

**Proposed Blackbird Leys Swimming Pool,
Oxford**

Report on Archaeological Geophysical Survey 2011

A.D.H. Bartlett

Surveyed by:

Bartlett-Clark Consultancy

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for:

**CgMs Consulting
Burlington House
Lypiatt Road
Cheltenham
GL50 2SY**

on behalf of:

Oxford City Council

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Introduction

This geophysical survey forms part of an archaeological evaluation of the site of the proposed new swimming pool adjacent to the existing Blackbird Leys Leisure Centre, Oxford. The survey was commissioned from Bartlett Clark Consultancy, Specialists in Archaeogeophysics of Oxford, by CgMs Consulting of Cheltenham on behalf of Oxford City Council. Fieldwork for the survey was done on 17 March 2011.

The survey is intended to meet the requirements of a brief issued by Oxford City Council on 15 March 2011.

The Site

Location and Topography

The area specified for coverage by the survey corresponds to the footprint of the proposed new building and adjacent access road, and amounts to c. 0.5ha (as indicated on the survey location plan, figure 1). It is located to the east of the leisure centre on the north side of Pegasus Road, and centred approximately at NGR 455550, 202700. The actual survey area has been extended slightly outside the specified boundary, but is truncated by a metal fence across the SW corner. (Magnetic interference from the fence would obstruct further coverage in this corner.) The area surveyed amounts to 0.48ha.

The site is located within a playing field and has a level grassed surface. It is on a Jurassic bedrock (Corallian group, adjacent to Kimmeridge Clay), which should provide favourable conditions for the magnetic detection of archaeological features.

Archaeological Background

The following note is reproduced from the project brief: The site is located between a north-south concentration of Roman kilns, associated enclosures and trackway (County HER No's 6143, 26160, 15836) and the Alchester-Dorchester Roman Road. The pottery manufacturing sites orientated on this road form part of nationally important Roman pottery industry that operated from the 1st to 4th century, with Blackbird Leys being an important focus for the expansion of the industry in the 2nd century based on the mass production on white ware mortaria bowls that utilised iron free clay deposits extracted and transported from Shotover. The industry in the Oxford region appears to have begun as a cottage industry in the 1st century before rapidly expanding into a major national industry by the later 3rd and 4th centuries (Young, 1972, 106; Booth, 2007).

We are told additionally by CgMs that no findings or remains relating to the pottery industry have been reported from the site, but any which are present could have gone unrecorded during previous nearby developments. Cartographic evidence shows that the site was in agricultural use during post-medieval and probably earlier periods. It is uncertain from the topography of the site whether it was subject to levelling or landscaping when the modern playing field was established.

Survey Procedure

The site was investigated by means of a recorded magnetometer survey, supplemented by magnetic susceptibility testing. 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 1:1000 scale in figure 1, and as a graphical (x-y trace) plot at 1:625 scale in figure 2. An interpretation of the findings is shown superimposed on the graphical plot (so that the interpretation can be compared with the underlying readings), and is also reproduced separately to provide a summary of the findings in figure 3.

The survey detected strong magnetic activity, and so the readings are plotted at relatively low sensitivity. Data processing was therefore limited to partial truncation of high readings, with no additional smoothing or other corrections.

Colour coding has been used in the interpretation to distinguish different effects. A group of magnetic anomalies of a strength which could possibly be consistent with the presence of archaeological debris is outlined in red (although the anomalies themselves show no archaeological characteristics). An area of strong interference is cross hatched on figure 3 in grey. Stronger (probably recent) disturbances are shown in brown, and some individual magnetic anomalies which may be caused by ferrous objects are marked in blue.

The survey grid was set out and located at the required national grid co-ordinates by means of a differential GPS system. OS co-ordinates of map locations can 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. A plot of the readings is inset in figure 3.

Susceptibility readings can provide a broad indication 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.

The magnetometer responds to cut features such as ditches and pits when they are silted with topsoil, which usually has a higher magnetic susceptibility than the underlying natural subsoil. It also detects the thermoremanent magnetism of fired materials, notably baked

clay structures such as kilns or hearths, and so responds preferentially to the presence of ancient settlement or industrial remains. It is also strongly affected by ferrous and other debris of recent origin.

Results

The survey plots (figures 1 and 2) show considerable magnetic activity, but none of it can be claimed with any confidence to be of archaeological interest. Findings include a strongly disturbed area (marked in grey and labelled A on figure 3) close to the leisure centre. This is likely to be a combination of construction debris and the magnetic effect of the building itself. Goalposts cause magnetic anomalies at the east of the survey at B. A linear sequence of disturbances (visible in the grey scale plot) suggests a pipe at C, but this cannot be identified clearly against the disturbed background.

The remaining widespread magnetic activity across the southern half of the survey is indicated by magnetic anomalies outlined in brown. These are of a strength to represent modern infilling or levelling, probably with debris including ferrous objects together with brick rubble, etc. Some of this may relate to the infilling of a former ditch. We are told by CgMs that a ditch or stream is shown here on historic maps, and has been replaced by a conduit along the southern site boundary. (This emerges and is visible in the SE corner of the playing field.) Some of the magnetic interference could therefore relate to the presence of imported debris used to fill the former ditch, but similar material appears also to be spread across the surrounding area.

It is difficult in these disturbed conditions to determine whether archaeological features could also be present. A Roman industrial site could be characterised by strong magnetic anomalies, particularly if waster heaps or kiln debris are present, but these will sometimes be contained within enclosures defined by linear boundaries, ditches or trackways, and no such features are visible here. Any surviving kiln bases might appear as strong coherent magnetic anomalies, rather than the narrow peaks (indicating fragmentary debris) which are seen in the survey.

One part of the site contains magnetic anomalies of relatively moderate strength, as could be consistent with the presence of buried ancient debris (rather than near-surface modern rubble). This area is outlined approximately in red at D, but contains no individual magnetic anomalies which display clear archaeological characteristics.

The magnetic susceptibility readings (figure 3) are sufficiently high to confirm that conditions at the site should be magnetically responsive, but show only random variations, as would be expected on soil containing scattered magnetic debris.

Conclusions

The survey has detected strong magnetic activity of a kind which could be accounted for by the adjacent modern buildings, together with infilling and levelling in the southern half of the survey area. Some of the recent disturbances could be superficial, but it is difficult to establish from the survey evidence alone whether they could conceal underlying archaeological features. One area of less extreme magnetic activity has been indicated (at D) on figure 3, but there is no clear evidence here (or elsewhere) for the presence of archaeological features.

Report by:

A.D.H. Bartlett BSc MPhil

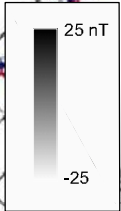
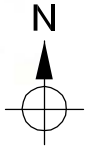
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21 March 2011




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

Mapping reproduced from site plan supplied by
FaulknerBrowns Architects and Oxford City Council

Figures 2, 3



202700N

-  Proposed evaluation area
-  Approximate extent of magnetometer survey
-  Location of 1:625 scale figures (2-3)

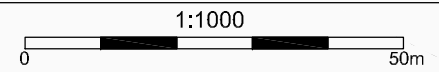
202600N

455500E

455600E






PEGASUS ROAD

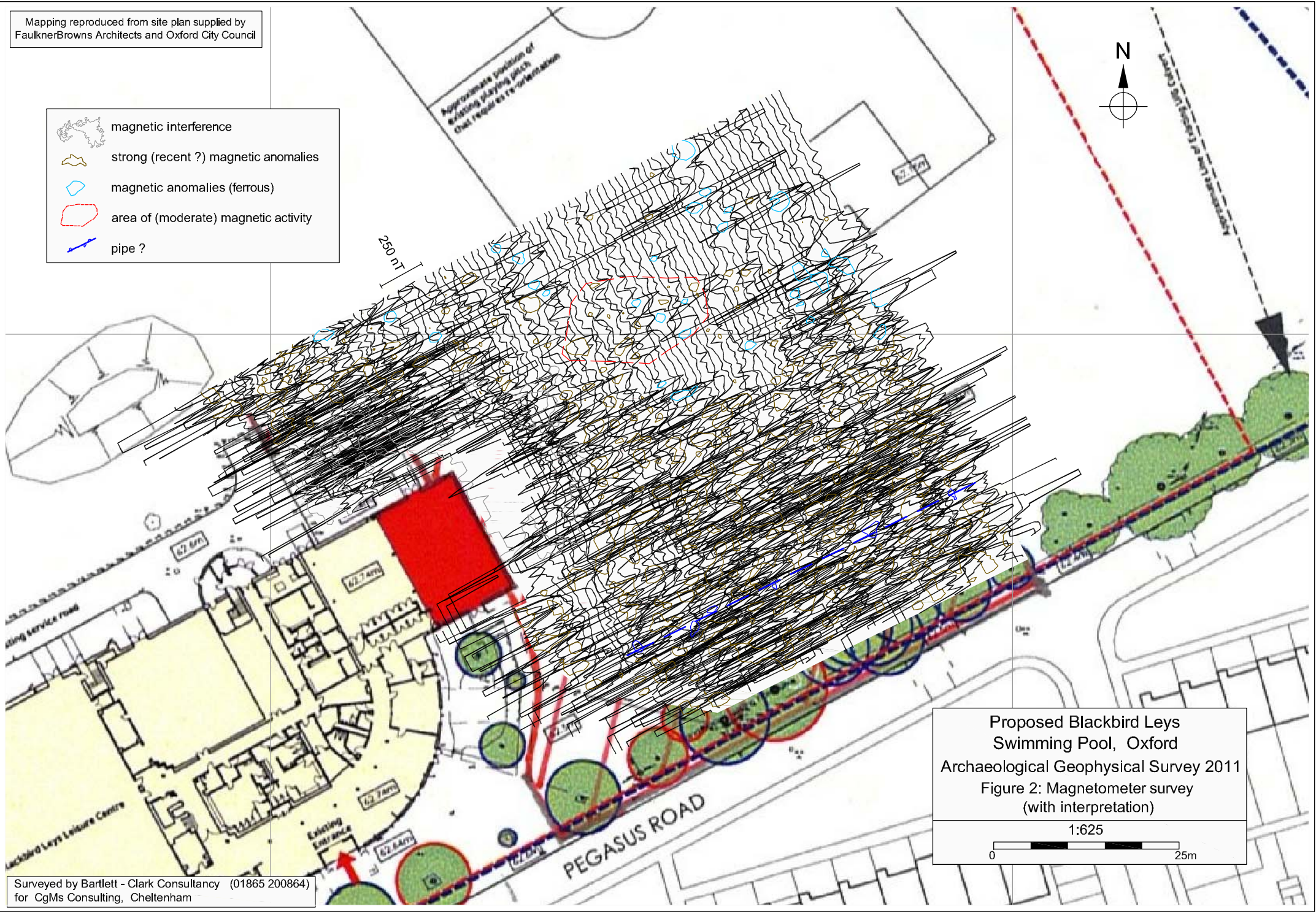
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Figure 1: Location of magnetometer survey
(with grey scale plot)



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-  magnetic interference
-  strong (recent ?) magnetic anomalies
-  magnetic anomalies (ferrous)
-  area of (moderate) magnetic activity
-  pipe ?








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Figure 2: Magnetometer survey
(with interpretation)

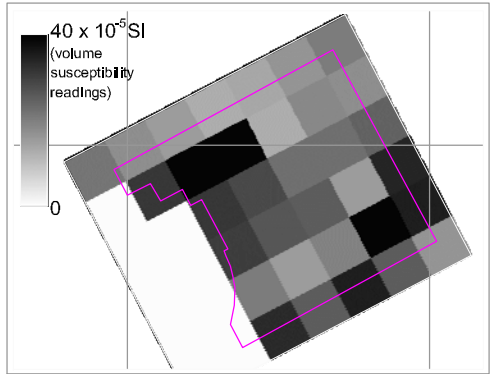
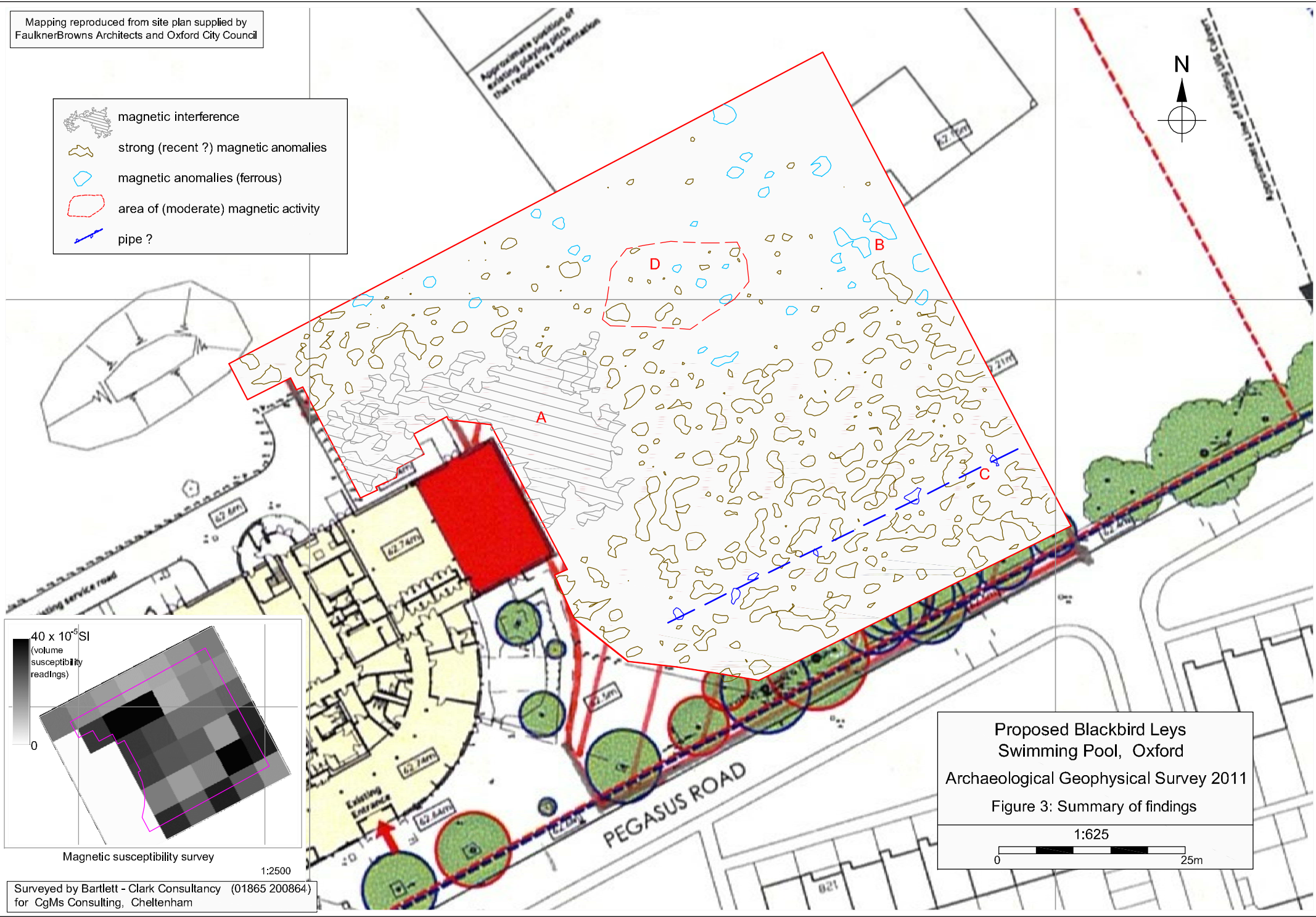
1:625

0 25m

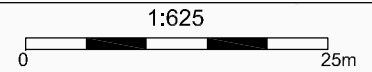
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Figure 3: Summary of findings



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