

**Old Fire Station Site
Huntingdon Road, St Neots
Cambridgeshire**

Report on Archaeological Geophysical Survey 2011

A.D.H. Bartlett

Surveyed by:

Bartlett-Clark Consultancy

**25 Estate Yard, Cuckoo Lane,
North Leigh,
Oxfordshire OX29 6PW
01865 200864**

for:

**Cambridge Archaeological Unit
Department of Archaeology
Downing Street
Cambridge CB2 3DZ**

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Introduction

This magnetometer survey was carried out as part of an archaeological evaluation of a proposed development site in the centre of St Neots, Cambridgeshire. The site is a playing field adjacent to the former fire station to the east of Huntingdon Street, and is centred approximately at NGR 518750 260390.

The survey was commissioned from Bartlett Clark Consultancy, Specialists in Archaeogeophysics of Oxford, by Cambridge Archaeological Unit, and fieldwork was done on 3 March 2011.

The Site

The full evaluation area extends in total to c. 1.1ha, and includes the former fire station, a car park and other properties as outlined in red on figure 1 (and on the inset aerial photograph). The survey covered an open grassed area at the east end of the site, as indicated by cross hatching on figure 1.

The survey area contains some children's play equipment, and there is an electricity sub station in the NE corner. We have not been told of any previously recorded archaeological findings from the site, although there is a clear likelihood that former settlement or other features could be present in an urban location of this kind. Part, if not all, of the site is reported to have been quarried. This is thought to be particularly likely at the eastern end of the playing field.

The site is a short distance from the River Ouse at approximately the location where the river terrace gravel gives way to Boulder Clay (above a bedrock of Oxford Clay). Previous magnetometer surveys at comparable locations along the Ouse valley have on a number of occasions provided clear evidence for the presence of archaeological features.

Survey Procedure

The survey was carried out following standard magnetometer survey procedures. Magnetometer readings were collected using Bartington 1m fluxgate magnetometers, and are plotted at 25cm intervals along transects 1m apart. The results of the survey are shown

as a grey scale plot at 1:625 scale in figure 2, and as a graphical (x-y trace) plot at 1:500 scale in figure 3. An interpretation of the findings is shown superimposed on figure 3, and is reproduced separately to provide a summary of the findings on 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. The readings in the grey scale plot have additionally been subjected to weak 2D low pass filtering, which is applied to reduce background noise levels.

Colour coding has been used in the interpretation to try and distinguish different effects. Magnetic anomalies which perhaps represent pits or other individual features of possible archaeological significance are outlined in red, with recent disturbances in dark brown. Magnetic anomalies within the densely disturbed eastern part of the site (which are probably caused by the modern fill of the former quarry) are shown in a light brown/green. Some other small strong magnetic disturbances which are likely to be caused by scattered iron objects are outlined in blue, and possible pipes or services are also indicated in blue.

The survey grid was set out and located at the required national grid co-ordinates by means of a GPS system with differential beacon correction. The architects' site plan which is used as a background map in the survey plans was also tied to the OS grid by means of GPS measurements to site boundaries and structures. OS co-ordinates of map locations can therefore be read from the AutoCAD (.dwg) version of the plans which can be supplied with this report.

The magnetometer survey was supplemented by a background magnetic susceptibility survey with readings taken at 15m intervals using a Bartington MS2 meter and field sensor loop. Plots of the readings are inset in figure 4.

Susceptibility readings can indicate whether soil conditions at the site are likely to be strongly responsive to a magnetometer survey, and so assist the interpretation of the survey. Variations in response may sometimes relate to the presence of previously occupied or disturbed areas in which burning associated with past human occupation has enhanced the magnetic susceptibility of the topsoil, although the readings may be affected by a number of non-archaeological factors, including geology and land use.

Results

The magnetic susceptibility readings from the site are relatively strong (in a range 40-90 x 10⁻⁵ SI). Readings are higher in the quarried area to the east, but remain within this range in the western part of the site, where it is possible that an original ground surface survives. This suggests that the site is on a gravel rather than clay soil, and also confirms that conditions should be favourable for the magnetic detection of surviving archaeological features. The actual findings visible in the survey plots are, however, limited.

This in part is because much of the survey data is strongly disturbed, as would be expected

if part of the site has been quarried and backfilled. Readings from the eastern 2/3 of the site (as seen particularly in the graphical plot, figure 3) are highly variable, as would be expected from the filling of a pit which perhaps contains brick rubble, ferrous objects and other debris.

The background response from the remaining western part of the site is relatively quiet, but there are strong disturbances near fences and boundaries (as indicated in brown), as is usual at an enclosed urban site. There are only a few remaining findings which do not clearly relate to the quarry or other recent disturbances. Individual magnetic anomalies which could (in part) be interpreted as pit-like features of potential archaeological interest are outlined in red (as at A, B, as labelled on figure 4). In each case they are near to other stronger disturbances, and so this interpretation remains uncertain.

We are told there is likely to be an underground electricity cable somewhere within the site. This would not necessarily respond if it is of copper and plastic composition, although any ferrous joints or sheathing may be detectable. Such findings may be obscured by the disturbed response from the quarry infilling, but possible linear sequences of magnetic anomalies are perhaps visible (particularly in the grey scale plot) at C, and (more doubtfully) D. The very strong disturbances (as outlined in blue) around C could indicate a length of iron pipe, although it does originate near the sub station. A weaker sequence of (mainly negative) magnetic anomalies at E could indicate joints between the sections of a non-ferrous pipe.

Conclusions

The survey has produced findings which include strong magnetic disturbances consistent with the presence of an infilled former pit or quarry occupying all except the westernmost third of the survey area.

It is probable that various pipes or services are present, including a strong linear disturbance near the sub station at C, and a possible non-ferrous pipe or cable in the less disturbed part of the site at E.

It is difficult to identify any findings of specifically archaeological interest, although some (very uncertain) possible pit-like features have been outlined (in red). The possibility cannot be excluded (particularly given the disturbed response from much of the site) that archaeological features which are not necessarily strongly magnetic (such as stone wall footings, shallow foundation trenches or post holes) could be present in the unquarried part of the site, but remain undetected.

Report by:

A.D.H. Bartlett BSc MPhil

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

01865 200864

20 June 2011

The fieldwork for this project was done by R. Ainslie and S. Ainslie. Plans were prepared by F. Prince.

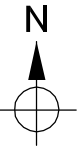
Background mapping based on site plan (H7405-03)
supplied by JWA Architects Limited, Clipston,
Market Harborough, Leicestershire

518600E

518700E





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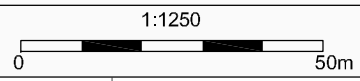


Site location 1:4000

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-  Site boundary
-  Magnetometer survey area
-  Location of 1:625 scale figures (2,4)
-  Location of 1:500 scale figure (3)

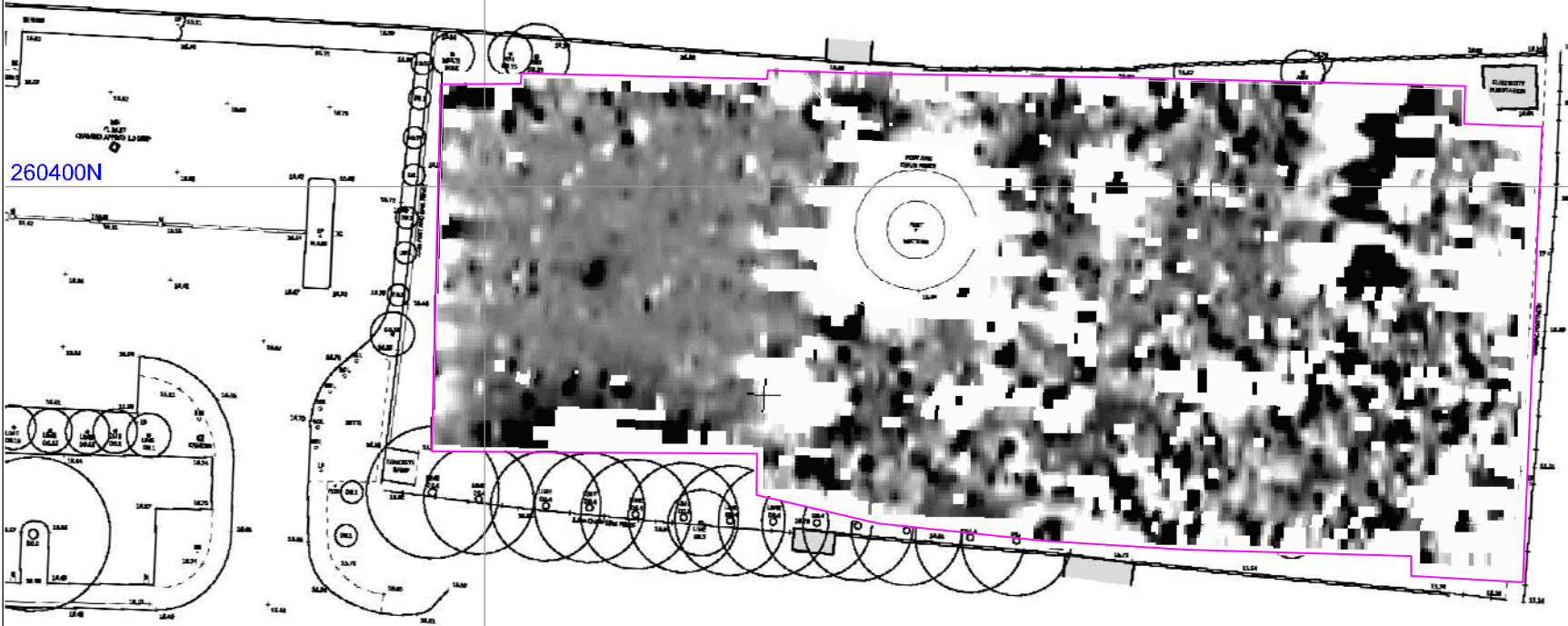
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Cambridgeshire
Geophysical Survey 2011
Figure 1: Location of magnetometer survey



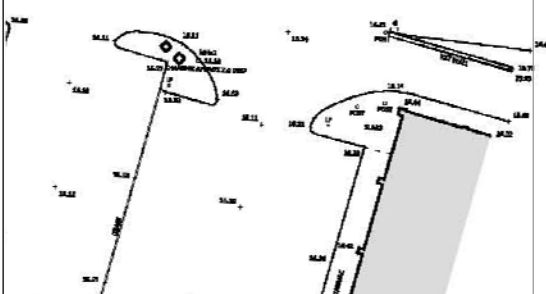
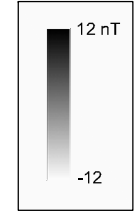
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Revision: 1

Background mapping based on site plan (H7405-03)
supplied by JWA Architects Limited, Clipston,
Market Harborough, Leicestershire

518700E



260400N



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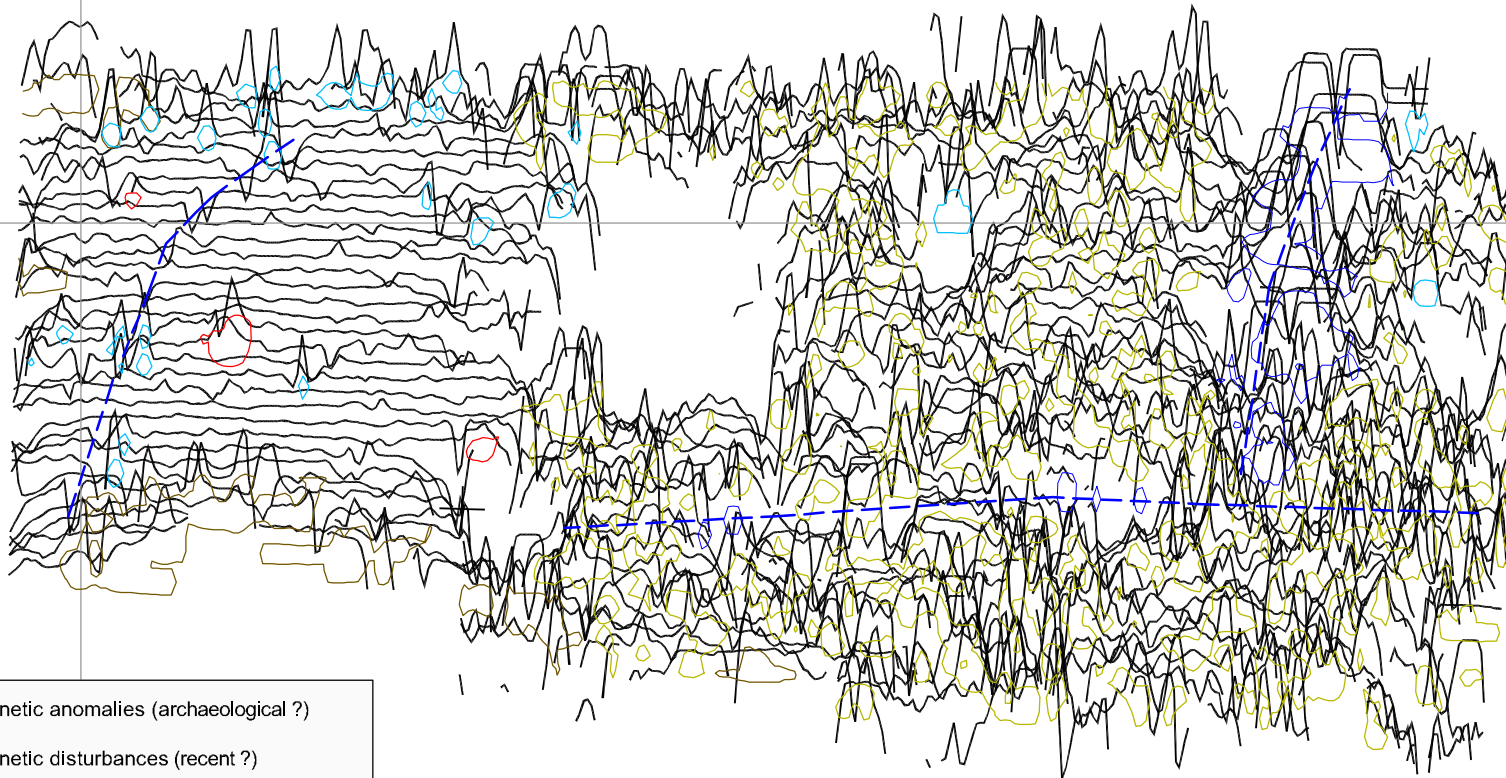
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Figure 2: Magnetometer survey (grey scale plot)

1:625
0 25m






Background mapping based on site plan (H7405-03)
supplied by JWA Architects Limited, Clipston,
Market Harborough, Leicestershire

518700E

260400N

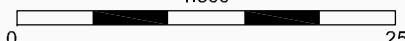


50 nT

-  magnetic anomalies (archaeological ?)
-  magnetic disturbances (recent ?)
-  magnetic disturbances (infilled ground?)
-  strong magnetic anomalies (ferrous)
-  pipe/cable (and associated magnetic disturbance)

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Figure 3: Magnetometer survey (with interpretation)

1:500



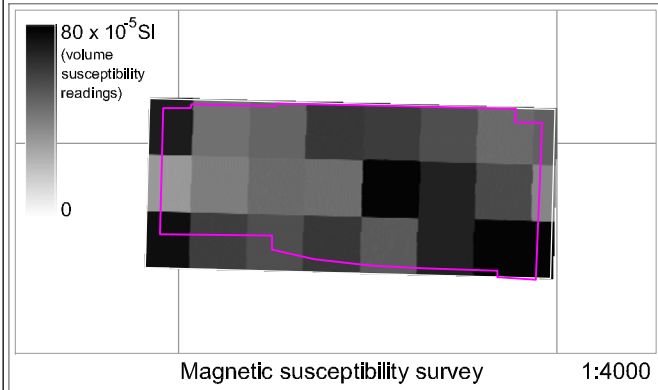
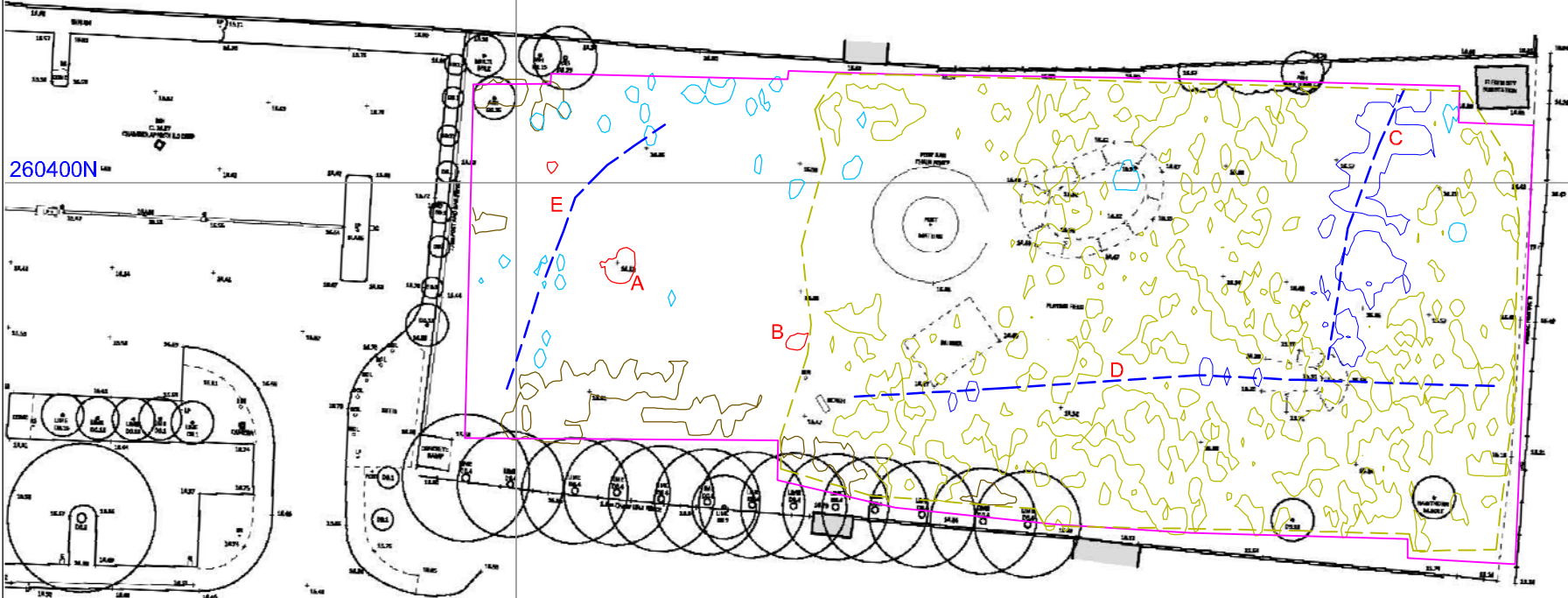
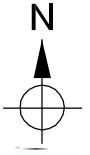
0 25m







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518700E

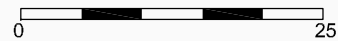
260400N



-  magnetic anomalies (archaeological ?)
-  magnetic disturbances (recent ?)
-  magnetic disturbances (infilled ground?)
-  possible quarried area
-  strong magnetic anomalies (ferrous)
-  pipe/cable (and associated magnetic disturbance)

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 Figure 4: Summary of findings

1:625



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