

**AN ARCHAEOLOGICAL WATCHING BRIEF
ON LAND ADJACENT TO PC HENDERSON LIMITED,
BOWBURN NORTH INDUSTRIAL ESTATE,
BOWBURN, COUNTY DURHAM**

OCTOBER 2011

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PRE-CONSTRUCT ARCHAEOLOGY

**An Archaeological Watching Brief on Land Adjacent to PC Henderson Limited,
Bowburn North Industrial Estate, Bowburn, County Durham**

National Grid Reference: NZ 30193 38321

Site Code: BID 11

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October 2011**

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1. NON-TECHNICAL SUMMARY

- 1.1 An archaeological monitoring and recording exercise was conducted in association with development of land adjacent to the existing premises of PC Henderson Limited at Bowburn North Industrial Estate, Durham. The site, covering c. 0.57 hectares, has a central National Grid Reference of NZ 30193 38321.
- 1.2 The archaeological investigation was commissioned by Arran Construction Limited and was undertaken in September 2011 by Pre-Construct Archaeology Limited as a condition of planning permission, on the recommendation of Durham County Council Archaeology Section, The development entails construction of a new office building, with associated car parking and landscaping.
- 1.3 Although the village of Bowburn is a modern creation which grew up around coal mining activity from the early 20th century, the site is of archaeological interest due to its location on the possible line of a Roman road, known as Cade's Road, which linked York and Newcastle.
- 1.4 The archaeological work monitored initial ground preparation, comprising reduction of the existing ground level across the development footprint, covering c. 0.23 hectares, and the initial stages of foundation trench excavations, along the eastern side and part of the southern side of the new build footprint. Thereafter the work was halted, with the agreement of the Archaeology Section, due to the absence of archaeological remains.
- 1.5 No archaeological remains of note were encountered during the investigation. Truncated natural clay was exposed across the development area, covered by modern 'made ground'. Imported topsoil formed the existing ground surface.

2. INTRODUCTION

2.1 General Background

- 2.1.1 This report details the results of an archaeological monitoring and recording exercise, (hereafter 'watching brief'), undertaken in association with development of land adjacent to the existing premises of PC Henderson Limited at Bowburn North Industrial Estate, County Durham. The development will create a new office building with associated car parking and landscaping. The watching brief was commissioned by Arran Construction Limited and undertaken by Pre-Construct Archaeology Limited (PCA) in September 2011.
- 2.1.2 The watching brief was carried out as a condition of planning permission at the request of Durham County Council Archaeology Section (DCCAS). The site is located on the possible line of a Roman road, known as Cade's Road, linking York and Newcastle; therefore it was considered that the groundworks had the potential to disturb important buried archaeological remains. The work was carried out according to a Specification¹ prepared by the Archaeology Section and a subsequent Written Scheme of Investigation² (WSI) produced by PCA.
- 2.1.3 The main aim of the work was to identify, investigate and record any archaeological remains of importance revealed during the construction groundworks. The watching brief was to continue until such time as invasive groundworks were complete or until the site was determined to be archaeologically sterile.
- 2.1.4 The completed Site Archive, comprising written, drawn and photographic records, will be deposited at the Old Fulling Mill Museum of Archaeology, The Banks, Durham, DH1 3EB, within six months of the completion of fieldwork at the site, unless alternative arrangements have been agreed in writing with DCCAS, under the site code BID 11. The Online 'Access to the Index of Archaeological Investigations' (OASIS) reference number for the project is: preconst1-112152.

2.2 Site Location and Description

- 2.2.1 The village of Bowburn lies to the north-west of Junction 61 of the A1(M) some 5km to the south-east of the historic core of Durham City and connected to it by the A177. The village lies on the eastern side of the A177 and since the end of coal mining in the village the land to the west of the road has been developed as industrial estates, including the Bowburn North Industrial Estate (Figure 1).
- 2.2.2 The development site is located on the north side of the main access route into the Bowburn North Industrial Estate. Its central National Grid Reference is NZ 30193 38321. It comprised a square plot of rough grassland, covering c. 0.57 hectares, immediately to the west of the existing premises of PC Henderson Limited.

¹ DCCAS 2011.

² PCA 2011.

2.3 Geology and Topography

- 2.3.1 The solid geology of this part of County Durham is made up of the Pennine Middle Coal Measures Formation consisting of interbedded grey mudstone, siltstone and sandstone, with common coal seams.³ The drift geology comprises Devensian Till.
- 2.3.2 The site lies at an elevation of c. 95m OD, with a slight fall across the existing ground surface to the south-east.

2.4 Planning Background

- 2.4.1 National planning policy relating to the historic environment is covered by *Planning Policy Statement 5 'Planning for the Historic Environment'* (PPS5)⁴ supported by guidance in the accompanying 'Historic Environment Planning Practice Guide' (HEPPG) and, at a local level, the archaeological policies of Durham County Council, as set out in the County Durham Plan (Local Development Framework).
- 2.4.2 Until the finalisation of the County Durham Plan Core Strategy, the most important element of the emerging County Durham Plan, the relevant planning document at a local level is the 2004 *City of Durham Local Plan*.⁵ The 'saved' Local Plan policy of most relevance is 'Policy E24 – Ancient Monuments and Archaeological Remains', which states:

Archaeological remains of regional and local importance, which may be adversely affected by development proposals will be protected by seeking preservation in situ, and where preservation in situ is not justified by:

- ensuring that in areas where there is evidence that significant archaeological remains exist, or reasons to pre-suppose such remains exist whose extent and importance is not known, pre-application evaluation or archaeological assessment will be required, and*
- requiring, as a condition of planning permission, that prior to development an appropriate programme of archaeological investigation, recording and publication has been made, in cases where the preservation in situ of archaeological remains is not justified.*

- 2.4.3 In March 2011 Durham County Council granted planning permission (planning application reference 11/00053/FPA) for the erection of a two storey office building with associated works at the site herein described. The new build, orientated SW-NE, was located in the central eastern part of the overall site, flanked on its south-western side by an access road, with a compound and a car park on its north-western and south-eastern sides, respectively. The development footprint covered an area of c. 0.23 hectares, within the overall planning application site.

³ Geological information from the *British Geological Survey* website.

⁴ Department for Communities and Local Government 2010.

⁵ Planning information from the *Durham County Council* website.

- 2.4.4 The permission contained two conditions imposed on the advice of DCCAS relating to the archaeology of the site. Condition 8 required a programme of archaeological monitoring and recording to be carried out during invasive construction groundworks, while condition 9 required a report on the findings of the work to be submitted to DCCAS for inclusion in the County Durham Historic Environment Record (HER) on completion of the fieldwork.
- 2.4.5 The Archaeology Section prepared a Specification (dated 11 August 2011 and included as Appendix C to this report) for the required work, in this instance a programme of monitoring and recording, and this stipulated that a 'written scheme of investigation' (WSI) must be submitted by the appointed archaeological contractor for approval by DCCAS prior to work commencing. On appointment, PCA compiled the required WSI (included as Appendix D to this report) and this was subsequently approved (21 August 2011) by the Archaeology Section.

2.5 Archaeological and Historical Background

The majority of the information used for the following summary has been taken from 'Keys to the Past', the online County Durham Historic Environment Record (HER) and the Specification prepared by DCCAS. The research and writing of those responsible is gratefully acknowledged.

- 2.5.1 It is for the Roman period that the site has particular archaeological potential. Bowburn lies on one possible route of the Roman road known as Cade's Road, first detailed by County Durham antiquarian John Cade in 1785. This road is purported to link Newcastle and York, lying to the east of the well-known and more recorded Dere Street. Cade's proposed route crossed the Tees at Sockburn and ran via Sadberge and Great Stainton through Bradbury and Mainsforth, then through Old Durham and onto Chester-le-Street then through Gateshead to Tynemouth.
- 2.5.2 Other courses for Cade's Road have since been suggested, with a principal point of dispute being a crossing of the Tees at Middleton St. George. The route as shown on Ordnance Survey mapping is that suggested by O.G.S. Crawford, while a route suggested by R. Walton passes through Bowburn. Very little archaeological investigation of the road has been undertaken, so that the majority of each of the proposed routes remains unsubstantiated, with a notable exception being where the road runs through East Park, Sedgfield.
- 2.5.3 It was therefore considered possible that the site could contain evidence of Cade's Road or associated Roman period activity.
- 2.5.4 For all other archaeological eras the site has low or negligible potential. Bowburn did not exist as a village as such until the sinking of the colliery in 1906. Prior to that there was just a tollgate, a handful of houses and a large stone farmhouse, Bowburn House. Production at the colliery began in 1908 and this was followed by the emergence of streets of colliery housing and associated facilities. After World War Two there was a spate of further housing development prior to the colliery closing in 1967. Since then, land around to the west of the A177 has been developed as industrial estates.

3. PROJECT AIMS AND RESEARCH OBJECTIVES

3.1 Project Aims

3.1.1 The overarching aim of the archaeological project was to mitigate the impact of construction groundworks on archaeological remains through a programme of archaeological monitoring and recording, with the ultimate aim of fulfilling planning conditions 8 and 9.

3.1.2 The DCCAS Specification details the purposes of the project as being to record:

- as yet unknown archaeological features and deposits which may be uncovered in the course of groundworks;
- features associated with the purported line of the Roman road known as Cade's Road which is thought to pass through this area.

3.2 Research Objectives

3.2.1 In terms of project specific research objectives, the work had the potential to make a significant contribution to archaeological knowledge of the area. *Shared Visions: The North-East Regional Research Framework for the Historic Environment* (NERRF)⁶ highlights the importance of research as a vital element of development-led archaeological work and sets out key research priorities for all periods of the past so that all elements of commercial archaeological work can be related to wider regional and national priorities for the study of archaeology and the historic environment.

3.2.2 The relevant key research priority for the Roman period in the NERRF research agenda and strategy is 'Rii. Roads and communication', which states that:

- *'The Roman communication network in the region is only superficially understood and a greater understanding of its development is a priority'*

and goes on to stress that

'...there has been very little excavation of roads in general...'

⁶ Petts and Gerrard 2006.

4. ARCHAEOLOGICAL METHODOLOGY

4.1 Fieldwork

- 4.1.1 The watching brief was undertaken intermittently 22-28 September 2011. The fieldwork was undertaken in accordance with the relevant standard and guidance document of the Institute for Archaeologists (IfA).⁷ PCA is an IfA-Registered Organisation. The DCCAS Specification (see Appendix C) and PCA WSI (see Appendix D) should be consulted for full details of proposed methodologies to be employed regarding archaeological recording, sampling, *etc.*
- 4.1.2 The Specification required that all invasive groundworks were to be monitored until their completion or until such time as the site was determined to be archaeologically sterile, to be decided in consultation with DCCAS.
- 4.1.3 The new build – a two-storey office block - was located in the central eastern part of the overall site, with an access road on its south-western side, a compound on its north-western side and a car park on its south-eastern side, the road frontage. Therefore, within the overall area covered by the planning application, the development footprint, *i.e.* the area subject to construction groundworks, covered c. 0.23 hectares.
- 4.1.4 Bulk ground reduction was undertaken to a depth of c. 0.40m across the development footprint (Figures 2 and 4). This work was subject to continuous archaeological monitoring, with no remains of note being encountered. Excavation of the c. 14m long foundation trench for the north-eastern wall of the new build and excavation of part (c. 5.50m) of the foundation trench for the south-eastern wall was then monitored before it was decided to consult with DCCAS with a view to terminating the monitoring, a course of action which was duly agreed. The foundation trenches were excavated to a depth of c. 2.0m and were c. 0.60m wide (Figure 4). All ground reduction and foundation trench excavation was undertaken mechanically, using a JCB 3CX.
- 4.1.5 Deposits were recorded on *pro forma* 'Context Recording Sheets'. A basic photographic record was compiled.

4.2 Post-excavation

- 4.2.1 The stratigraphic data for the project comprises written, drawn and photographic records. A total of six archaeological contexts were defined during the watching brief (Appendix B). Post-excavation work involved checking and collating site records, grouping contexts and phasing the stratigraphic data (Appendix A). A written summary of the archaeological sequence was then compiled, as described below in Section 5.
- 4.2.2 No artefactual or organic material was recovered during the fieldwork and no suitable archaeological deposits were encountered to warrant the recovery of bulk samples for palaeoenvironmental material.

⁷ IfA 2008a.

4.2.3 The complete Site Archive will be packaged for long-term curation. In preparing the Site Archive for deposition, all relevant standards and guidelines documents referenced in the Archaeological Archives Forum guidelines document⁸ will be adhered to, in particular a well-established United Kingdom Institute for Conservation (UKIC) document⁹ and a more recent IfA publication.¹⁰ The depositional requirements of the receiving body, in this case the Old Fulling Mill Museum of Archaeology, The Banks, Durham, DH1 3EB, will be met in full.

⁸ Brown 2007.

⁹ Walker, UKIC 1990.

¹⁰ IfA 2008b.

5. RESULTS: THE ARCHAEOLOGICAL SEQUENCE

During the watching brief, separate stratigraphic entities were assigned unique and individual 'context' numbers, which are indicated in the following text as, for example [123]. The archaeological sequence has been assigned to broad phases on a site-wide basis.

5.1 Phase 1: Natural Sub-stratum

5.1.1 A layer, [6], comprising firm, mid brownish yellow clay was exposed across the development footprint as a result of bulk ground reduction (Figure 3). Where further excavated in the new build foundation trenches, the deposit became mid purple grey in colour, at a depth of c. 0.60m below the reduced ground level. This clay deposit is of glacial origin.

5.2 Phase 2: Modern

5.2.1 All the remaining deposits recorded across the development footprint were of modern origin and collectively comprise 'made ground' (Figure 4). Overlying natural clay across the development footprint was a compact ground-raising/consolidation layer, [5], comprising crushed building materials, ash, coal fines and silty clay with a mixed dark greyish brown and mid brownish pink colouration. It had a maximum thickness of c. 0.40m. The fact that this material lay directly upon the natural, clay, with no ancient sub-soil surviving, indicates that the natural sub-stratum had almost certainly suffered some degree of horizontal truncation in the modern era, probably during landscaping when the industrial estate was created.

5.2.2 In parts of the development footprint, layer [5] was overlain by another layer, [4], comprising mid orange brown clayey silt, with moderate inclusions of stone and occasional plastic and other modern materials, up to 0.20m thick. Elsewhere, layer [5] was overlain by a layer, [3], of light brownish yellow crushed stone, up to 0.30m thick (Figure 4). In places, geotextile had been laid down upon layer [5] before the crushed stone.

5.2.3 A further layer, [2], of crushed stone, this dark bluish grey in colour, was recorded overlying layer [3] in places and this is likely to have been used for final levelling. It had a maximum thickness of 0.12m.

5.2.4 The uppermost deposit to be observed, extending across the development footprint, was a layer, [1], of mid brownish clayey silt, this the existing topsoil and rough turf that formed the ground surface immediately prior to the work.

6. CONCLUSIONS AND RECOMMENDATIONS

6.1 Conclusions

6.1.1 Natural clay, which formed the basal deposit exposed across the development footprint, had evidently been horizontally truncated by former landscaping. The overlying strata have been collectively interpreted as modern 'made ground', probably deposited when the industrial estate was created.

6.1.2 In sum, the work recorded no archaeological remains of significance.

6.2 Recommendations

6.2.1 No further work is required on the information recovered during the watching brief, with the Site Archive, including this report, forming the permanent record of the strata encountered.

7. REFERENCES

Bibliography

- Brown, D. H., 2007. *Archaeological Archives. A guide to best practice in creation, compilation transfer and curation*, Archaeological Archives Forum.
- Department for Communities and Local Government, 2010. *Planning Policy Statement 5, 'Planning for the Historic Environment'*, HMSO.
- Durham County Council Archaeology Section, 2011. *Specification for Archaeological Watching Brief: PC Henderson, Bowburn North Industrial Estate, Bowburn, Co. Durham, DH6 5PF*, Durham County Council unpublished.
- Institute for Archaeologists, 2008a. *Standard and guidance for archaeological watching brief*, IfA.
- Institute for Archaeologists, 2008b. *Standard and guidance for the creation, compilation, transfer and deposition of archaeological archives*, IfA.
- Pre-Construct Archaeology, 2011. *Written Scheme of Investigation for an Archaeological Watching Brief at PC Henderson Limited, Bowburn North Industrial Estate, Bowburn, Bountly Durham*, PCA unpublished.
- Petts, D. and Gerrard, C., 2006. *Shared Visions: North East Regional Research Framework for the Historical Environment*, English Heritage, Durham County Council and Durham University.
- Walker, K., 1990. *Guidelines for the Preparation of Excavation Archives for Long-term Storage*, Archaeology Section, United Kingdom Institute for Conservation.

Online Sources

- British Geological Survey* website www.bgs.ac.uk for geological information.
- Durham County Council* website www.durham.gov.uk/Pages/Service.aspx?ServiceId=6946 for information regarding 'saved' policies of the 2004 City of Durham Local Plan.

8. ACKNOWLEDGEMENTS AND CREDITS

Acknowledgements

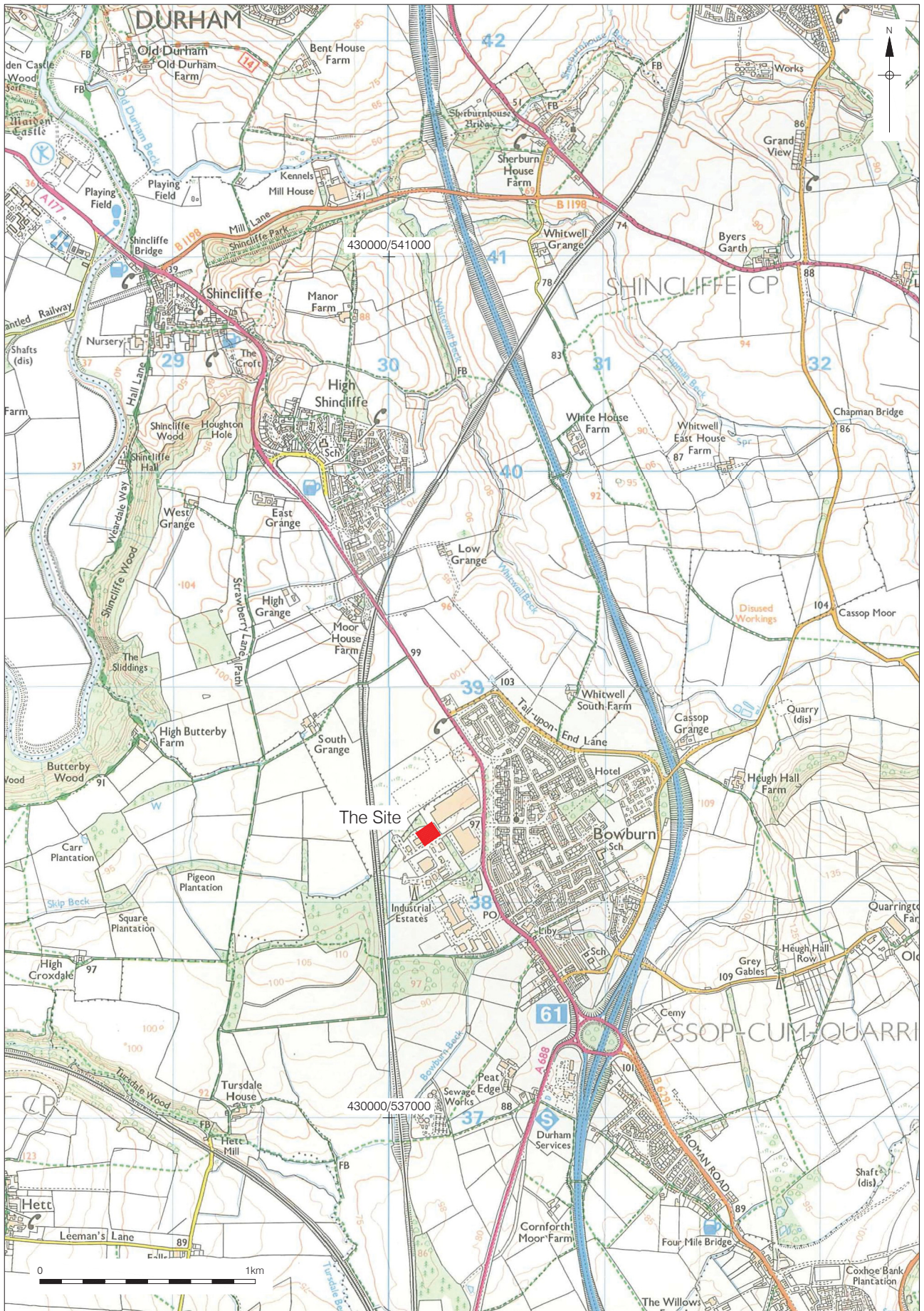
PCA would like to thank Arran Construction for commissioning the project herein described.
The liaison role of Brian Stace of Arran Construction is acknowledged.

PCA Credits

Fieldwork and Report: Amy Roberts

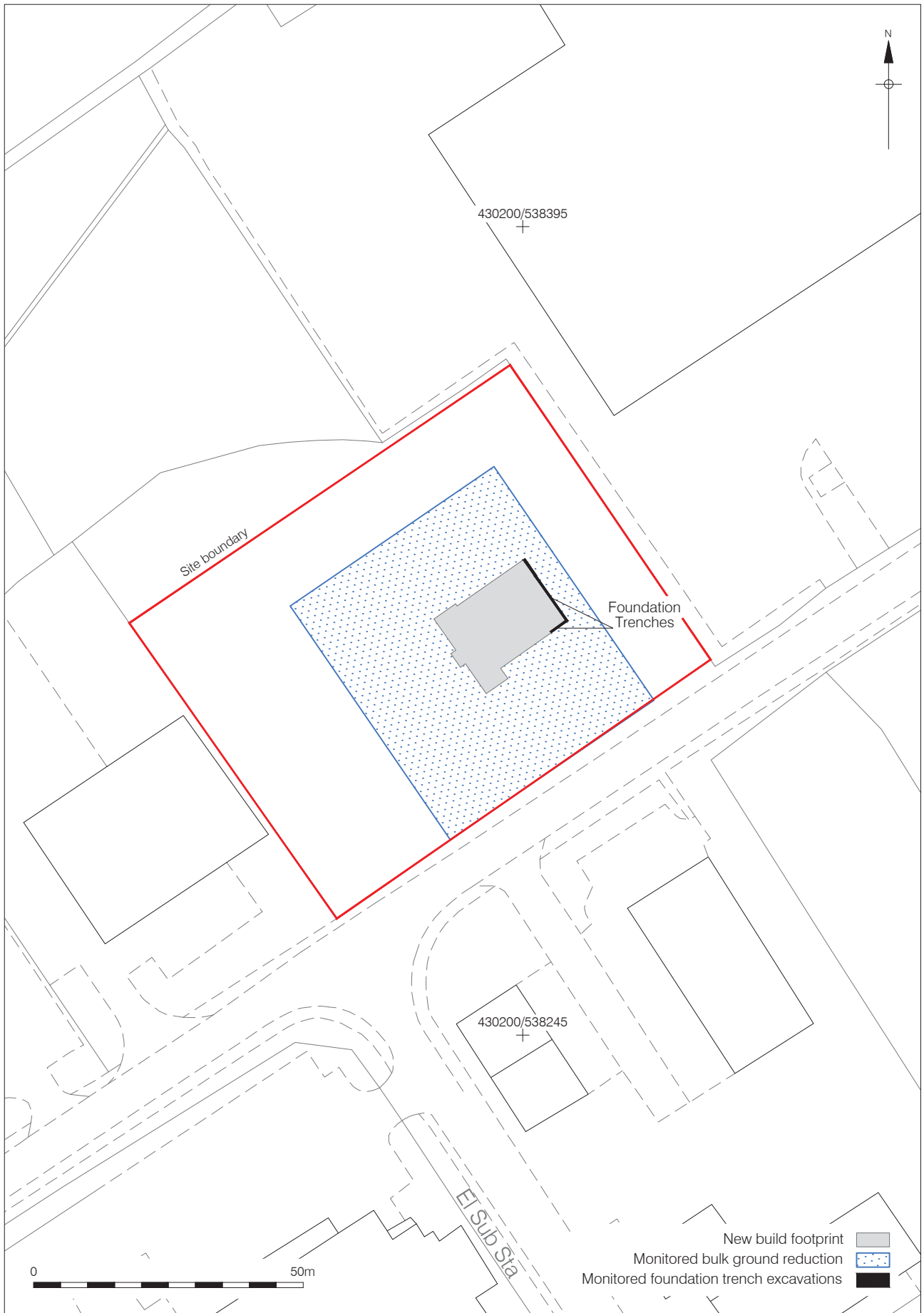
Project Manager: Robin Taylor-Wilson

CAD: Mark Roughley



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Figure 1
 Site Location
 1:25,000 at A4



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Figure 2
 Areas of Investigation
 1:1,000 at A4



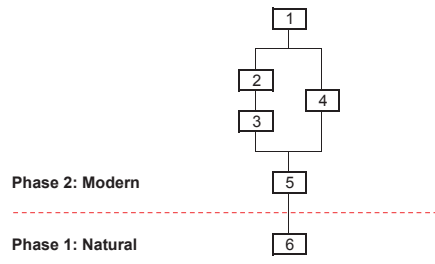
Figure 3. Bulk ground reduction exposing natural clay, looking ENE



Figure 4. NE wall foundation trench, looking NNW

**APPENDIX A
STRATIGRAPHIC MATRIX**

BID 11: STRATIGRAPHIC MATRIX



**APPENDIX B
CONTEXT INDEX**

BID 11: CONTEXT INDEX

Context	Phase	Type 1	Type 2	Interpretation
1	2	Deposit	Layer	Topsoil
2	2	Deposit	Layer	Levelling deposit
3	2	Deposit	Layer	Made ground
4	2	Deposit	Layer	Made ground
5	2	Deposit	Layer	Made ground
6	1	Deposit	Layer	Natural

**APPENDIX C
SPECIFICATION**

SPECIFICATION FOR ARCHAEOLOGICAL WATCHING BRIEF:
PC Henderson
Bowburn North Industrial Estate
Bowburn
Co. Durham
DH6 5PF

1 Site Location

- 1.1 The development is centred on OS grid reference NZ3019338321 in the village of Bowburn, County Durham. The village lies to the NW of junction 61 of the A1(M) motorway (see Figure 1a) some 5km to the SE of Durham City Centre.
- 1.2 The development site is located on the north side of the main access route into the industrial estate. The site is west of the extant PC Henderson Ltd building.

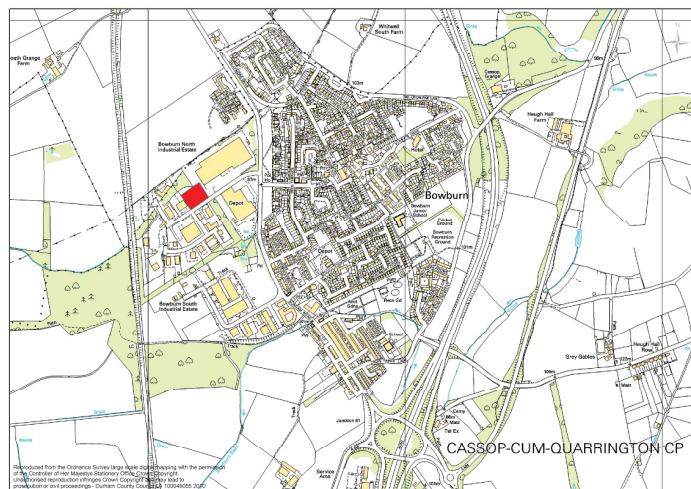


Figure 1a: General location of site shaded red © DCC

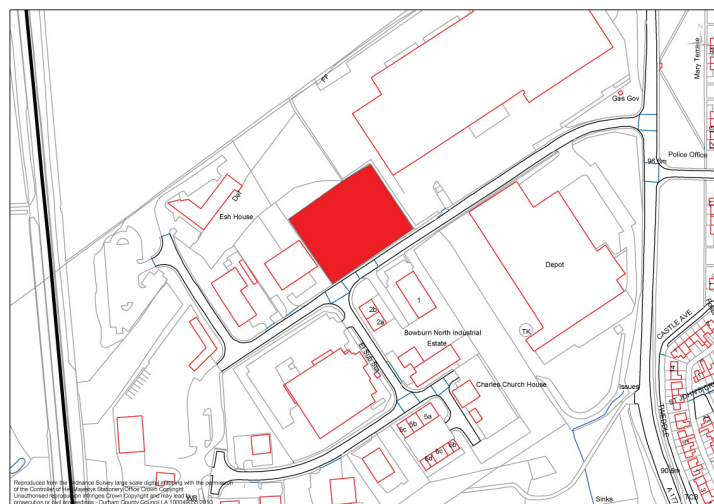


Figure 1b: site location © DCC

2 The Development

- 2.1 The agent for this work is Arran Construction Ltd.
- 2.2 The approved development (11/00053/FPA) is for the erection of a new office building with associated car parking and landscaping. Condition 8 requires an archaeological watching brief (monitoring) to be agreed and carried out during groundworks, and Condition 9 requires a report on the findings submitted to the County Durham Historic Environment Record (HER).
- 2.3 The appointed contractor will need to liaise with the client regarding scale plans of the proposed works.

3 Historical and Archaeological Background

- 3.1 The existence of a Roman road linking York and Newcastle east of Dere Street had long been accepted as a general concept when John Cade of Durham suggested its course in more detail in 1785 (H3349). His "conjectured" route crossed the Tees at Sockburn and ran via Sadberge and Great Stainton through Bradbury and Mainsforth, Old Durham, Chester-le-Street and "Gateshead to Shields and Tynemouth. Contemporary writers, Hutchinson in particular, disagreed with his evidence, and other courses were suggested, mostly with a Tees crossing at Middleton St. George. The route as shown on Ordnance Survey maps is the suggestion of O. G. S. Crawford, and the route suggested by R. Walton is equally individual (i.e. the route passing through Bowburn). None of the proposed courses has been substantiated by archaeological excavation at any point, apart from through East Park Sedgfield.
- 3.2 The route proposed by Walton covers the 35km from Great Stainton to Chester-le-Street, and was based on his personal fieldwork during the summers of 1984 and 1985. The route was identified from earthworks and traces exposed in excavation, the nature of which is unknown. The evidence for the road is admittedly, sketchy. Walton makes claim for the presence of cobbles in excavation at various places; these are, however, unattributed.
- 3.3 In 1857 Bowburn did not exist. There was only a tollgate, four or five houses and Bowburn House which was a large stone built farm house. A colliery was sunk in 1906 the ceremonial sod being turned on 23rd July by Gertrude Bell. The production began in 1908, at this time houses were built for the workers and streets of colliery houses emerged. After the second world war there was a spate of new building and a large council housing estate was built. The colliery closed in 1967.

4 Archaeological brief

- 4.1 It is expected that the archaeological works will be carried out according to archaeological best practice as set out in the following publications: *Yorkshire, the Humber and the North-East: A Regional Statement of Good Practice for Archaeology in the Development Process* (WYAAS 2011) and *Standard and Guidance: for an archaeological watching brief* (IFA 2008).
- 4.2 Archaeological works involving a watching brief are required on this development during all ground disturbance associated with the construction of the office building, car park and the associated services.
- 4.3 The fact that a watching brief has been identified as the appropriate archaeological response indicates that although the area has some archaeological potential, the impact of the groundworks

can be mitigated by the monitoring of the site and the recording of any archaeological deposits. If archaeological remains are found, the archaeologist must be given the opportunity of excavating and recording the remains before they are destroyed. Depending on the significance of these features, further mitigation in terms of preservation in situ or preservation by record may be required. This would be dealt with by a separate brief if required.

- 4.4 The purpose of the watching brief is to record:
- as yet unknown archaeological features and deposits which may be uncovered in the course of groundworks
 - features associated with the purported line of the Roman road known as Cades' Road which is thought to pass through this area.
- 4.5 It must be noted that recording work, when required, must be to the same standard as for any larger evaluation or excavation. The watching brief must set out to identify and record any previously unknown archaeological deposits disturbed during the process of the work.
- 4.6 A continuous presence watching brief must be maintained during all excavation works carried out on the site until such time as they are completed or the area of the works is determined to be archaeologically sterile (in consultation with DCC Archaeology Officer).
- 4.7 A toothless ditching bucket on a back-acting machine must be used on site by the building contractor (where a machine is required) during the groundworks phase under the direct control of the Archaeologist. In any area where evidence is observed which indicates the presence of archaeological remains, and it is considered that the normal method of stripping and excavation would be inappropriate, the technique and type of machine being employed may be varied so as to ensure that an adequate record is made of the archaeological remains. Final on-site methodology must be confirmed with the DCC Archaeology Section prior to work commencing.
- 4.8 Due to the nature of a watching brief, the archaeological working practice must be accommodated within the development timetable of the client's scheme. A clear working practice must be agreed in advance and cover the following points:
- 4.9 The archaeological contractor must be made aware in advance of scheme timetables and when their presence will be required on site. Adequate notice must be given to the archaeological contractor by the client. The anticipated extent of the work must be confirmed with the client in advance of tendering.
- 4.10 The line of communication on-site between the client and/or his representative and the archaeological contractor must be clearly stated in advance. This is especially important with regards to who must be advised of any necessary stoppage time required.
- 4.11 It must be clearly agreed before the site works begin that the archaeological contractor has access to all appropriate areas on site and can ask for stoppage time to allow for adequate archaeological recording to take place.
- 4.12 The on-site contractor's method statement, including Health and Safety requirements, must be circulated in advance to the archaeological contractor. This is to ensure archaeological best practice.
- 4.13 The machine used by the on-site contractor must be equipped with a toothless ditching bucket. This is to minimise the impact on potential archaeological deposits. If ground conditions dictate otherwise, this must be agreed with the DCC Archaeology Section.

- 4.14 It must be noted that archaeological finds remain the property of the landowner. They must not be removed from site unless previously arranged by agreement with the landowner. It is the client's responsibility to ensure that such an agreement is sought in advance of work commencing on site if the client is not the landowner.
- 4.15 This brief does not constitute the "written scheme of investigation" which must be submitted by the appointed contractor for approval by Durham County Council Archaeology Section prior to work commencing.

5 Recording

- 5.1 A sufficient sample of exposed archaeological features and deposits will be excavated in an archaeologically controlled and stratigraphic manner to fulfil the purpose of the project. The complete excavation of all features is not a necessity, especially where these continue into sections or below the maximum depth of excavation.
- 5.2 Any human remains encountered must be accurately recorded, including in-situ examination by a palaeo-pathologist, but not removed from site until a Section 25 licence has been obtained from the Ministry of Justice. Both the client and the DCC Assistant Archaeology Officer must be informed if human remains are found so that an agreement can be reached on the best possible way forward.
- 5.3 Horizontal survey control of the site must be by means of a coordinate grid, using metric measurements. The location of the grid must be established, where possible, relative to the National Grid. Vertical survey control must be tied to the Ordnance Survey datum. Details of the method employed must be recorded, including the height of the reference point.
- 5.4 Sections must be recorded by means of a measured drawing at an appropriate scale. The height of a datum on the drawing must be calculated and recorded. **Representative drawn sections of all trenches/test-pits must be recorded and presented in the report even if blank/negative.** The locations of sections must be recorded on the site plans, relative to the site grid. Cut features must be recorded in profile, planned at an appropriate scale and their location accurately identified on the appropriate trench plan.
- 5.5 All drawn records must be clearly marked with a unique site number, and must be individually identified. The scale and orientation of the plan must be recorded. All drawings must be drawn on dimensionally stable media. All plans must be drawn relative to the site grid and at least two grid references marked on each plan.
- 5.6 Each archaeological context must be recorded separately by means of a written description. The stratigraphic relationships of each context must be recorded. Pro-forma record sheets must be used throughout. An index must be kept of all record types.
- 5.7 A full record of excavated features must be made using a single context planning system. All archaeological features will be photographed and recorded at an appropriate scale. Sections must be drawn at 1:10, and plans at 1:20. All levels will be tied into Ordnance Datum and the trenches accurately located with the National Grid. Photographic records must use black and white prints and bracketed 35mm colour slide and prints. Suitable digital images for inclusion on the Keys to the Past website must be included with the report (these may be general site images or images of specific features or finds).
- 5.8 Pottery and animal bone must be collected as bulk samples by context. Significant small finds must be three dimensionally located prior to collection. All finds must be processed to MAP2 standards

and subject to specialist assessment. Palaeo-environmental samples must also be taken where appropriate. If necessary conservation of finds must be appraised to allow for specialist study (see section 6.0 Specialist Services below).

- 5.9 Scientific dating techniques such as archaeo-magnetism and radio-carbon (C¹⁴) must be applied where appropriate. X-ray photography of metal objects must be used where appropriate.
- 5.10 All relevant procedures relating to artefacts which fall under the Treasure Act (1996) must be adhered to should any such finds be discovered in the course of the watching brief.
- 5.11 Following the completion of recording the site must be left in a condition to be agreed with the client.

6 Specialist Services and Reports

- 6.1 The vast majority of sites where excavation takes place will require the input of archaeological specialists for dating, artefact analysis, palaeo-environmental sampling and conservation. Contingency sums must be set aside for all of these areas and clearly indicated in any tender documents. In the instance of palaeo-environmental remains and conservation, policies as follows must be adopted. In each case the specialist involved must be kept informed of the start date and progress of sites so that sampling and necessary on site conservation needs can be timetabled
- 6.2 Specialist advice regarding the need for palaeo-environmental sampling, appropriate sampling techniques and research questions for specific sites must be identified in advance. The successful contractor must make contact with, and ensure that any proposed sampling strategy includes the input of Jacqueline Huntley, The English Heritage Science Advisor for the NE, based at the English Heritage NE offices in Newcastle. The contractor's environmental specialist must be named in the project design/WSI.
- 6.3 Specialist conservation advice and services must be budgeted for in all tenders along with other specialist services. A contingency amount must be identified for the appraisal of the conservation needs of artefactual material excavated on site and for the initial stabilisation of such finds where needed so that they may be studied as part of the post-excavation for the project. All specialists must be named in advance.

7 OASIS

- 7.1 The Durham County Council Archaeology Section supports the Online Access to Index of Archaeological Investigations (OASIS) Project. The overall aim of the OASIS project is to provide an online index to the mass of archaeological grey literature that has been produced as a result of the advent of large scale developer funded fieldwork.
- 7.2 The archaeological contractor must therefore complete the online OASIS form at <http://ads.ahds.ac.uk/project/oasis/> within 3 months of completion of the work. Contractors are advised to ensure that adequate time and costings are built into their tenders to allow the forms to be filled in.
- 7.3 Technical advice must be sought in the first instance from OASIS (oasis@ads.ahds.ac.uk) and not from Durham County Council Archaeology Section.
- 7.4 Once a report has become a public document by submission to or incorporation into the SMR, Durham County Council Archaeology Section will validate the OASIS form thus placing the



information into the public domain on the OASIS website.

- 7.5 The archaeological consultant or contractor must indicate that they agree to this procedure within the specification/project design/written scheme of investigation submitted to Durham County Council Archaeology Section for approval

8 Health and Safety Policy

- 8.1 Contractors are expected to abide by the 1974 Health and Safety Act and any subsequent amendments. They are also expected to ensure that all projects which fall under the Construction and Design Management Regulations 2007 follow all necessary requirements of said regulations. Appropriate provision of first aid, telephone and safety clothing as described in the SCAUM manual on archaeological health and safety must be followed. Each site must have a nominated safety officer.
- 8.2 The undertaking of a risk assessment prior to the commencement of works is required. A copy of the risk assessment must be circulated to the client and any other sub-contractors working on the site at the same time. Contractors must ensure that all staff working on the site are fully briefed on all health and safety issues relating to the site prior to working there.
- 8.3 Extra care and attention must be taken in areas where excavation goes below 1.20m. It may be that shoring or stepping of the trench may be required in such an instance, or where ground conditions dictate. The risk assessment must identify if this is likely to be an issue on this site.

9 Publication

- 9.1 All assessments, evaluations and watching briefs which do not progress to further excavation and research (with the relevant post-excavation and publication scheme and costs), must have a time and budget allocation identified for publication. This must be to a minimum standard to include a summary of the work, findings, dates, illustrations and photographs and references to where the archive is lodged.
- 9.2 Editors of regional journals, either the *Durham Archaeological Journal* or *Archaeologia Aeliana* must be contacted for information on outline publication costs, fuller figures may be worked out on completion of the watching brief. As the final note is largely unpredictable in advance a contingency sum must be set aside at the outset of work in the tender.
- 9.3 County Durham Archaeology Section will be producing an annual publication every March which will highlight the archaeological work conducted in the county over the previous 12 months. To this end, it is now a requirement of every specification that a précis of archaeological works conducted in the county as a result of PPG16 must be submitted to the DCC Archaeology Section.
- 9.4 The précis must be no more than 500 words in length and it would be appreciated if TIFF images of 300dpi are also included. The summary must be sent to the County Archaeologist by the beginning of December of the same year in which the work was conducted.
- 9.5 Where publication is required, conditions will not be discharged until County Durham Archaeology Section have received written agreement from the contractor that publication will be funded by the client.

10 The Report

10.1 The watching brief report must follow the standards and layout as set out in MAP2 (phase 4 and appendix 4):

- executive summary
- a site location plan to at least 1:10,000 scale with at least an 8 figure central grid reference
- OASIS reference number; unique site code
- Planning application number
- contractor's details including date work carried out
- nature and extent of the proposed development, including developer/client details
- description of the site location and geology
- a site plan to a suitable scale and tied into the national grid so that features can be correctly orientated
- discussion of the results of field work
- context & feature descriptions
- features, number and class of artefacts, spot dating & scientific dating of significant finds presented in tabular format
- plans and section drawings of the features drawn at a suitable scale
- initial assessment reports by specialists to MAP2 standards
- recommendations regarding the need for, and scope of, any further archaeological work
- bibliography

10.2 A report synthesising the results of the watching brief must be produced for the client. This must include a site location plan with NGR references, and also be accompanied by additional plans/map extracts to display noted and recorded archaeological features as appropriate. At least 2 copies must be prepared for the client and a further one including a digital PDF copy sent to the HER at County Hall, so that the condition can be discharged.

10.3 The report must be presented in an ordered state and contained within a protective cover/sleeve or bound in some fashion (loose-leaf presentation is unacceptable). The report must contain a title page listing site/development name, district and County together with a general NGR, the name of the archaeological contractor and the developer or commissioning agent. The report must be page numbered and supplemented with sections and paragraph numbering for ease of reference.

10.4 The report must seek to identify any deposits remaining on or associated with the site that will remain following the completion of the watching brief.

11 The Tender

11.1 Tenders for the work must include a method statement, day rates and the following:

11.2 Brief details of the organisation and the number of staff who are proposing to carry out the work including any relevant specialisms or experience. The earliest date at which the work can be commenced and the amount of notice required to initiate the survey.

11.3 Details concerning proposed methods of recording and source material.

11.4 Statement agreeing to complete the OASIS forms on completion of the watching brief.

11.5 An estimate of how long the work will take broken down by time and cost in terms of data collection

and report production (the anticipated extent of the work must be confirmed with the client in advance). The tender must include a breakdown of costs attributable to:

- travelling and subsistence
- fieldwork
- monitoring visit (x1)
- finds analysis
- report production
- administration
- other

Contingency sums must be clearly allocated for the following:

- conservation of finds
- environmental sampling
- archiving and publication
- post-ex assessment
- other

12 Submission of Report

This watching brief must be considered as a project in its own right and not necessarily the first stage of any further work. At least two copies of the report must be sent to the client. A third paper copy of the report and a PDF on CD-ROM with digital images (JPEG's) of the site for the *Keys To The Past* website must be sent to the Archaeology Section, Durham County Council for inclusion into the County Durham Historic Environment Record (HER) at:

Archaeology Section
Design & Historic Environment Team
Regeneration & Economic Development
The Rivergreen Centre
Aykley Heads
Durham
DH1 5TS

13 The Archive and Submission to a Museum

- 13.1 The site archive comprising the original paper records and plans, photographs, negatives, and finds etc, must be deposited in the appropriate museum (Bowes Museum, Barnard Castle) at the completion of post-excavation. In the rare event that the landowner should wish to retain the finds, then a full measured, written and graphic record of the entire assemblage retained must be made.
- 13.2 Deposition must be in accordance with the County Durham Archaeological Archive policy, a guidance note on which can be obtained from the County Archaeology Service. Failure to adhere to the guidance note can mean refusal of the archive by the intended museum.
- 13.3 Contractors must ensure that suitable costs to cover archiving requirements are included in the original tender document.

14 Notice

The County Archaeologist must be given two weeks (or in exceptional circumstances a minimum of 48 hours) notice in writing of the commencement of groundworks. During such works the County Archaeologist or his nominated representative must be allowed access to the site and excavations at all reasonable times.

15 References

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| Archaeological Archives Forum | 2007 | Archaeological Archives: A guide to best practice in creation, compilation, transfer and curation. |
| English Heritage | 1991 | Management of Archaeological Projects 2 |
| | 2002 | Guidelines for Environmental Archaeology: a guide to the theory and practice of methods from sampling and recording to post-excavation |
| Institute for Archaeologists (IFA) | 2008 | Standard and Guidance: for an archaeological watching brief. |
| United Kingdom Institute of Conservation | 1990 | Guidelines for the Preparation of Excavation Archives for long-term storage |
| West Yorkshire Archaeological Advisory Service (WYAAS) | 2009 | Yorkshire, The Humber & The North-East: A regional statement of good practice for Archaeology in the development process |

11th August 2011
Lee McFarlane
Assistant Archaeology Officer
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YORKSHIRE, THE HUMBER & THE NORTH EAST: A REGIONAL STATEMENT OF GOOD PRACTICE FOR ARCHAEOLOGY IN THE DEVELOPMENT PROCESS

This document contains general principles on Archaeology in the development process and has been endorsed by the organisations listed below:

The intention is to help improve standards of archaeological work in the Yorkshire & the Humber and the North East Regions and to help establish a consistent approach for the benefit of archaeological contractors, consultants, curators and developers who are funding the work, as well as to the historic environment. The historic environment is an encompassing term that includes “all aspects of the environment resulting from the interaction between people and places through time, including all surviving physical remains of past human activity, whether visible or buried, and deliberately planted or managed flora” (English Heritage 2008, *Conservation Principles* p. 71). It should be noted that there is a presumption within the Region that archaeological interest may apply not only to below ground archaeological remains, but also may apply to upstanding structures / buildings (both listed and unlisted), marine and maritime assets as well as paleoenvironmental deposits.

This document should be read in conjunction with the issued specification/WSI/brief/project design.

The following general principles are expected to pertain to archaeological work carried out as part of the development process in these Regions in accordance with Central Government Guidance and Regional and Local Development Plans and policies:

- 1) Pre-application discussion on the potential archaeological impact of a development is encouraged as is pre-determination evaluation where it is necessary to help define the character, extent and significance of the archaeological remains that may exist in the area of a proposed development prior to a planning decision.
- 2) Archaeological work in the development process should be carried out by a professionally qualified archaeological organisation or archaeologist (PPS 5 Policy HE12.3; PPS 5 HE PPG Para 130.1) and the archaeologists undertaking the work should have “the requisite qualifications, expertise and experience” (IFA Code of Approved Practice).
- 3) In accordance with long-standing professional practice (see footnote below) it is expected that all archaeological specifications/WSIs/ briefs/project designs will have been agreed in advance with the relevant archaeological curator before archaeological work commences. Any variations to the previously established programme of work must be agreed in writing by the archaeological curator acting on behalf of the local planning authority.
- 4) As part of the implementation of the Planning Consent process archaeological work will be monitored on behalf of the LPA by its archaeological curator (who may seek advice where appropriate from the EH Science Advisor). There may be exceptions, but consultants and contractors should expect monitoring to be the norm unless informed otherwise. To allow monitoring to occur, the relevant curatorial archaeologist should be given reasonable notice of intention to commence any fieldwork undertaken as part of the development process and confirmation of the actual start date.
- 5) Archaeological work carried out within the development process is expected to accord with best practice as published in English Heritage guidelines and the IFA’s standards and guidance.
- 6) Historic Environment Records (also known as Sites and Monuments Records) are key to understanding and managing the historic environment. Archaeological contractors and consultants should consult the relevant HER / SMR in person prior to producing desk-based assessments or commencing fieldwork (unless otherwise agreed with the relevant curator).
- 7) Archaeological fieldwork carried out as part of the development process should have regard to both national and local published research agenda, and should have an intention of furthering these agenda.
- 8) Archaeological contractors and consultants are expected to discuss any recommendations they make in archaeological reports submitted as part of the development process with the relevant curatorial archaeologist prior to formal submission. If this has not been done, the

YORKSHIRE, THE HUMBER & THE NORTH EAST: A REGIONAL STATEMENT OF GOOD PRACTICE FOR ARCHAEOLOGY IN THE DEVELOPMENT PROCESS

absence of discussion / agreement should be formally stated in the submitted document. It should be noted that the final decision on the need for and scope of any further works lies with the Archaeological curator acting on behalf of the Local Authority.

- 9) All reports and required data produced following archaeological work as part of the development process should be supplied by the archaeological contractor / consultant directly to the relevant HER / SMR within a reasonable timescale following completion of the fieldwork, in the format agreed with the curatorial body, and in accordance with any issued or agreed specification or project design.
- 10) The curatorial archaeologist will make any comments they wish to make on the report within a reasonable timescale of receipt.
- 11) Where considered appropriate by the archaeological curator, and particularly where supported by the relevant research agenda, it is expected that significant archaeological results will be submitted for publication in a suitable journal or journals.
- 12) The archive produced as a result of archaeological fieldwork is expected to be deposited in an ordered and acceptable fashion with an appropriate public repository within a reasonable timescale following completion of the project. Details of the location of the (intended) repository should be included in the archaeological fieldwork report.
- 13) The historic environment is a shared resource. During the course of archaeological work on site, it is normally expected that arrangements will be made for dissemination of information to the general public, providing intellectual access where physical access is not possible or appropriate.

Organisations that have accepted and agreed these Principles within Yorkshire & the Humber & the North East are listed below:

Archaeology Section, Design & Historic Environment Team, Durham County Council
City of York Design, Conservation & Sustainable Development Team
Humber Archaeology Partnership
North East Lincolnshire Archaeology Service
North Lincolnshire Council Historic Environment Record
North York Moors National Park Authority Historic Environment Service
North Yorkshire County Council Historic Environment Team
Northumberland Conservation, Northumberland County Council
South Yorkshire Archaeology Service
Tees Archaeology
Tyne and Wear Specialist Conservation Team
West Yorkshire Archaeology Advisory Service
Yorkshire Dales National Park Authority Historic Environment Service

Footnote: the IFA's Standards and Guidance for archaeological field evaluation para. 3.3.1; the IFA's Standard and Guidance for archaeological desk-based assessment para. 3.2.5; the IFA's Standard and Guidance for an archaeological watching brief para. 3.2.5; ACAO Model Briefs and Specifications for Archaeological Assessments and Field Evaluations, Appendix D iv (b))

Revision 1: March 2011 to reflect the replacement of PPGs 15 & 16 with PPS5.

APPENDIX D
WRITTEN SCHEME OF INVESTIGATION

**Written Scheme of Investigation for an Archaeological Watching Brief at
PC Henderson Limited, Bowburn North Industrial Estate, Bowburn,
County Durham**

***Prepared on behalf of Arran Construction Limited by
Pre-Construct Archaeology Limited***

17 August 2011

Revision 1, 21 August 2011

Planning Application No.: 11/00053/FPA

1. INTRODUCTION

1.1 General

- 1.1.1 An appropriately specified programme of archaeological work is required in association with development of land adjacent to the existing premises of PC Henderson Limited at Bowburn North Industrial Estate. The work – to be undertaken by Pre-Construct Archaeology Limited (PCA) - will involve: archaeological observation and recording – a ‘watching brief’ – during all invasive groundworks; excavation and recording of any archaeological remains of interest exposed; reporting on the work, including, as appropriate, publication of any significant findings. The work has been commissioned by Arran Construction Limited.
- 1.1.2 The site is of archaeological interest because it lies on the possible line of a Roman road linking York and Newcastle, known as Cade’s Road. Bowburn itself is a modern creation, which grew up around coal mining activity from the early 20th century.
- 1.1.3 The archaeological work herein described is required as a planning condition. A Specification for the work has been prepared by the Durham County Council Archaeology Officer (DCCAO), of the Archaeology Section, Design and Historic Environment Team, Durham County Council (DCCAS).

1.2 Site Location and Description

- 1.2.1 The village of Bowburn lies to the north-west of Junction 61 of the A1(M) some 5km to the south-east of the historic core of Durham City and connected to it by the A177. The village lies on the eastern side of the A177 and since the end of coal mining in the village the land to the west of the road has been developed as industrial estates, including the Bowburn North Industrial Estate.
- 1.2.2 The site herein described is located on the north side of the main access route into the Bowburn North Industrial Estate. Its central National Grid Reference is NZ 30193 38321. It comprises a square plot of land to the west of the existing premises of PC Henderson Limited.
- 1.2.3 The site lies at an elevation of c. 95m OD.

1.3 Archaeological and Historical Background

The majority of the information used for the following summary has been taken from 'Keys to the Past, the online County Durham Historic Environment Record (HER) and the DCCAS Specification. The research and writing of those responsible is gratefully acknowledged.

- 1.3.1 It is for the Roman period that the site has particular archaeological potential. Bowburn lies on one possible route of the Roman road known as Cade's Road, first detailed by County Durham antiquarian John Cade in 1785. This road is purported to link Newcastle and York, lying to the east of the well-known and more recorded Dere Street. Cade's proposed route crossed the Tees at Sockburn and ran via Sadberge and Great Stainton through Bradbury and Mainsforth, then through Old Durham and onto Chester-le-Street then through Gateshead to Tynemouth.
- 1.3.2 Other courses for Cade's Road have since been suggested, with a principal point of dispute being a crossing of the Tees at Middleton St. George. The route as shown on Ordnance Survey mapping is that suggested by O.G.S. Crawford, while a route suggested by R. Walton passes through Bowburn. Very little archaeological investigation of the road has been undertaken, so that the majority of each of the proposed routes remains unsubstantiated, with a notable exception being where the road runs through East Park, Sedgefield.
- 1.3.3 It is therefore considered possible that the site contains evidence of Cade's Road or associated Roman period activity.
- 1.3.4 For all other archaeological eras the site has low or negligible potential. Bowburn did not exist as a village as such until the sinking of the colliery in 1906. Prior to that there was just a tollgate, a handful of houses and a large stone farmhouse, Bowburn House. Production at the colliery began in 1908 and this was followed by the emergence of streets of colliery housing and associated facilities. After World War Two there was a spate of further housing development prior to the colliery closing in 1967. Since then, land around to the west of the A177 has been developed as industrial estates.

2. PLANNING BACKGROUND

- 2.1 The approved development is for the erection of a new office building with associated car parking and landscaping. Condition 8 of the planning permission requires a programme of archaeological monitoring and recording (a watching brief) to be agreed and carried out during invasive construction groundworks. Condition 9 requires a report on the findings of the watching brief to be submitted to the DCCAS for inclusion in the County Durham Historic Environment Record (HER) on completion of the fieldwork.
- 2.2 The DCCAO has prepared a Specification for the work and paragraph 4.15 of this stipulates that a 'written scheme of investigation' (WSI) for the work must be submitted by the appointed archaeological contractor for approval by the DCCAS prior to any work commencing.

3. PROJECT AIMS AND OBJECTIVES

- 3.1 The project aims to fulfil planning conditions 8 and 9 by undertaking an appropriately specified scheme of archaeological fieldwork in association with construction groundworks, with subsequent reporting on the findings, as described in this WSI.
- 3.2 The archaeological work will aim to identify, investigate and record any archaeological remains through a programme of observation and recording - watching brief - conducted in association with groundworks.
- 3.3 An appropriate level of reporting on the work is required, including, if necessary, full analysis and publication of any notable archaeological findings upon completion of the project. Thus the results of the work will constitute the preservation by record of any archaeological remains thus encountered and subsequently removed during the course of works. The full scheme of archaeological work required is described in the following section.

4. METHOD STATEMENT

4.1 *General Standards*

- 4.1.1 All archaeological work will be carried out in compliance with the codes and practice of the Institute for Archaeologists (IfA) and will follow the relevant IfA standard and guidance documents. PCA is an 'IfA-Registered Organisation'.
- 4.1.2 All archaeological staff involved in the project will be suitably qualified and experienced for their project roles. The project will be overseen for PCA by a Member (at MIfA level) of the IfA
- 4.1.3 All archaeological staff involved in the project will be aware of the work required, as detailed in this WSI and will understand the aims and methodologies of the project.
- 4.1.4 All relevant Health and Safety legislation, regulations and codes of practice will be respected. For Health and Safety purposes, PCA is a sub-contractor and will have no responsibilities as a Principal/Main Contractor. Site welfare will be provided for PCA personnel. All PCA personnel will attend site inductions as required. All archaeological personnel will use PPE.

4.2 *Archaeological Methodology - Fieldwork*

- 4.2.1 Continuous archaeological monitoring and observation will be carried out during invasive construction groundworks. All monitoring and observation will be carried out by one (or more if required) suitably experienced professional archaeologist(s). The watching brief will continue until such time as invasive groundworks are completed or until such time as the site is determined to be archaeologically sterile, which is to be decided only in consultation with the DCCAO.
- 4.2.2 Any archaeological remains of possible significance that are exposed during groundworks are to be immediately examined, hand cleaned and recorded, to an appropriate level and using the established principles of stratigraphic excavation. Within the scope of the watching brief, adequate time is to be afforded for such work to take place to the satisfaction of the attendant archaeologist(s).

- 4.2.3 In the event of extensive, significant and/or unexpectedly complex archaeological remains, for example a well-preserved section of the Roman road or complex roadside activity, such as cemetery activity, being revealed during the watching brief, the DCCAO must be notified immediately and a site visit organised to allow the DCCAO to inspect the remains. In such an event, the DCCAO could require a programme of more detailed archaeological investigation, 'open area excavation', to be implemented. Such work would require a team of archaeological personnel on site and would require the site - or at least the part(s) of the site in which archaeological remains were located - effectively to be under the control of the archaeological team. Such work would be beyond the scope of the 'watching brief' herein described and would thus require the compilation of a revised WSI to set out the revised aims and objectives of the project as well as detailing the revised fieldwork and post-excavation methodologies to be employed, through to publication of the findings.
- 4.2.4 All archaeological remains - structures, features and deposits - encountered at the site will be excavated and recorded to the necessary extent to achieve as full an understanding as possible of the past activity that those remains represent. All archaeological features (layers, cuts, fills, structures) that do not merit preservation *in situ* will be excavated by hand tools and recorded in plan and/or section. Work in plan will use the standard 'single context planning' system. Archaeological recording will be carried out by means of unique numeric based context records and will be written, drawn and photographic (and any other appropriate means). All archaeological exposures (layers, cuts, fills, structures) will be recorded using *pro forma* recording sheets. Where stratified deposits are encountered, a 'Harris' matrix will be compiled.
- 4.2.5 If possible, a site survey grid will be established and located relative to the Ordnance Survey National Grid, using electronic surveying instrumentation. Otherwise, archaeological features will be located by appropriate means to ensure their accurate location relative to the Ordnance Survey National Grid. Drawn records of archaeological features and deposits will normally be at a scale of 1:10 (sections) or 1:20 (plans) and will be prepared in a suitable form of digitisation. Where possible, archaeological features and deposits will be logged relative to Ordnance Datum.
- 4.2.6 Archaeological excavation may require work by pick/mattock and shovel. Such techniques will be used only for the removal of homogeneous and 'low grade' layers, where it can be reasonably argued, firstly, that more detailed attention would not produce information of value and, secondly, that their removal provides a window onto the underlying archaeological levels. Such tools will not be employed on complex stratigraphy, and where deposits are removed in this manner they will have been properly recorded first.
- 4.2.7 Where archaeological features are exposed by hand cleaning cut into the natural sub-stratum or overlying sub-soil horizons, an adequate proportion of those features will be excavated by hand in order to determine their form and function, where possible. The following sampling policy will apply:
- Complete features, such as pits and postholes, will normally be half-sectioned to determine and record their form, and then fully emptied to aid recovery of dateable material.

- Linear features, such as ditches and gullies, will be excavated at appropriate intervals in order to obtain a meaningful sample of each feature and give an indication of variations in profile along their exposed length. For features up to 5m in length, 20% of the feature will be excavated as a minimum; for features greater than 5m in length, 10% will be excavated as a minimum. Where phasing is apparent, excavated sections will concentrate on the recovery of dating evidence and profile determination. Deposits at junctions of, or interruptions in, linear features will be removed over sufficient length to determine the nature of stratigraphic relationships between components.
 - Cremation or inhumation burials will be subject to 100% excavation.
- 4.2.8 Photography will be undertaken in 35mm film and digital format. Graduated metric scales will appear in all photographic frames and, in addition, general 'working shots' will be taken to show the overall scale of the archaeological operation mounted. A register of all photographs will be kept.
- 4.2.9 During the archaeological work, a high priority will be given to dating any archaeological remains. Therefore, all relevant artefacts and finds would be retained. Consideration would also be given to the recovery of specialist samples for scientific analysis, particularly samples of structural materials, samples for absolute dating and bulk or column samples of deposits for palaeoenvironmental evidence. Different sampling strategies may be employed according to established research targets and the perceived importance of the strata under investigation.
- 4.2.10 The overall aim of the fieldwork with respect to archaeological science is to determine the types of material preserved and in what quantity and condition, thus enabling the aims and objectives of the project as a whole to be addressed. The advice of English Heritage's Regional Advisor for Archaeological Science (RAAS) will be sought, as appropriate.
- 4.2.11 Deposits would be assessed for their potential for absolute dating by radiocarbon, archaeomagnetism or by any other means and, if appropriate, samples would be recovered for these purposes. Specialist analysis of the recovered material would be a requirement.
- 4.2.12 Appropriate procedures involving human remains and discoveries classed as 'treasure' under *The Treasure Act 1996* will be followed, as appropriate. In the event of human burials being discovered, PCA will procure and comply with all statutory consents and licences. If human burials are encountered, they would be recorded by photography and the use of *pro forma* recording sheets. Where any part of a human burial is disturbed, the whole burial must be archaeologically excavated as far as is possible, but always with Health and Safety considerations in mind.
- 4.2.13 Waterlogged organic materials are unlikely at the site but in the event that they are encountered they would be dealt with following recognised guidelines.
- 4.2.14 All processing of artefacts and ecofacts would be undertaken away from the site. All finds would be treated in a proper manner and would be exposed, lifted, cleaned, conserved, marked, bagged and boxed in accordance with recognised guidelines.

4.3 Archaeological Methodology – Post-Excavation

4.3.1 Irrespective of whether or not any archaeological remains of note are encountered during the fieldwork, the archaeological investigation must be summarised in a bound report. The report will include the following information specific to the work:

- a summary statement of the results of the investigations;
- the aims and methods adopted in the course of the work;
- illustrative material (cross-referenced within the text), including an overall site location plan and a plan showing the location all areas of investigation, both tied into the Ordnance Survey grid and at recognisable scales, plans and sections of archaeological deposits at recognisable scales, and photographs, as appropriate;
- text detailing the nature, extent, date, condition and significance of any archaeological remains.

4.3.2 The report will detail the dates when the fieldwork was undertaken.

4.3.3 All recovered artefacts (e.g. ceramic, metallic) and samples (e.g. bulk soil samples for biological remains) would be examined off-site by appropriate specialists. For each category of artefact and ecofact, an assessment report would be produced, that would include a basic quantification of the material, a statement of its potential for further analysis and recommendations for such work. The results of all specialist assessment reports would be incorporated into the overall report on the watching brief.

4.3.4 Where one or more elements of the recovered data-set from the watching brief is identified as having potential for further analysis (irrespective of whether or not extensive, significant and/or unexpectedly complex archaeological remains are discovered), an 'Updated Project Design' would be produced to accompany the report on the watching brief and this would detail any requirements for further analysis of material, the results of which would likely require reporting on in a subsequent published paper or report. Costs for any such further analysis and publication can only be established after an initial assessment of the material. The scope of any such further analysis and publication would be agreed with the commissioning client before being undertaken. The 'Updated Project Design' would detail the post-excavation methodologies to be employed, as well as outlining the likely form of a publication paper.

4.3.5 In the event of extensive, significant and/or unexpectedly complex archaeological remains being discovered (as described in 4.2.3), post-excavation work would require an initial assessment of all elements of the archaeological data-set. An 'Updated Project Design' would be produced to accompany the 'Assessment Report' and this would detail any requirements for further analysis of material, the results of which would likely require reporting on in a subsequent published paper or report. Again, costs for any such further analysis and publication can only be established after an initial assessment of the material and the scope of any such further analysis and publication would be agreed with the Client before being undertaken. Again, the 'Updated Project Design' would detail the post-excavation methodologies to be employed, as well as outlining the likely form of a publication paper.

4.3.6 Copies of all reports will be sent to all appropriate organisations in hardcopy and electronic format, as required. The requirements of the DCCAS are set out in paragraph 10.2 of the Specification.

4.3.7 PCA will complete an Online Access to Index of Archaeological Investigations (OASIS) form for the project.

4.4 Site Archive

4.4.1 The data collected during the programme of archaeological work, including all paper and photographic records, as well as all artefacts and ecofacts recovered, will comprise the Site Archive. The Site Archive will be prepared to recognised standards.

4.4.2 The Site Archive will be deposited at the Old Fulling Mill Museum of Archaeology, The Banks, Durham DH1 3EB, within six months of the completion of fieldwork at the site, unless alternative arrangements have been agreed in writing with the DCCAS.

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