ARCHAEOLOGICAL MONITORING AT THE FORMER 'JACOBS MANUFACTURING' SITE, TROUTBECK ROAD, SHEFFIELD, SOUTH YORKSHIRE

On behalf of

Northern Construction Solutions Ltd.

Planning Ref., 13/02019/COND 41
(Sheffield City Council)

CS Archaeology
April 2016 (Rev.)

On behalf of:	Northern Construction Solutions Ltd. 6 Lumly Court Drum Road Chester Le Street County Durham DH2 1AN
The Site's National Grid Reference (NGR):	SK 340 836
Project Number:	156
Oasis Reference Code:	csarchae1-246041
Planning Reference:	13/02019/COND 41
Report by:	Chris Scurfield BA (Hons)
Timing:	Fieldwork and Reporting, March/April 2016

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Frontispiece: view of the former Millhouses Engine Shed early 20th century

CONTENTS

1 SUMMARY

1.1 This report is in response to a condition placed on Planning consent (Application No. 13/02019/COND 41) by Sheffield City Council.

1.2 The results from this work have provided details of the Proposed Development Area's (PDA) archaeological resource, and has mitigated those remains through 'preservation by record'.

1.3 A relatively small section of the Millhouses engine shed was revealed and dates to Late Victorian (1901) period. Below surface remains took the form of an exterior wall with arches to the outer brickwork, and an associated railway siding. These remains formed two phases of construction.

2 INTRODUCTION

2.1 *Site Name:* The former 'Jacobs Manufacturing' site, Troutbeck Road, Sheffield

2.2 *Site Location:* is located approximately 2km south west of Sheffield city centre (**Figure 1**). The site comprises a former Engine shed of the Midland Railway. The engine shed was extended in the 1960s and became the Jacobs Engineering factory site. In total the site extends 3.38 acres (1.37 hectares) across the right bank of the River Sheaf. The area subject to this watching brief is situated towards the northern corner of the site (**Figure 2**). Access is via a bridge link across The River Sheaf, via Troutbeck Road and Abbeydale Road (A621).

2.3 *Status:* non- statutory

2.4 Grid reference: SK 340 836

2.5 Area of the total redevelopment site (hectares): 1.37

2.6 The site is bound by:

- a railway to the south east;
- an overflow car park and associated rail development to the south east;
- the River Sheaf, an access bridge and the South West Centre with residential homes off Troutbeck Road to the northeast.

2.7 At the time of the Watching Brief, the site comprised:

- level concrete floor surfaces of a large from he demolished building works;
- a car park strip located along the south east boundary;
- an office block in the eastern corner;
- and access bridge crossing the River Sheaf in the eastern corner.

3 AIMS AND OBJECTIVES

3.1 To ensure that any buried archaeological remains present are investigated in order that an understanding of their nature, extent and significance be achieved, before they are damaged or destroyed. The watching brief will also allow for the identification and recording of any archaeological material that might be uncovered and that the knowledge gained is then disseminated to the public.

4 METHODOLOGY

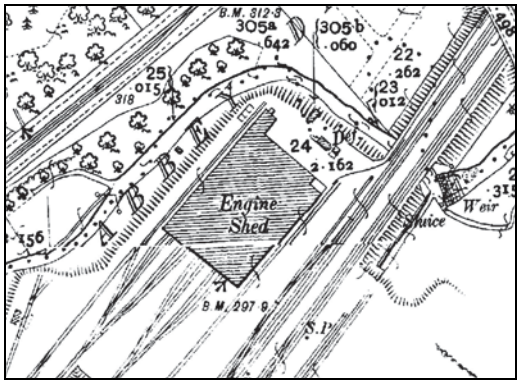
4.1 This has been carried out according to an agreed specification in the Project Design, Appendix 1. Photographs have been recorded for the archive and are listed in Appendix 2.

5 HISTORICAL BACKGROUND

5.1 The site appears to have been undeveloped up to 1898, with the original meandering alignment of the River Sheaf depicted to the north east and north west of the site boundary (**Figure 2**).

5.2 Post 1898 a rail embankment is depicted and by 1905 (below: **Figure 4**) the site's development consists of an engine shed with associated railway sidings. The engine shed was owned by the Midland Railway Company. Further more down the side of the Engine Shed is an external railway track and embankment. The alignment of the River Sheaf is shown to haven straightened with no meandering and is assumed to have been partly canalized (G & M Consulting Ltd 2013).

5.3 After 1958 the railway sidings are no longer depicted on the Ordnance Survey and the Engine Shed is shown to have been extended to the south west.



Extract from the 1905 OS map


View of the Eccleshall (Millhouses) Engine shed c. 1910 (www.rmr.org Ref 1997-7397_DY_9275)

5.4 Originally called Eccleshall Engine Shed, then became known as 'Millhouses engine shed' in about 1920. It featured 8 dead end roads and could handle about forty steam locomotives.

5.5 Locomotives were stored here when not in use and they were cleaned and checked for breakages and flaws in the engine (www.rmr.org)

5.6 The engine shed closed in 1962 and the engines transferred regionally.


Internal view of the Hill houses Engine Shed (Google images)


Derelict Sheds c.2013 (Google Images)

6 THE WATCHING BRIEF

6.1 This took place on the 3rd March 2016, and consisted of a mechanical excavator with a toothless ditching bucket. The PDA consisted of a small rectangular pit area (8.5 x 6.5m) of the development site towards the PDA's northern corner. Apart from a modern office building on the site, no extant remains existed of the former Engine shed and Engineering works remained. The level pre-excavation surface consisted of a series of relict concrete floors with occasional truncated brick walls (**Plates 1-2**). One of these double width brick walls bisected the area of the watching brief and was on a NNE-SSW alignment (NW facing) broadly parallel with the adjacent Trout Beck to the northwest (**Figure 3**).

6.2 The wall consisted of well made bricks (**Plate 3:** 0.23m x 0.11m x 0.07m) with the maker's mould mark of 'Saunders' on one face. The bricks post-date 1850 and probably lies within the 1880–1910 range, historical mapping indicates the Engine Shed and associated railway sidings date to between 1898 and 1905. This wall [105] represents and external well constructed wall that would have probably extended 2-3 storey in height and is therefore consistent with the Midland Engine Shed depicted on the OS map of 1905. The wall featured repetitive arches and pilaster design. No evidence for fenestration was evident suggesting that the exposed wall was below basement level.

6.3 As the excavation area was being reduced a brick floor surface was revealed (**Plate 4**). This brick floor had extended west of the brick wall, and featured a variety of bricks including 'Saunders' and 'Stairfoot' bricks, indicating the possibility that the floor had been made up of demolished walls during an extension phase [2] to the factory. The brick set floor [102] was not continuous (**Plate 5**) and was therefore removed. This revealed a series of pitch pine timbers set within the brick work and arranged at 90° to the brick wall [105] within this supposed building extension (**Plate 6**). Each timber was similar about 2.7m long, and the upper face featured a pair of rectangular impressions 0.4 x 0.19m, and 1.11m apart, each with a pair of bolt holes, and was consistent with a railway sleeper. These sleepers evidence a railway siding that extended along the foot of the railway shed's north west wall. Beneath the floor the excavation extended down to 0.8m below the surface and no further significant deposits were recorded. The excavation finished still within a levelling deposit of 'made ground' introduced to the site as a clay/stone mix.

6.4 Stratigraphy consisted of concrete floor (0.3m) rubble backfill on top of a brick and wooden timber floor above a dark grey levelling deposit consisting of metal smelting slag down to 0.8m below the ground surface. Below 0.8m there was a clay/stone mixed deposit which appeared to have been part of the levelling deposit associated with this part of the factory's extension.

6.5 During the excavation of the rectangular pit, the brick wall was gradually revealed (**Plate 7**). Eventually three arches and two brick pilasters were exposed (**Plates 8-10**), and these represented the external wall of the late nineteenth/early 20th century engine shed. The arches extended only the width of the 0.52m lower wall, upon which the upper (ground floor) wall was laid and comprised of a 0.36m wide wall construction in an 'English garden bond'.

6.6 The excavation to the east of the brick wall (**Plate 11: Figure 3**) consisted of modern leveling material, and the sections revealed no further archaeological deposits, and significantly no evidence for the continuation for any further floors.

7 CONCLUSION

7.1 The archaeology indicates two phases of industrial activity with the PDA. The first phase is brick built Engine Shed as evidenced by it's NW wall with its characteristic arches below floor level. The second phase relates to the made ground and railway siding as evidenced by the in situ remains of the sleepers. Both building phases were probably undertaken in short succession. There was no evidence of the sidings being covered, and this would be consistent with the external siding depicted on the Ordnance Survey map of 1910 (**Figure 4**).

7.2 The archaeological monitoring has allowed for an assessment of the PDA and indeed for the wider site's archaeological potential. This has demonstrated the survival of subsurface features: walls and floors of the former Engine Shed and associated railway siding.

8 PROPOSED ARCHAEOLOGICAL MITIGATION

No further excavation work is planned or anticipated in this part of the site, therefore no further archaeological mitigation is recommended. Foundations and services are anticipated for the remainder of the development area.

9 REFERENCES

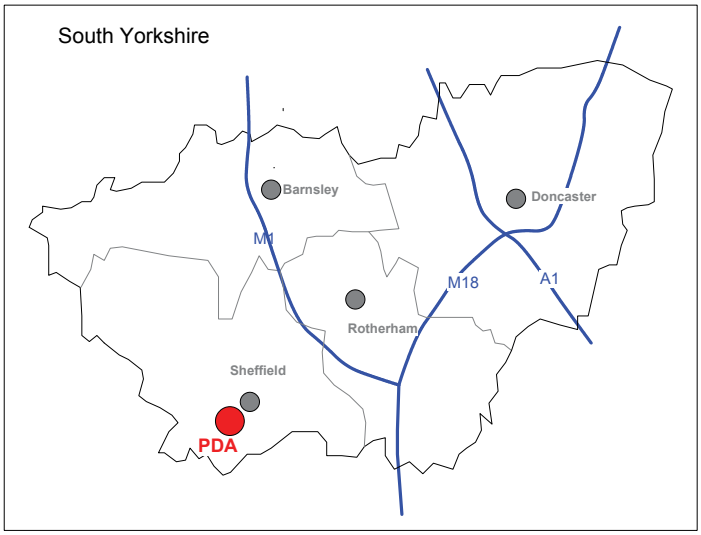
2013, G & M Consulting Ltd '*Preliminary Investigation of Land at Troutbeck Road, Sheffield*', unpublished Client Report

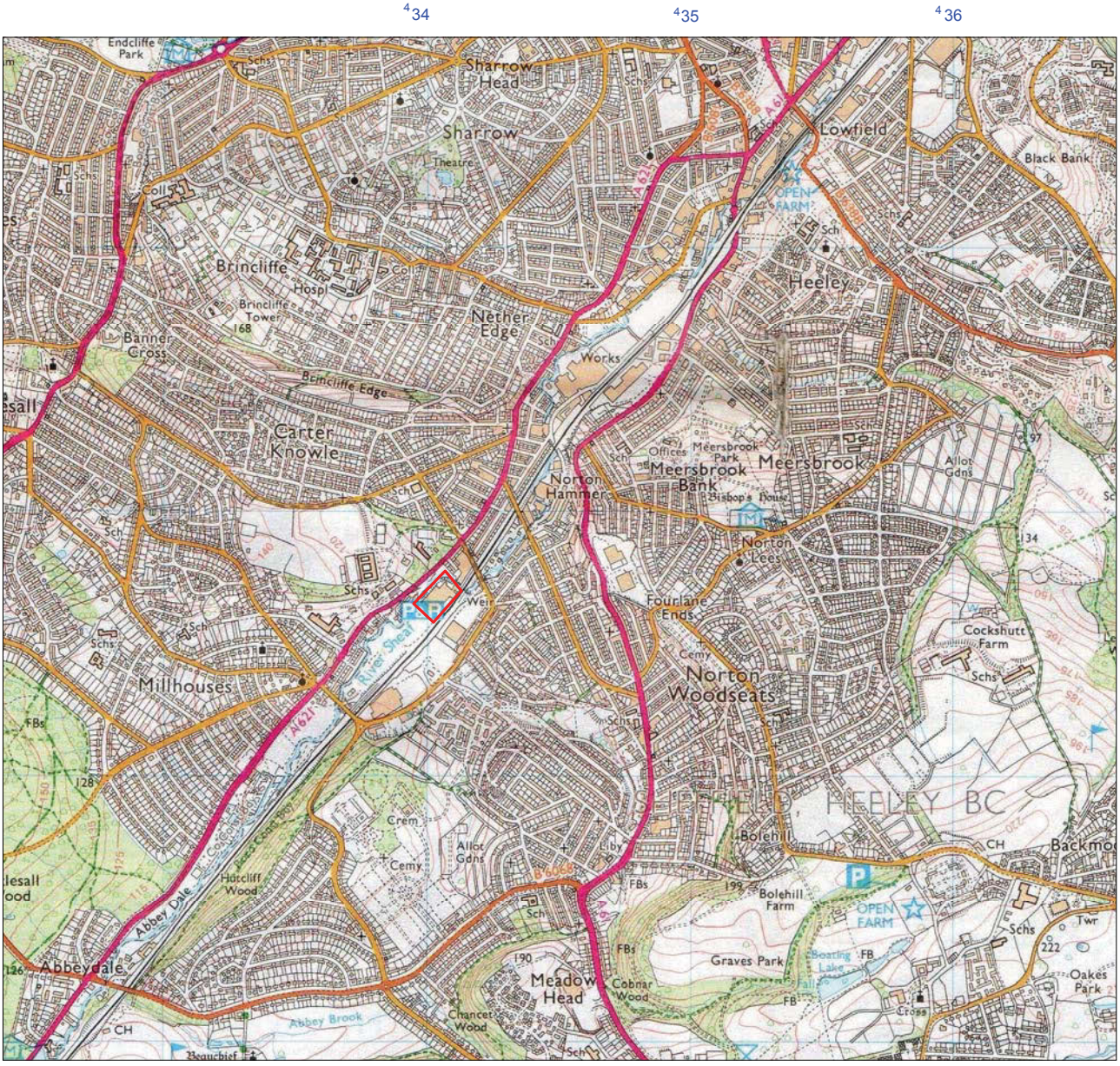
Cartographic References
1905, Ordnance Survey 25"
2008, Ordnance Survey Explorer Map 1:25000 (Sheet 278).

10 ACKNOWLEDGEMENTS

Thank you to Mr P Wade (PCW) for commissioning this report and to Mr J McNeil for approving the project design.

FIGURES

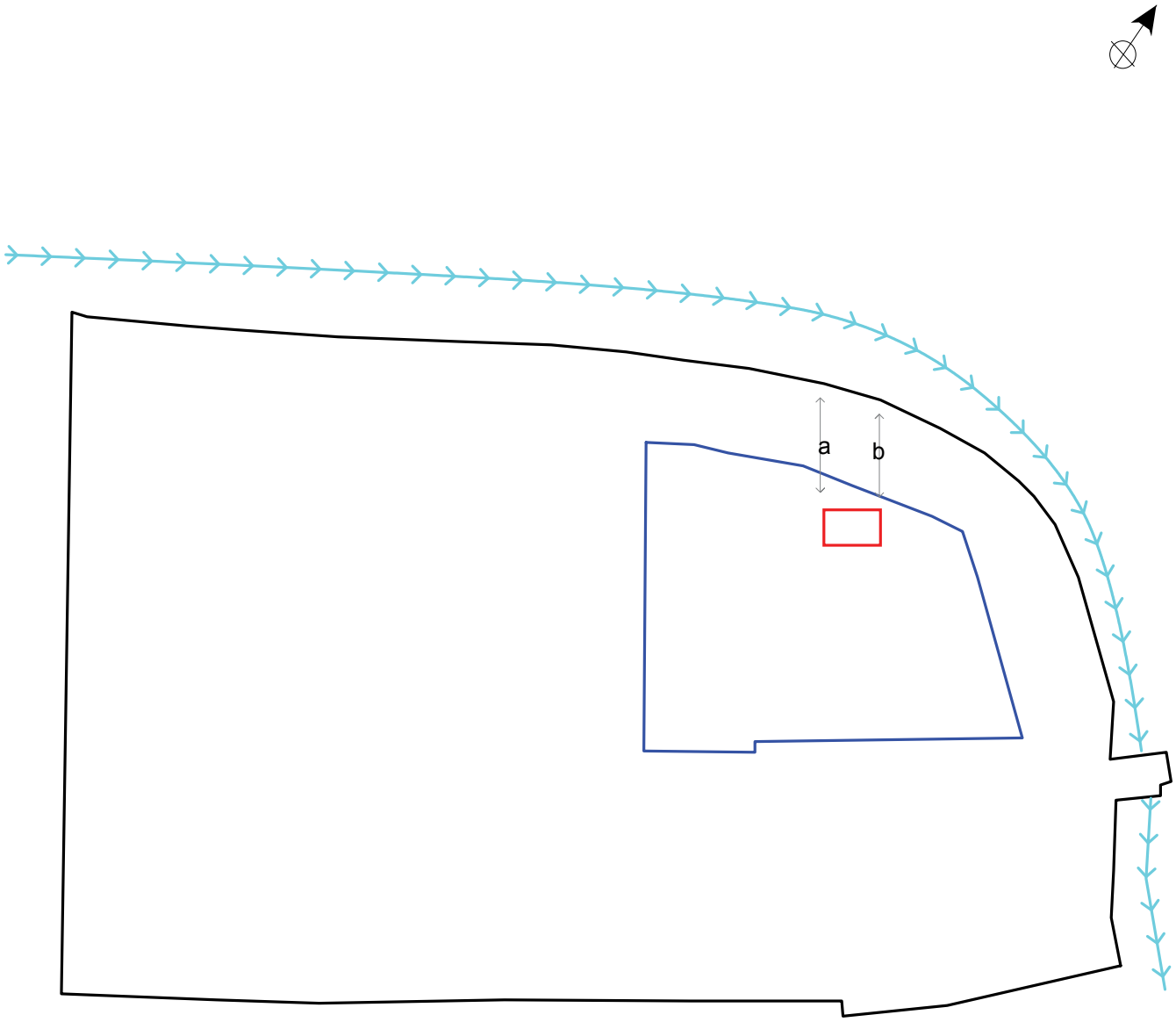




scale 1:25000

for inset see Figure 2

Nether Mill Store/Kiln, Penistone, South Yorkshire: An Archaeological Building Record	Figure 1: Location Map	CS Archaeology April 2016



River Sheaf

Proposed Development Area (PDA)
8.5 x 6.5m

Site Boundary

overall site boundary

a 8m

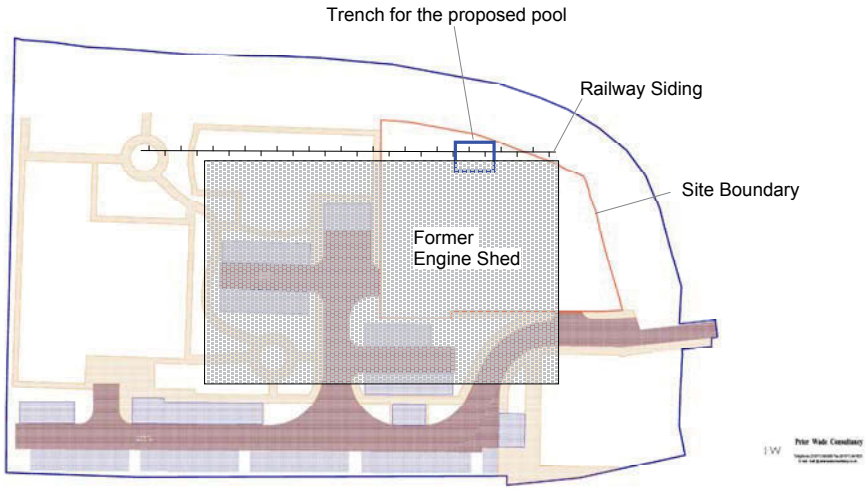
b 6m

Archaeological Monitoring
At The Former 'Jacobs Manufacturing' Site,
Troutbeck Road, Sheffield, South Yorkshire

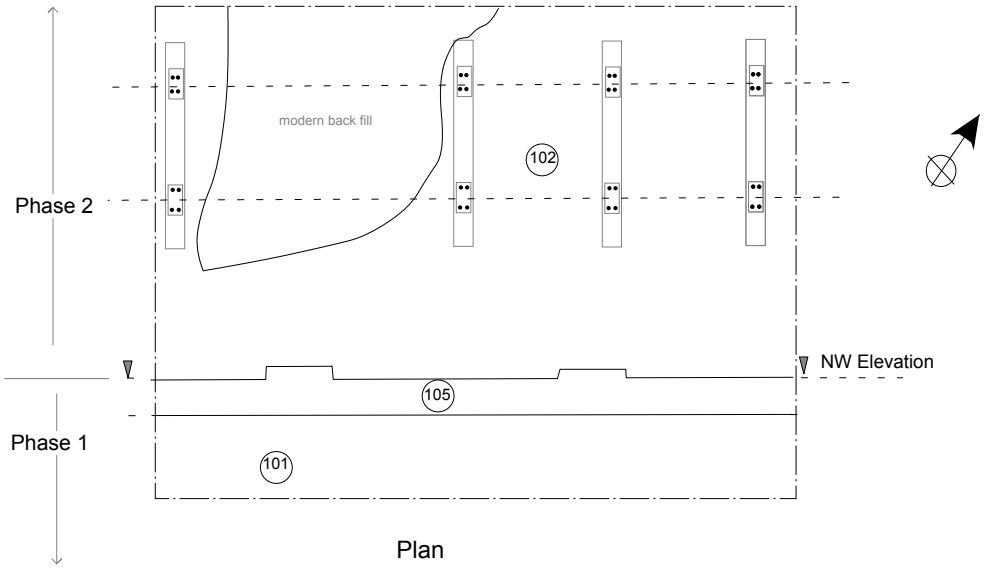
Figure 2: Site Plan

not to scale

CS Archaeology
April 2016

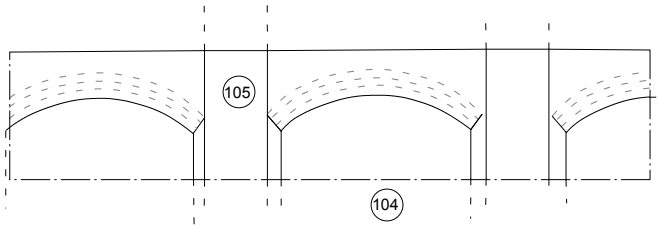


Overall Site Plan



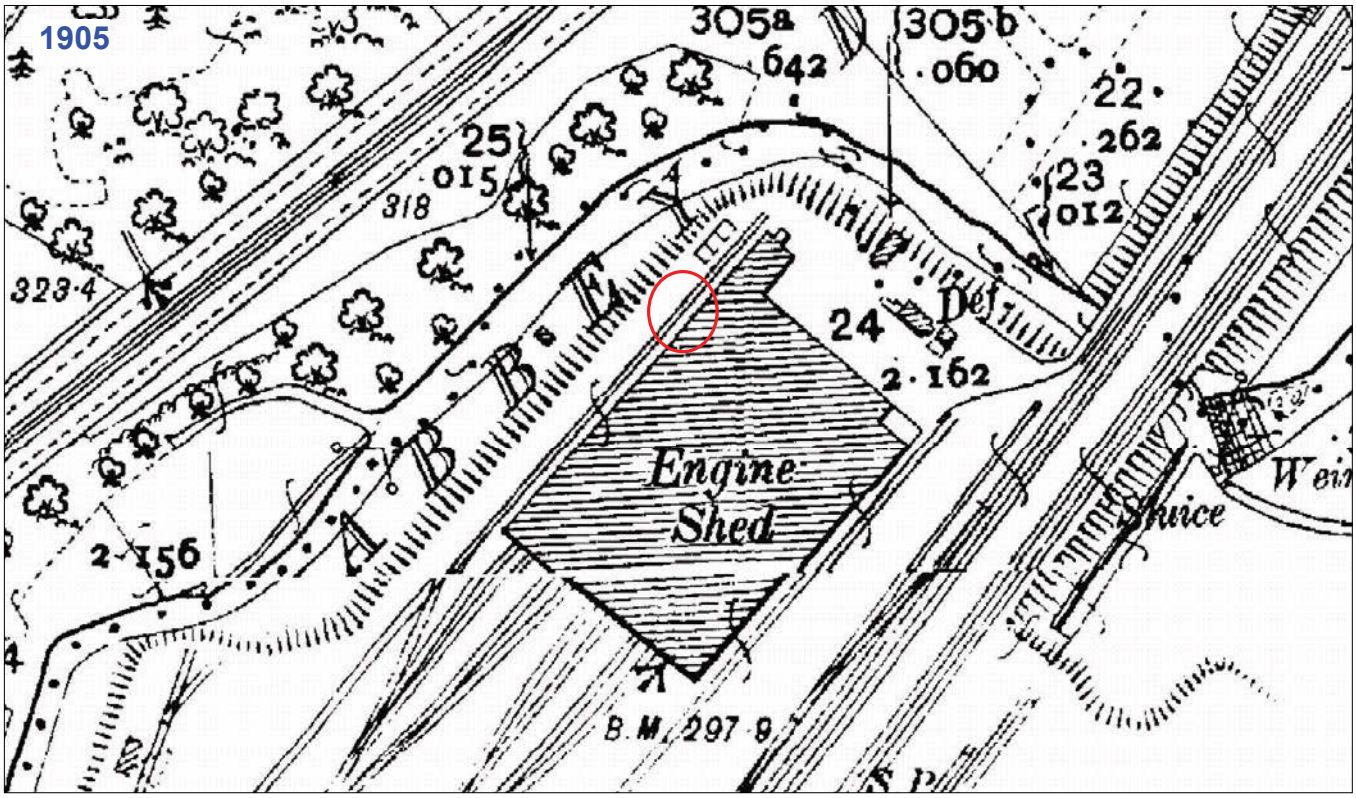
Plan

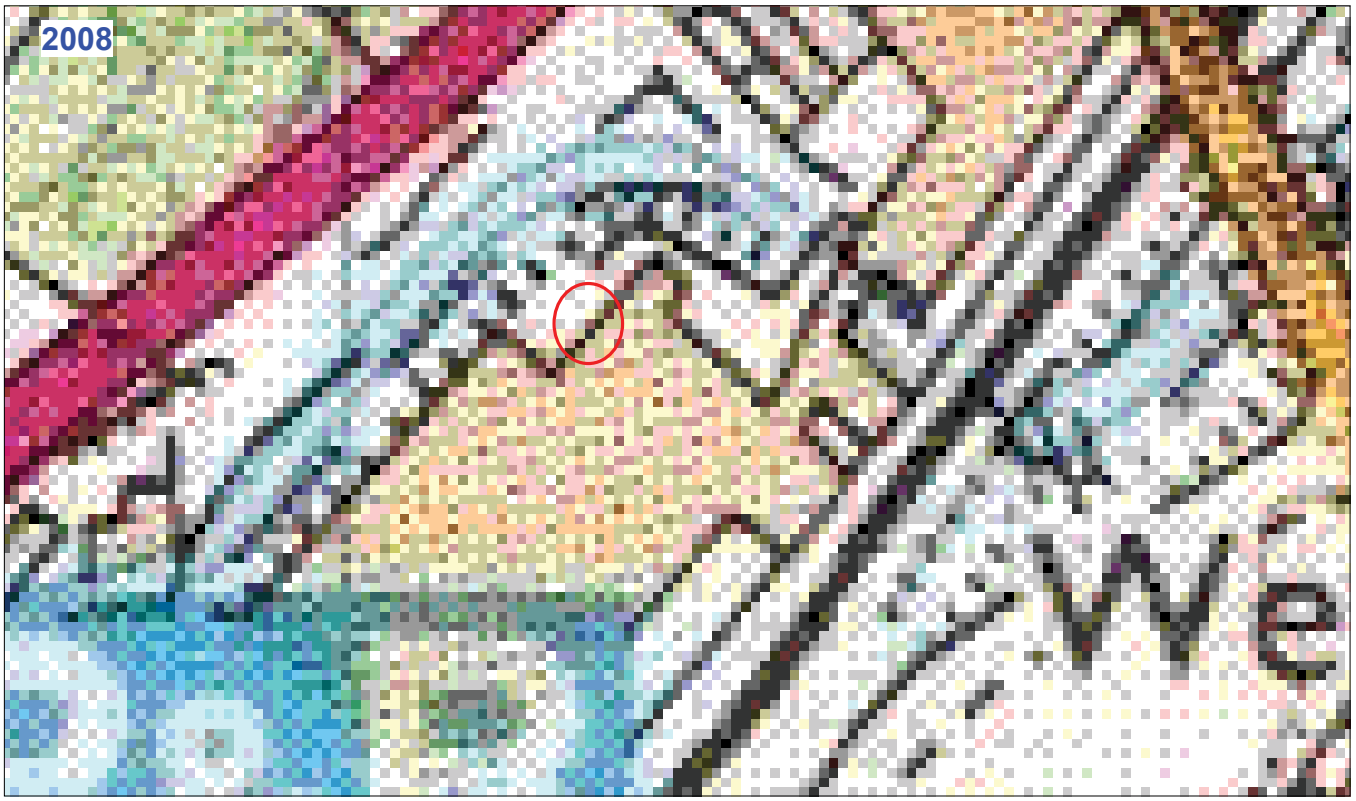
NW Facing Elevation



100 - concrete floor
101- rubble levelling deposit abutting wall [105]
102 - Floor surface mixed brick and timbers
103 - black slag and cinder - made ground
104 - clay/stone mix
105 - brick wall 'saunders' bricks

Archaeological Monitoring At The Former 'Jacobs Manufacturing' Site, Troutbeck Road, Sheffield, South Yorkshire	Figure 3: Trench Plan and Section *scale 1:100*	CS Archaeology April 2016





Archaeological Monitoring At The Former 'Jacobs Manufacturing' Site, Troutbeck Road, Sheffield, South Yorkshire	Figure 4: Comparative Mapping 1905 & 2008 *scale 1:100*	CS Archaeology April 2016

PLATES

Plate 1: view of the proposed excavations, with in situ wall from the east

Plate 2: view of the proposed excavations, with in situ wall, from the east

Plate 3: detail of one of the bricks from the NW facing wall

Plate 4: detailed view of the brick surface which reused 'Saunders' bricks and also 'Stairfoot' bricks too, from the west

Plate 5: general view of the cleaning off the floor surface, from the northeast

Plate 6: during removal of the brick sett floor machine base timbers were revealed these formed a series of parallel bases down the PDA, from the northwest

Plate 7: view of the upper part of an exposed arch, from the northwest

Plate 8: detail of the exposed wall (central arch), from the west

Plate 9: oblique view of the exposed wall, from the west

Plate 10: oblique view of the exposed wall, from the west

Plate 11: general post excavation view, from the south west

CS Archaeology
March 2016

APPENDICES

CS Archaeology
April 2016

Project Design for Archaeological Monitoring at 'Jacobs Manufacturing', Troutbeck Road, Sheffield, SOUTH YORKSHIRE

Planning Ref. 13/02019/COND41

CS Archaeology

February 2016

SUMMARY

0.1 This Project Design (PD) is in response to a condition (3/02019/COND 41) - on Planning Consent for the redevelopment of Jacobs Manufacturing, Troutbeck Road, Sheffield.

0.2 This PD proposes that an archaeological watching brief is implemented to record potential archaeological deposits during all below ground works, specifically during site reduction, service trench and foundation excavations.

0.3 The results from this works will provide a more detailed record of the Proposed Development Area's (PDA) archaeological resource, and will mitigate any archaeological activity by 'preservation by record'.

0.4 Archaeological monitoring (often referred to as a 'Watching Brief') is required to ensure that remains that are to be affected by works will be recorded and/or retrieved.

0.5 All archaeological work will comply with:

- "*Regional statement of good practice for archaeology in the development process, Yorkshire, the Humber & the North East*" (available for download from the SYAS website);
- relevant IfA Standard and guidance documents;
- relevant EH best practice guidance documents.

0.6 All archaeological work will be monitored by the South Yorkshire Archaeology Service (SYAS).

1 INTRODUCTION

1.1 Details

1.1.1 *Site Name:* Jacobs Manufacturing, Troutbeck Road, Sheffield, South Yorkshire. The site comprises the former Jacobs Engineering factory site extending to approximately 3.38 acres (1.37 hectares). Access is via a bridge link across the River Sheaf off Troutbeck Road via the A621 Abbeydale Road.

1.1.2 *Status:* non- statutory

1.2 Archaeological Background

2.2.1 During the 1980s the site was used by Troutbeck Engineering Ltd. Who specialised in pneumatic systems and this went into liquidation in 1987. The company's previous name was 'The Jacobs Manufacturing Company Ltd'. After 1987 Jacobs Manufacturing was set up and specialised in the manufacture of drill chucks.

1.3 Planning Background

1.3.1 This Project Design (PD) has been written in response to a condition on planning consent (Application No. 13/02019/COND41).

1.3.2 This PD represents a summary of the broad archaeological requirements during the redevelopment of the PDA. This is in accordance with Local Plan Policies and the National Planning Policy Framework (NPPF, 12).

2 OBJECTIVES

2.1 To ensure that any buried archaeological remains present are investigated in order than an understanding of their nature extent and significance, before they are damaged or destroyed. The watching Brief will also allow for the identification and recording of any archaeological material that might be uncovered and that the knowledge gained is then dis

3 METHODOLOGY

3.1 Procedures and Objectives

3.1.1 Access during the works will be afforded to CS Archaeology at all reasonable times, arrangements for access to the site will be agreed with the client Mr J Wade, in advance.

3.1.2 CS Archaeology will ensure that any plant and machinery operated by CS Archaeology is used with due care and attention.

3.1.3 Ditching bucket will be used at all times unless modern/concrete deposits are encountered.

3.1.4 This project will be undertaken in a manner consistent with the guidance of MAP2 (English Heritage 1991) and professional standards and guidance (IFA, 2001).

3.1.5 All finds that are 'treasure' will be reported to the coroner in accordance with the Treasure Act Code of Practice (1997).

3.1.6 If archaeology is revealed every effort will be made to enable the deposits to be preserved in situ.

3.1.7 If architectural features or archaeological remains are discovered during the course of the site works CS Archaeology will be afforded the opportunity to investigate and record them. Significant or unexpected discoveries will be immediately reported to the archaeological monitor (SYAS).

3.1.8 During the watching brief analytical drawings and a written report on the deposits will be made sufficient to illustrate archaeological details.

3.2 Photography

3.2.1 A general and detailed photographic record of the demolition will be made. General and detailed photographs will be taken with a digital 35mm camera. If required black and white photographs are required, an appropriate silver based film (Ilford Delta 400 Professional) and camera will be used in order to provide a long term record of the archaeological deposits.

3.2.2 All photographs will contain an appropriate graduated photographic scale. copies of all the photographs will be included in the digital archive which will be supplied both the client and to SYAS.

3.3 Site Monitoring

3.3.1 SYAS will be notified at least two weeks in advance of the site works and the start of the site works, so that arrangements for monitoring the work can be made.

3.3.2 Monitoring will be arranged so that all excavated areas can be inspected in an exposed condition.

3.4 Finds Recovery and Conservation Strategy

3.4.1 If any site reduction work does take place and this is not anticipated, the following categories of artefact may be predicted on this site: pottery, ferrous and non ferrous metalwork, glass, ceramic building material, worked bone, flint and/or worked stone. Potential finds could date from any period.

3.4.2 Should a site archive be created this will be offered to Sheffield Museum Service, and a project initiation form (attached) will be completed in advance with copies sent to Sheffield Museum and SYAS.

3.4.3 All recording, marking and storage of material will be of archive quality and recording systems will be compatible with Sheffield Museum. Allowance will be made for preliminary conservation and stabilisation of all objects and an assessment of their long-term conservation and storage needs.

3.4.4 Finds will be appropriately packaged and stored under optimum conditions, as detailed in the RESCUE/UKIC publication First Aid for Finds. In accordance with the procedures outlined in MAP2, all iron objects, a selection of non-ferrous artefacts (including coins), and a sample of any industrial debris relating to metallurgy will be X-radiographed before assessment.

3.4.5 If required a specialist assessment report on the recovered artefacts will be undertaken, with a view to their potential for further study. Any assessment report will form an appendix to the main report. Allowance will be made for preliminary conservation and storage needs.

3.5 Health and Safety

3.5.1 CS Archaeology will operate with due regard to health, and will comply with the principal contractor on site.

3.6 Post –Recording Work and Report Preparation

3.6.1 Once the site works have been completed, a full report of the results of the watching brief will be undertaken by CS Archaeology, within 3 months. The post-excavation assessment of material if recovered will be undertaken in accordance with the guidance of MAP2 (English Heritage, 1991). The report will include: background information, methods, detailed results, grid references, conclusion and discussion.

3.6.2 The watching brief report may if required include a phased interpretation of the site, and a detailed photographic index.

3.6.3 A copy of this PD will be included as an appendix to the final report.

3.7 Post Excavation Specialists

3.7.1

Prehistoric and Medieval Pottery	Dr C G Cumberpatch, Sheffield
Roman Pottery	Ms R Leary
Anglo-Saxon Pottery	Ms J Young
Slags	Dr R MacKenzie, Sheffield

Environmental sampling and analysis	Ms E Simmons, Sheffield
Bone (Animal)	Mr J Buglass, Northallerton
Bone (Human)	Mr M Holst, York Osteolo-Archaeology

3.7.2 Should any further specialists be required these will be employed accordingly after approval by the SYAS.

3.8 Preservation in situ

3.8.1 During the course of the watching brief, structures and deposits could be encountered that require the need for preservation in situ. CS Archaeology will ensure that any feature meriting preservation will be reported to and a design solution if feasible will be developed in full consultation with SYAS.

3.9 Archive Preparation & Deposition

3.9.1 A site archive will be prepared in accordance with English Heritage MoRPHE guidelines (English Heritage 2006). See also *Towards an Accessible Archaeological Archive, the Transfer of Archaeological Archives to Museums: Guidelines for use in England, Northern Ireland, Scotland and Wales* Society of Museum Archaeologists 1995.

3.9.2 The site archive, including finds and environmental material, subject to the permission of the relevant landowners, will be labelled, conserved and stored according to the United Kingdom Institute for Conservation (UKIC)'s *Guidelines for the Preparation of Excavation Archives for Long-term Storage* (Walker 1990) and the Museums and Galleries Commission's *Standards in the Museum Care of Archaeological Collections*, 1992.

3.9.3 Arrangements will be made for the full and final archive to be deposited in with Sheffield Museum in accordance with their deposition and archiving standards. If, after the watching brief, no further archaeological work is initiated, the archive will be deposited. An agreed allowance will be made for a contribution to Sheffield Museum towards the curation and storage of material.

3.9.4 If further archaeological mitigation is requested any additional archaeological work undertaken, the archive will be prepared accordingly for incorporation into the final archive.

3.9.5 Archive deposition will be arranged in consultation with, and will take account of Sheffield Museum's requirements and the relevant guidelines (see above). The timetable for deposition shall be agreed on completion of the site archive and report.

3.10 Report Submission

3.10.1 Upon completion of the field work a full report will be produced and copies with CD Rom containing the text of the report and illustrations (including all photos and slides taken), scanned at 300 dpi, is to be provided with each copy of the printed report submitted to the client and Mr. J McNeil of the SYAS. As a minimum, a summary or interim statement will be produced 6 weeks after completion of the fieldwork, and a full report within 3 months.

3.10.2 Copies of the completed report will be submitted in both hard (if required) and digital formats to:

- The Client Mr J Wade
- Mr J McNeil and the HER at the SYAS.

3.10.3 A summary report of an appropriate length, accompanied by illustrations, will be prepared and submitted in digital format (word/jpg >300dpi), for publication in *Archaeology in South Yorkshire*.

3.9 Publicity

3.9.1 Provision will be made for publicising the results of the work locally, and an OASIS form will be completed for the project.

3.9.2 CS Archaeology will either arrange for copyright on the deposited material to be assigned to the Sheffield Museum in perpetuity; this licence will allow the archive to reproduce material, including for use by third parties, with the copyright owner suitably acknowledged.

3.9.3 CS Archaeology is aware that this work may lead to further archaeological dissemination.

3.10 References

English Heritage, 1991, *Management of Archaeological Projects* (MAP2)

Institute of Archaeologists, 2001, *Standard and Guidance for Archaeological Field Evaluations* Reading

Watkinson D. & Neal V.,1998, *First Aid for Finds* (3rd edition), RESCUE & the Archaeological Section of the United Kingdom Institute for Conservation.

South Yorkshire Archaeology Service, 2014, 'Model Brief for Archaeological Monitoring (Watching Brief)

Treasure Act, 1996, Code of Practice

National Planning Policy Framework, 2012, Department for Communities and Local Government, Chp 12. Conserving and Enhancing the Historic Environment

Any comments on this PD please address to Chris Scurfield at:

CS Archaeology

E: chrisscurfield@yahoo.com

T: 01609 772721 *M:* 07963 586767

APPENDIX 2: THE ARCHIVE

1. PHOTOGRAPHIC REGISTER

Black and White (Ilford Delta 400 Professional) and colour digital

Photo-graphic No.	Plate	Description	From
1	**1**	view of the proposed excavations	E
2	**2**	view of the proposed excavations, with in situ wall	
3	**3**	detail of one of the bricks from the NW facing wall	-
4	**4**	detail of one of the bricks from the NW facing wall	W
5	**5**	general view of the cleaning off the floor surface	NE
6	**6**	during removal of the brick sett floor machine base timbers were revealed these formed a series of parallel bases down the PDA	NW
7	**7**	view of the upper part of an exposed arch	NW
8	**8**	detail of the exposed wall (central arch)	W
9	**9**	oblique view of the exposed wall	W
10	**10**	oblique view of the exposed wall	W
11	**11**	general post excavation view	SW