



Global Centre of Rail Excellence
Nant Helen
Powys and Neath Port Talbot

Addendum to the Written Scheme of Investigation for
Archaeological Watching Brief
During Stage 1 and 2 Ground Investigations

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Global Centre of Rail Excellence Nant Helen, Powys and Neath Port Talbot

Addendum to the Written Scheme of Investigation for Archaeological Watching Brief During Stage 1 and 2 Ground Investigation Works

1 INTRODUCTION

1.1 Project and planning background

- 1.1.1 Wessex Archaeology has been commissioned by Atkins Ltd to produce a written scheme of investigation (WSI) to include an archaeological watching brief during Stage 1 and 2 ground investigations (GI) within the 475 ha Global Centre for Rail Excellence site, Nant Helen, in Powys and Neath Port Talbot.
- 1.1.2 The Stage 1 works were located in two areas: a 12 ha area within the Onllwyn Coal Washery, Onllwyn, Neath Port Talbot, SA10 9NL (centred on NGR 284601 210662); and an 8 ha area of land to the south of the A4221, between Caehopkin and Coelbren, Powys, SA9 1UE (centred on NGR 283216 211930). The subsequent Stage 2 works cover the Washery and the remainder of the site, including the two electrified rail test loops.
- 1.1.3 The proposed Global Centre of Rail Excellence (GCRE) development comprises the construction of complementary earthworks to create two looped landform platforms (part in-cutting and part on embankment) with associated drainage infrastructure and areas of landscaping and habitat creation to create a flexible and adaptable area.
- 1.1.4 The Ground Investigation (GI) watching brief is part of a programme of archaeological works, which has been covered by a desk-based assessment (Arup 2020) and heritage impact assessment (Arup 2021). There will be further archaeological works elsewhere within the GCRE: details of these works will be covered by separate WSIs.

1.2 Scope of document

- 1.2.1 The purpose of this document is to cover additional GI works being undertaken during the Stage 2 GI programme, specifically additional 'coal mining' boreholes (S2-BH259 to S2-BH265) in the area of the Internal Haul Road, Washery and Substation, four trial pits and two boreholes at Onllwyn Bridge, and four boreholes (BH1a-1c and BH2) at the Headquarters site (see **Table 1** and **Figures 1** and **2**).
- 1.2.2 This addendum is designed to be read in conjunction with the WSI for the Stage 1 and 2 GI works (Wessex Archaeology 2023), which sets out the aims of the watching brief, and the methods and standards that will be employed. This document will be submitted to Clwyd-Powys Archaeological Trust and Glamorgan-Gwent Archaeological Trust, the archaeological advisors to the Local Planning Authorities (LPA), for approval, prior to the start of the watching brief.
- 1.2.3 A full description of the archaeological and geoarchaeological background for the site is presented in the WSI (Wessex Archaeology 2023).



2 AIMS AND OBJECTIVES

2.1 Aims

2.1.1 The aims (or purpose) of the watching brief, as defined in the *ClfA Standard and guidance for an archaeological watching brief* (ClfA 2014a, updated 2020), are to:

- allow, within the resources available, the preservation by record of archaeological deposits, the presence and nature of which could not be established (or established with sufficient accuracy) in advance of the development or other works;
- provide an opportunity, if needed, for the watching archaeologist to signal to all interested parties, before the destruction of the material in question, that an archaeological find has been made for which the resources allocated to the watching brief itself are not sufficient to support treatment to a satisfactory and proper standard; and
- guide, not replace, any requirement for contingent excavation or preservation of possible deposits.

2.2 Objectives

2.2.1 In order to achieve the above aims, the objectives of the watching brief are to:

- determine the presence or absence of archaeological features, deposits, structures, artefacts or ecofacts within the specified works area;
- record and establish, within the constraints of the works, the extent, character, date, condition and quality of any surviving archaeological remains (a preservation by record);
- place any identified archaeological remains within a wider historical and archaeological context in order to assess their significance; and
- to determine, as far as is reasonably possible, the nature of the detectable geoarchaeological resource within the area of groundworks;
- refine understanding of the presence, nature and distribution of Quaternary superficial deposits within the area of groundworks;
- where appropriate/possible, obtain representative palaeoenvironmental samples from deposits of geoarchaeological potential;
- make available information about the archaeological resource on the site by preparing a report on the results of the watching brief.

3 FIELDWORK METHODS

3.1 Introduction

3.1.1 Health and safety will override archaeological considerations in all works since, as stated in ClfA guidance, *Health and Safety regulations and requirements cannot be ignored no matter how imperative the need to record archaeological information; hence Health and Safety will take priority over archaeological matters* (ClfA 2014a, 10).

3.1.2 All works will be undertaken in accordance with the detailed methods set out within the WSI (Wessex Archaeology 2023). Any significant variations to these methods will be agreed in writing with the Clwyd-Powys Archaeological Trust or Glamorgan-Gwent Archaeological Trust and the client prior to being implemented.

Additional GI Works

- 3.1.3 Additional GI works are being undertaken during the Stage 2 GI works, including 10 boreholes in the area of the Internal Haul Road, Washery and Substation (S2-BH259 to S2-BH265), four trial pits and two boreholes at Onllwyn Bridge, and four boreholes (BH1a-1c and BH2) at the Headquarters site (**Table 1** and **Figures 1** and **2**).

Table 1 Additional GI works covered by this addendum

Intervention	Area	Easting	Northing
BH1a	Headquarters site	284175	210535
BH1b		284177	210531
BH1c		284180	210526
BH2		284171	210488
S2-BH256	Internal Haul Road	283699	210395
S2-BH257		283702	210425
S2-BH258		283851	210411
S2-BH259		283902	210395
S2-BH260	Substation	284886	210627
S2-BH261		284902	210622
S2-BH262	Washery	284919	210560
S2-BH263		285091	210479
S2-BH264		285061	210488
S2-BH265		285018	210470
BH1 Bridge East	Onllwyn Bridge	284129	210517
BH2 Bridge West		284124	210498
TP-West 1		284116	210511
TP-West 2		284111	210503
TP-East 1		284126	210520
TP-East 2		284147	210506

3.2 Service location and other constraints

- 3.2.1 The client and/or their principal contactor will be responsible for the identification and protection of any above- and below-ground services within the watching brief area/s. The client and/or their principal contactor will also be responsible for informing Wessex Archaeology of, and delimiting, any other areas of environmental, ecological or other constraints.

3.3 Geoarchaeological monitoring of boreholes

- 3.3.1 The attending geoarchaeologist will liaise closely with the GI team(s) on Site to ensure effective communication is maintained as the GI works proceed, that all parties understand his/her role and the broad aims with regarding the monitoring/sampling. This can be achieved by means of a tool-box style talk from the geoarchaeologist at project start and when appropriate.



- 3.3.2 Ground Investigations will be carried out by experienced geotechnical engineers under the supervision of a suitably experienced member of Wessex Archaeology's geoarchaeological team. Whilst excavations are in progress the geoarchaeologist must maintain a safe distance from the GI team, but will be afforded access to the work area to describe, and if appropriate, request a sample of the deposits observed.
- 3.3.3 The supervising geoarchaeologist will record, describe and interpret the sequence of deposits encountered in order to allow assessment of likely geoarchaeological potential.
- 3.3.4 Where possible, selected cores will be retained as part of the sedimentary archive against which further works will be recommended. In the case of any purposive geoarchaeological cores, all of these will be available for selection and retention.

3.4 Archaeological watching brief on trial pits

- 3.4.1 The watching brief will be undertaken by at least one archaeologist, subject to the number of site operations being carried out at any one time. All mechanical excavation will, where possible, be undertaken using a toothless ditching bucket and will be constantly monitored by the watching archaeologist.
- 3.4.2 Both the archaeological and GI contractors have been advised that they are not permitted to track on or over the Scheduled Monument to conduct the work. The GI contractor will provide a detailed traffic management plan during any works in the vicinity of the Scheduled Monument; the archaeological contractor will be fully briefed on, and observe, the detailed traffic management plan.
- 3.4.3 Without causing unnecessary delay to the groundwork programme, the archaeologist may ask for the groundwork to be temporarily halted whilst investigations are carried out. If appropriate, areas of archaeological interest will be defined and suitably protected in advance of their investigation and recording.
- 3.4.4 Where necessary, the surface of archaeological deposits will be cleaned by hand. A sample of the archaeological features and deposits identified will be hand-excavated and recorded, sufficient to address the aims of the watching brief. Spoil derived from both machine stripping and hand-excavation will be visually scanned for the purposes of finds retrieval. Artefacts and other finds will be collected and bagged by context.
- 3.4.5 If extensive, complex or well-preserved archaeological remains are identified, for which the scope of the approved watching brief WSI is insufficient, the watching archaeologist will halt the groundwork, delimit the area of archaeological interest, and report immediately to the Wessex Archaeology project manager. Wessex Archaeology will then inform the groundwork contractor, the client, Clwyd-Powys Archaeological Trust and the Glamorgan-Gwent Archaeological Trust, as a contingent excavation or revised strategy may be required. The programme, and additional resources, for any contingent excavation will be agreed with the client. Accordingly, this WSI will need revising before any further fieldwork proceeds – the revised WSI will need the approval of Clwyd-Powys Archaeological Trust and Glamorgan-Gwent Archaeological Trust, on behalf of the LPAs.
- 3.4.6 If human remains are uncovered, the specific methods outlined below (section 3.8.2) will be followed.



3.5 Recording

- 3.5.1 All exposed archaeological deposits and features will be recorded using Wessex Archaeology's pro forma recording system.
- 3.5.2 A complete record of excavated archaeological features and deposits will be made. This will include plans and sections, drawn to appropriate scales (generally 1:20 or 1:50 for plans, 1:10 for sections) and tied to the Ordnance Survey (OS) National Grid.
- 3.5.3 A full photographic record will be made using digital cameras equipped with an image sensor of not less than 10 megapixels. This will record both the detail and the general context of the principal features and the site. Digital images will be subject to managed quality control and curation processes which will embed appropriate metadata within the image and ensure long term accessibility of the image set.

3.6 Survey

- 3.6.1 The real time kinematic (RTK) survey of all archaeological features will be carried out using a Leica Global Navigation Satellite System (GNSS) connected to Leica's SmartNet service. All survey data will be recorded in OS National Grid coordinates and heights above OD (Newlyn), as defined by OSTN15 and OSGM15, with a three-dimensional accuracy of at least 50 mm.
- 3.6.2 If, due to unforeseen circumstances, it is not possible to survey using survey equipment prior to the destruction of the material, archaeological features will be located to either client plans that are related to OS mapping or structures/features that appear on OS mapping. This will be achieved using hand-held measuring tapes and the basic principles of triangulation.

3.7 Monitoring

- 3.7.1 The client will inform Clwyd-Powys Archaeological Trust and Glamorgan-Gwent Archaeological Trust of the start of the watching brief and its progress. Reasonable access will be arranged for the Clwyd-Powys Archaeological Trust and Glamorgan-Gwent Archaeological Trust to make site visits to inspect and monitor the progress of the watching brief. Any variations to the WSI, if required to better address the project aims, will be agreed in advance with the client, Clwyd-Powys Archaeological Trust and the Glamorgan-Gwent Archaeological Trust.

3.8 Finds

General

- 3.8.1 All archaeological finds will be retained, although those of clearly very recent origin with negligible potential to provide information relevant to the project aims and objectives may be recorded on site and not retained. Where appropriate, soil samples may be taken and sieved to aid in finds recovery. Any finds requiring conservation or specific storage conditions will be dealt with immediately in line with *First Aid for Finds* (Watkinson and Neal 1998).

Human remains

- 3.8.2 In the event of discovery of any human remains (articulated or disarticulated, cremated or unburnt), all excavation of the deposit(s) will cease pending Wessex Archaeology obtaining a Ministry of Justice licence (this includes cases where remains are to be left *in situ*).

- 3.8.3 Initially the remains will be left *in situ*, covered and protected, pending discussions between the client, Wessex Archaeology's osteoarchaeologist Clwyd-Powys Archaeological Trust and/or Glamorgan-Gwent Archaeological Trust regarding the need for excavation/removal or sampling. Where this is deemed appropriate, the human remains will be fully recorded, excavated and removed from site in compliance with the Ministry of Justice licence.
- 3.8.4 Excavation and post-excavation processing of human remains will be in accordance with Wessex Archaeology protocols and in-line with current guidance documents (e.g., McKinley 2013) and the standards set out in ClfA Technical Paper 13 (McKinley and Roberts 1993). Appropriate specialist guidance/site visits will be undertaken if required.
- 3.8.5 The final deposition of human remains subsequent to the appropriate level of osteological analysis and other specialist sampling/examinations will follow the requirements set out in the Ministry of Justice licence.

Treasure

- 3.8.6 Wessex Archaeology will immediately notify the client, Clwyd-Powys Archaeological Trust and/or Glamorgan-Gwent Archaeological Trust on discovery of any material covered, or potentially covered, by the *Treasure Act 1996*. All information required by the *Treasure Act* (i.e., finder, location, material, date, associated items etc.) will be reported to the Coroner within 14 days.

3.9 Environmental sampling

- 3.9.1 All sampling will be undertaken following Wessex Archaeology's in-house guidance, which adheres to the principles outlined in Historic England's guidance (English Heritage 2011 and Historic England 2015b).
- 3.9.2 Bulk environmental soil samples, for the recovery of plant macrofossils, wood charcoal, small animal bones and other small artefacts, will be taken as appropriate from well-sealed and dateable contexts. In general, features directly associated with particular activities (e.g., pits, latrines, cesspits, hearths, ovens, kilns, and corn driers) should be prioritised for sampling over features, such as ditches or postholes, which are likely to contain reworked and residual material.
- 3.9.3 If waterlogged or mineralised deposits are encountered, an environmental sampling strategy will be devised and agreed with the Clwyd-Powys Archaeological Trust and/or Glamorgan-Gwent Archaeological Trust as appropriate. Specialist guidance will be provided by a member of Wessex Archaeology's geoarchaeological and environmental team, with site visits undertaken if required.
- 3.9.4 Any samples will be of an appropriate size – typically 40 litres for the recovery of environmental evidence from dry contexts, and 10 litres from waterlogged deposits.
- 3.9.5 Following specialist advice, other sampling methods such as monolith, Kubiena or contiguous small bulk (column) samples may be employed to enable investigation of deposits with regard to microfossils (e.g., pollen, diatoms) and macrofossils (e.g., molluscs, insects), soil micromorphological or soil chemical analyses.

4 POST-EXCAVATION METHODS AND REPORTING

- 4.1.1 All post-excavation methods and reporting will be undertaken as outlined within the WSI (Wessex Archaeology 2023). The results of the monitoring of the additional GI works will be integrated with that undertaken during the remainder of the Stage 1 and 2 GI works.



5 ARCHIVE STORAGE AND CURATION

- 5.1.1 All archiving and curation, including the Data Management Plan, will be undertaken as outlined within the WSI (Wessex Archaeology 2023).

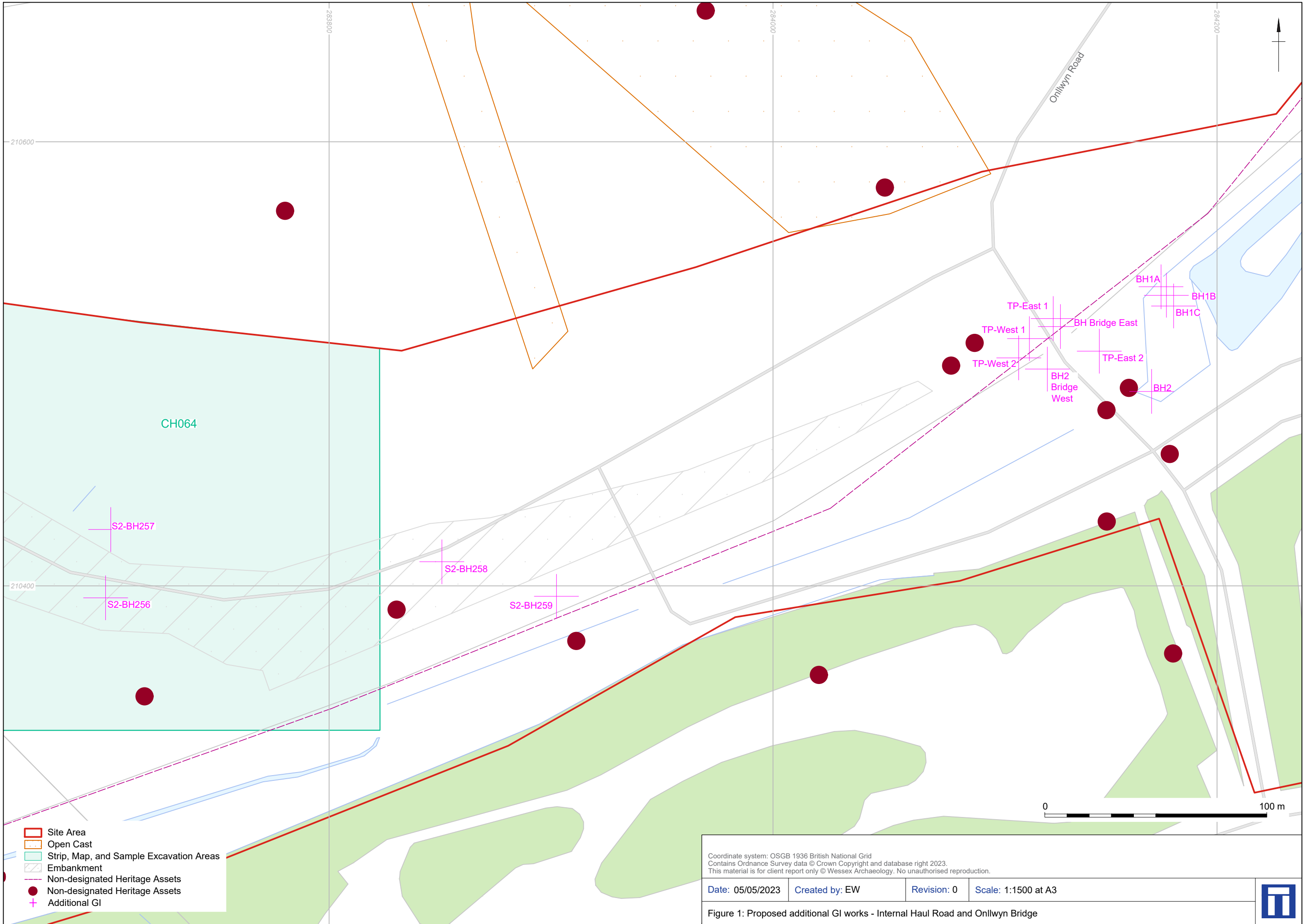
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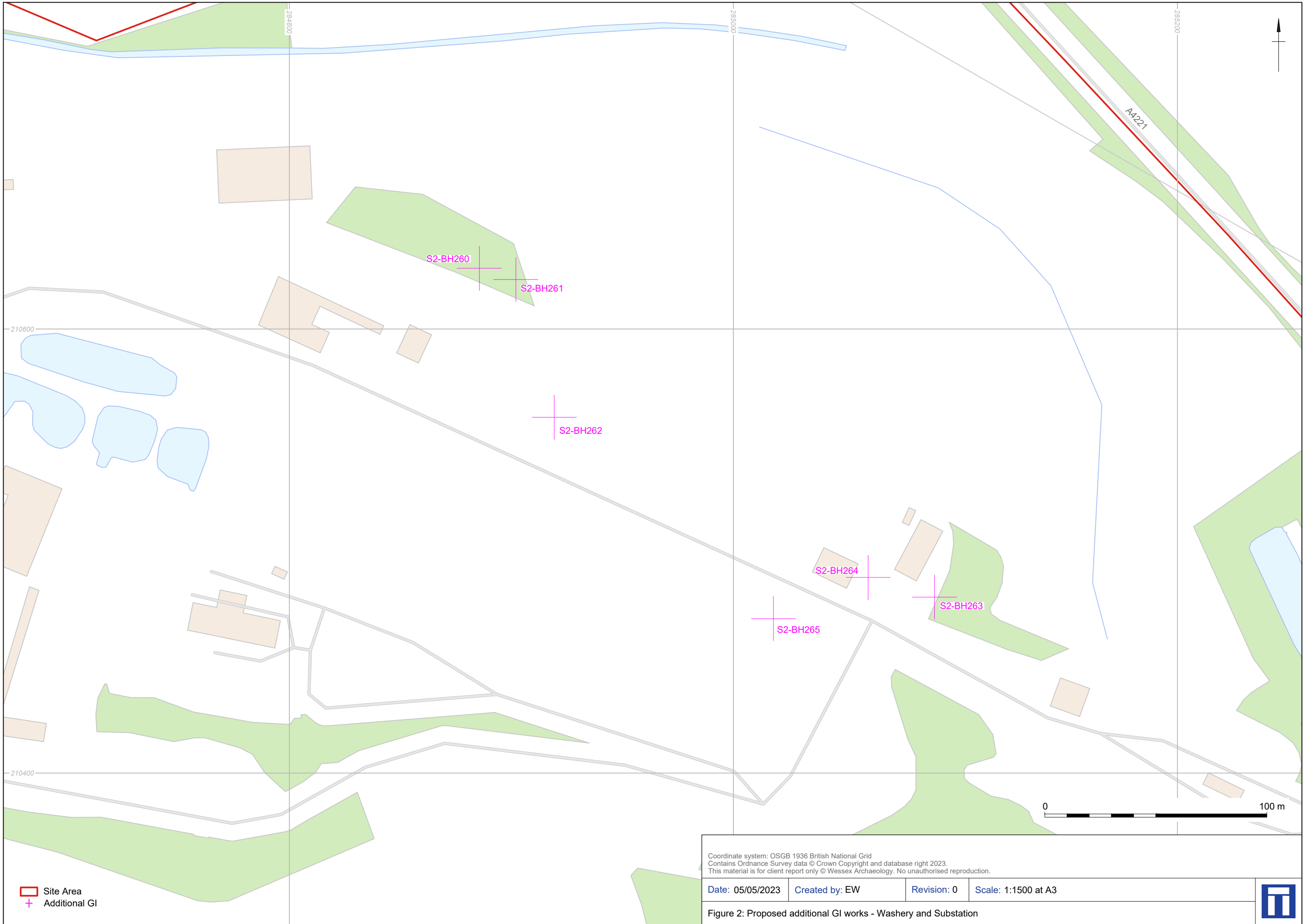
APPENDICES

Appendix 1 Finds and environmental specialists

Name	Qualifications	Specialism
Sander Aerts	BA, MSc	Archaeoentomological remains, animal bone, marine shell and archaeobotanical remains (carbonised)
Phil Andrews	BSc; FSA; MCIfA	Slag and metal working debris
Ceridwen Boston	BSocSc; MA; MSc; DPhil	Osteoarchaeology; funerary archaeology
Elina Brook	BA; MA; PCIfA	Later prehistoric and Romano-British pottery, and small finds
Alex Brown	BA; MSc; PhD	Geoarchaeology, palynology
Kirsten Egging Dinwiddy	BA; MA; MCIfA	Human remains (inhumations)
Erica Gittins	BA; MA; PhD	Prehistoric flint
Phil Harding	PhD	Prehistoric flint, particularly Palaeolithic flint
Lorrain Higbee	BSc; MSc; MCIfA	Animal bone
Matt Leivers	BA; PhD; ACIfA	Prehistoric pottery and flint
Inés López-Dóriga	BA; MA; PhD	Archaeobotanical remains
Erica Macey-Bracken	BA; ACIfA	Post-medieval finds, ceramic building material and worked wood
Katie Marsden	BSc	Pottery from prehistoric to post-medieval/modern. Metalwork of all periods, including coins. Small and bulk finds including fired clay, ceramic building material, worked bone
Jacqueline McKinley	BTech; FSA	Human remains (inhumations and cremations)
Lorraine Mephram	BA; MCIfA	Pottery and other ceramic finds of all dates, concentrating on later prehistoric and post-Roman; ceramic building material; clay tobacco pipe; glass of Saxon or later date; small finds
Nicki Mulhall		Geoarchaeology and archaeobotanical remains
Daniel Young	BSc; MSc; MPhil	Geoarchaeology and deposit modelling
Emma Robertson	BA; MSc	Human remains (inhumations)
Megan Scantlebury	BA, MSc	Archaeobotanical remains
Rachael Seager Smith	BA; MCIfA	Pottery with particular emphasis on Roman ceramics; and metalwork, fired clay, ceramic building material, stone, worked bone, shale, glass, and wall plaster
Andrew Shaw	BA; MA; PhD	Palaeolithic lithic artefacts and Pleistocene geoarchaeology
Amy Thorp	BA; MA	Pottery with emphasis on Roman ceramics, small finds
Ed Treasure	BSc; MRes; PhD	Archaeobotanical remains, including plant remains and charcoal/wood



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