



ARCHAEOLOGICAL
SERVICES
WYAS

Land north of Penny Pot Lane Harrogate North Yorkshire

Geophysical Survey Project Design

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Project Design for Geophysical Survey of land north of Penny Pot Lane, Harrogate

1. Introduction

- 1.1 This Project Design has been prepared by Archaeological Services WYAS (ASWYAS) for MAP Archaeological Practice Ltd on behalf of Persimmon Homes in advance of a geophysical (magnetometer) survey of the site of a proposed housing development on land north of Penny Pot Lane, Harrogate, North Yorkshire.
- 1.2 The scheme of work will be undertaken in accordance with the requirements of the National Planning Policy Framework (2012).
- 1.3 This document details a proposed programme of non-intrusive geophysical (magnetometer) survey.
- 1.4 The Project Design was produced to the standards laid down in English Heritage's guideline publication *Geophysical Survey in Archaeological Field Evaluation* (2008), the Institute for Archaeologists (IfA) *Standard and Guidance for Archaeological Geophysical Survey (IfA 2010)*.

2. Site location and Description

- 2.1 The proposed development area (PDA) is situated 5km to the west of the spa town of Harrogate, North Yorkshire, centred at SE 274 556 (see Fig. 1). The PDA is bound by Penny Pot Lane to the south, by the B6161 Oaker Lane to the west, by residential properties to the south-east, scrubland to the north and woodland to the east. The site measures 22ha and comprises of 4 fields of pasture and incorporates areas of scrubland to the north. However, due to the presence of service pipes in the southern field and the scrubland to the north, only 12ha will be targeted by geophysical survey.

3. Geology and Soils

- 3.1 The underlying bedrock comprises mudstone, sandstone and siltstone of the Millstone Grit Group overlain by superficial deposits of till (British Geological Survey 2013). The soils in this area are classified in the Dunkeswick association, characterised as seasonally waterlogged loams over clay (SSEW 1983).

4. Archaeological Background

- 4.1 No archaeological background was available at the times of writing.

5. Aims and Objectives

- 5.1 The aims and objectives of the programme of geophysical survey is to gather sufficient information to establish the presence/absence, character, extent, of any archaeological remains within the specific areas to be impacted by the proposed development), and to inform further strategies should they be necessary.

The aims of the survey are to:

- to provide information about the nature and possible interpretation of any magnetic anomalies identified;
- to therefore determine the presence/absence and extent of any buried archaeological features;
- to produce a comprehensive site archive and report.

6. Fieldwork Methodology

- 6.1 A geophysical (magnetometer) survey will be carried out across the available survey area. Areas known to have previously been disturbed by service pipes will be omitted from the survey. The total area for survey is 12 hectares.
- 6.2 The geophysical survey site grid will be established using a Trimble 5800 VRS dGPS system or 5600 Total Station. The site grid will be tied into the Ordnance Survey National Grid and semi-permanent survey markers will be left on site, so that the grid can be accurately re-located during any later stages of archaeological investigation.
- 6.3 The survey will be undertaken using Bartington Grad601 instruments to take readings at 0.25m intervals on zig-zag traverses 1m apart within 30m by 30m grid squares, allowing 3600 readings to be recorded in each grid square. These readings will be stored in the memory of the instrument and later downloaded for processing and interpretation. Geoplot 3 (Geoscan Research) software will be used to process and present the data.
- 6.4 The geophysical survey will comply with guidelines outlined by English Heritage (David *et al.* 2008) and the Institute for Archaeologists (IfA 2010). All figures will be reproduced from Ordnance Survey mapping with the permission of the controller of Her Majesty's Stationery Office (© Crown copyright).
- 6.5 On completion of the geophysical survey, a report will be produced containing all relevant information including:
- i) Site code/project number; dates for fieldwork visits; grid references; location plan, and a plan showing the limits of the detailed survey area.
 - ii) A non-technical summary of the reason, aims and main results of the assessment.

iii) An introduction to outline the circumstances leading to the commission of the report and any restrictions encountered.

iv) The aims and objectives of the study

v) The methodology used.

vi) A summary and synthesis of the archaeological results in relation to the methods used. This shall be supported by a survey location plan (minimum scale 1:2500), a plot of raw data (preferred minimum scale 1:1000, grey-scale format, and/or X-Y trace format as appropriate to the technique(s) used), a plot of enhanced data and one, or more, interpretative plots. Each plan/plot will have a bar scale and accurately oriented north sign.

vii) An assessment of the importance of sites and features within the study area against a background of national, regional or local importance.

viii) References to all primary and secondary sources consulted.

6.6 A project archive will be prepared in accordance with recent good practice guidelines and submitted to the client in acceptable formats. The geophysical archive will comprise:

- an archive CD containing compressed (WinZip 8) files of the raw data, report text (Word 2000), and graphics files (Adobe Illustrator and AutoCAD 2007) files;
- a full copy of the report.

6.7 Following completion and submission of the report to the client, and deposition of the archive, copies of the report will be sent to the relevant Historic Environment Record, local authority Planning Officer and/or Conservation Officer. In addition, ASWYAS will make their work accessible to the wider research community by submitting digital data and copies of the report on line to OASIS.

7 Copyright, Confidentiality and Publicity

7.1 The copyright of any written, graphic or photographic record and reports produced as part of this project shall belong to the client, unless otherwise agreed, with ASWYAS being acknowledged as the originating body.

7.2 The circumstances under which the report or records can be used by other parties will be identified at the commencement of the project, as will the proposals for the distribution of the report. ASWYAS will respect any requirements regarding confidentiality, but will endeavour to emphasise the company's professional obligation to make the results of archaeological work known to the wider archaeological community within a reasonable time.

8. Health and Safety

8.1 All work will conform to the ASWYAS Health and Safety Policy (a copy of which can be supplied if requested), which makes particular reference to the FAME (Federation of Archaeological Managers and Employers) Health and Safety Manual and will be carried out according to the relevant Health and Safety Legislation. This includes, in particular, the following regulations:

- Health and Safety at Work 1974
- Construction (Design and Management) Regulations 2007
- The Management of Health and Safety at Work Regulations 1999
- Personal Protective Equipment at Work Regulations 1992
- Provision and Use of Work Equipment Regulations 1998
- Manual Handling Operations Regulations 1992
- Workplace (Health, Safety and Welfare) Regulations 1992

8.2 In addition each project undergoes a 'Risk Assessment' which sets project specific Health and Safety requirements to which all members of staff are made aware of prior to on-site work commencing.

8.3 Health and Safety will take priority over archaeological matters. Necessary precautions will be taken with regard to protecting ASWYAS staff and the public.

9. Insurance

9.1 ASWYAS is covered by the insurance and indemnities of the City of Wakefield Metropolitan District Council. Insurance has been effected with: Zurich Municipal, PO Box 568, 1st Floor, 1 East Parade, Leeds, LS1 2UA (policy number QLA-03R896 0013). Any further enquiries should be directed to: City of Wakefield Metropolitan District Council, Corporate Services, Financial Services (Insurance, Room 403), County Hall, Bond Street, Wakefield WF1 2QW.

10. Quality

10.1 ASWYAS is an accredited ISO 9001:2008 organisation and a Registered Archaeological Organisation with the Institute for Archaeologists, operating to nationally agreed guidelines, processes and procedures. These are set within a framework that endeavours to carry out the required work and submit the final report in a manner that meets with our client's specific needs, providing quality assurance throughout the project and for the end product. These guidelines, processes and procedures are contained within a Quality Manual and all staff work in accordance with this manual.

11. Monitoring

- 11.1 A standard working day will involve driving to site, condition surveys of the survey area, survey area setting out and detailed earth resistance and/or magnetic survey recording. Constant updating of the survey work will be relayed back to the office by telephone.

Contacts

Senior Managing Archaeologist: Alistair Webb	0113 393 9753
Project Manager: Sam Harrison	0113 393 9745
Health and Safety Coordinator: Alistair Webb	0113 393 9753
Survey team:	07796 9964(44)/(46)

12. Staffing

Archaeological Services WYAS currently employs six dedicated geophysicists. Summary Curriculum Vitae for all the staff to be employed on the proposed project are detailed below together with their proposed role in the scheme.

Senior Project Management:	Alistair Webb BA MIfA
Senior Geophysicist / Project Manager:	Sam Harrison BSc MSc AlfA
Archaeological Geophysicist	David Harrison BA MSc MIfA
Archaeological Geophysicist	Chris Sykes BA MSc
Archaeological Geophysicist	James Lawton BSc MSc PlfA
Assistant Geophysicist	Thomas Fildes BA

Name:- Alistair Webb BA MIfA

Current Position:- Senior Managing Archaeologist

Proposed Role:- Senior Archaeological Geophysicist

Alistair is the Senior Manager responsible for overall management of the geophysical survey teams, as well as other developer funded archaeological field projects. He has more than twenty years archaeological experience being involved in geophysical surveys almost exclusively for fifteen years. During this time he has written well in excess of three hundred geophysical survey reports for clients including English Heritage and Historic Scotland, as well as for commercial companies such as Barratts, Bryant Homes, Ben Bailey and RJB Mining and for archaeological consultants and contractors including Albion Archaeology, AC Archaeology, Headland Archaeology, Ed Dennison Archaeological Services and Northern Archaeological Associates. Alistair gained his BA in Environmental Studies in 1984 and in 1995 successfully completed modules on Magnetic and Electromagnetic Methods of Survey, part of the MSc in Archaeological Prospection run by Bradford

University. Alistair is a member of the Institute for Archaeologists at Member level (MIfA)

Name:- Sam Harrison BSc MSc AlfA

Current Position:- Senior Archaeological Geophysicist

Proposed Role:- Project Manager

Sam graduated in 2002 from Bradford University with an Honours degree in Archaeological Sciences having a particular interest in Archaeological Geophysics. He subsequently refined this interest gaining an MSc in Archaeological Prospection, also at Bradford, in 2005.

Prior to joining Archaeological Services on a full time basis in April 2004 Sam worked for Stratascan Ltd. He has substantial experience in shallow sub-surface archaeological prospection techniques including magnetometry, earth resistance, ground penetrating radar and electro-magnetic methods. Sam is also experienced in software programs including Geoplot 3, AutoCad Map, Illustrator, MapInfo and ArcGIS.

Since joining ASWYAS Sam has managed over a 100 geophysical projects from small scale Heritage Lottery funded schemes to large-scale infrastructure projects.

Sam is a member of the Institute for Archaeologists at Associate level (AlfA) Sam is also CSCS certified and Emergency First Aid at Work trained.

Name:- David Harrison BA MSc MIfA

Current Position:- Project Officer (Geophysics)

Proposed Role:- Senior Geophysical Supervisor

David has recently joined ASWYAS in August 2010 as a Geophysicist following five years experience undertaking and managing (since May 2006) the geophysical survey team at Margaret Gowen and Co Ltd, a large multidisciplinary commercial archaeological consultancy based in Dublin. Whilst at Margaret Gowen David undertook over 100 surveys across Ireland ranging from small independent developments to pipelines, regional and national infrastructure projects. In his former post he had responsibility for tendering, data collection and processing, client liaison and final report preparation. In addition David has more than three years commercial archaeological excavation experience half of which was at a Supervisory level.

David has a BA (Hons) in Archaeology awarded in by 1999 by King Alfred's College, Winchester and an MSc in Archaeology awarded by the University of Liverpool in 2002. David is also CSCS certified and Emergency First Aid at Work trained. He has recently attained MIfA status within the Institute for Archaeologists.

Name:- Chris Sykes BA MSc

Current Position:- Archaeologist (Geophysics)

Proposed Role:- Geophysical Surveyor/Supervisor

Having graduated from the University of Sheffield with his degree in Archaeology in 2008, Christopher has been engaged in a number of community involvement projects in and around South Yorkshire as an excavation supervisor. It was an interest in geophysical survey which prompted him to undertake the Masters programme in Archaeological Prospection at Bradford University in September 2009.

Since completing his Masters studies, Christopher immediately began working as a geophysicist in Ireland with Headland Archaeology on the major N20 project. Building on this experience he undertook geophysics in Crete, before becoming the geophysicist for Wessex Archaeology at their Sheffield office. Here he supervised staff in the undertaking of geophysical projects and also assisted in excavations, before joining WYAS in 2011.

Starting in 2005, Christopher has been involved in a number of community focused archaeological pursuits which has included working with children and adults with special requirements. Chris is CSCS certified.

Name:- James Lawton BSc MSc PlfA

Current Position:- Archaeologist (Geophysics)

Proposed Role:- Geophysical Surveyor/Supervisor

James graduated from the University of Bradford in 2007 where he had studied for 5 years which included a 4 year BSc Undergraduate course in Geoarchaeology followed by a 1 year MSc in Archaeological Prospection.

As part his undergraduate, James completed a 1 year diploma in archaeology where he undertook geophysical surveying with GSB Prospection Ltd. During the course of this placement James gained experience surveying throughout the British Isles and Ireland as well as the Isle of Man.

After graduating James took a job with AECOM Ltd as a graduate archaeologist working as a consultant, where he spent four and half years gaining experience and knowledge within archaeology sector, working on large scale developments. This involved consultations between the client and developer and writing detailed reports as part of the planning requirements. These involved Desk-based Assessments and Environmental Impact Assessments.

As part of his work James continued to be involved with geophysics writing tenders for geophysical subcontractors planning specifications and undertaking voluntary geophysical surveys in his spare time as part of his own archaeological research. James joined ASWYAS in late September 2012. James is CSCS certified and Emergency First Aid at Work trained.

Name:- Thomas Fildes BA

Current Position:- Assistant Archaeologist (Geophysics)

Proposed Role:- Geophysical Surveyor

Tom graduated with a BA degree in Archaeology from the University of Liverpool in 2012, having worked with the university on sites such as Iron Age hillforts & Medieval settlements, as well as HER and planning work with the Staffordshire County Council Countryside & Planning department. Since then he has been working principally in field excavation work, and with various institutes including Liverpool Museum Field Archaeology on a Mesolithic settlement, and on a variety of sites ranging from Roman to Victorian with Birmingham-based Benchmark Archaeology. In this short space of time since graduation he has experienced working in a variety of environments including HER & archival research, Watching Briefs, Evaluations, & report-writing, and is now expanding on this experience in a different direction by working with the ASWYAS Geophysics team, having joined the company in early 2013.

12.2 Archaeological Services WYAS project personnel may be subject to change.

13. References

British Geological Survey, 2013.

http://maps.bgs.ac.uk/geologyviewer_google/googleviewer.html (Viewed 23rd August 2013)

David, A., N. Linford, P. Linford and L. Martin, 2008. *Geophysical Survey in Archaeological Field Evaluation: Research and Professional Services Guidelines (2nd edition)* English Heritage

IfA, 2010. *Standard and Guidance for archaeological geophysical survey.* Institute for Archaeologists

Soil Survey of England and Wales, 1983, Soils of Northern England, Sheet 1.



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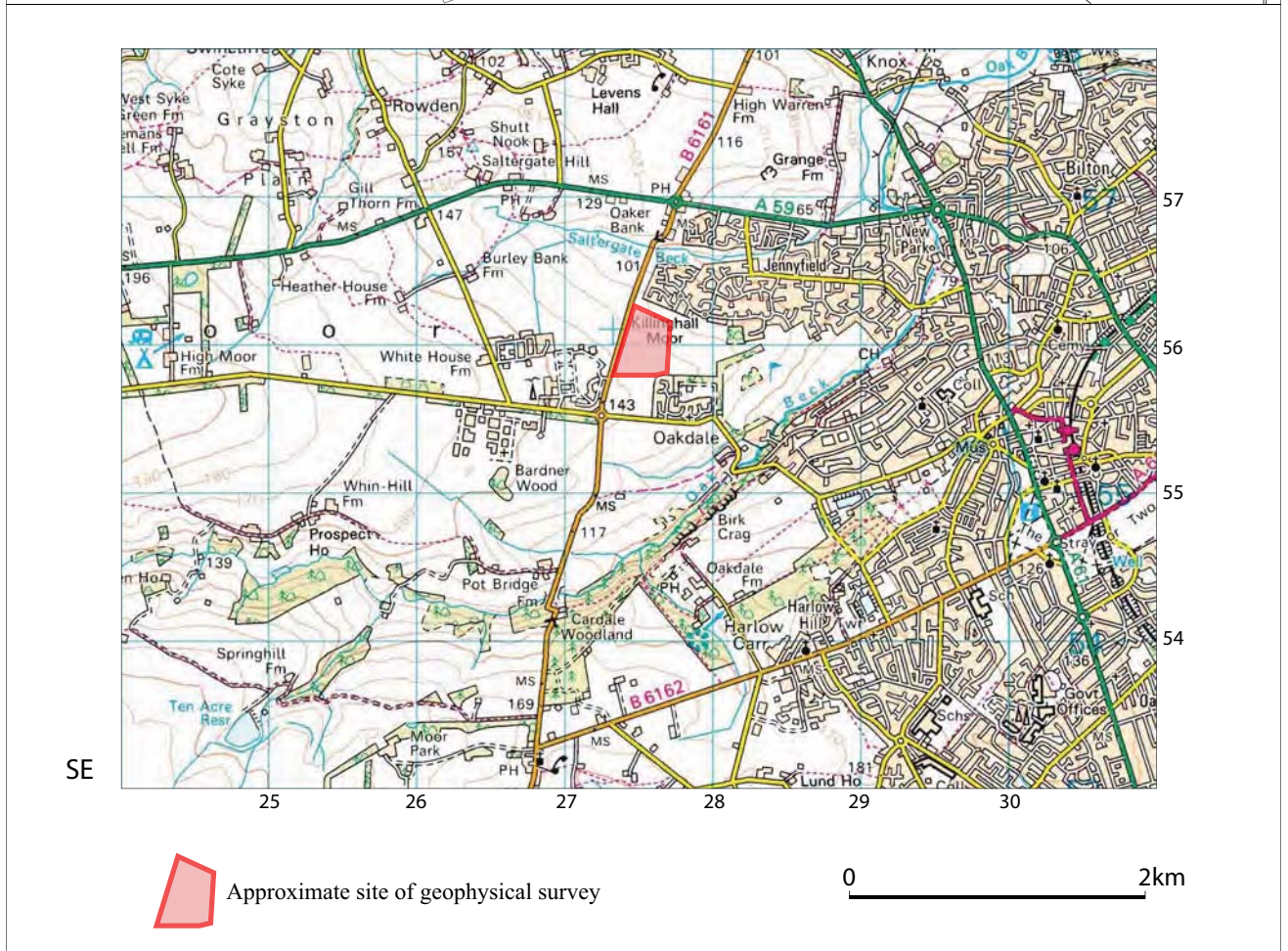
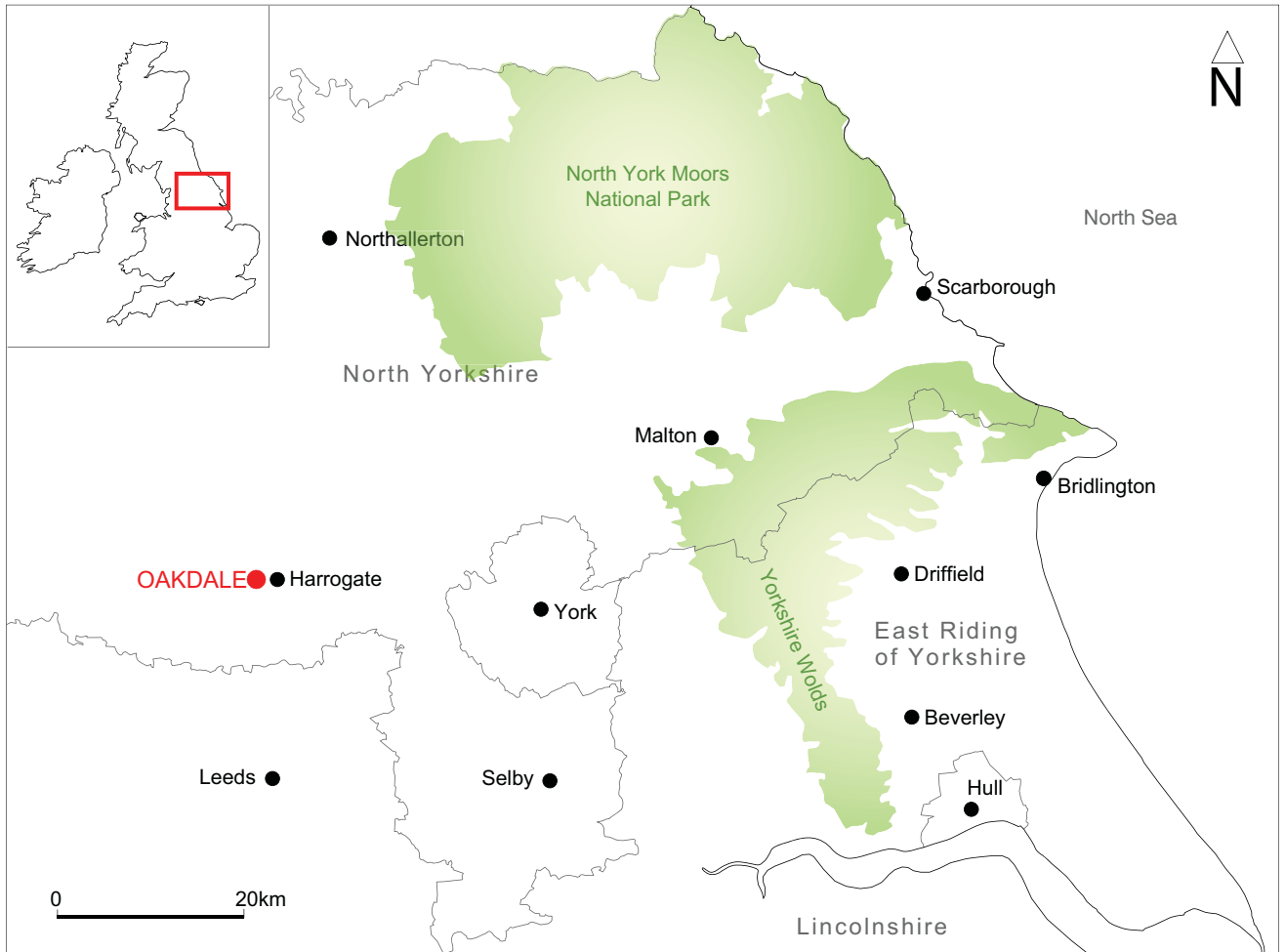


Fig. 1. Site location