Archaeological Watching Brief at Stockley Airport Junction Report

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SUMMARY

In January 2012, Oxford Archaeology (OA) carried out an archaeological watching brief at the Stockley Airport Junction section of the Crossrail scheme, situated on land beside Unit 306, Stockley Close, West Drayton. The work comprised a targeted watching brief during the de-silting of Broad's Dock, an historic spur of from the Grand Union Canal.

No archaeological remains, with the exception of the canal, were observed during the work. Natural geology, consisting of Langley Silts (brickearth) and underlying gravel was observed within the spoil recovered from excavation within the canal, suggesting natural geology was reached during the de-silting.

1. INTRODUCTION

1.1 Location and Scope of work

1.1.1 In January 2012, Oxford Archaeology (OA) conducted a targeted watching brief at the Stockley Airport Junction section of Crossrail scheme, centred on National Grid Reference TQ 077 795 (Fig. 1). The area of the watching brief was situated at the proposed crossing point of the designed access over Broad's Dock behind Unit 306, Stockley Close, West Drayton, London (Fig. 2). The work comprised the archaeological supervision of topsoil removal by mechanical excavator during the clearance of dead vegetation, modern rubbish and concrete blocks on the western bank of Broad's Dock, and during the mechanical excavation of silt from the canal.

1.1.2 The watching brief was carried out in accordance with a Site Specific Written Scheme of Investigation (SSWSI) designed by Crossrail for the entire Early Works programme of the Stockley Airport Junction section (Crossrail, 2011).

1.2 Project Background

1.2.1 The background to the Crossrail project has been described in detail in the SSWSI and is briefly summarised below.

1.2.2 Crossrail is a major new cross-London rail link designed to serve London and the south-east and includes the construction of a twin bore tunnel on an east-west alignment under central London and upgrading of some existing rail facilities. The route is divided into four sections: central, western, north-eastern and south-eastern, all containing additional sub-sites. Stockley Airport Junction is within the western section.

1.2.3 The construction of the Stockley Airport Junction will provide a grade separated junction to facilitate Crossrail and Heathrow Express services without causing disruption to the existing Main Line services. The work includes a new embankment, flyover, viaduct and ramps. The foundations for the new viaduct, ramp and flyover structures may impact upon cultural heritage assets and the mitigation for this work is archaeological watching brief, as specified in SSWSI.

1.3 Topography and geology

1.3.1 The site lies at the western edge of an industrial estate, accessed via Stockley Close. The site encompasses approximately 400 m^2, consisting of a large area of land and water adjacent to the east of Unit 306. It includes a *c* 20-25m long section of Broad's Dock, immediately north of the point where the canal bends to a north-east – south-west alignment.

1.3.2 The ground level across the site, and on both sides of the canal, is fairly uniform between 31-33m above Ordnance Datum (OD), with the water level of the canal situated at approximately 29.4m (OD). The eastern bank of the canal displays an irregular topography, which may reflect both quarrying and land-filling activities through past brickearth and gravel extraction as well as the construction of the vertically raised embankment of the Heathrow Express Railway situated *c* 15m to the east of the site.

1.3.3 The superficial geology of the area is Lynch Hill Thames Gravels overlain by the Langley Silt Complex (brickearth). Both were extensively quarried in the wider area (Crossrail, 2011). The underlying solid geology is London Clay.

1.4 Archaeological background

1.4.1 The archaeological background of the site has been described in detail in the SSWSI and is brief summarised below (Crossrail, 2011).

1.4.2 There is evidence for Palaeolithic activity in the surrounding area, mainly discovered during quarrying of the Lynch Hill gravels. No Bronze Age, Iron Age or Roman activity has been identified in the immediate area, however large agricultural field systems have been identified on the Taplow terraces to the south of the Crossrail route and settlement activity has been identified approximately 1km to the north at Stockley Park.

1.4.3 Saxon settlements have been investigated to the south of the site around Sipson and Harmondsworth. The layout of lanes, villages and Hamlets seems to have been in place by the late Saxon period. However, no archaeological evidence from this period has been identified in the proximity of Stockley Airport Junction.

1.4.4 The locations of the deserted medieval hamlet of Dawley and of Dawley Manor House although now lost, are assumed to lie to the east of the site.

1.4.5 During the post-medieval period the landscape around Stockley Airport junction remained predominantly rural. In the late 18th century the Grand Union Canal with its associated bridges was constructed, followed by the Great Western Railway in the mid 19th century.

1.4.6 Brick manufacture developed in the area during the 19th century. A spur from the Grand Union Canal called Broad's Dock, used to transport clay, has survived within the site boundary. Both clay and gravel extraction continued into the 20th century; A number of the associated pits have been used as landfill sites and further redeveloped in the 20th/ 21st century as golf courses, fishing lakes and a business park.

1.4.7 The area around the site was subject to development from the early 20th century, comprising suburban expansion, industrial buildings and workers housing.

1.5 Previous investigations

1.5.1 No previous archaeological investigations have taken place within the site. Geotechnical borehole investigation across the site recorded varied levels of made ground from 0.50 - 1.80m deep overlying a 0.20 - 0.60m deep layer of clay overlying gravel.

2. RESEARCH AIMS AND OBJECTIVES

2.1.1 The objectives of the investigation were to establish the character, nature, date, extent and state of preservation of any surviving archaeological remains that would be impacted upon by the development and contribute towards the research themes outlined in the SSWSI.

2.2 General Aims

2.2.1 The general aims of the watching brief, based on overarching aims stated in the *Research Framework for London Archaeology,* as quoted in the SSWSI, were as follows:

- Identify, investigate and record any significant archaeological remains revealed by the groundworks, where such remains cannot be avoided by the ground investigations, paying particular regard to the potential for early Prehistoric levels not previously noted in the area.
- Establish a chronology for the archaeological remains in the area.
- Contribute to an understanding of the potential impact of the development.

2.3 Site-Specific Aims

2.3.1 The site-specific research aims were as follows:

- What is the development of the local landscape from prehistory to the medieval period? Are any Palaeolithic remains present? If so, at what level(s) and at what date did they form? Is there any evidence for redeposited land surfaces?
- What evidence exists in the landscape for the development of the Roman and Saxon landscape?
- What information exists about the development of the agricultural and industrial landscape in the post-medieval period?

2.4 Regional Research Aims

2.4.1 The regional research themes considered to have possible relevance to archaeological remains uncovered at the site are:

- Upper Palaeolithic and Mesolithic – aspects of continuity and change in the nature of subsistence strategies pursued by human groups: how did they change and develop through time, and why?

- Roman – Understanding how the relationship between hinterland and *territorium* of *Londinium* operated.
- Saxon – Identifying rural land use and the extent of agricultural exploitation.
- Medieval – Understanding the social and economic implications of patterns of consumption across the city and region, and using the archaeological record to trace individual lives.
- Post-medieval – Understanding how the proximity of the metropolis, the largest urban conurbation in Britain, affected the lives of people living and working in the immediate surrounding area.

3. INVESTIGATION METHODOLOGIES

3.1 Watching Brief Methodology

3.1.1 A watching brief is a programme of archaeological monitoring (observation, investigation and recording) which is carried out by a suitably qualified archaeologist during site investigations (e.g. geotechnical test pits, boreholes and utilities trial trenches) and construction works. The purpose of the watching brief is to identify the potential of any archaeological remains uncovered in the course of the works and record them appropriately (as far as was reasonably practicable).

3.1.2 OA carried out the watching brief works during the Early Works associated with the vegetation clearance and de-silting of Broad's Dock. The works were monitored by an attending Archaeologist when required by the Principal Contractor between the 17th of January and 24th of January 2012. The scope of attendance included any activities undertaken by the Principal Contractor that involved the removal of modern material, made ground, topsoil, subsoils and superficial geological deposits, such as brickearth and gravel. All works were carried out by a 360° mechanical excavator fitted with a long reach boom and either a toothed or ditching bucket, whichever was most appropriate for the required work.

3.1.3 The following observations were recorded on a daily basis by the attending Archaeologist:

- Personnel employed on site;
- A description of the construction works observed;
- Any relevant works sub-contractor and personnel undertaking and supervising the construction activity
- Depths and extents of excavation works observed;
- A measure of confidence that any archaeological remains would have been observed;
- The reasons why any particular area of the works was not observed, and noting those areas not subject to disturbance from construction;
- Location and description of any archaeological remains;
- Location and description of any modern remains.

3.2 Recording

3.2.1 The recording included the production of a written record of individual context descriptions on appropriate *pro forma*, a drawn record, finds retrieval and photography, where appropriate.

3.2.2 The drawn record incorporated plans and section drawings of appropriate features, structures and individual contexts (at an appropriate scale).

3.2.3 The photographic record consisted of 35mm monochrome and colour, as well as digital formats.

3.2.4 All structures and deposits were recorded according to current best practice and accepted professional standards (see OA Fieldwork Manual, 1992) and as outlined in the SSWSI.

4. RESULTS

4.1 Introduction

4.1.1 The area subject to topsoil removal was approximately 16m long and 7m wide and the works included the removal of overlying vegetation, modern rubbish and the removal of some large blocks of concrete, both from the ground surface and the bank of Broad's Dock. Although the blocks did not appear to be structural, it seems likely that they are related to re-enforcement or anti-erosion measures associated with Broad's Dock (Plate 1).

4.1.2 A test-pit excavated by the Principal Contractor illustrated the partial stratigraphic sequence of the western bank (Plate 2). The test-pit was approximately 1.8m deep and did not reach natural geology. Although the test-pit was excavated under artificial lighting, the stratigraphic sequence was still clear. The 0.30m thick topsoil deposit (101) was overlying a layer of sand mixed with concrete rubble and rare red brick fragments (103). This 0.50m thick deposit was interpreted as a levelling layer associated with the formation of the yard of Unit 306 of the industrial estate. Deposit (103) was overlying an earlier layer of made ground consisting of a mixed deposit of rubble, including concrete, blocks of fuel ash slag and redeposited topsoil (104). This layer was at least 1m thick and the base of the context was not reached within the test-pit.

4.1.3 The removal of silts from Broad's Dock encompassed an area measuring approximately 25m by 10m and was undertaken by a mechanical excavator fitted with a toothless bucket (Plate 3). Prior to excavation, the depth of the canal was approximately 1m deep. The underlying black organic silt (106) with frequent vegetation detritus formed an approximate 1m thick deposit at the base of the canal. These silts were excavated to an estimated depth of 27.40m OD, which was judged from the depth to which the excavator's boom was submerged within the canal.

4.1.4 The profile of the canal bed was difficult to judge but it appeared to be flat at the bottom and steep at the sides. Despite checking all timber lifted out of the water, no worked wood other than modern cut building wood was found. No wooden

structures were observed at the edges of the canal.

4.1.5 The natural geology at the bottom of the canal was a brownish yellow sandy clay that was interpreted as the Langley Silt Complex (107). Gravel was only rarely observed from deeper excavation within the canal. These gravels may tentatively be interpreted as the contact horizon between the Langley Silt and the Thames Gravels.

4.1.6 Using the data from the test-pit and the excavations within Broad's Dock, a virtual section was produced illustrating the deposits present throughout the watching brief area (Fig. 3).

4.2 Artefactual / Finds Results

4.2.1 No finds were recovered during the investigation.

5. CONCLUSIONS AND RECOMMENDATIONS

5.1.1 The watching brief did not identify any archaeological remains or deposits of significance other than Broad's Dock. No archaeological information on the prehistoric and later environments of the floodplain could be recovered, and there was there no information for occupation activity of any period. The made ground deposits were of 19th or 20th century date and are likely to have resulted from raising the ground level. Below the silt deposit within the canal, the natural sandy clay of the Langley Silt Complex and tentatively the interface with the Thames Gravels was observed.

6. ARCHIVE DEPOSITION

6.1.1 The complete project archive includes paper context records and indices, permatrace drawings, both black and white and colour photographs, digital plans and photographs, artefacts, ecofacts and sieved residues. A full list is given in Appendix 5. These will be prepared following the guidelines set out in Environmental standards for the permanent storage of excavated material from archaeological sites (UKIC 1984, Conservation Guidelines 3) and Guidelines for the preparation of excavation archive for long-term storage (Walker 1990).

APPENDIX 1 ARCHAEOLOGICAL CONTEXT INVENTORY

Context No.	*Context type*	*Description*	*Width (m)*	*Thick. (m)*	*Finds*	*Date*
100	Layer	Natural. Loose brown yellow, fine sediment, sandy clay with no inclusions. Brickearth				
101	Layer	Topsoil		0.3		
102	Deposit	Concrete blocks	*c* 0.7	*c* 0.45		
103	Layer	Made ground. Loose light brown fine to coarse slightly gritty sand with angular to sub-angular pebbles and cobbles of concrete, flint pebbles and red bricks. Rare glass and building iron.		0.5		
104	Layer	Made ground consisting of redeposited topsoil and hardcore.		>1		
105	Cut	Construction cut for Broad's Dock canal.				
106	Fill	Soft black organic silt with plant detritus and fragments of modern rubbish (builder's bucket, bent iron rod, concrete slabs, sheet metal etc). Silt deposit accumulated at the base of the canal.				
107	Layer	Natural. Loose, dark olive grey, coarse gritty sand with small to large sub-rounded pebbles. Terrace gravel deposit.				

APPENDIX 2 BIBLIOGRAPHY AND REFERENCES

Crossrail	2011	Stockley Airport Junction. Cultural Heritage Site Specific Written Scheme of Investigation. Document No: WSK1B-HEN-REP-JED-000004 Revision B03
UKIC 1984,	1984	Conservation Guidelines 3
Walker, K	1980	Guidelines for the preparation of excavation archive for long-term storage (Walker 1990
Wilkinson, D (ed)	1992	OAU Fieldwork Manual, Oxford Archaeological Field Unit

APPENDIX 3 SUMMARY OF SITE DETAILS

Client name: Thomson Ecology
Site name: Stockley Airport Junction
Site code: To be confirmed
Grid reference: TQ 077 795
Type of investigation: Watching brief
Date and duration of project: 17-24 January 2012
Location of archive: The archive is currently held at OA, Janus House, Osney Mead, Oxford, OX2 0ES and will deposited with the appropriate receiving museum in due course.