



DRONFIELD GASWORKS, DERBYSHIRE

Archaeological Watching Brief





**DRONFIELD GASWORKS,
DERBYSHIRE**

Archaeological Watching Brief

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Contents

Summary.....	iv
Acknowledgements.....	v
1 INTRODUCTION.....	1
1.1 Project Background.....	1
1.2 The Site, Location and Geology.....	1
1.3 Archaeological and Historical Background.....	1
2 METHODOLOGY.....	2
2.1 Aims.....	2
2.2 Methodology.....	2
2.3 Best Practice.....	2
3 RESULTS.....	2
3.1 Introduction.....	2
3.2 General Stratigraphy.....	2
3.3 Retort House.....	3
3.4 Quenching Hut.....	3
4 CONCLUSIONS.....	4
4.1 Summary.....	4
5 ARCHIVE.....	4
5.1 Preparation.....	4
5.2 Deposition.....	4
6 REFERENCES.....	4
APPENDIX I: TABLES.....	5

Front Cover Working shot looking east during excavation of Trench 1

Back Cover View of Dronfield Gas Works from Chesterfield Road

Figure 1 Site Location

Figure 2 Site Plan

Plate 1 Southeast facing section of Trench 1 showing made ground deposits **100, 104, 105, 106** and **107**.

Plate 2 General view across Trench 1 showing standing remains of the quenching house, its sandstone foundations **103**, the short brick structure **102**, and the concrete foundation **101**.

Plate 3 View showing brick structures **414** & **415** within southeast facing section of Trench 4

Plate 4 Northeast facing section of Trench 2, showing brick structure **204** and the remains of sandstone foundation **207/305/404**.

Plate 5 Northwest facing section of Trench 3, showing depth of sandstone foundation **207/305/404**.

Plate 6 General view of Trench 4 showing brick structure **403** and sandstone foundation **405** in the section.

**DRONFIELD GAS WORKS,
DERBYSHIRE****Archaeological Watching Brief****Summary**

Wessex Archaeology was commissioned by URS Infrastructure & Environment UK Limited to undertake an Archaeological Watching Brief during remediation groundworks at Dronfield Gas Works, Derbyshire (NGR 435924 378095). This report presents a brief description of the methodology followed, a description of the results and an interpretation of the findings. The watching brief was undertaken between 01.03.12 and 29.03.12.

The archaeological monitoring identified limited structures and features associated with the mid-19th century retort house and quenching hut of Dronfield Gas Works, with levels of made ground indicating extensive modern disturbance. The only evidence encountered for specific processes comprises cast iron pipework to the south of the monitored area that may have been situated to provide water for the quenching process, or to extract produced gas to the condensers.

There was approximately 2.7m of made ground deposits across the monitored area, corresponding in part to the historic raising of ground levels for the gas works in the mid-19th century, and in part from the gradual demolition and clearance of buildings since the 1950s.

It is anticipated that the physical Site archive will be deposited at the Derbyshire Record Office (DRO) in Matlock.

**DRONFIELD GAS WORKS,
DERBYSHIRE****Archaeological Watching Brief****Acknowledgements**

This project was commissioned by URS Infrastructure & Environment UK Limited and Wessex Archaeology is grateful to Jim McQueen in this regard.

The report was researched and compiled by James Thomson. Fieldwork was undertaken by James Thomson, Mathew Weightman and Phil Roberts. The project was managed for Wessex Archaeology by Richard O'Neill.

**DRONFIELD GAS WORKS,
DERBYSHIRE****Archaeological Watching Brief****1 INTRODUCTION****1.1 Project Background**

1.1.1 Wessex Archaeology were commissioned by URS Infrastructure & Environment UK Limited to undertake an archaeological watching brief during remediation groundworks at Dronfield Gas Works (hereafter 'The Site'). The Site is located at NGR 435924 378095 (**Figure 1**).

1.1.2 The remediation groundworks were carried out to treat high levels of contamination. A programme of archaeological work was required to mitigate the impact to potential remains of archaeological significance relating to the former retort house of the gas works.

1.1.3 The programme of archaeological works was undertaken in line with a Written Scheme of Investigation (WSI) produced by URS (2012b), and approved by Steve Baker (Development Control Archaeologist for Derbyshire County Council).

1.2 The Site, Location and Geology

1.2.1 The Site lies to the east of the centre of Dronfield, between Chesterfield Road and Mill Lane.

1.2.2 Archaeological monitoring within the Site (**Figure 2**) primarily targeted the area of the former retort house identified by a previous heritage assessment of the site (URS 2012a). In addition, structures and deposits relating to the adjacent south-eastern structure, identified as a possible quenching hut (*ibid.*), were also recorded.

1.2.3 The underlying geology of the Site consists of Silkstone Rock (sandstone) of the Lower Westphalian-aged Coal Measures, with upper drift deposits of silt and clay.

1.3 Archaeological and Historical Background

1.3.1 The heritage assessment (URS 2012a) determined that the site was developed in the mid-19th century by the Dronfield Gas Light and Coke Company as a small town gas production site. There is documentary evidence to suggest that the works were extended in 1912, and again with the transfer of the company to Sheffield Gas in 1924. Further alterations occurred to the works in the late 1950s/ early 1960s with the demolition of a number of the buildings pertaining to the original gas works.

2 METHODOLOGY

2.1 Aims

2.1.1 The principal aims of the archaeological work were:

- To confirm and enhance the results of the Heritage Assessment prepared by URS (2012a);
- To ensure preservation by record of historic structures and deposits relating to the furnace associated with the former retort house; and
- To establish the character and form of any processes observed.

2.2 Methodology

2.2.1 Due to the instability a wall that bounds the north of the Site, and the level of contamination identified within the Site (URS 2012b), no access into the excavation was permitted. Consequently, all recording was carried using a Leica TCRP 1205 Total Station taking reflectorless observations from outside of the excavation area. A Leica Viva GNSS system was used to locate the survey on the Ordnance Survey grid.

2.2.2 All archaeological deposits were recorded using Wessex Archaeology's pro forma recording system. This written record is hierarchically based and centred on the context record. Each context record fully describes the location, extent, composition and relationship of the subject and is cross-referenced to all other assigned records. Context numbers used in recording the excavation were not repeated.

2.2.3 A full photographic record was maintained during the course of the works comprising 35mm black and white print film duplicated with digital photography at 10 megapixel resolution.

2.2.4 No finds were recovered from the Site.

2.3 Best Practice

2.3.1 All works were conducted in compliance with the Institute for Archaeologists' *Standards and Guidance for Archaeological Watching Brief* (1994: revised 2008).

3 RESULTS

3.1 Introduction

3.1.1 Fieldwork was undertaken between 01.03.12 and 29.03.12. The following section provides a summary of the information held in the site archive with observed features and contexts tabulated in **Appendix 1**.

3.2 General Stratigraphy

3.2.1 A possible undisturbed natural deposit of dark clay with a blue hue was encountered at a depth of 2.7m below ground level (bgl) in Test Pits 2 and 3 (contexts **208** and **307**). In both cases the deposits were observed to be contaminated with tar.

3.2.2 Above the natural were numerous made ground deposits (**Plate 1**) of redeposited soils (contexts **104, 106, 107, 204, 206, 306** and **411**) and ash rich deposits with fragments of construction material (contexts **105, 203, 303,** and **410**). Whilst structure **405** (see below) was observed to have been constructed within a cut made into these deposits (context **412**), it was not possible to identify the relationship between all deposits and structures due to the constraints of the methodology.

3.2.3 A further layer of made ground of mixed composition overlay the Site, with frequent inclusions of frogged and unfrogged red brick, squared masonry and general construction material throughout (contexts **100, 201, 202, 301, 302,** and **407**).

3.3 Retort House

3.3.1 Although a few structures were identified within the footprint of the retort house, no evidence was uncovered for an ashpit or retort foundations. Ground reduction monitored within this area was to a depth of between 1.2 and 2.0m bgl, at which point the base of modern made ground deposit **100** had not been encountered suggesting any basement structure in the area of the retort house had been previously robbed out.

3.3.2 Towards the northern end of the building a short two skin thick southeast-northwest aligned handmade red brick structure was observed (context **102,** **Plate 2**). The structure was not found to be associated with any larger structure and appeared to terminate at its western extent.

3.3.3 In the southeast of the area was a substantial concrete foundation of indeterminate function (context **101**).

3.3.4 In the southern corner of the building's footprint an L-shaped section of brickwork was encountered (contexts **414** and **415**). This structure was four skins thick and constructed of handmade red brick with one course laid on edge (**Plate 3**).

3.4 Quenching Hut

3.4.1 Significantly more structural remains were encountered for the quenching hut situated to the southeast of the retort house. Ground reduction monitored in this area was to a depth of 0.8-1.3m bgl.

3.4.2 The foundations of the outer walls of the building comprised rough slabs of sandstone laid to courses (contexts **103/405, 404, 408,** and **409; Plates 4-6**).

3.4.3 A redbrick structure was observed abutting the northern face of the southwest wall foundation (context **204/304; Plates 4-5**). This structure was likely associated with a large nine skin thick redbrick foundation (context **401** and **403; Plate 6**) and associated cast iron pipe and tank (**402**) to its northeast, although any linking walls had been removed during the excavation for a modern plastic gas main extending northwest-southeast across the bottom of the monitored area. A plan produced of the works in 1913 (URS 2012) shows a structure within the vicinity of these observed features.

4 CONCLUSIONS

4.1 Summary

4.1.1 The archaeological monitoring identified limited structures and features associated with the mid-19th century retort house and quenching hut of Dronfield Gas Works. No evidence was recovered for the ash pit or retort foundations within the retort house, with levels of made ground indicating extensive modern disturbance. The only evidence encountered for specific processes comprises cast iron pipework to the south of the monitored area that may have been situated to provide water for the quenching process, or to extract produced gas to the condensers.

4.1.2 There was approximately 2.7m of made ground deposits across the monitored area, corresponding in part to the historic raising of ground levels for the gas works in the mid-19th century, and in part from the gradual demolition and clearance of buildings since the 1950s.

5 ARCHIVE

5.1 Preparation

5.1.1 The project archive, consisting of all primary written documents, plans, sections, photographs, and electronic data, will be prepared by Wessex Archaeology staff in accordance with the requirements of the repository museum and in line with national guideline (Brown 2007).

5.2 Deposition

5.2.1 It is anticipated that the physical Site archive will be deposited at the Derbyshire Record Office (DRO) in Matlock.

5.2.2 A digital copy of the report will be prepared for the client and physical copies will be submitted to Derbyshire County Council, Peak District National Park Authority and, along with the Site archive, to the repository museum.

5.2.3 An OASIS form will be completed at <http://ads.ahds.ac.uk/project/oasis/> for inclusion in the ADS database. This will include an electronic copy of the report in PDF format.

6 REFERENCES

Brown 2007. *Archaeological Archives: A Guide to Best Practice in Creation, Compilation, Transfer and Curation*.

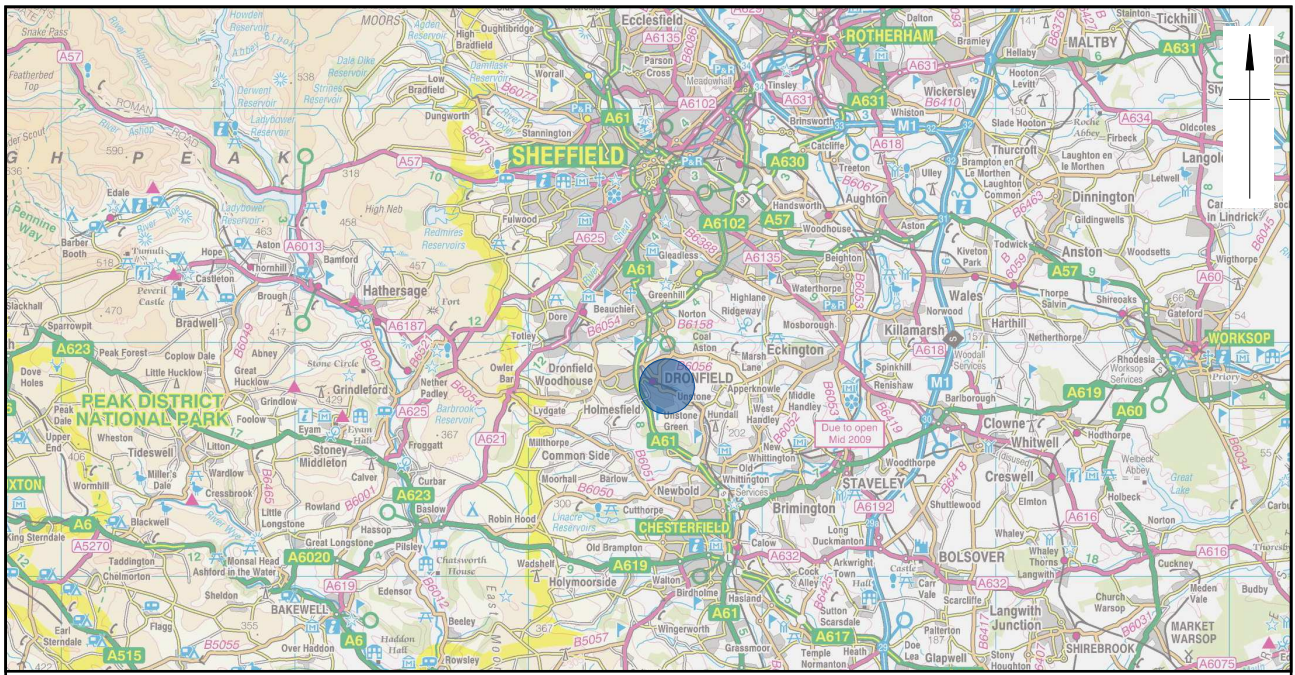
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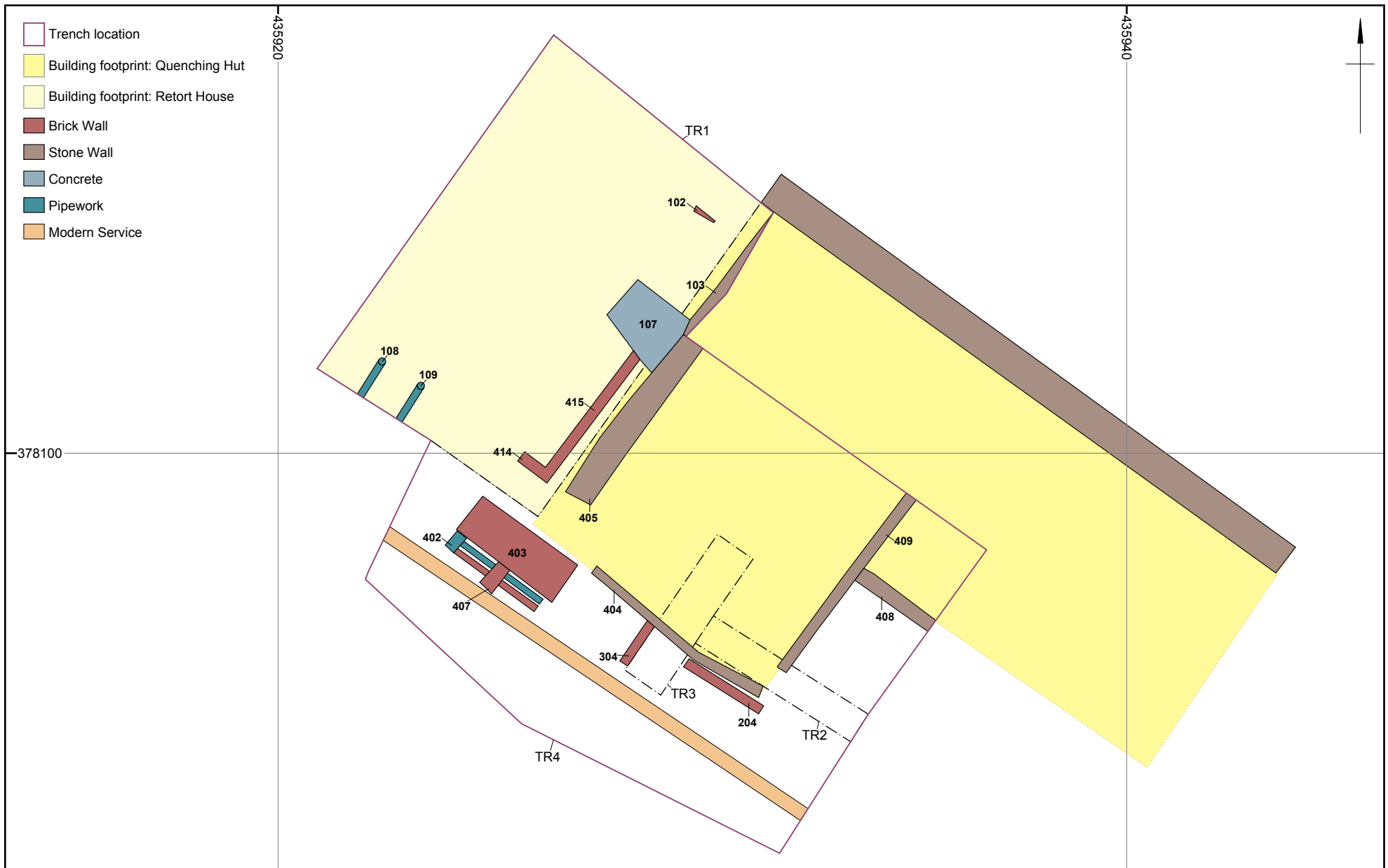
APPENDIX I: TABLES
Table 1: Sediment Descriptions

Area	Context	Category	Description	Depth bgl (m)
Trench 1	100	Deposit	Dark Brown Sandy Silt with modern red brick, sandstone <10cm and rare pebbles and coal <5cm	0.00-0.10
Trench 1	101	Foundation	Rectilinear concrete block	0.10+
Trench 1	102	Structure	Handmade redbrick structure, 1 skin thick with right angle bend	1.00+
Trench 1	103	Foundation	Sandstone wall foundation on east side of trench for building identified at Building 1 in assessment report. Stone laid to courses.	0.10+
Trench 1	104	Deposit	Fragmented orange sandstone with no inclusions	0.90+
Trench 1	105	Deposit	Dark charcoal rich sandy soil	0.80-0.90
Trench 1	106	Deposit	Grey brown sandy gravel	0.70-0.90
Trench 1	107	Deposit	Reddish brown sandy gravel	0.90+
Trench 1	108	Pipe	Cast iron pipe, approx. 20cm diameter, with 90 degree bend towards surface	0.15-0.75
Trench 1	109	Pipe	As 108, and located 1m to its east	0.15-0.75
Trench 2	201	Deposit	Dark brown ash rich sand with inclusions of red brick and sandstone rubble	0.00-0.35
Trench 2	202	Deposit	Dark ashy silt deposit with frequent sandstone and redbrick rubble.	0.35-0.90
Trench 2	203	Deposit	Black ash	0.90-1.20
Trench 2	204	Structure	Southeast-northwest aligned redbrick wall	0.35-0.70
Trench 2	205	Deposit	Mid brown silt and stone rubble	1.20-2.25
Trench 2	206	Deposit	Black ashy silt	2.25-2.70
Trench 2	207	Foundation	Rough sandstone northwest-southeast aligned structure	0.70-1.90
Trench 2	208	Natural	Pale greenish blue sandy clay	2.70+
Trench 3	301	Deposit	Black ashy sand with redbrick and sandstone rubble	0.00-0.35
Trench 3	302	Deposit	Dark ashy silt deposit with frequent sandstone and redbrick rubble.	0.35-1.90
Trench 3	303	Deposit	Black ash	1.90-2.25
Trench 3	304	Structure	Redbrick wall running northeast-southwest	0.35-1.30
Trench 3	305	Foundation	Rough sandstone northwest-southeast aligned structure	0.45+
Trench 3	306	Deposit	Yellow clay	2.25-2.90
Trench 3	307	Natural	Pale greenish blue sandy clay	2.90+
Trench 3	308	Construction cut	Straight sided cut for 305 .	0.35-1.90
Trench 4	401	Structure	Two skin yellow brick wall with coarse inclusions and black mortar	0.47+
Trench 4	402	Pipe	Metal tar tank with riser and pipe	0.35-0.55
Trench 4	403	Structure	Unfrogged redbrick structure of nine courses wide	0.47+
Trench 4	404	Foundation	Sandstone wall laid to courses, 0.5m wide	1.27+
Trench 4	405	Foundation	Sandstone wall laid to courses, 0.5m wide	1.00+
Trench 4	406	Backfill of Tr1	Friable mid brown coarse gravel	0.00-1.50
Trench 4	407	Deposit	Mid yellow sandy sandstone gravel	c.0.50-1.00
Trench 4	408	Foundation	Sandstone wall laid to courses, 0.5m wide	1.24+
Trench 4	409	Foundation	Sandstone wall laid to courses, 0.5m wide	1.24+
Trench 4	410	Deposit	Coke gravel	c.1.00+
Trench 4	411	Deposit	Course yellow-brown sand and gravel	c.1.00+
Trench 4	412	Construction cut	Straight linear cut for 405	c.1.00+
Trench 4	413	Fill of 412	Brick rubble	c.1.00+



Site location Trench location	Contains Ordnance Survey data © Crown Copyright and database right 2010 This material is for client report only © Wessex Archaeology. No unauthorised reproduction.		
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Site location Figure 1



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Site plan

Figure 2



Plate 1: Southeast facing section of Trench 1, showing made ground deposits **100**, **104**, **105**, **106** and **107**.



Plate 2: General view across Trench 1, showing standard remains of Quenching House, its sandstone foundations **103**, the short brick structure **102** and concrete foundations **101**.

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Plate 3: View showing brick structures **414** and **415** within southeast facing section of Trench 4.



Plate 4: Northeast facing section of Trench 2, showing brick structure **204** and the remains of sandstone foundation **207/305/404**.

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Plate 5: Northwest facing section of Trench 3, showing depth of sandstone foundation **207/305/404**.



Plate 6: General view of Trench 4, showing brick structure **403** and sandstone foundation **405** in the section.

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