Land off Tewkesbury Road, Bredon, Worcestershire

Report on Archaeological Geophysical Survey 2013

Report by:

A.D.H. Bartlett

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

for:

CgMs Consulting
Burlington House,
Lypiatt Road,
Cheltenham,
Glos GL50 2SY

6 December 2013

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Introduction

The geophysical survey described in this report is to form part of an archaeological field evaluation of a proposed development site near Bredon, Worcestershire. The survey was commissioned from Bartlett Clark Consultancy, Specialists in Archaeogeophysics of Oxford, on behalf CgMs Consulting Ltd of Cheltenham.

Fieldwork for the survey was done on 21-22 November 2013. A data plot showing the survey findings was subsequently supplied to CgMs, and is now included in this report.

The Site

The site is described in an Archaeological Desk Based Assessment (DBA), which was prepared and supplied to us by CgMs [1]. This documents lists and describes previously recorded archaeological sites and findings from the area surrounding the evaluation site. We previously included a summary of the more relevant archaeological findings as noted in the DBA in the Method Statement (prepared by BCC and submitted to CgMs) at the start of this project [2]. The following notes are reproduced in part from this earlier summary.

Topography and geology

The proposed development site is described in the DBA as a single pasture field immediately to the south of Bredon. The ground rises slightly from c. 21m AOD to 28m at the north eastern limit of the site. The River Avon is about 400m to the north. The site is centred at NGR 391931, 236560, and is c. 5.2ha in area.

The solid geology of the study site is identified as mudstone of the Charmouth Mudstone Formation (early Jurassic Lias), possibly overlain by sand and gravel deposits, which are recorded immediately to the south.

Sites both on Jurassic bedrock and on river terrace gravels usually provide favourable conditions for magnetometer surveying, and positive archaeological findings have previously been obtained in surveys at sites with similar ground conditions.

Archaeological background

It is stated in the DBA that the site probably has a low potential for previously undiscovered archaeological sites or features, but that no previous archaeological fieldwork has been

carried out within the evaluation site itself. Findings in the wider study area include a cropmark ring ditch near the River Avon some 400m to the west (HER WSM46831), and an Iron Age settlement (HER WSM34280) at Grange Farm c. 480m to the south east. Other comparable findings are at a greater distance from the site. The Grange farm settlement was confirmed by excavation by Cotswold Archaeology in 2003. This identified enclosures, ditches and a roundhouse, and indicated that the settlement appeared to extend further to the south east (away from the present site). Small amounts of Roman pottery were found at Grange Farm, and Roman remains were found in quarrying c. 480m east of the present site in 1882 (HER WSM12076), but there is no evidence for Roman activity within or near the site itself. The site at later dates would have formed part of agricultural land surrounding the settlement at Bredon.

The inclosure map of 1809 shows fields at the west of the site adjacent to Tewkesbury Road. These had been removed by the time of the 1884 OS map. The site was then planted as an orchard in the early 20th C, and an associated track and buildings were still present in the 1980s. Extracts from the 1809 map and an OS map of 1923 are inset in figure 3.

Survey Procedure

The site was investigated by means of a recorded magnetometer survey. 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 at 1:2000 scale as a grey scale plot (figure 1), and as a graphical (x-y trace) plot at 1:1250 (figure 2). Comparison 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 figure 2 (which permits the interpreted outlines to be compared with the underlying data), and is reproduced separately to provide a summary of the findings (figure 3).

The graphical plots show the magnetometer readings after minimal pre-processing which includes 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 plots to reduce background noise levels.

Colour coding has been used in the interpretation to distinguish different effects. The interpretation is intended to be schematic and illustrative, and not to reproduce the detail of the grey scale plots.

Features as marked include magnetic anomalies which may show characteristics to be expected from features of potential archaeological significance (in red). Weak or small background disturbances (of natural or non-archaeological origin) are outlined in light brown, and stronger (perhaps recent) disturbances are in a darker brown. Cultivation markings are shown in green. Pipes are marked in blue, and some of the more conspicuous ferrous objects (identifiable as narrow spikes in the graphical plots) are outlined in light blue.

Survey location

The survey grid was set out and tied to the OS grid using a differential GPS system (with Omnistar satellite correction to give accuracy to c. 10cm). 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

Conditions at the site appear to be favourable (as expected) for a magnetometer survey. This was confirmed by magnetic susceptibility readings taken at the site, which gave relatively high values in the range 30-40 (x 10^{-5} SI). The survey has detected various magnetic anomalies and disturbances, but many of these clearly relate to features shown on 20th C maps.

Findings include an area of strong magnetic disturbances (labelled A on figure 3) probably representing a spread of rubble or hardcore in the vicinity of the sheds or structures shown on the 1923 OS map (inset in figure 3). There are similar disturbances along the line of the access track to the west (B), and a later track to the east (C). Magnetic activity along the track to the south of the field (as shown on the 1923 map) is obscured by a very strong response from one of several pipes (D). An additional large iron pipe (blue) extends across the southern boundary of the site.

Findings other than modern disturbances are limited mainly to cultivation effects, which are most clearly visible at the west of the field. Curving linear markings visible in the grey scale plot (figure 1) are marked in green at E and F in figure 3. They align with the field boundary and could perhaps result from modern ploughing, but it is also possible they could represent traces of ridge and furrow. They lie within the small paddocks shown at the west of the field on the 1809 map, and are contained by a linear feature indicated in red at G. This is narrower than the cultivation markings, and could perhaps correspond to the north-south field boundary shown on the 1809 map.

Conclusions

The survey has detected magnetic disturbances corresponding to 20th C structures and trackways, but there are no magnetic anomalies which show any of the characteristics to be expected from archaeological features except for cultivation effects towards the north and west of the field. The cultivation markings at the west of the field could represent traces of ridge and furrow. They are enclosed by a linear feature (G) which may correspond to a field boundary shown on the 1809 map.

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A. Bartlett BSc MPhil

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

01865 200864
email: bcc123@ntlworld.com

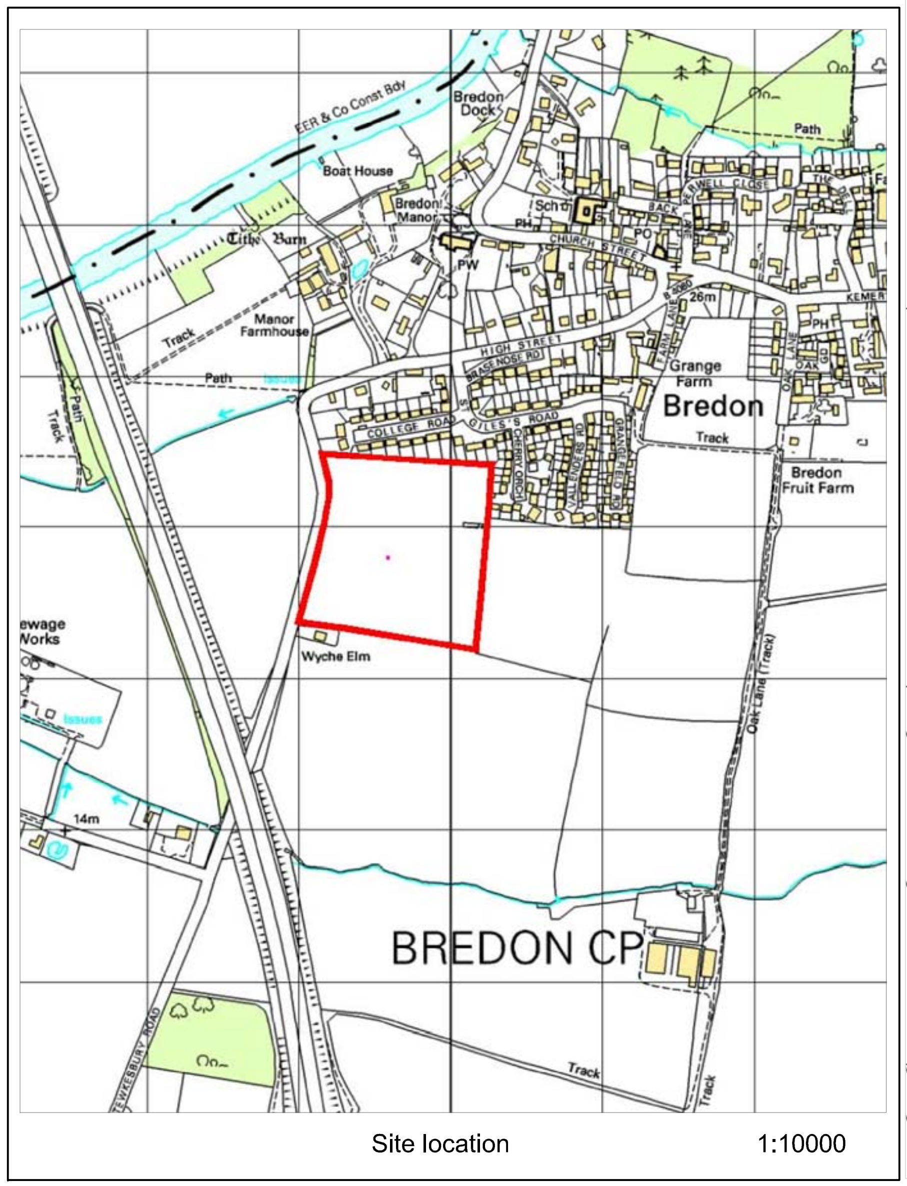
6 December 2013

The fieldwork for the survey was done by C. Oatley and P. Heykoop.

References

[1] Archaeological Desk Based Assessment; Land off Tewkesbury Road, Bredon, Worcestershire. S. Weaver, CgMs. September 2013 (CgMs ref: SW/15657).

[2] Land off Tewkesbury Road, Bredon, Worcestershire: Method Statement for Archaeological Geophysical Survey. Document submitted by Bartlett Clark Consultancy to CgMs; 15 November 2013.



Site location 1:10000

Surveyed by Bartlett - Clark Consultancy (01865 200864)
for CgMs Consulting (Cheltenham)

TEWKESBURY ROAD, BREDON
WORCESTERSHIRE
Geophysical Survey 2013
Figure 1: Magnetometer survey
(grey scale plot)

0 Scale 1:2000 @ A3 100m

N

MP

50 nT

COLLEGE ROAD

CHERRY ORCHARD

VALLENDERS ROAD

Playground

MAIN ROAD

Wyche Elm

magnetic anomalies (archaeological ?)

strong (recent) magnetic disturbances

weak (natural ?) magnetic anomalies

pipe

cultivation

strong (ferrous) magnetic anomalies

TEWKESBURY ROAD, BREDON
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Figure 2: Magnetometer survey
(with interpretation)

0 Scale 1:1250 @ A3 50m

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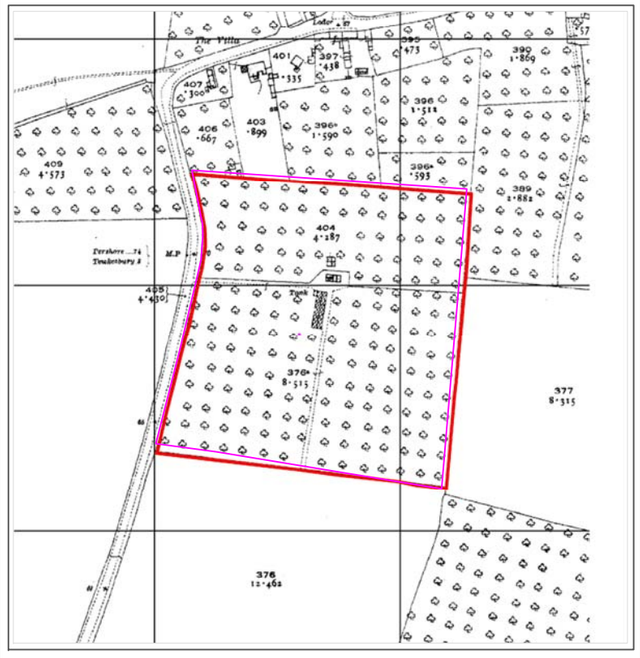
1809 Inclosure map (from DBA figure 2) 1:5000



1923 OS map (from DBA figure 6) 1:5000

N

COLLEGE ROAD

CHERRY ORCHARD

Playground

MAIN ROAD

MP

21.3m

21.3m

A

B

C

D

E

F

G

Wyche Elm

magnetic anomalies (archaeological ?)

strong (recent) magnetic disturbances

weak (natural ?) magnetic anomalies

pipe

cultivation

strong (ferrous) magnetic anomalies

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Figure 3: Summary of findings

0 Scale 1:1250 @ A3 50m

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