Springfield Farm, Ambrosden, Bicester
Oxfordshire

Report on Archaeological Geophysical Survey
2012

Surveyed by:

Bartlett-Clark Consultancy
25 Estate Yard, Cuckoo Lane,
North Leigh,
Oxfordshire OX29 6PW
01865 200864

for:

The Environmental Dimension Partnership
14 Inner Courtyard,
Whiteway Farmhouse,
The Whiteway,
Cirencester,
Gloucestershire GL7 7BA
01285 640640

Springfield Farm, Ambrosden, Bicester
Oxfordshire

Report on Archaeological Geophysical Survey 2012

Introduction

This report describes the findings from a geophysical survey which was carried out as part of an archaeological field assessment of a proposed development site at Ambrosden, Oxfordshire.

The survey was commissioned from Bartlett-Clark Consultancy (BCC), Specialists in Archaeogeophysics of Oxford, by the Environmental Dimension Partnership (EDP) of Cirencester. Fieldwork for the survey was done in the last week of August 2012.

The Site

The purpose of the survey was to test for evidence of archaeological features or remains within an area of about 7ha. The site is grassland located (at NGR SP609193) to the south east of Ambrosden.

The site is described in an Archaeological and Heritage Assessment, which has been prepared and supplied to us by EDP [1]. This document lists previously recorded archaeological sites and findings in the vicinity of the evaluation site. The following notes are reproduced and summarised from the assessment report.

Geology and topography

The underlying geology of the site is Jurassic Kellaways Clay. There may also be superficial deposits of clay, sand and gravel, including an alluvial flood plain immediately to the south of the survey area. The survey (and future development) are therefore limited to ground north of the floodplain. The stepped southern boundary of the survey area follows the edge of the flood plain (as indicated in blue on figures 1 and 4) as closely as is practical.

Sites on Jurassic geology usually respond well to magnetometer surveys, although the strength of magnetic response may be weaker on clay than on solid bedrock. Other surveys in comparable conditions (including some near Bicester) have previously produced positive archaeological findings.

.

Archaeology

It is noted in the Archaeological Assessment that the site contains no previously identified or designated archaeological features or remains, but its topography is similar to the land further north, where there is evidence for both prehistoric and Roman activity. It is considered therefore that there is low potential for the site to contain significant archaeological remains from the Middle Ages onwards, but it has moderate potential to contain archaeological deposits from the prehistoric and Roman periods.

Some nearby archaeological sites are indicated on the map (reproduced from [1]) inset in figure 4. There are no undesignated heritage assets of prehistoric or Roman date within the application site boundary, although there is evidence for settlement activity within the wider study area. Cropmarks identifying two ring ditches (HER 13909) are located to the north east of the site and are interpreted as being possible Bronze Age funerary monuments. Rock-cut pits further to north (HER 2787), which are of Iron Age and/or Roman date suggest rural settlement of this date within the study area. The line of Akeman Street (**HER 8920**), which connects St Albans to Cirencester, runs east-west approximately 800 metres to the north of the application site, and there are various Roman find spots in the vicinity.

The land within the application site was probably under agricultural management during the 18th and 19th centuries, and it is unlikely to contain any significant archaeological remains from this period. The purpose of the survey was therefore to test for the presence of any unknown or unexpected archaeological findings.

Survey Procedure

The method used for this geophysical investigation was magnetometer surveying, as described in the Written Scheme of Investigation for the project (submitted by BCC to EDP on 22 August 2012) .

Magnetometer survey

The magnetometer readings were collected along transects 1m apart using Bartington 1m fluxgate gradiometers, and are plotted at 25cm intervals along each transect. The results of the survey are presented as a 1:2000 grey scale plot (figure 1), and as a graphical (x-y trace) plot in two sections at 1:1250 scale in figures 2-3. Inclusion of these alternative presentations allows the detected magnetic anomalies to be examined in plan and profile respectively. An interpretation of the findings is shown superimposed on figures 2-3 (which permits the interpreted outlines to be compared with the underlying data), and is reproduced separately to provide a summary of the findings (figure 4).

The survey plots show the magnetometer readings after standard treatments which include adjustment for irregularities in line spacing caused by variations in the instrument zero setting, and

slight linear smoothing. Additional 2D low pass filtering has been applied to the grey scale plot to reduce background noise levels.

Colour coding has been used in the interpretation to distinguish different effects. Features are indicated by coloured outlines, or broken lines. Magnetic anomalies of possibly archaeological origin are outlined in red. Features of uncertain, but probably natural, origin are shown in a light brown. Strong magnetic anomalies which are likely to be of recent origin are shown in dark brown. Strong magnetic anomalies which appear to represent iron objects are in blue, and possible cultivation effects in green.

Survey location

The survey grid was set out and tied to the OS grid using a differential GPS system. The plans are therefore geo-referenced, and OS co-ordinates of map locations can be read from the AutoCAD version of the plans which can be supplied with this report.

Results

The survey has detected various subsurface disturbances, most of which are clearly of recent or non-archaeological origin. A slight possibility remains that some could be of archaeological relevance, but this cannot be confirmed from the survey evidence alone.

The most conspicuous finding is an area of strong magnetic disturbances to the south west of the site, most of which terminate at distinct linear boundaries, as seen at A (marked in red and labelled in figure 4). Only a few sections of boundary have a continuous ditch-like appearance, and so they perhaps represent disturbances along former hedge or fence lines. (Some may relate to boundaries shown on a tithe map of 1848, as reproduced in the Archaeological Assessment.) The farmer mentioned to the surveyors that pig sties were formerly present in this part of the site. It is probable that most of the magnetic disturbances here (outlined in brown) represent debris or rubble from these structures.

Other similarly strong disturbances were detected around the farm, as is usual near to modern buildings and activity. Some other possible findings may be visible to the west of the farm in the north west corner of the survey. A rather broken linear sequence of weak magnetic anomalies is visible in the grey scale plot, and labelled B in figure 4. This again does not clearly represent a ditch, but could be a former boundary (perhaps marked by tree holes).

To the north of B other very weak and uncertain linear features may be visible, as at C. These are indistinct, in part because of the disturbed background. They could be no more than cultivation effects, but could perhaps represent traces of former small enclosures or property boundaries. There are few magnetic anomalies which appear likely to represent silted pits (as indicated by magnetic anomalies with rounded profiles in the graphical plot, and commonly found at ancient settlement sites). A few have been outlined in red in the vicinity of B, but they do not form a group

or cluster to suggest the presence of an archaeological site.

Findings from the remainder of the site away from the farm are limited mainly to possible weak linear cultivation markings, which are visible faintly in the grey scale plot, and are marked in green in the east part of the site (most clearly at D). The linear disturbances E, F could represent land drains. Small paddocks to the north and north east of the farm were too overgrown or constrained by fences to be surveyed.

The level of minor background magnetic activity (as indicated by small magnetic anomalies outlined in light brown) reduces in the south western part of the site (except around the former pig sties). This suggests that alluvial deposits from the flood plain could extend into the southern part of the survey area.

Conclusions

The survey has not detected any findings of conclusively archaeological origin, although a slight possibility remains that traces of former boundaries or enclosures could survive in the north west corner of the site (around B, C). The main findings elsewhere are recent disturbances around the farm, and at the site of the former pig sties in the south western corner of the site.

Report by:

A. Bartlett BSc MPhil

Bartlett - Clark Consultancy
Specialists in Archaeogeophysics
25 Estate Yard
Cuckoo Lane
North Leigh
Oxfordshire
OX29 6PW

01865 200864 13 September 2012

The fieldwork for this project was done by R. Ainslie and S. Ainslie.

Reference

[1] Archaeological and Heritage Assessment; Springfield Farm, Ambrosden, Bicester. Report by D. Lewis, The Environmental Dimension Partnership, on behalf of Bloor Homes (South Midlands). 13 August 2012 (Report no. H_EDP1568_02a_Draft).

Background mapping includes OS data.
Crown Copyright reserved.

460500E

461000E

219500N

Five Acres
Primary School

ELM LANE

CLOSE

area proposed for
magnetometer survey

survey coverage

Cros

CHAPEL D

PO

ROAD

OLD ARNCOTT

ROAD

West View
Farm

62m

Drain

mbrosden

N

1.4 nT

-1.6

Springfield Farm, Ambrosden
Oxfordshire
Geophysical Survey 2012
Figure 1: Magnetometer survey
(grey scale plot)

0 1:2000 100m

Surveyed by Bartlett - Clark Consultancy (01865 200864)
for The Environmental Dimension Partnership (EDP)

magnetic anomalies (archaeological ?)

magnetic disturbances
(recent / non-archaeological)

background magnetic activity
(natural / non-archaeological ?)

cultivation

strong (ferrous) magnetic anomalies

drains

N

40nT

Surveyed by Bartlett - Clark Consultancy (01865 200864)
for The Environmental Dimension Partnership (EDP)

Springfield Farm, Ambrosden
Oxfordshire
Geophysical Survey 2012

Figure 2: Magnetometer survey
(with interpretation)

0 1:1250 50m

N

magnetic anomalies (archaeological ?)

magnetic disturbances
(recent / non-archaeological)

background magnetic activity
(natural / non-archaeological ?)

cultivation

strong (ferrous) magnetic anomalies

drains

40nT

Springfield Farm, Ambrosden
Oxfordshire
Geophysical Survey 2012

Figure 3: Magnetometer survey
(with interpretation)

0 1:1250 50m

Surveyed by Bartlett - Clark Consultancy (01865 200864)
for The Environmental Dimension Partnership (EDP)

magnetic anomalies (archaeological ?)

magnetic disturbances
(recent / non-archaeological)

background magnetic activity
(natural / non-archaeological ?)

cultivation

strong (ferrous) magnetic anomalies

drains

Five Acres
Primary School

Ambrosden

PW

Cross

ELM LANE

CHAPEL

Drain

A

B

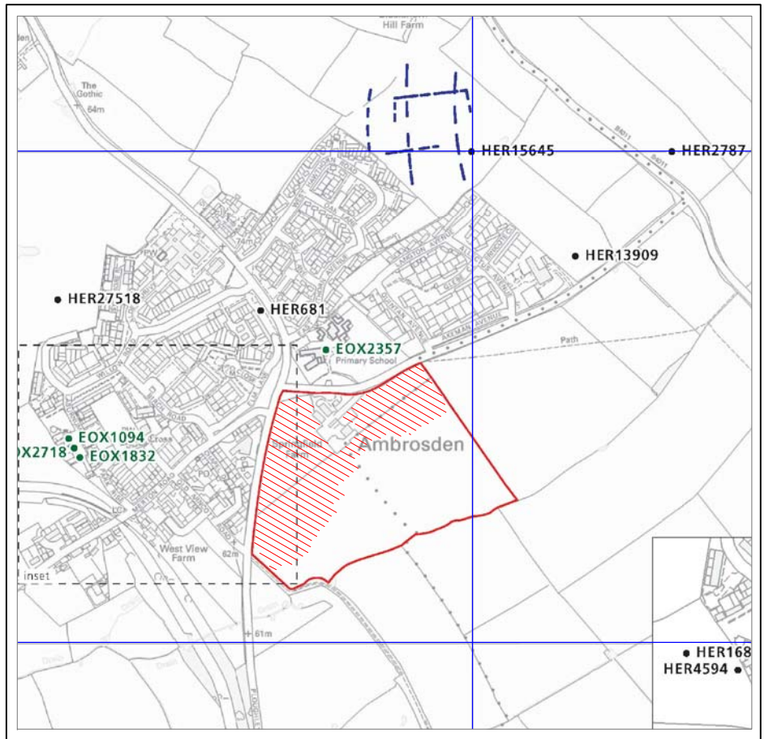
C

D

E

F

N



Survey location (hatched) and HER entries 1:12500

Springfield Farm, Ambrosden
Oxfordshire
Geophysical Survey 2012
Figure 4: Summary of findings

0 1:2000 100m

Surveyed by Bartlett - Clark Consultancy (01865 200864)
for The Environmental Dimension Partnership (EDP)