Archaeological geophysical survey of land to the west of the 'i54' Business Park Codsall, Staffordshire January 2014

Report No. 14/58

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Illustrator: John Walford

Project Manager: Mark Holmes
Site Code: None
NGR: SJ 898 041

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OASIS REPORT FORM

PROJECT DETAILS	Oasis No. molanort1-173561	
Project name	Archaeological geophysical survey of land to the west of the 'i54' Business Park, Codsall, Staffordshire	
Short description	MOLA (formerly Northamptonshire Archaeology) was commissioned to carry out a detailed magnetometer survey on land to the west of the 'i54' Business Park, Codsall, Staffordshire. The survey did not detect any trace of the Roman road which is believed to cross the survey area, but it did detect a set of anomalies which are tentatively suggested to represent a brick kiln or similar industrial feature.	
Project type	Geophysical survey	
Site status	None	
Previous work	None known	
Current Land use	Pasture	
Future work	Trial trench excavation	
Monument type/ period	Roman road, medieval ridge and furrow, possible post-medieval kiln	
Significant finds	None	
PROJECT LOCATION		
County	Staffordshire	
Site address	Lawn Lane, Codsall	
Study area	*c* 9.3ha	
OS Easting & Northing	SJ 898 041	
Height OD	*c* 100-120 m AOD	
PROJECT CREATORS		
Organisation	MOLA	
Project brief originator	Wolverhampton City Council	
Project design originator	Mike Shaw, Wolverhampton City Archaeologist	
Director/Supervisor	Simon Markus	
Project Manager	Mark Holmes	
Sponsor or funding body	Kier Property	
PROJECT DATE		
Start date	6 January 2014	
End date	28 February 2014	
ARCHIVES	Location	Content
Physical	N/A	
Paper	MOLA Northampton	Site survey records
Digital		Geophysical survey & GIS data
BIBLIOGRAPHY	Journal/monograph, published or forthcoming, or unpublished client report	
Title	Archaeological geophysical survey of land to the west of the 'i54' Business Park, Codsall, Staffordshire, January 2014	
Serial title & volume	MOLA Northampton Reports 14/58	
Author(s)	John Walford	
Page numbers	7	
Date	6 March 2014	

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ARCHAEOLOGICAL GEOPHYSICAL SURVEY OF LAND TO THE WEST OF THE 'i54' BUSINESS PARK, CODSALL, STAFFORDSHIRE

JANUARY 2014

ABSTRACT

MOLA (formerly Northamptonshire Archaeology) was commissioned to carry out a detailed magnetometer survey on land to the west of the 'i54' Business Park, Codsall, Staffordshire. The survey did not detect any trace of the Roman road which is believed to cross the survey area, but it did detect a set of anomalies which are tentatively suggested to represent a brick kiln or similar industrial feature.

1 INTRODUCTION

MOLA (formerly Northamptonshire Archaeology) was commissioned by Wolverhampton City Council to conduct a geophysical survey on land to the west of the 'i54' Business Park, Codsall, Staffordshire (NGR SJ 898 041; Fig 1). The aim was to identify the precise line of a Roman road which is believed to cross the survey area. A detailed magnetometer survey was undertaken in two stages, on 6-7th January and 23-24th January 2014, and covered a total area of approximately 7.3ha. An additional 2ha of land was left unsurveyed due to flooding.

2 TOPOGRAPHY AND GEOLOGY

The survey area extends across four pasture fields which lie to the west of the 'i54' Business Park, close to Junction 2 of the M54 Motorway. Its western boundary is defined by Lawn Lane and its southern boundary by Wobaston Road. Although it lies wholly within the county of Staffordshire, its southern boundary is concurrent with the northern boundary of Wolverhampton and it forms part of the landholdings of Wolverhampton City Council.

The survey area lies between the 100m and 120m contours on a north to north-westerly facing slope. Its underlying geology consists of the Bromsgrove Sandstone with superficial deposits of till and head (BGS 2014).

3 ARCHAEOLOGICAL BACKGROUND

The survey area is believed to be crossed by a Roman road which once linked the forts at Greensforge and Penkridge (Shaw 2013). The course of this road can be traced from cropmarks which occur in the fields to the north of the survey area, and is projected to continue southwards on a line that passes east of, and almost parallel to, Lawn Lane (Fig 1).

Apart from the road, the only archaeological features recorded within the survey area are residual earthworks of ridge and furrow and a double ditch which probably represents a recent field boundary (Shaw 2013). The Staffordshire and West Midlands Historic Environment Records list other archaeological features in the surrounding area, but these are mostly post-medieval or recent, and have little bearing on the survey area itself.

4 METHODOLOGY

The magnetometer survey was conducted with Bartington Grad 601-2, twin sensor array, vertical component fluxgate gradiometers (Bartington and Chapman 2003). These are standard instruments for archaeological survey and can resolve magnetic variations as slight as 0.1 nanoTesla (nT). All reasonably accessible parts of the survey area were covered, but significant parts of Field 2 were unsurveyable due to flooding.

An independent network of 30m grid squares was established within each of the fields to be surveyed. The grids were set out with a tape measure and optical square and were tied in to the Ordnance Survey National Grid by means of a Leica 1200 dGPS. The gradiometers were carried at a brisk but steady pace through each grid square, collecting data along 1m spaced traverse lines. Measurements were automatically triggered every 0.25m along the traverses, giving a total of 3600 measurements per square. All fieldwork methods complied with the guidelines issued by English Heritage and by the Institute for Archaeologists (EH 2008; IfA 2011).

The survey data were processed using Geoplot 3.00v software. The striping was removed using the 'Zero Mean Traverse' function and destaggering of the data was performed where necessary. The processed data is presented in this report in the form of greyscale plots at a range of +4nT (black) to -4nT (white). These have been have been scaled, rotated and resampled (georectified) for display against the Ordnance Survey base mapping (Fig 2) and are shown with an interpretative overlay in Fig 3.

5 SURVEY RESULTS

The survey has not detected any magnetic anomalies relating to the Roman road, but it has detected a few other anomalies which may be of archaeological interest. Anomalies of modern origin and of probable geological origin have also been detected.

In Field 1, at the southern end of the survey area, the survey detected some very weak negative linear anomalies which follow parallel north-south alignments. These probably represent ridge and furrow of medieval to early post-medieval date. A few positive linear anomalies were also detected. Three are irregular, ill-defined and slightly curving, and probably represent minor natural features in the underlying geology, but the fourth is slightly more regular and distinct and possibly represents an infilled ditch.

In Field 2, the survey has detected a group of dipolar anomalies of moderate magnetic intensity with typical peak values of around 20nT to 40nT. The largest of these is nearly rectangular and its positive core measures approximately 3m x 5m. A pair of less regular anomalies flank it to the north and south and a fourth anomaly lies 25m to its north-west, alongside Lawn Lane. The form and intensity of the rectangular anomaly is comparable to anomalies found elsewhere which have proved to represent brick kilns, and the other anomalies might also be consistent with industrial residues of ceramics or burnt soil. However, similar anomalies can also caused by pits filled with modern hardcore, and by large ferrous items buried at depth. Thus an archaeological interpretation cannot be offered with complete certainty.

In Field 3, the survey has detected the line of a recent (19th – 20th century) field boundary. The northern end of this is represented by a very tenuous positive linear anomaly and the southern part by a sporadic chain of small dipolar anomalies which probably represent pieces of ferrous debris within the backfill of the ditch. The survey has also detected a group of irregular positive anomalies. These have most probably

been caused by mineralogical variations in the underlying soils or geology. However, there is one anomaly in the group which has a fairly regular square shape and might conceivably represent a small ditched feature of archaeological significance.

In Field 4, the survey detected nothing except small magnetic spikes and weak variations in the magnetic background. None of these anomalies are significant or worthy of further discussion

In addition to the anomalies described above, there are others which may be attributed to definite modern causes. Several field drains are represented by characteristic linear anomalies with alternating magnetic polarities. The clearest examples of these occur in Field 2, but others are present in Fields 1 and 3. There are also a number of intense dipolar anomalies and magnetic halos arising from ferrous objects. The particularly large dipole at the northern end of Field 1 was caused by a cattle trough, and the various halos around the field margins can be attributed to fences and other adjacent structures

6 CONCLUSION

The survey has not detected any trace of the Roman road that is believed to pass though the survey area. This may be because the remains are too ephemeral to detect (*cf* Gaffney and Gater 2003, 142) or because the local soils are unfavourable for magnetic survey. The latter explanation is perhaps the more probable, as the survey results are generally subdued and several known historic features, including medieval ridge and furrow and a recently removed field boundary, have produced almost indiscernable anomalies.

Apart from modern ferrous interference, the survey has only identified one set of distinct magnetic anomalies. These occur in Field 2, close to Lawn Lane. Their significance is not entirely certain but they resemble, in form and intensity, anomalies found elsewhere which have proven to arise from post-medieval brick kilns.

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MOLA
6 March 2014

APPENDIX 1: BRIEF FOR FIELDWORK

Land west of i54 Site, Wolverhampton
Brief for Archaeological Evaluation

1. Introduction

1.1 An area on the north side of Wolverhampton adjacent to the M54 motorway and west of the existing i54 site is earmarked for development. It comprises an area of c 40ha immediately east of Hall Lane/Lawn Lane and north of Wobaston Road, centering on SJ898041. The area lies immediately north of the Wolverhampton boundary within Staffordshire but is within the ownership of Wolverhampton Council.

1.2 An Assessment of the Archaeology of the area (Shaw 2013 – copy attached) revealed that the projected line of a Roman road linking the Roman fort at Penkridge (Pennocrucium) and that at Greensforge, near Kingswinford runs north-south through the western side of the area. A 'parallel ditched feature' identified as an earthwork during a 1995 survey by BUFAU may represent the roadside ditches flanking the Roman road (BUFAU 1995, Site B46, 7- 46). They are slightly to the east of the projected road line, however, and run on a similar line to a field boundary shown on late 19th to early 20th century maps.

1.3 Wolverhampton City Council wishes to commission an archaeological evaluation to establish the line of the Roman road and whether there are any roadside features associated with it in order that these can be taken account of in the development proposals.

2. Detailed Requirements

2.1 The evaluation should comprise geophysical survey and trail trenching.

Geophysical Survey

2.2 An area of 7.5ha along the road line should be surveyed by magnetometer. A notional area for this survey is shown on Fig 1 but its exact area should be confirmed with the Local Authority Curators. A plot of the results should be produced in order to inform the resistivity survey.

2.3 Allowance should be made for the survey of an area of 0.4ha by resistivity. The area to be surveyed will be determined by the results of the magnetometer survey.

2.4 On completion of the geophysical survey as a whole an illustrated report should be produced. This will be used to inform the location of the trial trenches.

Trial Trenching

2.5 Excavation of a length of around 150m length (225m^2) of trenching by machine. Trenches should be laid out in agreement with the Local Authority Curators in areas deemed most suitable from the geophysical survey, or if the results from this are indeterminate, along the projected line of the road. Trenches should be carefully cleaned, features defined and where necessary sample excavation undertaken.

Allowance should be made for 3 days site work to include opening up of trenches, cleaning and sampling and backfill.

Report

2.6 On completion of the trial trenching an illustrated report should be produced on the work, including also the geophysical survey results overlaid on the trial trench locations and results.

Quotations

2.7 Quotations should be separated into separate amounts for the geophysical survey + report and for the trial trenching + report.

3. General conditions

3.1 The work should be undertaken by suitably qualified and experienced archaeological staff, under the supervision of a Member of the Institute for Archaeologists (MIfA) or a Project Manager with equivalent experience.

3.2 An appropriate recording strategy should be used and the method and justification for this stated in the reports.

3.3 The code of conduct, standards and guidance of the Institute for Archaeologists (IfA) should be adhered to.

3.4 A written scheme of investigation for the work required should be prepared by the contractor and agreed with the sponsor and the local planning authority (LPA) before the work commences.

3.5 On completion of the work the site archive should be deposited with an appropriate museum/public archive. The site owner is encouraged to deposit any finds with the archive.

3.6 A digital copy of the report should be submitted to the Local Authority Archaeologists for Wolverhampton and Staffordshire, Staffordshire Record Office and Staffordshire Historic Environment Record (SHER). The report will normally become a publicly accessible part of the SHER within 6 months of completion.

3.7 Reports should contain the following information:

- Location, aims and methodology
- A written summary of the findings together with appropriate illustrations, which should be related to the national grid. Levels should be related to the Ordnance Datum.
- An analytical summary of features and deposits, including an annotated survey plan showing identified geophysical anomalies potentially representative of archaeological features.
- A copy of the brief

3.8 On completion of the work an OASIS record form should be completed and a summary report should be sent for publication in West Midlands Archaeology and any other appropriate local or national archaeological journal.

3.9 Health and Safety

It is the responsibility of the contractor to ensure that all work is carried out in accordance with relevant Health and Safety regulations.

Site procedures should be in accordance with the guidance set out in the Health and Safety Manual of the Standing Conference of Archaeological Unit Managers

3.10 Monitoring

The work will be monitored by the Local Authority Archaeologists and provisions for monitoring should be agreed with them. At least five working days' notice of commencement of any fieldwork should be given. A draft of any report should be submitted to the City Archaeologist for approval ahead of finalisation.

4. Contacts

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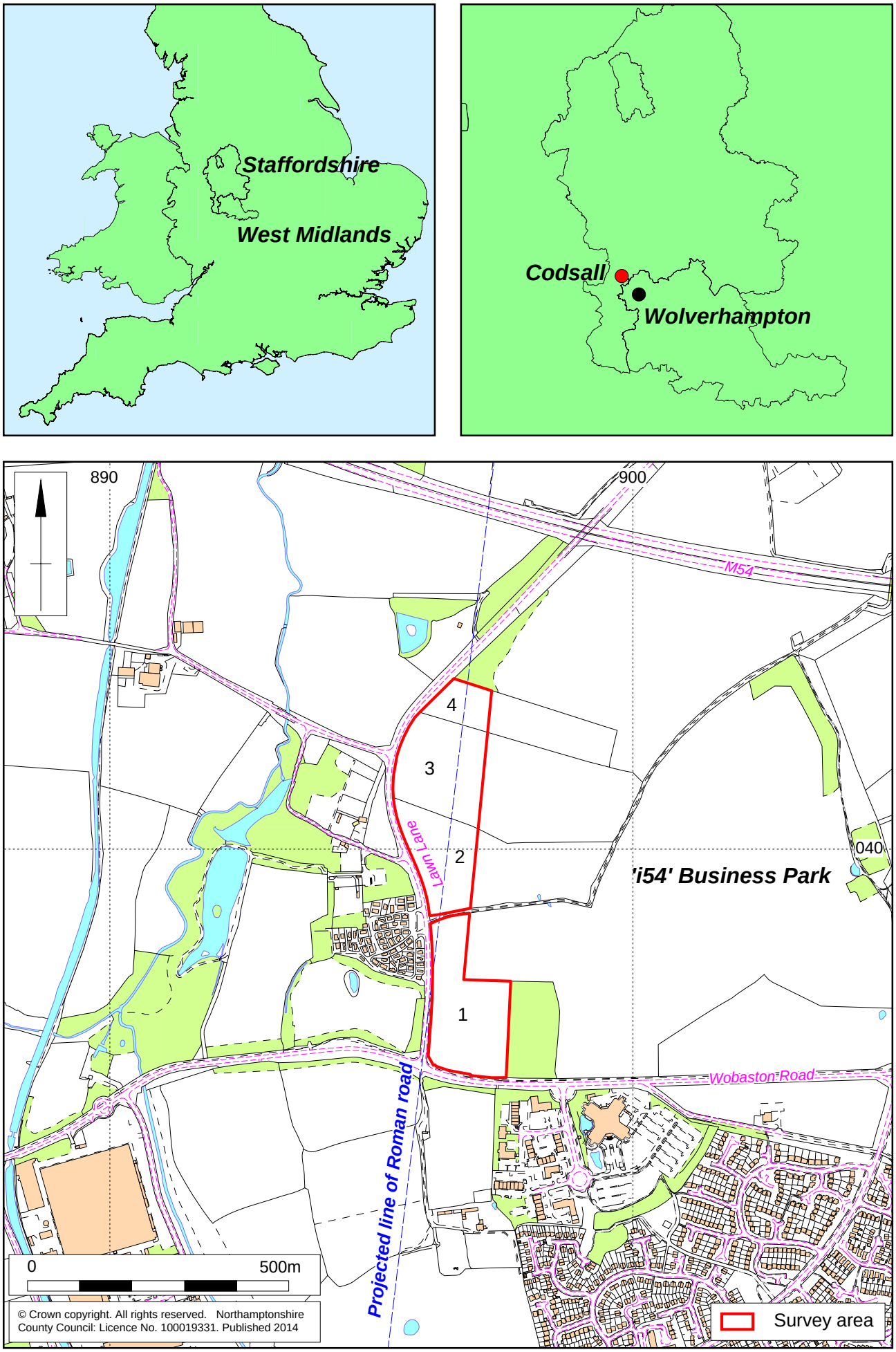

Scale 1:10,000

Site location Fig 1

894
896
898
043
041
039
037
035
4
3
2
1
Flooded area:
not surveyed
Flooded area:
not surveyed
Magnetic anomaly /nT
-3nT 0 +3nT
0 1:2500 100m

Scale 1:2500

Magnetomerter survey results Fig 2

894
896
898
043
041
039
037
4
3
2
1
Flooded area:
not surveyed
Flooded area:
not surveyed
Magnetic anomaly /nT
-3nT 0 +3nT
0 1:2500 100m

Archaeology (doubtful)
Kiln / burnt debris?
Ridge and furrow
Old field boundary
Field drain
Ferrous object
Geology

Scale 1:2500

Magnetomerter survey interpretation Fig 3

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