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**Sherwood Drive Playing Field, Bletchley, Milton Keynes :
Report on Geophysical Survey 2003**

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Sherwood Drive Playing Field, Bletchley, Milton Keynes : Report on Geophysical Survey 2003

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Summary

A possible Roman villa has been identified at the Sherwood Drive playing field site from aerial photographs. Magnetometer and resistivity surveys were carried out to test for evidence of the villa, but both showed strong interference from pipes, land drains and landscaping. Some archaeological features may be present, but there were few relevant findings in the vicinity of the villa.

The low and uniform magnetic susceptibility readings suggest that the magnetometer response from the site is likely to be weak, and also leaves open the possibility that the site has been levelled with imported overburden. This would obscure and weaken both the magnetometer and resistivity response from any underlying archaeological features.

Keywords

Geophysical Survey

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**Sherwood Drive Playing Field,
Bletchley, Milton Keynes**

**Report on Geophysical Survey
2003**

Introduction

This playing field contains cropmarks suggesting it is the site of a Roman villa. The site is located at SP 864343 immediately to the north of Bletchley Park. It is noted in the project brief that excavations of an adjacent site to the north east in 1973, and trenching to the east in 1992 each produced Roman findings including, in the former case, a building. The villa was identified from a 1991 aerial photograph, and other buildings could also be present.

The full area of the playing field (with the exception of a bank in the north east corner) was investigated by both magnetometer and resistivity surveys, supplemented by magnetic susceptibility measurements. The survey was commissioned by the Archaeometry Branch of the English Heritage Centre for Archaeology, Portsmouth, and fieldwork for the survey was carried out on 25-26 March 2003.

Survey Procedure

Both the magnetometer and resistivity surveys followed standard procedures as specified in the project brief.

Magnetometer readings were recorded at 25 cm intervals along lines 1m apart using fluxgate magnetometers. The x-y (graphical) plot represents the initial data after preliminary smoothing and correction for irregularities in line spacing caused by variations in the instrument zero setting. Additional 2D low pass filtering has been applied to the grey scale plot (figure 2) to reduce background noise levels. Outlines indicating the location of selected magnetic anomalies are shown superimposed on the x-y survey plot, and on a separate interpretative plan, figure 5.

The magnetometer survey was supplemented by magnetic susceptibility readings, which were taken using a Bartington MS2 meter and field sensor loop. The results are presented as a shaded plot inset with the magnetometer survey interpretation on figure 5. Susceptibility measurements can provide a broad indication of areas in which archaeological debris, and particularly burnt material associated with past human activity, has become dispersed in the soil. They can provide useful supplementary evidence when interpreting a magnetometer survey, but are also affected by non-archaeological factors, including geology, past and present land use, and modern disturbances.

Ground resistance measurements were taken using a Geoscan RM15 resistivity meter with the twin electrode probe configuration and a mobile probe spacing on 0.5m. A Geoscan multiplexer was used to permit the collection of two readings at each survey station. The remote probes were placed at a sufficiently wide separation (10m +) to give readings of constant minimum value, and so avoid discontinuities between sections of the survey.

The survey grid was set out and located at the required national grid co-ordinates by means of a sub-1m accuracy GPS system. Pegs marking positions measured from survey grid points were also left in place at the field boundaries at two positions as indicated on figure 5.

Results

Magnetometer Survey

A magnetometer survey can often be expected to produce a cluster of strong magnetic anomalies at the site of a substantial Roman building, particularly if there is a hypocaust, or if deposits of brick or tile are present. Stone wall footings in the absence of other more strongly magnetic debris might not, however, produce a detectable response.

The magnetometer survey in this case has detected a number of subsurface features and disturbances, but most of them appear likely to be of recent or non-archaeological origin. Such disturbances include a branching pattern of linear anomalies, as labelled at A on figure 5. This is almost certainly a land drain, and lies across the apparent position of the east wing of the villa (which is shown on figure 5 as a dotted outline traced from the cropmark plan supplied to us). There are also two iron pipes B and C converging at the east side of the field. Two sets of steel goalposts also create strong magnetic disturbances. There are disturbances from recent landscaping or levelling around the northern end and north east corner of the field.

Other magnetic findings include various small anomalies which could indicate silted pits of possible archaeological relevance. A number of these lie close to the east side of the field, where they could represent a continuation of features seen in the nearby 1992 trenching. There are only a few weak examples of pit-like features elsewhere, and very little magnetic activity within the site of the villa. A cluster of magnetic anomalies at D lies near to the cropmarks, and is strong enough to represent a deposit of Roman tile. It could, however, equally be of recent origin, as is clearly the case for most of the other magnetic disturbances at the site.

The magnetic susceptibility readings are consistent with the apparent lack of magnetometer findings. The site is on a Till soil over Oxford Clay. Glacial drift deposits sometimes produce magnetically unresponsive soils, which may be the case here. The susceptibility readings are low and uniform (mean = 5 SI, standard deviation = 3.06), with the exception of the north east corner of the site, where the readings reach a maximum of 15. This increase is likely to relate to recent landscaping of that part of the site.

The unusual lack of any increase in susceptibility values associated with the villa could perhaps mean the field has been levelled or landscaped, and no longer retains its original topsoil cover.

Resistivity Survey

The resistivity survey again appears to have detected recent disturbances, and shows little response in the vicinity of the villa.

The unfiltered plots (figure 3) show a relatively uniform response, with areas of high readings towards the east of the site. The pipes seen in the magnetometer survey appear as negative anomalies (white in the grey scale plot and blue in colour, as seen in the filtered plots in figure 4). Some of the strong positive anomalies detected by the survey (green outlines on figure 5) lie close to the east wing of the villa, but they also extend along much of the eastern side of the field. It is easier to suppose that they relate to modern levelling and pipe laying than to the presence of archaeological features.

A few findings elsewhere may be significant. There are narrow linear anomalies at G and H in the less disturbed western half of the field. These lie to the north of the villa, but it is not impossible they could indicate wall footings. The broken green lines J and K indicate possible linear features seen in the filtered data. They lie close to the villa, but are very weak, and of uncertain significance.

Other groups of strong anomalies at E, F and L are irregularly shaped, and are unlikely to represent structural remains. The feature M lies in a magnetically disturbed area next to the car park at the northern end of the field, and must indicate a recent disturbance.

Conclusions

The survey has produced a limited number of findings of potential archaeological relevance, although further investigation would be needed to confirm such an interpretation. These include the linear resistivity anomalies near G and H (figure 5), and perhaps the weak rectilinear feature J. The anomaly J lies near the villa, but is weak, and may be a random artefact of the survey.

There are also small pit-like magnetic anomalies (red outlines) near the eastern boundary of the site. These could indicate a continuation of features seen in trenching in the adjacent field. The lack of any clear response from the site of the villa could perhaps indicate the site has been levelled or landscaped, or that any surviving structures are at too great a depth to be detected. It would also be interesting to know the clarity and reliability of the aerial photographs from which the villa was identified, given that the villa site is intersected by pipes and land drains which could well have been present in 1991.

Report by:

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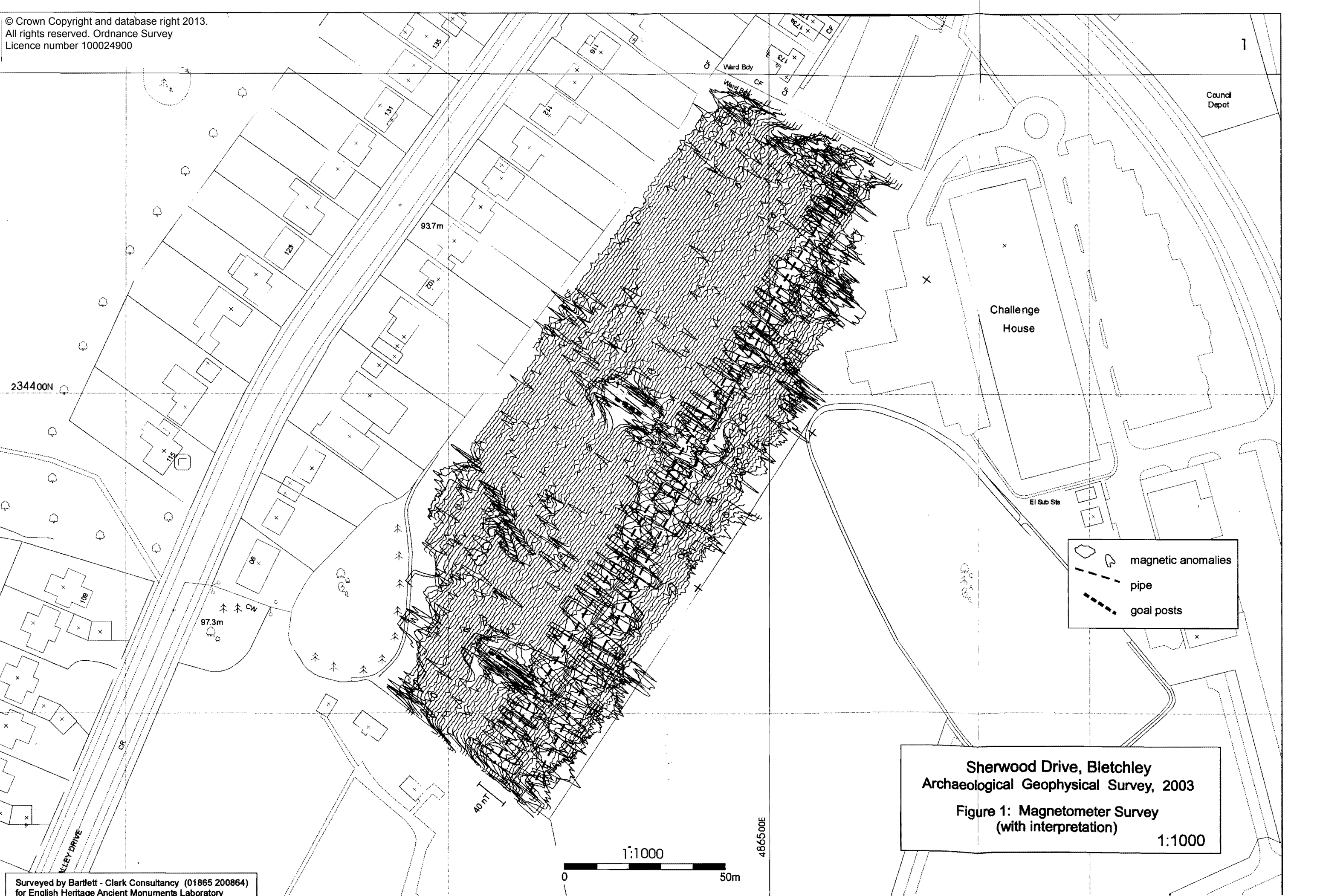
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11 April 2003

P. Cottrell, D. Lewis and S. Brown carried out the fieldwork for this project.



Council Depot

Challenge House

E1 Sub Sta

- magnetic anomalies
- pipe
- goal posts

Sherwood Drive, Bletchley
Archaeological Geophysical Survey, 2003
Figure 1: Magnetometer Survey
(with interpretation) 1:1000

1:1000
0 50m

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Council Depot

Challenge House

Sherwood House

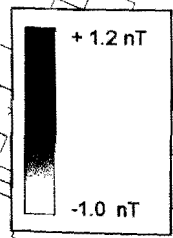
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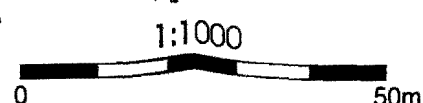
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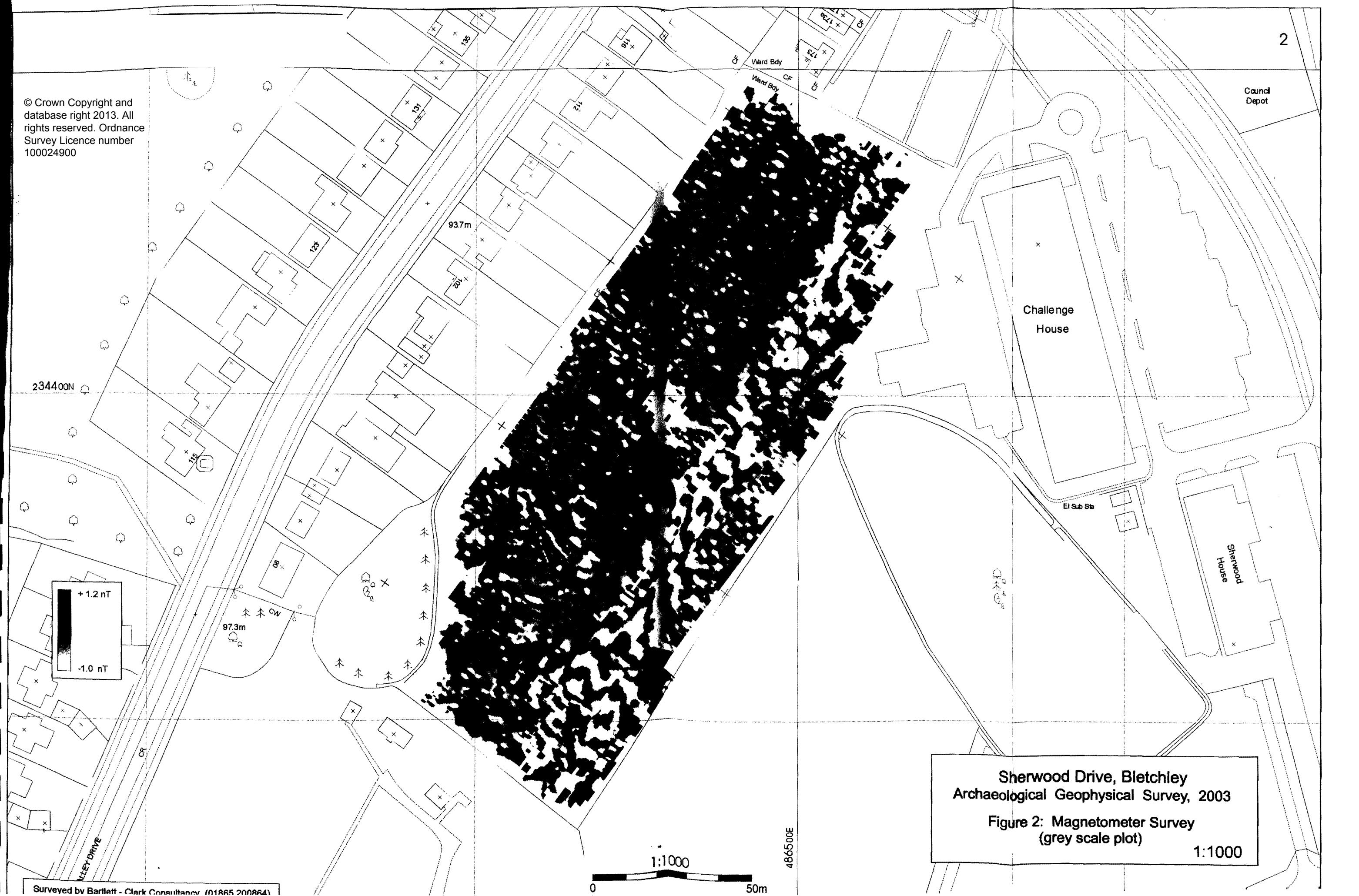
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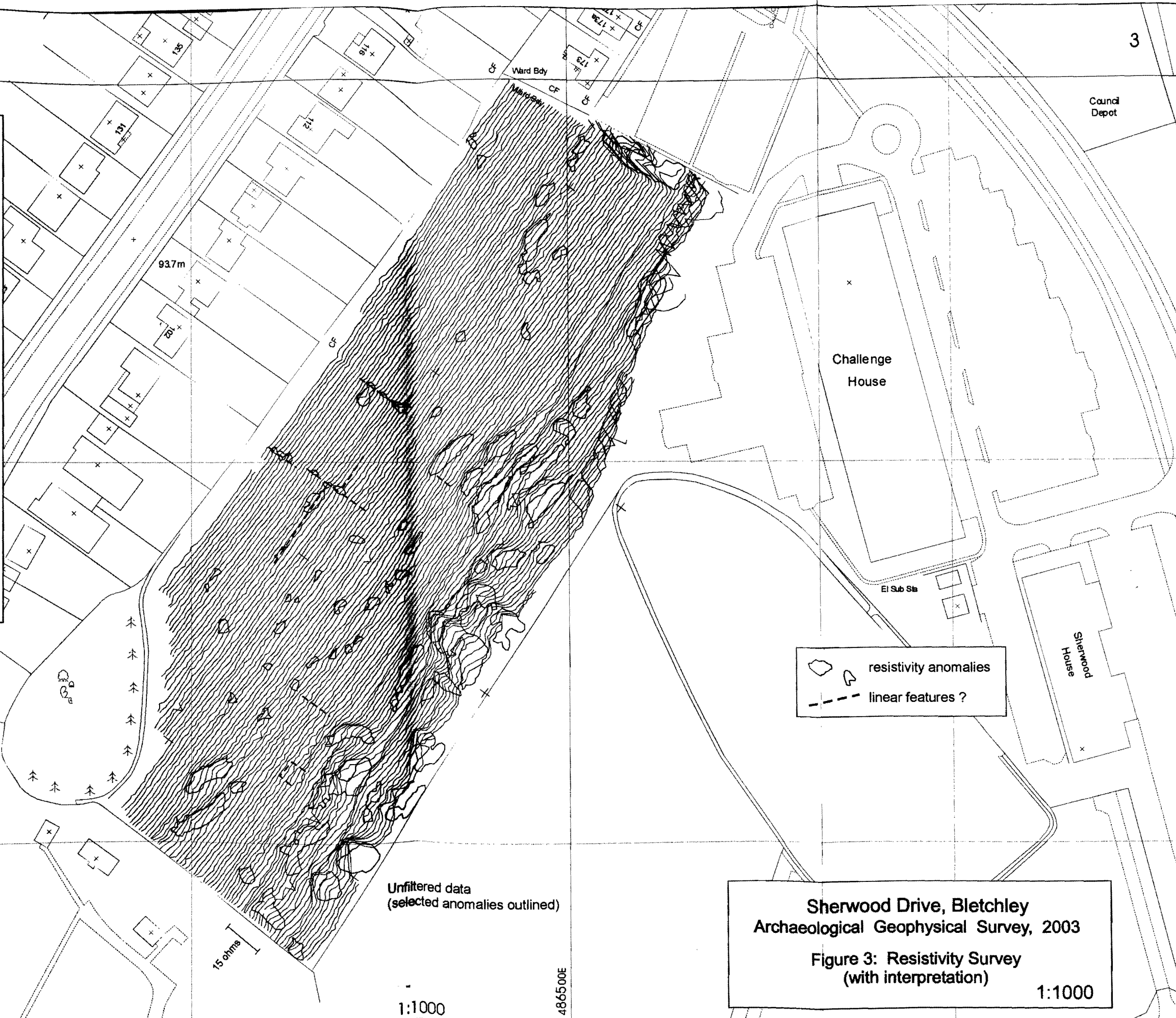
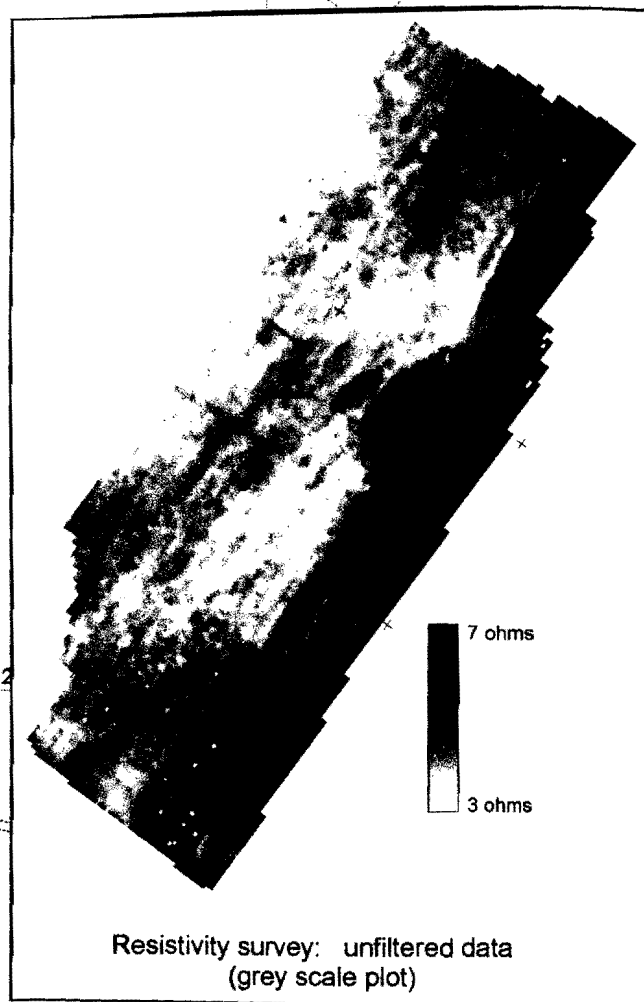


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Figure 2: Magnetometer Survey
(grey scale plot) 1:1000

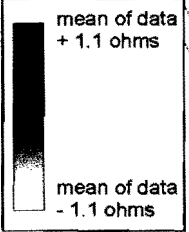
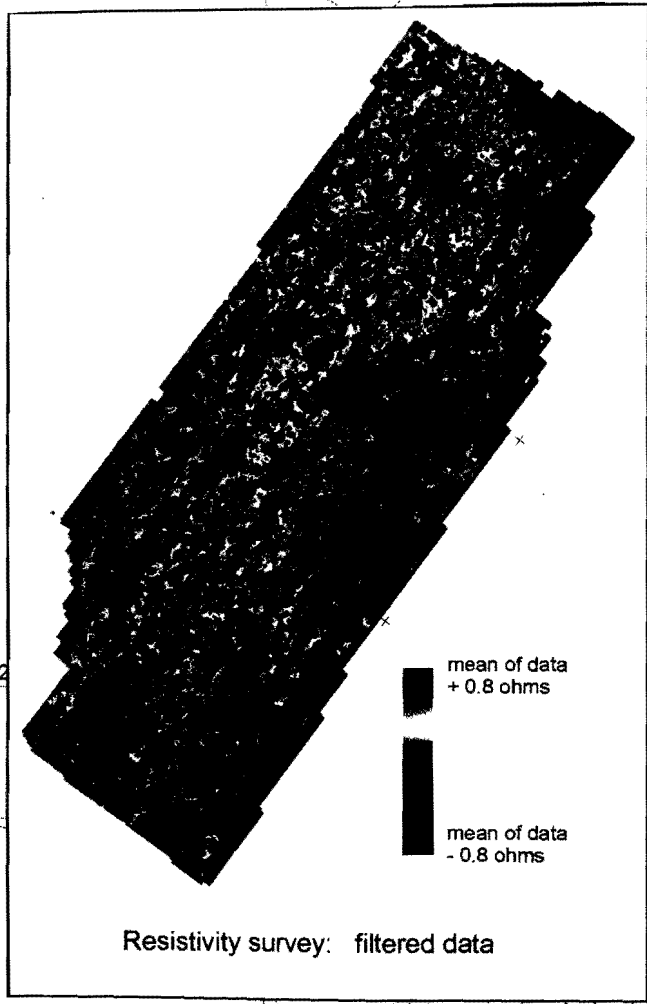


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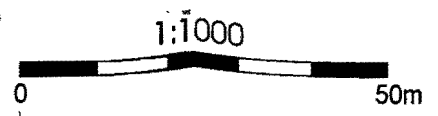




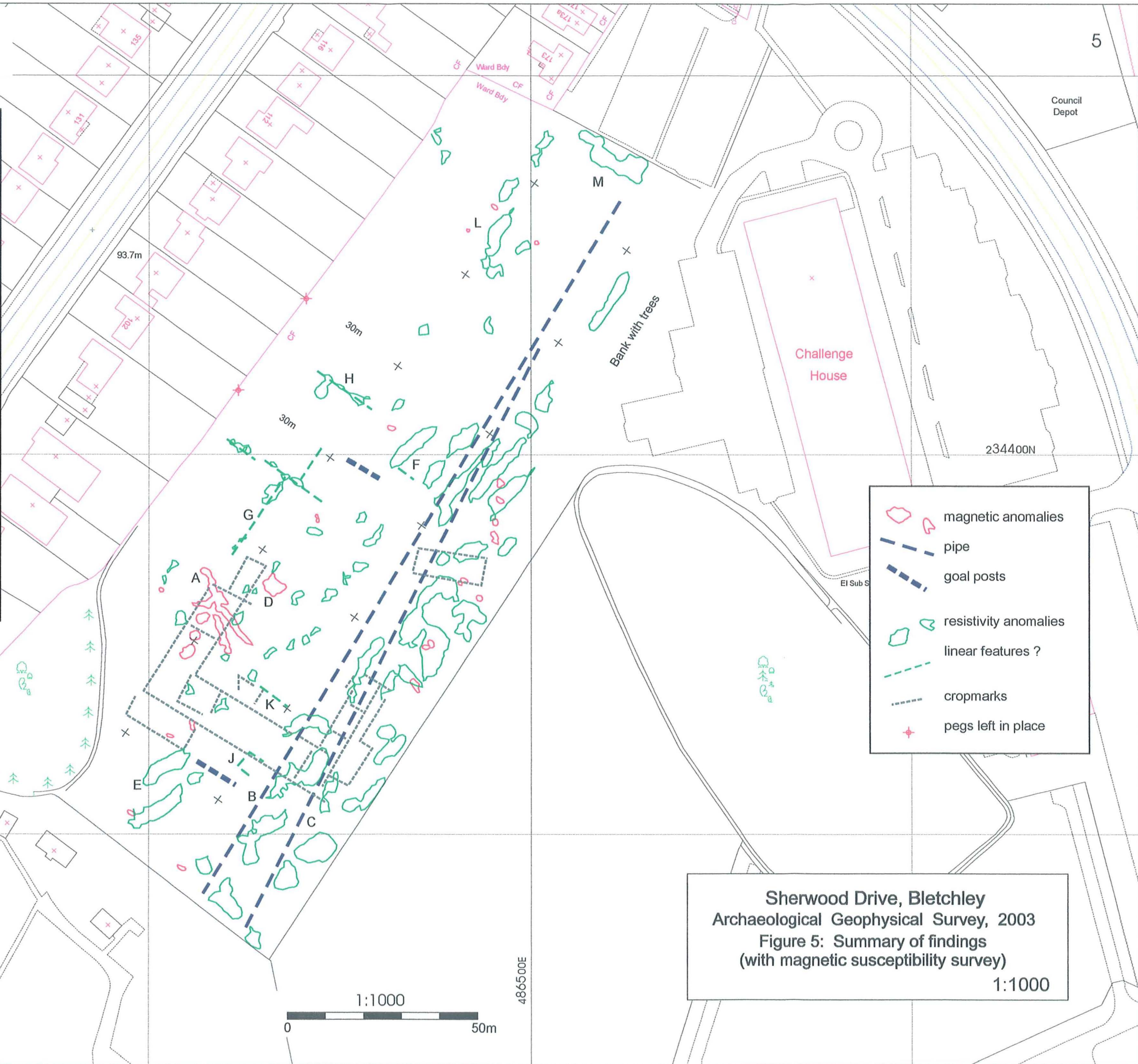
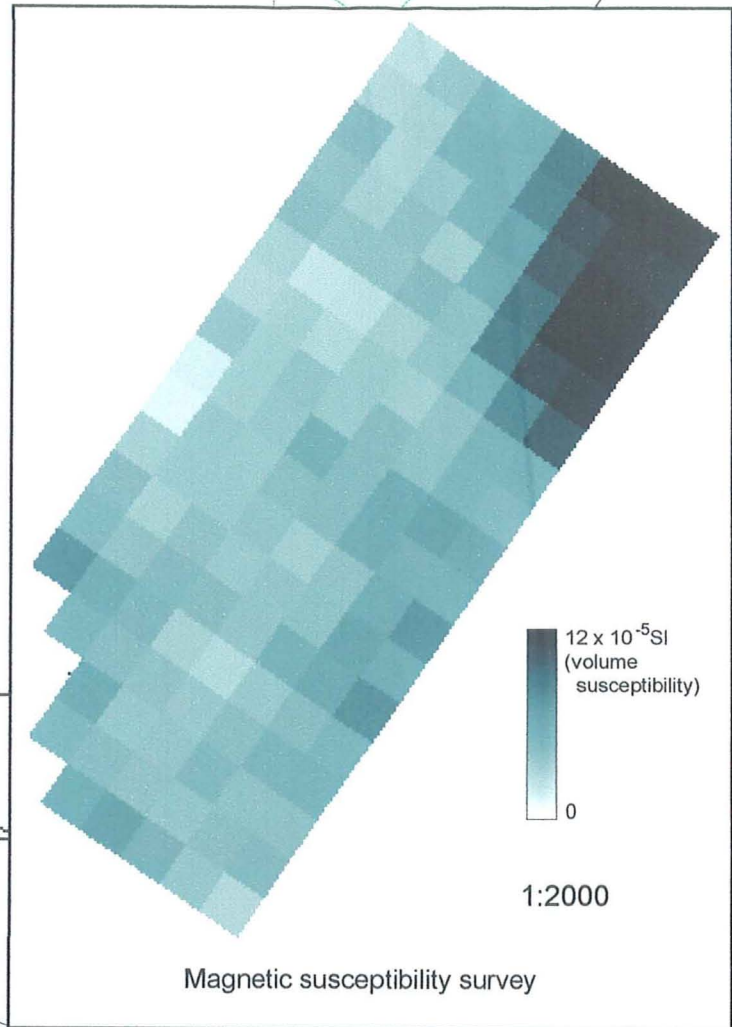
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Figure 3: Resistivity Survey
(with interpretation) 1:1000



Sherwood Drive, Bletchley
Archaeological Geophysical Survey, 2003
Figure 4: Resistivity Survey
(filtered data)



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- magnetic anomalies
- pipe
- goal posts
- resistivity anomalies
- linear features ?
- cropmarks
- pegs left in place

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Figure 5: Summary of findings
(with magnetic susceptibility survey)
 1:1000

