Fletcher Bank Quarry
Near Ramsbottom, Lancashire
Archaeological Evaluation and Watching Brief
Written Scheme of Investigation

National Grid Reference Number: SD 80665 17050
AOC Project No: 51542
Date: July 2016
Fletcher Bank Quarry, Near Ramsbottom, Lancashire
Archaeological Evaluation and Watching Brief Written Scheme of Investigation

On Behalf of: Terra Consult Ltd
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National Grid References (NGR): SD 80665 17050

AOC Project No: 51542

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Illustrations by: Ian Atkins

Date: July 2016

This document has been prepared in accordance with AOC standard operating procedures.

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Figure 1: Site location
Figure 2: Proposed evaluation trench plan overlaying the results of the geophysical survey
1 Introduction

1.1 This Written Scheme of Investigation (WSI) has been prepared by AOC Archaeology Group on behalf of Terra Consult Ltd and details the methodology for a scheme of archaeological evaluation trenching and watching brief on the site of a proposed extension to Fletcher Bank Quarry, near Ramsbottom in Lancashire. If significant archaeological remains are identified as part of the evaluation, further archaeological works could be required, such as targeted open area excavation, the scope of which would be detailed in an updated WSI.

1.2 The proposed programme of archaeological evaluation will comprise targeted trial trenching informed by the results of a previous archaeological geophysical survey undertaken by AOC Archaeology (2016b). All work will be undertaken to fully meet the requirements of all nationally recognised guidance for such work, including standards laid down by English Heritage/Historic England and the Chartered Institute for Archaeologists (CIfA).

1.3 The programme of archaeological mitigation will be managed in line with the standards laid down in the English Heritage (now Historic England) guideline publication Management of Research Projects in the Historic Environment (MoRPHE): Project Managers Guide (2006a) and the MoRPHE Project Planning Note 3: Archaeological Excavation (PPN3) (2008), and to meet the requirements of the National Planning Policy Framework (NPPF; Chapter 12: ‘Conserving and enhancing the historic environment’).

2 Site Location and Description

2.1 The proposed quarry extension area is situated on the north-eastern side of Fletcher Bank Quarry, to the immediate east of Shuttleworth and approximately 1km to the east of Ramsbottom, Greater Manchester. The existing quarry sits on the boundary between the Greater Manchester and Lancashire local authorities, although the proposed extension is located within the Rossendale District of Lancashire (centred on SD 80665 17050; see Figure 1).

2.2 The proposed extension area comprises two fields of rough pasture bounded by the existing quarry to the west and Bury Old Road to the east, covering approximately 3.9ha. The southern edge of the site is situated at a height of approximately 275m above Ordnance Datum (OD) and slopes to the north to a height of approximately 240m OD.

2.3 A site visit was conducted by AOC on 22nd July 2016 to assess the survival of potential archaeological deposits in the northern field following the stripping of topsoil and areas of thin subsoil. It was assessed that the potential for survival across the majority of the field was low, other than under two banded stores of topsoil within the south-west and north-east of the field, each c.1200m² in surface area. A 10m wide bund of topsoil was also present along the eastern and southern edges of the northern field.

2.4 The bedrock geology within the proposed quarry extension consists of Fletcher Bank Grit sandstone (BGS 2016) overlain by very acid loamy upland soils with a wet peaty surface (Soilscapes 2016).

3 Archaeological Background

3.1 The archaeological background below is drawn from the Historic Environment Assessment previously undertaken by AOC Archaeology (2016a).

Prehistoric and Roman Periods (up to c. AD 410)

3.2 There is no recorded evidence for activity or occupation dating to the prehistoric period within the proposed quarry extension area.
3.3 There is extensive evidence for early prehistoric activity across the uplands of the South Pennines, such as to the east of the study area, where Mesolithic and Neolithic flints have been discovered at Knowl Hill, Heywood.

3.4 Within the surrounding area there is evidence of three probable Bronze Age cairns. The closest of these sites to the proposed quarry extension area is Bank Lane Cairn, which was situated to the immediate north-west of the area but has now been destroyed by quarrying. This was excavated by Bury Archaeology Group (BAG) and was shown to have been a kerbed cairn with a primary inhumation in a cist; a cremation of a child lay below the floor of the cist. The remains of a second cremation were scattered over the cist and a third was discovered in a pit containing a sherd of collared urn. Other finds included a flint blade, a bead and a sherd of pottery.

3.5 Shuttleworth Cairn was situated approximately 470m to the south-west of the proposed quarry extension area, and has now been destroyed by quarrying. The cairn is recorded as having been 60 feet (18.2m) in diameter and 5 feet (1.5m) high and had a revetment of inwards leaning slabs enclosed by a ring of boulders. It included three cremations and fragments of a collared urn, a flint scraper and a bead.

3.6 The surface remains of Whitelow Hillock Cairns survive along the natural ridge about 250m to the south-east of Shuttleworth Cairn, and 650m to the south of the proposed quarry extension, which comprise apparently in situ kerb stones. Archaeological excavations were undertaken at the cairn between 1961 and 1965 by BAG and it was shown to contain five urns and eight un-urned cremations. The primary burial was of a young female accompanied by burnt flints, fish bones and a broken bronze awl. Flints and fish bones also accompanied the other burials, and two ‘pulley’ shaped clay studs were also uncovered.

**Romano-British Period (c. AD 50 to c.410)**

3.7 There is no recorded evidence for activity or occupation dating to the Roman period within the proposed quarry extension area, or within the surrounding area.

3.8 It is likely that the rural settlement pattern in uplands areas of the South Pennines continued in much the same form as it had in the late Iron Age and, despite the material cultural influence of the Romans, these settlements may have remained largely aceramic through this period.

**Medieval Period (c. AD 410 to c.1500)**

3.9 There is no evidence for medieval settlement or activity within the proposed quarry extension area. Indeed, it is likely that the area remained marginal upland pasture throughout this period.

3.10 In the 12th and early 13th centuries Ramsbottom was part of the Royal and Ancient Manor of Tottington, controlled by the Montbegan family, but in 1230 it came under the control of the Honour of Clitheroe, held by the important De Lacy family. In medieval times the locality was a royal hunting forest and farming activities were discouraged, but in 1507 the area was deforested, allowing the creation and expansion of new farmsteads (Bury Council 2011, 7).

3.11 The earliest archaeological evidence for activity during the medieval period in the surrounding area is the site of a kiln, near Whitelow Cairn, approximately 500m to the south of the proposed quarry extension. This was excavated in 1989 by BAG and radiocarbon dates retrieved from this feature gave a date of between 996 and 1162.

**Post-medieval Period (c. AD 1500 to c.1950)**

3.12 The earliest surviving structures within the surrounding area are farm buildings dating to the early post-medieval period. Green Hill Farmhouse is located approximately 300m to the north-east of
the proposed quarry extension, on the opposite side of the valley of the Harden Brook at Green Hill Farm. This was constructed in the early 17th century and has an 18th century barn attached to the rear. A 16th or 17th century cruck-framed barn also survives at Dry Gap Farm, about 750m to the north of the proposed quarry extension.

3.13 The area around Ramsbottom, in the valley to the west of Fletcher Bank Quarry, remained largely rural into the late 18th century, Ramsbottom itself comprising several farmsteads. The town’s development began in 1783 when the firm Peel and Yates bought land in the area, on which it built new works buildings and offices for their bleaching and dying business. Further mills were built throughout the area in the early 19th century by a number of industrialists, and this development was encouraged further by the construction of a turnpike road in c.1815. Housing, chapels and other civic amenities then followed (Bury Council 2011, 8).

3.14 The earliest extraction at Fletcher Bank Quarry probably began in the late 18th century, and many of the buildings within Ramsbottom and the surrounding area are constructed of Fletcher Bank Grit sandstone. By the late 1840s, when the First Edition Ordnance Survey 6 inch map was surveyed (Ordnance Survey 1851) the quarry already covered an extensive area on the western side of Fletcher Bank. In the 1890s the quarry had been extended towards the south-east, around Grime Height (Ordnance Survey 1894) and by the end of the first decade of the 20th century the excavations cut across the line of Bury Old Road (Ordnance Survey 1912). Further northward expansion occurred through the 1930s and 1940s (Ordnance Survey 1930 and 1947). The post-war period saw the further extensive expansion of the quarry workings to the east and north, destroying the former post-medieval field pattern, the line of Bury Old Road, Tops Farm (which was situated to the immediate west of the proposed quarry extension), and a number of field barns.

3.15 Through the 19th and 20th century the proposed quarry extension area remained pasture. The Ordnance Survey map of 1851 shows the southern half of the area covering areas of three separate fields defined by straight, surveyed, field boundaries. An area of rough pasture is depicted covering the area’s northern half. The field pattern within the proposed quarry extension remained largely the same through into the second half of the 20th century, following which the quarrying removed the ground to the west. The main east-west boundary survives from the 19th century, however, although the boundaries of the smaller fields across the southern half of the site have now been removed and Bury Old Road has been re-routed, forming the proposed extension area’s eastern edge.

4 Previous Archaeological Investigations

4.1 A programme of geophysical survey was conducted across the proposed quarry extension by AOC (2016b).

4.2 Gradiometer survey results identified a former field boundary which is noted on historic mapping (Ordnance Survey 1851). The results have also detected a number of isolated and discrete linear anomalies. The weak patterning and poor increases in magnetic values of these anomalies has prevented a detailed interpretation and it is difficult to determine their character. They could, however, be of anthropogenic origin.

4.3 The results also mapped modern features most likely related to previous quarry activity, as well as natural variations in soil composition or geology.
5 **Aims**

5.1 The primary aim of the archaeological evaluation trenching is to gather sufficient information to establish the presence/absence, character, extent, state of preservation, significance and date of any archaeological remains within the proposed development site.

5.2 The specific aims are to:

- Locate, record, characterise, and determine the extent of, any surviving sub-surface archaeological remains
- Provide an assessment of the potential significance of any identified archaeological remains in a local, regional and (if relevant) national context
- Produce a comprehensive site archive and a descriptive and interpretive assessment report.

5.3 In consideration of Bronze Age funerary landscapes or enclosures being the most likely archaeological features present within the proposed quarry extension area, a number of questions based upon the North West regional research framework (Hodgson & Brennand 2007) could be answered. These should be considered both during the evaluation and in the event of further works:

- Is it possible to gain evidence for prehistoric monumental construction?
- How do such features link into wider environmental and land-use contexts? In the event of a suitably old linear feature being present – sampling for pollen is likely to be appropriate.
- Does evidence of Neolithic or early Bronze Age enclosures survive?

6 **Methodology**

**Evaluation Excavation and Watching Brief**

6.1 A programme of archaeological trenching will be undertaken to evaluate approximately 7% of the total remaining area of the proposed development site. This will consist of 12 trenches measuring 2.1m by 50m, which will be positioned to both target potential archaeological anomalies and provide a representative sample of the proposed development site (see Figure 2).

6.2 The stripping of two areas of surviving topsoil in the northern field (see Figure 2) will be monitored under direct archaeological supervision, by a suitably experienced and qualified archaeologist, with one archaeologist responsible for monitoring each mechanical excavator.

6.3 The trenches will be accurately located using survey-grade GPS (Trimble R8) equipment combined with a Trimble S6 total station. All surveys will be accurately tied into the Ordnance Survey National Grid and Ordnance Datum Newlyn heights.

6.4 All excavation will be undertaken in line with the CIIfA guidelines *Standard and Guidance for Archaeological Excavation* (2014a) and *Standard and Guidance for archaeological field evaluation* (2014b), and in compliance with the English Heritage/Historic England guidance *MoRPHE PPN3: Archaeological Excavation* (2008).

6.5 Trenches will initially be excavated using a mechanical excavator fitted with a wide, toothless ditching bucket down to the first significant archaeological horizon.

6.6 All topsoil removal will be undertaken under direct archaeological supervision, by a suitably experienced and qualified archaeologist, with one archaeologist responsible for monitoring each mechanical excavator.
6.7 Following completion of the initial machine excavation, all excavation will be undertaken by hand, and exposed surfaces will be thoroughly cleaned in order to assist the identification of any features.

6.8 Any excavation, whether by machine or by hand, will be undertaken with a view to avoiding damage to any archaeological features or deposits which appear to be demonstrably worthy of preservation in situ.

6.9 Where depth of excavation is required to be greater than 1.2m, suitable stepping will be employed.

6.10 The provisional sampling policy is as follows:
- a 100% sample will be taken of all stake-holes
- a 50% sample will be taken of all post-holes, and of pits with a diameter of up to 1.5m
- a minimum 25% sample will be taken of pits with a diameter of over 1.5m. This should include a complete section across the pit to recover its full profile
- a minimum 25% sample will be taken of all linear features, up to 5m in length; for features larger than this, a 10% sample
- Deposits at junctions (and interruptions) in linear features will be excavated to determine the relationships between the different components.
- Any in situ building remains will be fully recorded for the extent that they are exposed. Brick and stone samples may be taken if potentially diagnostic of date or function.
- Significant features will be 100% excavated, if required by the archaeological advisor to Lancashire County Council.

6.11 A full written, drawn and photographic record will be made of all features revealed during the course of the archaeological evaluation. Plans will be completed at a scale of 1:50 or 1:20 (as appropriate), with section drawings at a scale of 1:10. All plans will be tied in with the Ordnance Survey National Grid with levels given to metres above OD.

6.12 A minimum 35mm format for photography will be used (in monochrome and colour). Any digital photography will be undertaken using a camera with a resolution of at least 10 megapixels.

6.13 All finds will be bagged according to their context, and significant finds will be allocated a recorded finds number and their positions surveyed individually. Finds requiring further analysis, excavation or conservation will be lifted and packed using suitable archival standard storage materials, and assessed in a relevant conservation laboratory. Where required, suitable specialists will be employed during fieldwork to advise, date or excavate significant finds or features.

6.14 The palaeoenvironmental sampling strategy will comprise the removal of a bulk sample from every securely sealed and hand-excavated context, excepting those with excessive levels of residuality or those with minimal ‘soil’ content (such as building rubble).

6.15 Bulk samples will comprise a representative 40 litre sample. However, where a context does not yield 40 litres of material, smaller samples will be taken (generally the maximum amount of material that it is practicable to collect). Bulk samples will be used to recover a sub-sample of charred macroplant material, faunal remains and artefacts. Suitable deposits will also be sampled for industrial residues.

6.16 If buried soils or other deposits are encountered, column samples may be taken for micromorphological and pollen analysis. Environmental material will be stored in controlled
environments and environmental and soil specialists will be consulted during the course of the work if necessary.

6.17 If required a qualified and experienced palaeoenvironmental specialist will undertake site visits to discuss the sampling strategy, and if necessary assist in any required fieldwork.

6.18 On completion of all archaeological excavation and recording, and following the agreement of the archaeological advisor to Lancashire County Council, the trenches will be backfilled with excavated spoil, if required by Terra Consult Ltd.

**Human remains**

6.19 Terra Consult Ltd, the coroner and the archaeological advisor to Lancashire County Council will be informed if human remains are found. Disturbance of human skeletal remains will be kept to a minimum. Any human remains encountered will be accurately recorded in plan to identify the date and character of the remains, but no further investigation will occur and the remains will be covered and protected.

6.20 Removal of human remains will only take place under appropriate government and environmental health regulations, in compliance with the Burial Act 1857 and after obtaining a Section 25 exhumation licence obtained from the Ministry of Justice.

6.21 If required a qualified and experienced osteoarchaeologist will undertake site visits to discuss the recording and assist in the removal of any human skeletal remains.

**Scientific dating**

6.22 The recovery of material suitable for radiocarbon, archaeomagnetic and/or dendrochronological dating will be sought, as appropriate.

**Other finds**

6.23 All finds and samples will be treated in a proper manner during the excavation stage and to standards agreed in advance with the recipient museum using the site code obtained for the evaluation excavation. Finds will be exposed, lifted, cleaned, conserved, marked, bagged and stored in accordance with the guidelines set out in United Kingdom Institute for Conservation's \*Conservation Guidelines No. 2* and the CIfA guidelines \*Standards and Guidance for the collection, documentation, conservation and research of archaeological materials* (2014c).

6.24 All finds of gold and silver will be moved to a safe place. Where removal cannot be effected immediately, suitable security measures will be taken to protect the artefacts from theft or damage. All finds of gold and silver, and associated objects, will be reported to the coroner according to the procedures relating to the Treasure Act 1996 (and the act’s amendment of 2003 to include prehistoric objects such as Bronze Age metalworking hoards and other non-precious metal items), after discussion with Terra Consult Ltd and the archaeological advisor to Lancashire County Council.

**Additional ‘Strip, Map and Record’ Excavation**

6.25 If significant archaeological remains are identified during the archaeological evaluation trenching, it may be necessary to expand these areas of excavation in order to determine the full form, character and extent of any archaeological features. The scope of any further excavation would need to be detailed in an updated WSI in agreement with the archaeological advisor to Lancashire County Council.
Processing, Storage and conservation

6.26 The processing of all palaeoenvironmental samples will be undertaken in line with the requirements of the English Heritage publications Archaeological Science at PPG16 Interventions: Best Practice Guidance for Curators and Commissioning Archaeologists (2006b) and Environmental Archaeology: A guide to the theory and practice of methods from sampling and recovery to post-excitation (2011).

6.27 The preservation state, density and significance of material retrieved will be assessed, following methods presented in the English Heritage guidelines Environmental Archaeology: A guide to the theory and practice of methods from sampling and recovery to post-excitation (2011). Unprocessed sub-samples must be stored in conditions specified by the appropriate specialists.

6.28 If required, conservation will be undertaken by approved conservators in line with the First Aid for Finds guidelines (Watkinson and Neal 1998). Material considered vulnerable will be selected for stabilisation after specialist recording. Where intervention is necessary, consideration must be given to possible investigative procedures (e.g. glass composition studies, residues in or on pottery, and mineral-preserved organic material).

6.29 Once assessed, all material will be packed and stored in optimum conditions, as described in First Aid for Finds (Watkinson and Neal 1998). Waterlogged organic materials will be dealt with in line with the English Heritage guidance documents, Waterlogged Organic Artefacts. Guidelines on their Recovery, Analysis and Conservation (2012) and Waterlogged Wood. Guidelines on the recording, sampling, conservation and curation of waterlogged wood (2010).

6.30 Samples for dating will be submitted to specialists promptly, so as to ensure that results are available to aid development of specifications for subsequent mitigation strategies.

Contingencies and unexpectedly significant or complex discoveries

6.31 Should unexpectedly extensive, complex or significant remains be uncovered that warrant, in the professional judgment of the archaeologist on site, more detailed recording than is appropriate within the terms of the WSI, the scope of the WSI should be reviewed.

6.32 In the event of a review of the WSI being required, AOC Archaeology will urgently contact Terra Consult Ltd and the archaeological advisor to Lancashire County Council with the relevant information to enable them to resolve the matter. This is likely to require an on-site meeting between the relevant stakeholders to review the archaeological remains on-site and identify a way forward. Any variations to this WSI will be put in writing and agreed by the relevant stakeholders including the archaeological advisor to Lancashire County Council and Terra Consult Ltd.

7 Assessment Reporting

7.1 The assessment reporting will consist of three main parts to allow informed decisions to be made on any future analysis and publication of the results of the work:

- A factual summary, characterising the quantity and perceived quality of the data contained in the site archive;
- A statement of the archaeological potential of the data contained in the site archive, including recommendations for future work; and
- Recommendations on the storage and duration of the data contained in the site archive, and the timescale on which this should be achieved.
7.2 The results of the assessment phase will be presented in an integrated assessment report and updated WSI if required. As a minimum the report shall contain the following information:

- A title page, with the name of the project, the name of the author(s) of the report, the title of the report and date of the report
- A non-technical summary of the results of the work, introduction and aims and objectives
- Introduction which includes site code/project number, planning reference number and dates when the fieldwork took place, grid reference
- Description of the aims, methodology and extent of fieldwork completed
- Factual assessments of stratigraphic, artefactual and environmental evidence
- Factual assessment of stratigraphic evidence to include interpretation, covering phasing of the site sequence and integrating spot-dating of ceramics or other material
- Factual assessment of the artefactual evidence, where applicable including inspection of X-radiographs of all iron objects, a selection of non-ferrous artefacts (including coins) and a sample of any industrial debris relating to metallurgy
- Factual assessment of the environmental evidence
- An assessment of the archaeological potential of the stratigraphic, artefactual and environmental records
- Proposals for the selection of samples or sub-samples for further analysis and reporting
- Identification of interim and long term conservation and storage requirements.
- Conclusions
- Details of archive location and destination (with the recipient museum accession number), together with a catalogue of what is contained in that archive
- Copy of the OASIS entry form and any entry updates
- Appendices, illustrations and figures, as appropriate
- References and bibliography of all sources used

7.3 All survey data will be provided as hard copies, or in PDF format at a suitable scale, and can also be provided a DWG files or Shapefiles, or any other major industry standard formats as required.

7.4 Hard copies of the report will be provided in draft and final form, together with a PDF/A copy to be provided on CD. Copies of the draft and final reports will be produced and submitted to:

- Terra Consult Ltd
- the archaeological advisor to Lancashire County Council
- Lancashire Historic Environment Record (one bound copy and a PDF copy)
- Historic England Regional Science Advisor

7.5 If the archaeological evaluation excavation yields negative results, or features of limited archaeological significance, the assessment report may be the final stage of post-excavation work, or may lead to only limited further work, such as a summary note in an appropriate journal.
7.6 If significant archaeological remains are identified as part of the evaluation, further archaeological mitigation works could be required. The scope of any further excavation or post-excavation analysis would need to be detailed in an updated WSI in agreement with the archaeological advisor to Lancashire County Council.

8 Analysis Report

8.1 Upon completion of the archaeological evaluation trenching the artefacts, soils samples and stratigraphic information shall be assessed as to their potential and significance for further analysis. An assessment report on the field work will be produced within the agreed programme timetable following the completion of the on-site works.

8.2 The assessment report will be used to agree the scope of any further analysis and reporting to be completed for the project, which will be detailed in an updated WSI to be agreed with the archaeological advisor to Lancashire County Council and Terra Consult Ltd. The further analysis and reporting will then be carried out in line with this updated WSI.

8.3 If required, the results of the assessment and analysis stages will be published in a suitable academic journal. All analysis and publication will draw on the results of all previous archaeological investigations on the site, to produce a coherent and comprehensive record of the archaeological resource.

9 Archiving

9.1 The archive will contain all the data collected during the archaeological works, including all digital and paper records, finds and environmental samples. It will be quantified, ordered, indexed and internally consistent. The archive for the evaluation will be submitted to recipient museum within one year of the completion of the fieldwork, unless the significance or complexity of any archaeological material requires further analysis, conservation or scientific dating as part of a subsequent scheme of archaeological excavation, although any changes to this timescale will be agreed in writing with the archaeological advisor to Lancashire County Council.

9.2 Adequate resources will be provided during fieldwork to ensure that all records are checked and internally consistent. Archive consolidation will be undertaken immediately following the conclusion of fieldwork and will include the following work:

- the site record will be checked, cross-referenced and indexed as necessary
- all retained finds will be cleaned, conserved, marked and packaged in accordance with the requirements of the recipient museum
- all retained finds will be assessed and recorded using pro forma recording sheets, by suitably qualified and experienced staff. Initial artefact dating will be integrated within the site matrix
- all environmental samples will be processed by suitably experienced and qualified staff

9.3 The archive will be assembled in line with the recommendations provided in English Heritage’s MoRPHE Project Planning Note 3: Archaeological Excavation (PPN3) (2008). In addition to the site records, artefacts, ecofacts and other sample residues, the archive shall contain:

- site matrices where appropriate
- a summary report synthesising the context record
- a summary of the artefact record
- a summary of the environment record
9.4 The archive will be prepared in accordance with the Guidelines for the preparation of Excavation Archives for long–term storage (United Kingdom Institute for Conservation, 1990), Standards in the museum care of archaeological collections (Museums and Galleries Commission 1994), and in accordance with the recipient deposition guidelines. Provision will be made for the stable storage of paper records and their long–term storage.

9.5 An OASIS will be completed and an electronic copy of the final report deposited with the Archaeological Data Service (ADS).

10 AOC Archaeology Capability Statement

10.1 AOC Archaeology was established in 1991, and is a Chartered Institute for Archaeologists (CIfA) Registered Organisation and an accredited ISO 9001:2008 organisation, operating to nationally agreed guidelines, processes and procedures. AOC offer a full range of archaeological and heritage services that makes the most effective use of the company’s skills, specialised knowledge and experience, based on key expert services including archaeological excavation and survey, consultancy and heritage management, building recording, geophysical survey and geomatics, laser scanning, post-excavation analysis and conservation, and community archaeological services.

10.2 AOC’s in-house post-excavation services include sedimentology, soil micromorphology, soil chemistry, dendrochronology, palaeobotany, palynology, faunal analysis, osteoarchaeology, artefact conservation and analysis, building materials and lithics. AOC has a strong association with other highly regarded organisations and individuals and we can cover the entire spectrum of artefact and ecofactual analysis. AOC Archaeology has a well equipped conservation laboratory that offers practical conservation and artefact care for archaeological material.

11 Key Project Staff

Stephen Potten MA
Project Manager

11.1 Stephen has worked widely in commercial archaeology and has broad experience of supervising large-scale excavations and evaluations across northern England, covering a range of site types and periods, from prehistoric and Roman sites in the East Riding of Yorkshire through to post-medieval mills in Lancashire. Most recently, Stephen has been responsible for supervising, and the day-to-day management of, a large excavation as part of the Beverley Southern Relief Road scheme, East Riding of Yorkshire. He has also worked on housing developments, reservoir construction and the re-development of listed buildings. This has given Stephen valuable experience of monitoring groundworks and interpreting archaeological deposits in both urban and rural environments. Stephen also has experience of working with English Heritage, having taken part in the excavation of Roman building remains at Groundwell Ridge, Swindon. Stephen has extensive experience of community archaeology, having worked on large scale community excavation projects including at The Butts, Worcester, Castle Howard, North Yorkshire, and The Commandery, Worcester, where he supervised and provided training to volunteers, and provided site tours explaining the nature of the archaeology being uncovered.

Charlie Morris BA (Hons)
Project Officer

11.2 Charlie Joined AOC in August 2015 having been employed by the company previously, and has over 30 years experience in commercial archaeology and also worked as an archaeological consultant. Charlie has previously worked of various archaeological contracting units as a
supervisor and project officer managing archaeological projects including site excavations, surveys, gaining considerable experience in the field and post-extraction. Fieldwork has included deeply stratified urban sites, open area excavations and major infrastructure schemes including wind farms, roadways, pipelines, housing and retail developments solar farms and quarry extensions throughout the UK including sites in Scotland. Charlie also worked in the United Arab Emirates in 2012-2013 assisting in the excavation and recording of Bronze Age Tombs near Ras al Khaimah. Charlie also worked as a photographer specializing in the recording of historic buildings. During previous periods of employment for AOC Charlie has supervised a variety of sites including the Beverley Southern By-pass, North Newbald wind farm and the site of a former cotton mill in Great Harwood Lancashire. Charlie has also assisted with and supervised a number of sites in Scotland and the south of England for the AOC Edinburgh and London offices. During the 2 years working as a consultant Charlie prepared desk-based assessments, project designs, written schemes of investigation, environmental impact assessments, modern disturbance reviews and photographic recording of historic buildings. Charlie has a full first aid certificate and holds a CSCS health and safety card.

**Ciara Clarke BA (mod) MSc PhD MCIfA**

**Post-Excavation Management**

11.3 After completing her studies in 1994, Ciara was employed as the senior environmental scientist for the Archaeological Field Unit at University of Edinburgh. Throughout this period she guided environmental aspects of field and post excavation programmes in addition to the overall management of backlogged post excavation projects. She also undertook both commercial and research project work and was a member of the senior management team responsible for the strategic direction of the unit. In 2000 Ciara joined AOC Archaeology Group initially as manager of the post-exavocation sector, and ultimately overseeing all post-excavation work, including conservation. Ciara continues her interest in the archaeology of wetlands on which she has undertaken several research projects conducting palynological work.

**Specialists**

11.4 Any post-exavocation analyses or conservation will be conducted primarily by AOC Archaeology's in-house specialists, although external finds specialists will be used as required.

11.5 A provisional list of proposed specialists is provided below:

<table>
<thead>
<tr>
<th>Role</th>
<th>Name</th>
<th>Organisation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Post-exavocation/conservation</td>
<td>Ciara Clarke BA MSc PhD MCIfA</td>
<td>AOC</td>
</tr>
<tr>
<td>Bronze Age pottery</td>
<td>Kevin Cootes</td>
<td>University of Sheffield</td>
</tr>
<tr>
<td>Iron Age and Roman pottery</td>
<td>Peter Didsbury</td>
<td>Freelance</td>
</tr>
<tr>
<td>Medieval and post-medieval pottery</td>
<td>George Haggarty</td>
<td>Freelance/AOC</td>
</tr>
<tr>
<td>Environmental specialist</td>
<td>Jackaline Robertson BA MPhil MSc</td>
<td>AOC</td>
</tr>
<tr>
<td>Osteoarchaeologist</td>
<td>Rachel Ives BA (Hons) MPhil PhD</td>
<td>AOC</td>
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<tr>
<td>Metal work</td>
<td>McLaren PhD MA (Hon) FSA (Scot)</td>
<td>AOC</td>
</tr>
<tr>
<td>Archaeomagnetic dating</td>
<td>Cathy Batt</td>
<td>University of Bradford</td>
</tr>
<tr>
<td>Dendrochronological dating</td>
<td>Alison Arnold</td>
<td>Nottingham Tree-ring Dating Laboratory</td>
</tr>
</tbody>
</table>
12 Monitoring

12.1 The archaeological advisor to Lancashire County Council will be responsible for monitoring the project and will be afforded the opportunity to inspect the site and all records at any stage of the work.

12.2 Following the agreement of this WSI, the archaeological advisor will be provided with written notice of the proposed date for the commencement of the archaeological evaluation.

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