GIS
- Geophysics
- Images
- Illustrations
- Moving Image
- Spreadsheets
- Survey
- Text
- Virtual Reality

### Paper Media

- Aerial Photos
- Context Sheet
- Correspondence
- Diary
- Drawing
- Manuscript
- Map
- Matrices
- Microfilm
- Misc.
- Research/Notes
- Photos
- Plans
- Report
- Sections
- Survey
Figure 2: Map showing entries in the vicinity of the site on the Historic Environment Record
Figure 3: Jeffreys Map of Bedfordshire, 1765 two inches to one mile
Figure 4: MA56/1/1 Ritton: 'Map of the parishes of Ritton cum Slsoe and Pulloxhill in the C of B. Award map accompanying Parliamentary Enclosure Award of 1826. 13.3" = 1 mile
Figure 5: Ordnance Survey 25" 270 1st ed c1880-84
Figure 6: Aerial photograph showing extent of surviving ridge and furrow on 14/10/1968 (HSL UK BED 68806 6": 6000' b/w)
Figure 7: Interpretation of Aerial photographic evidence
Figure 8: Results of topographic survey
Figure 9: Digital terrain model showing surviving earthworks (exaggerated vertical scale; coordinates shown in metres)
Figure 10: Interpretive plan of earthwork survey with cross sections across features.
Figure 11: Proposed development impact on earthworks, showing buildings in red and roads and hardstanding in blue.
Plate 1: The water treatment works building HER16307 (facing east)

Plate 2: Site conditions to the rear of the plot (facing south)
Plate 3: Surviving ridge and furrow at the front of the plot (facing east)

Plate 4: Surviving ridge and furrow to the rear of the plot (facing south-east)
Plate 5: Earthen mound to the rear of the plot (facing north)