

Land to the East of Whelford Road Kempford, Gloucestershire

Archaeological Geophysical Survey

September 2017

Client: Pye Homes

NGR: SU 1589 9700

Bartlett-Clark Consultancy



**LAND TO THE EAST OF WHELFORD ROAD,
KEMPSFORD, GLOUCESTERSHIRE**

**Archaeological Geophysical Survey
2017**

Report by:

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1. Introduction

A geophysical survey has been undertaken as part of an archaeological field evaluation which is required for planning purposes at the site of a proposed housing development at Kempford, Gloucestershire. The purpose of the survey was to test for evidence of archaeological features or remains which may be present at the site.

The survey was commissioned from Bartlett Clark Consultancy, Specialists in Archaeogeophysics of Oxford by Oxford Archaeology (OA). Fieldwork for the survey was completed on 25 August 2017 by M. Berry and P. Heykoop. Data processing and interpretation was done by P. Cottrell.

3. Survey Procedure

The site was investigated by means of a recorded magnetometer survey. A magnetometer survey is often able to identify the extent and character of cut features such as ditches and pits when they are silted with an increased depth of topsoil, which usually responds more strongly than the underlying natural subsoil. Fired materials, including baked clay structures such as kilns or hearths are also likely to produce a localised enhancement of the magnetic field strength, and the survey therefore responds preferentially to the presence of ancient settlement or industrial remains. The survey is also strongly affected by ferrous and other debris of recent origin.

Readings were collected along transects 1m apart using Bartington 1m fluxgate gradiometers, and are plotted at 25cm intervals along each transect. The survey data is shown at 1:1250 as a grey scale plot in figure 1, and as a graphical (x-y trace) plot at 1:1000 in figure 2. Comparison of these alternative representations allows the detected magnetic anomalies to be examined in plan and profile respectively. (Inclusion of the graphical plot also means that the report contains all the information required for further interpretation or re-assessment of the survey results.) An interpretation of the findings is shown superimposed on figure 2. This permits the interpreted outlines to be compared with the underlying data. A further interpreted plan of the findings is presented in figure 3.

The graphical plot in figure 2 shows the magnetometer readings after minimal pre-processing as mentioned in the English Heritage (2008) geophysical guidelines. [*Geophysical Survey in Archaeological Field Evaluation*; Section 4.8]. This includes adjustment for irregularities in line spacing caused by variations in the instrument zero setting, and truncation of extreme values. Additional weak 2D low pass filtering has been applied to the grey scale plot to adjust background noise levels.

Colour coding has been used in the interpretation to distinguish different effects. The interpretation is intended to categorize most of the identifiable magnetic anomalies, but cannot reproduce the detail of the grey scale plots.

Magnetic anomalies which may show characteristics to be expected from features of archaeological interest are outlined in red, and weaker or less reliable potential findings are shown in a lighter (pink) colour. Strong (and perhaps recent) disturbances are outlined in grey, and cultivation effects are indicated schematically in green. Some of the more conspicuous ferrous objects (identifiable as narrow spikes in the graphical plots) are marked in light blue. These are only sparsely distributed across most of the site.

2. The Site

The location and condition of the site are described, and nearby archaeological findings are reviewed, in the Archaeological Desk-Based Assessment previously prepared by Oxford Archaeology [1]. This information was further summarised in the Written Scheme of Investigation which was submitted to OA in advance of the survey [2]. The following notes are reproduced in part from these documents.

Topography and geology

The site is located in the middle of the village of Kempford. The site is flat, lying at c.77m, and is currently used for arable purposes. It is located to the east of Whelford Road and North of The Knoll, Kempford. The site is centred on NGR 415899 197007 and bounded on its eastern, southern and western sides by residential developments. It lies within the Cotswold district of Gloucestershire.

The evaluation area includes an arable field, and a proposed access route in a second field to the north. This route approaches the site from Whelford Road to the west. The access route was surveyed to a width of 20m, which is the usual minimum width for linear coverage. This gave a total survey area of c. 2.3 ha.

The bedrock underlying the site is a mudstone deposit of the Oxford Clay Formation. The superficial deposits are part of the Summertown-Radley Second gravel terrace, laid down in the Quaternary Period (BGS 2017). Soils both on a Jurassic bedrock of this kind, and on river terrace gravels, should provide favourable conditions for a magnetometer survey. Clearly defined archaeological findings have previously been detected in surveys at comparable locations.

Archaeological background

Cropmarks which are likely to represent two double-ditched trackways, a possible enclosure and possible pits have been recorded on the site. These are part of a larger complex of cropmarks extending to the north. The site is within a known Romano-British archaeological landscape comprising enclosures, field systems and settlements, and it is probable that at least some of the features within the site relate to activity of this period. The site is therefore considered to have a high potential to contain archaeological remains dating to the Romano-British period, as well as a high potential to contain antecedent Iron Age activity. The site is also located immediately adjacent to areas of probable medieval and certain post medieval settlement, and as such has a moderate potential to contain remains of these periods.

Three buildings dating to the early-mid 20th century were located in the south-east part of the site. These structures have since been demolished. Ground works associated with the construction and demolition of these building would have caused disturbance to any archaeological remains in the immediate vicinity of the former buildings. The entirety of the site has also been repeatedly ploughed in modern times. Plough damage would adversely impact any shallow archaeological remains present, but any more substantial or deeply buried archaeological features should still be detectable by means of a magnetometer survey.

4. Results

The survey has produced clearly defined findings which are consistent in their character and extent with the presence of archaeological features as indicated by the previously recorded cropmarks.

Findings which are identifiable with the cropmarks (as marked on the DBA plan inset in figure 3) include part of a rectilinear enclosure in the north-west of the main survey area (A, as labelled on figure 3), a curving enclosure in the south-west corner (B), and an adjacent ditched trackway (C). A rectilinear inner enclosure (D) is visible with the survey area, rather than on its southern boundary as indicated on the cropmark plan. This suggests that features shown in the cropmark interpretation are offset (by 20-25m) to the south of their correct locations. The enclosure D contains internal pit-like magnetic anomalies which would be consistent with the presence of settlement remains within and around the enclosure.

A small but distinct circular feature in the north-west of the field at E could perhaps represent a hut circle (c. 5m in diameter), but it is unclear whether other circular features are present nearby. Two larger circles at F may be visible in the grey scale plot, and are marked as possible archaeological features in the interpretation, but they are fragmentary and indistinct. It is possible therefore that any archaeological features present here have been more heavily eroded by cultivation than is the case for features A-D.

A parallel linear pattern of cultivation markings is visible across much of the field (as indicated in green in figure 3), and is likely to be caused by current or recent ploughing.

Additional linear features which appear to represent ditched enclosures (extending beyond the survey boundaries) are visible at G in the main survey area, and at H on the access route to the north. These features are not indicated on the cropmark plan.

There is strong magnetic activity along the southern and eastern boundaries of the survey, and in the south-eastern corner (I). These disturbances (outlined in grey) appear to represent a considerable spread of debris in the vicinity of the demolished buildings (mentioned above). The position of one of the buildings is shown on the 1920 OS map extract inset in figure 3, but the magnetic anomalies (probably caused by a scatter of brick or concrete fragments) spread for some distance into the surrounding area. It is perhaps unlikely that these disturbances obscure any archaeological findings, given that the survey does not suggest the presence of any clearly identifiable archaeological features in the eastern half of the site.

5. Conclusions

Conditions at the site appear (as expected on Jurassic bedrock) to be favourable for the magnetic detection of archaeological features, and the survey has produced a strong magnetic response. The findings confirm the presence of archaeological features corresponding to the cropmarks (including the enclosures and trackway A-D), and has detected a number of other potential findings. Some of these (the possible hut circle at E, and enclosures G,H) are clearly identifiable, but others (as at F) are fragmentary or indistinct, and (if genuine) might represent features affected by plough erosion.

The survey findings therefore strongly suggest the presence (as noted in the DBA) of settlement remains of late prehistoric or Roman date in the western half of the survey area, but findings in the east of the survey are limited to a spread of debris around the site of the demolished buildings at I.

References

- [1] *Land to the East of Whelford Road, Kempsford, Gloucestershire; Archaeological Desk-Based Assessment*. Report by A. Davies, Oxford Archaeology for West Waddy ADP. 25 May 2017.

- [2] *Land to the East of Whelford Road, Kempsford, Gloucestershire. Written Scheme of Investigation for Archaeological Geophysical Survey 2017*. Document submitted to Oxford Archaeology by Bartlett Clark Consultancy. 18 August 2017.

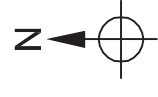
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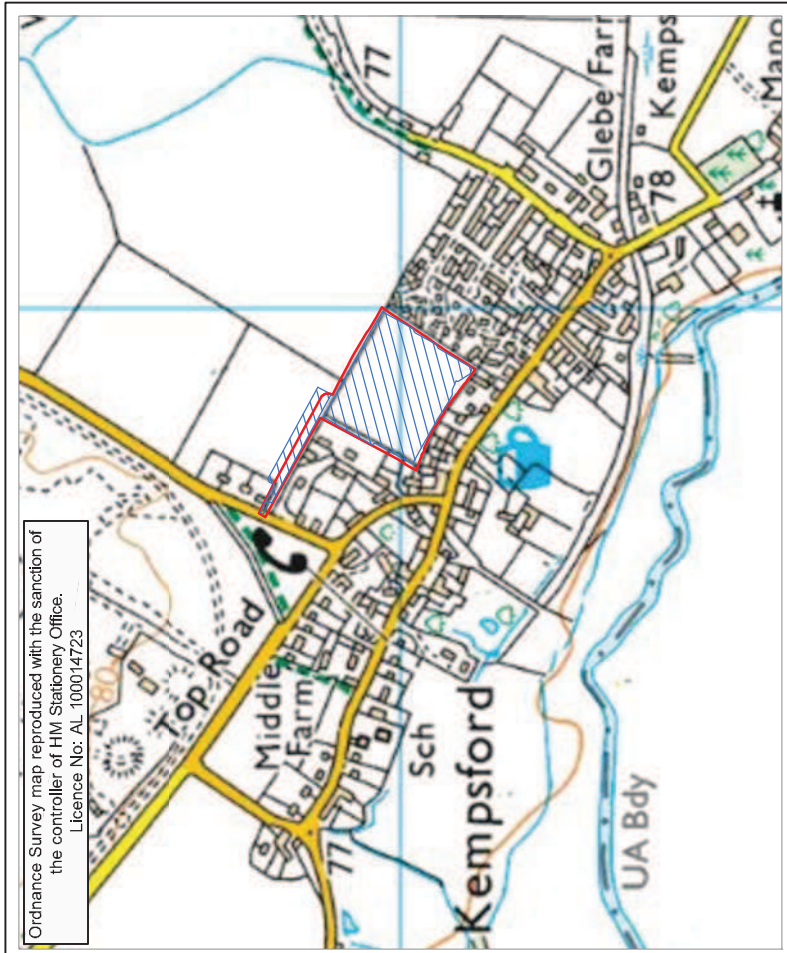
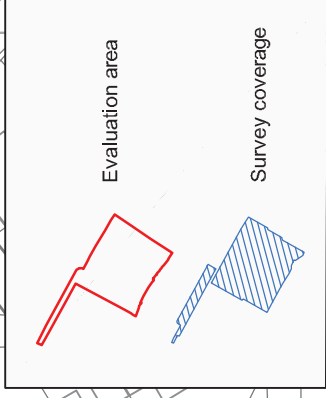
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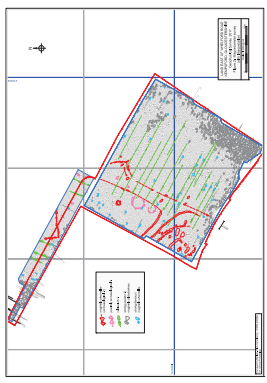
LAND EAST OF WHELFORD ROAD
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Geophysical Survey 2017
Figure 1: Magnetometer survey
(grey scale plot)
0 1:1250 @ A3 50m

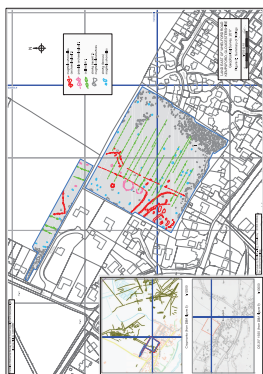


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Site location
1:10000

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