

**AN ARCHAEOLOGICAL EVALUATION ON
LAND OFF LISBURN TERRACE,
MILLFIELD, SUNDERLAND,
TYNE AND WEAR**

P

C

A

PRE-CONSTRUCT ARCHAEOLOGY

**An Archaeological Evaluation on Land off Lisburn Terrace, Millfield,
Sunderland, Tyne and Wear**

Central National Grid Reference: NZ 3835 5735

Site Code: LTS 10

Commissioning Client (on behalf of St. Modwen Developments Limited):

**Prospect Archaeology Limited
Prospect House
Garden Lane
Sherburn-in-Elmet
Leeds
LS25 6AT**

Tel: 01977 681 885

Contractor:

**Pre-Construct Archaeology Limited
Northern Office
Unit N19a Turdale Business Park
Durham
DH6 5PG**

Tel: 0191 377 1111

**© Pre-Construct Archaeology Limited
November 2010**

This report is protected by copyright. The report and the information contained herein are and remain the sole property of Pre-Construct Archaeology Limited and are provided on a single site multi-user basis. If provided in paper form, the report may be utilised by a number of individuals within a location, but copying is prohibited under copyright. If provided in an electronic form the report may be utilised in a shared server environment, but copying or installation onto more than one computer is prohibited under copyright, and printing from electronic form is permitted for own, single location, use only. Multiple printing from electronic form for onward distribution is prohibited under copyright. Further distribution and uses of the report in its entirety or part thereof in electronic form is prohibited without prior consent from Pre-Construct Archaeology Limited.

Pre-Construct Archaeology Limited has made every effort to ensure the accuracy of the content of this report. However Pre-Construct Archaeology Limited cannot accept any liability in respect of, or resulting from, errors, inaccuracies, or omissions herein contained.

CONTENTS

List of Figures and Plates

| | <i>page</i> |
|---|-------------|
| 1. NON-TECHNICAL SUMMARY | 1 |
| 2. INTRODUCTION | 3 |
| 3. PROJECT AIMS AND RESEARCH OBJECTIVES | 11 |
| 4. ARCHAEOLOGICAL METHODOLOGY | 12 |
| 5. RESULTS: THE ARCHAEOLOGICAL SEQUENCE | 15 |
| 6. CONCLUSIONS | 40 |
| 7. REFERENCES | 42 |
| 8. ACKNOWLEDGEMENTS AND CREDITS | 43 |

APPENDICES

- Appendix A Stratigraphic Matrices
- Appendix B Context Index
- Appendix C Finds Assessment
- Appendix D Plates

| List of Figures and Plates (<i>Plates form Appendix D</i>) | | <i>page</i> |
|---|---|-------------|
| Figure 1 | Site Location | 5 |
| Figure 2 | Trench Location Plan | 6 |
| Figure 3 | Trench 1: Plan and Section | 33 |
| Figure 4 | Trench 2: Plan and Sections | 34 |
| Figure 5 | Trench 3: Plan and Section | 35 |
| Figure 6 | Trench 4: Plan and Section | 36 |
| Figure 7 | Trench 5: Plan and Section | 37 |
| Figure 8 | Trench Locations overlain on Ordnance Survey map, 1919 | 38 |
| Figure 9 | Trench Locations overlain on Ordnance Survey map, 1941 | 39 |
| | | |
| Plate 1 | Overview of Trench 1 | |
| Plate 2 | South facing section of easternmost part of Trench 1 | |
| Plate 3 | Overview of Trench 2 | |
| Plate 4 | Overview of kiln [205] in Trench 2 | |
| Plate 5 | Overview of kiln [205] in Trench 2 | |
| Plate 6 | Detail of brick infill [219], within kiln [205], in Trench 2 | |
| Plate 7 | Overview of wall [202], with partition wall [203], in Trench 2 | |
| Plate 8 | Overview of Structure [301], with wall [328], in Trench 3 | |
| Plate 9 | Overview of northern extent of Building [300], with Structure [321], in Trench 3 | |
| Plate 10 | Western corridor of Building [300] in Trench 3 | |
| Plate 11 | Floor [304] and wall [305] of Building [300] in Trench 3 | |
| Plate 12 | Detail of modifications to wall [305] of Building [300] in Trench 3 | |
| Plate 13 | Wall [424] in Trench 4 | |
| Plate 14 | Southern extent of wall [424], with wall [446], in Trench 4 | |
| Plate 15 | Overview of Trench 5 | |
| Plate 16 | Overview of Structure [595], including wall [516], in Trench 5 | |
| Plate 17 | Overview of Trench 5 | |

1. NON-TECHNICAL SUMMARY

- 1.1 An archaeological evaluation was undertaken by Pre-Construct Archaeology Limited on land off Lisburn Terrace in the Millfield area of Sunderland, Tyne and Wear. The site, of overall size c. 6.75 hectares and with central National Grid Reference NZ 3835 5734, is bounded by Pallion New Road to the north, by a railway line and industrial premises to the west, and by terraced housing to the south and east. The fieldwork, undertaken September to October 2010, was commissioned by Prospect Archaeology Limited as part of the planning process ahead of a re-development scheme.
- 1.2 Historical records indicate that the site remained largely undeveloped and in agricultural use until the second half of the 19th century. A large house, Diamond Hall, was located immediately to the north-west of the site, which lay within the associated estate. As this part of Sunderland industrialised rapidly in the late 19th century, Henry Greener established the Wear Flint Glass Works in the southern part of the site in the early 1870s. Subsequently, a pottery, an engineering works and a carpentry business occupied parts of the site, while the glass works expanded into a major operation, known as 'Jobling's' from the early 20th century. The works manufactured Pyrex from the 1920s, high quality pressed art glass in the 1930s and from 1973 the American glass manufacturer Corning's owned and operated the works. By 2008 all manufacturing had ceased at the site and the standing buildings were demolished ahead of the re-development scheme.
- 1.3 The evaluation comprised five machine-excavated trenches (Trench 1-5). In broad terms, the evaluation aimed to provide information regarding the character, date, extent and degree of survival of archaeological deposits at the site. The trenches were sited at specific locations in the south-western part of the site, where historic map evidence indicated that the earliest industrial era buildings and associated features were known to have been located.
- 1.4 Trench 1, the northernmost trench, was sited to test the area occupied by an engineering works on the 1919 Ordnance Survey map. It revealed modern dumped infill deposits continuing to a depth of at least 6.0m below existing ground level. No deposits of archaeological significance were recorded in this trench.
- 1.5 Trench 2, to the south of Trench 1, was sited to test the area occupied by The Sunderland (later the Wearside) Pottery, built c. 1913 and first depicted on the 1919 Ordnance Survey map. The pottery was represented by the well-preserved remains of a brick and concrete building, with walls surviving to a height of up to c. 0.95m, the uppermost of these remains lying c. 0.30m below existing ground level. Parts of four rooms within the building were identified, one of which incorporated approximately the northern half of a circular kiln – likely to be a coal-fired downdraught kiln, possibly of the 'beehive' type – demolished to floor level. Sample machine excavation through the floor exposed make-up material for the building, beneath which was a thin soil horizon of uncertain date, cut by a feature also of uncertain date, overlying the natural clay sub-stratum, which lay c. 1.50m below the existing ground surface.

- 1.6 Trench 3, to the south-east of Trench 2, was sited to test the area occupied by the north-western corner of the Wear Flint Glass Works, built in the early 1870s and first depicted on the 1897 Ordnance Survey map. Natural clay – probably horizontally truncated by later activity – was exposed in the central northern part of the trench at a depth of c. 1.95m below ground level, this due to extensive ground-raising when the glass works was built. The glass works was represented by the well-preserved remains of a brick building occupying the southern half of the trench, the uppermost of these remains lying c. 0.30m below existing ground level. The main elements of the building were three substantial parallel brick walls delineating narrow north-south aligned brick-floored corridors, along with a square brick structure, probably the base of an external chimney or tank. The northernmost part of the trench contained a west-east aligned brick wall, probably the north wall of the glass works, as well as the remains of a substantial concrete structure, representing 20th century re-development of the glass works.
- 1.7 Trench 4, to the south of Trench 3 and the southernmost of the trenches to be investigated, was sited to test the area occupied by a railway branch line serving the south side of the Wear Flint Glass Works, as depicted the 1897 Ordnance Survey map. Natural clay was recorded c. 0.50m below the existing ground surface towards the centre of trench. In the northernmost extent of the trench, a short length of west-east aligned brick wall, with a return to the south, probably represents the southernmost part of the 19th century glass works. The surviving lowermost course of a west-east aligned wall in the southernmost part of the trench probably represents an ancillary building of the glass works. The trench also contained structural remains – mostly brick walls with concrete footings - representing 20th century re-development of the glass works.
- 1.8 Trench 5, to the north-east of Trench 4 and the easternmost of the trenches to be investigated, was sited to test the area occupied by the south-eastern portion of the Wear Flint Glass Works, as depicted on the 1897 Ordnance Survey map. It was specifically located to test the part of the works where a row of chimneys was depicted. Natural clay was recorded c. 1.35m below the existing ground surface, this due to extensive ground raising when the glass works was built. A substantial west-east aligned brick wall recorded adjacent to the northern limit of the trench was probably an internal wall within the 19th century glass works, while a brick structure recorded adjacent to the southern limit of the trench probably represents the northern extent of one of the chimneys. To its east was a brick culvert, also probably part of the works. The trench also contained structural remains – including a series of substantial concrete footings - representing 20th century re-development of the glass works.
- 1.9 In summary, the work revealed archaeological remains of the late post-medieval/early modern industrial era in Trenches 2, 3, 4 and 5. The remains in Trenches 2 and 3 are considered to be of local to regional archaeological significance, with those in Trenches 4 and 5 of local significance at best, due to their lesser degree of preservation.

2. INTRODUCTION

2.1 General Background

- 2.1.1 This report details the methodology and results of an archaeological evaluation undertaken by Pre-Construct Archaeology Limited (PCA) between 21st September and 13th October on land off Lisburn Terrace, Sunderland. The work was undertaken ahead of a mixed-use re-development scheme, which will provide office accommodation and residential housing, and was commissioned by Prospect Archaeology Limited (the Client) on behalf of the developer, St. Modwen Developments Limited.
- 2.1.2 The irregularly shaped re-development site, covering of c. 6.75 hectares, has the central National Grid Reference NZ 3835 5734 (Figure 1). Accessed from Carol Street to the east, it is bounded by Pallion New Road to the north, by a railway line and industrial premises to the west, and by terraced housing to the south and east. At the time of the archaeological investigation, the site was largely open, as a programme of demolition of former factory buildings drew to a close, occupied only by numerous large mounds of demolition rubble.
- 2.1.3 The archaeological potential of the site was established by an archaeological desk-based assessment (DBA) undertaken in 2009 by Under Construction Archaeology Limited.¹ This concluded that there was particular potential for archaeological remains of the late post-medieval/early modern industrial era, as the site had been occupied by a number of important manufactories, including, from the 1870s, Henry Greener's Wear Flint Glass Works and, later, the premises of the Sunderland Pottery Company.
- 2.1.4 Ahead of the archaeological investigation, the layout of a series of evaluation trenches was agreed following discussions between the Client and the Tyne and Wear Specialist Conservation Team. A Project Design for the evaluation, following the format set out in the English Heritage document *Management of Research Projects in the Historic Environment*,² was prepared by PCA in advance of the fieldwork.³
- 2.1.5 The evaluation comprised five machine-excavated trial trenches (Trenches 1-5) all sited in the south-western part of the overall site (Figure 2). Each of the trenches was to target a specific location where an industrial era building or associated feature were known to have been present, based on historic map evidence.
- 2.1.6 The Site Archive (PCA site code LTS 10) is currently held at the Northern Office of PCA and the retained element, comprising the written, drawn and photographic records, as well as an artefactual assemblage of pottery, bricks and glass, will deposited with Tyne and Wear Archives and Museums at Arbeia Roman Fort and Museum, Baring Street, South Shields.
- 2.1.7 The Online Access to the Index of Archaeological Investigations (OASIS) reference number for the project is: preconst1-85231.

¹ Under Construction Archaeology Limited 2009.

² English Heritage 2006.

³ PCA 2010.

2.2 Geology and Topography

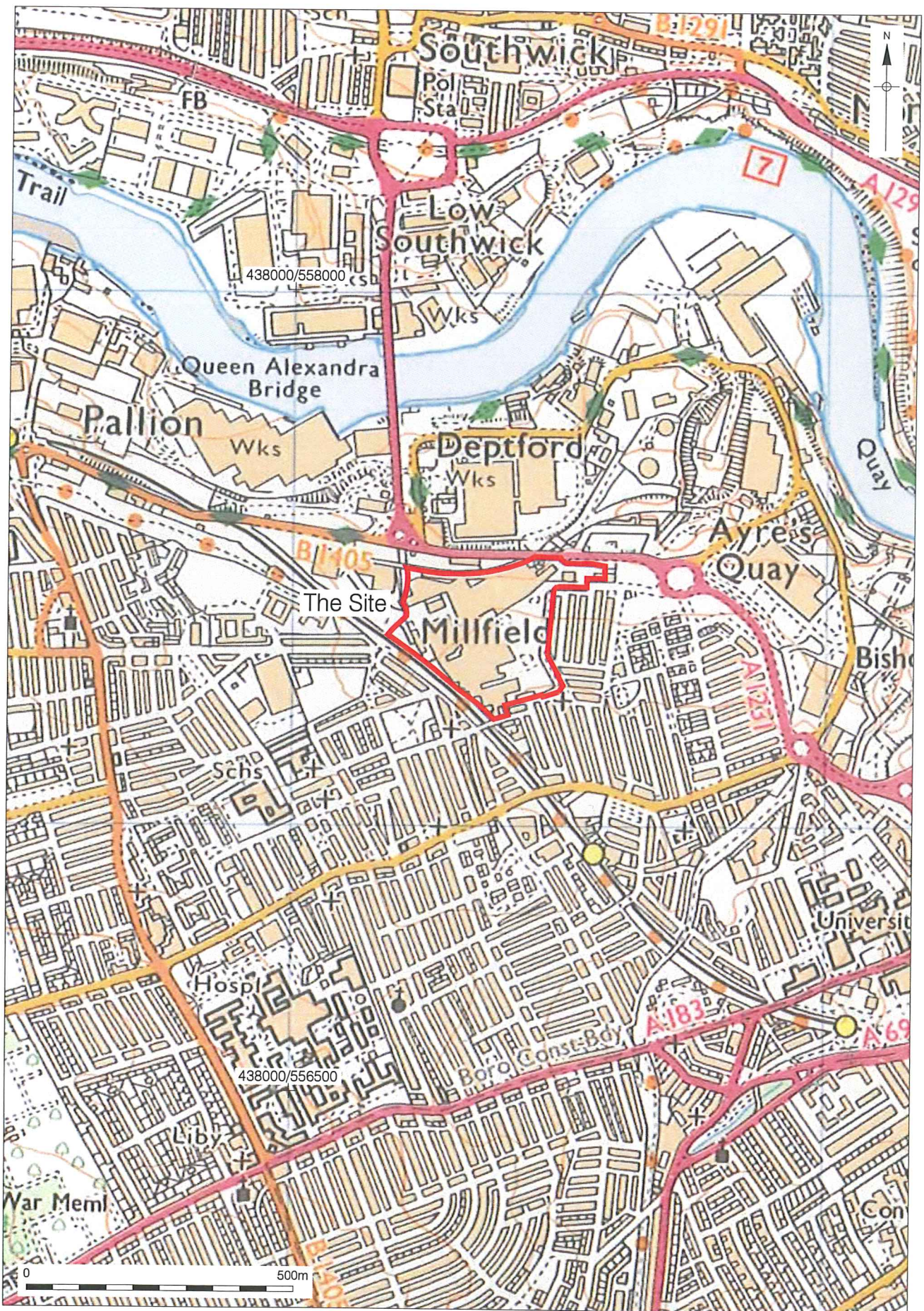
- 2.2.1 The solid geology of the site comprises Dolostone bedrock of the Roker Formation, formerly classified as part of the Late Permian Upper Magnesian Limestone.⁴ The superficial geology of the majority of the site is formed by Pelaw Clay (described as a reddish brown to dark brown silty clay containing well dispersed pebbles and cobbles and some calcareous concretions) Skirting the northern and westernmost limits of the site is a band of Devensian Glaciolacustrine deposits – primarily of silt and clay composition.
- 2.2.2 The site occupies land that slopes away gradually from south to north, lying on the upper valley side of the River Wear. On Milton Street, to the south of the site, ground level lies at c. 40.70m OD, while on Pallion New Road, to the north of the site, ground level is at c. 32.50m OD.

2.3 Planning Background

- 2.3.1 St. Modwen gained planning permission from the Local Planning Authority (LPA), Sunderland City Council, for a mixed-use development (planning application reference 10/01549/OUT) at the site in August 2010. A condition of planning permission – imposed on the advice of the Tyne and Wear Specialist Conservation Team - was that an archaeological evaluation must be undertaken ahead of the main programme of construction groundworks.
- 2.3.2 The aforementioned archaeological DBA, undertaken in 2009, indicated that there was particular potential for remains of various late post-medieval/early modern industrial era manufactories in the south-western portion of the site, particularly the Wear Flint Glass Works opened by Henry Greener in the 1870s and a pottery, built c. 1913, and known latterly as the Wearside Pottery. Much of the northern part of the site is known to have been subject to quarrying in the early 20th century and was thus considered to have negligible potential for archaeological remains.
- 2.3.3 UK Government guidance on archaeology and heritage conservation is now set out in *Planning Policy Statement 5: Planning for the Historic Environment (PPS5)*,⁵ supported by guidance contained in an accompanying document, *Historic Environment Planning Practice Guide (HEPPG)*. The various Regional Spatial Strategies were revoked by the coalition UK Government in July 2010. At a local level, the LPA has various policies - B12 to B17 - within its Unitary Development Plan (UDP) concerning archaeology and cultural heritage.
- 2.3.4 In sum, therefore, the archaeological evaluation was required, as part of the planning process, to inform St. Modwen, the Client and the LPA regarding the character, date, extent and degree of survival of archaeological remains at the development site, specifically any such remains representing late post-medieval/early modern industrial era manufactories and associated features in the south-western portion of the site. The results should inform a decision by the Tyne and Wear Specialist Conservation Team regarding further archaeological mitigation measures.

⁴ British Geological Survey website.

⁵ Department for Communities and Local Government 2010.



© Crown copyright 2008. All rights reserved. License number 36110309
 © Pre-Construct Archaeology Ltd 2010

Figure 1
 Site Location
 1:10,000 at A4

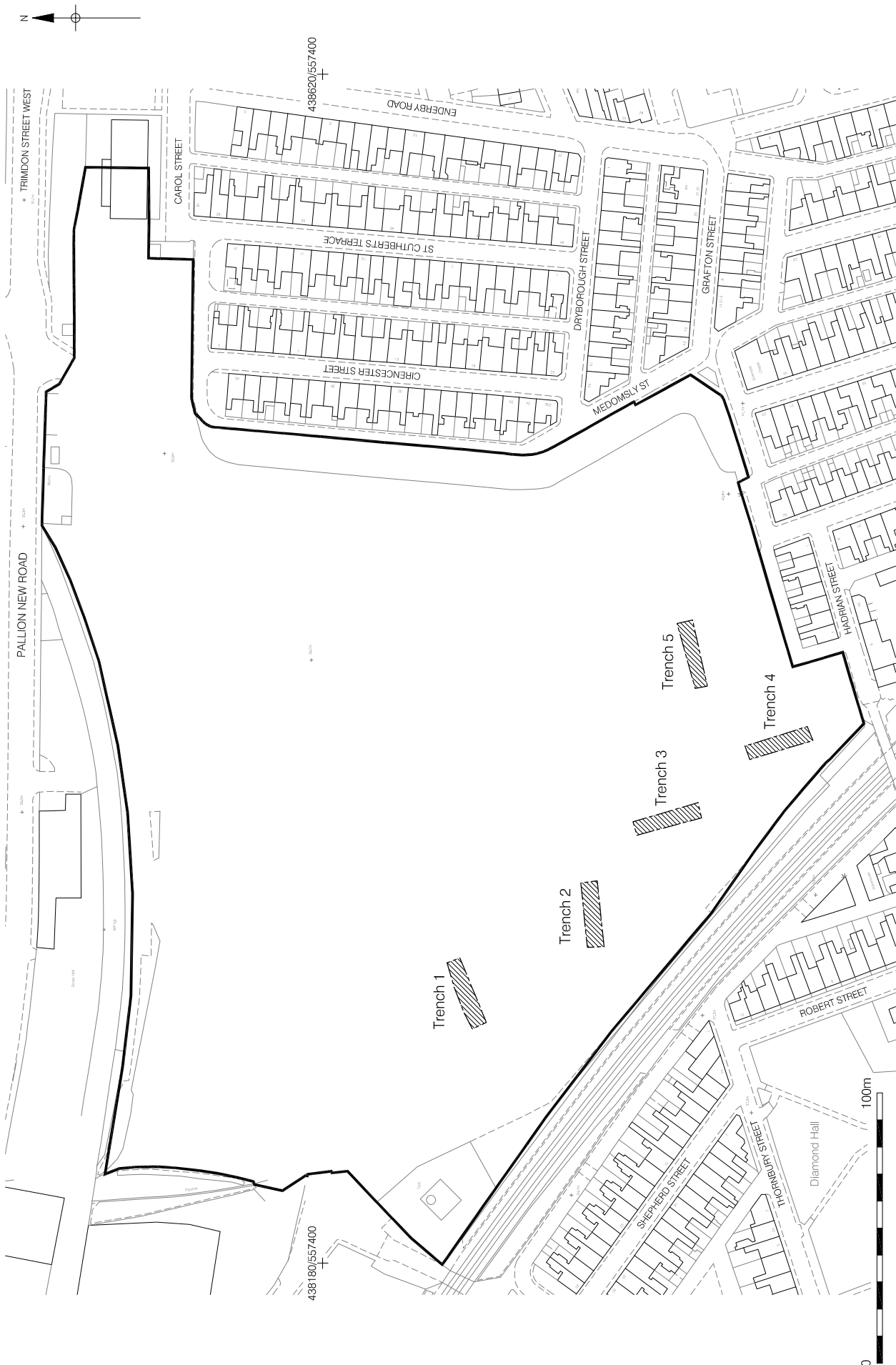


Figure 2
Trench Location Plan
1:2,000 at A4

2.4 Archaeological and Historical Background

The archaeological DBA undertaken in 2009 has been used as the basis of the following summary. The research and writing of those responsible from Under Construction Archaeology is gratefully acknowledged. Full details - including Tyne and Wear Historic Environment Record (HER) numbers and documentary references – are contained within the DBA. Other information has been taken from 'Sitelines', the online Tyne and Wear Historic Environment Record and other online sources.

2.4.1 Prehistoric – Early Medieval

2.4.1.1 There are no known prehistoric sites at the site or within its immediate vicinity. A prehistoric perforated 'axe hammer' was found in the general Millfield area in the mid 19th century.

2.4.1.2 No remains of Roman date are known at the site or within its immediate vicinity.

2.4.1.3 The site of the 7th century monastery and priory at Monkwearmouth lies c. 2.5km to the east. However, there is no physical evidence of Anglo-Saxon activity at the site or within its immediate vicinity.

2.4.2 Medieval

2.4.2.1 The name Sunderland is traditionally thought to originate as a reference to a large estate or administrative unit divided or broken (sundered) by the River Wear and is first referred to by Bede in the 8th century. In AD 930 King Athelstan granted lands on the southern bank of the Wear to the Bishop of Durham.

2.4.2.2 The lands of the Bishop of Durham are omitted from the Domesday Book but the Bolden Book, compiled for Bishop Pudsey in 1183, describes a fishing settlement at Sunderland and a separate settlement at Wearmouth (later called Bishopwearmouth). The latter was incorporated as a borough around this date. The Bishop's estate comprised several townships which were probably centred on farms and small hamlets. Townships with fords or crossings over the Wear, for example Deptford, initially gained greater significance.

2.4.3 Post-medieval

2.4.3.1 Wearside prospered from the mid 17th century with an ever growing trade in coal and attendant growth in the shipping and ship building trades. Access to cheap coal allowed other industries to develop and flourish; salt pans were an early industry locally, and glass making commenced in the late 17th century. Other industries which depended on coal mining or its waste products developed from the 18th century. For example, the Deptford Chemical Works was established to the north of the site by 1760.

2.4.3.2 No documentary evidence relating to the enclosure of the medieval field systems around the site was available. However, early 19th century maps show the site lying in an area of irregularly shaped fields which may have resulted from early enclosures by agreement rather than by Parliamentary Act.

- 2.4.3.3 Robert Robson's 1830 'Plan of the Parishes of Bishop Wearmouth and Sunderland...' shows a large house, Diamond Hall, in an isolated position within the field system and lying just beyond the north-western corner of the site. Land within the north-westernmost portion of the site was owned by the owner of Diamond Hall, a Mr. Snowdon, with the majority of the remainder of the site comprising fields owned by 'Miss Nicholson's Representatives' and executors of 'Thomas Hopper Esq.' To the north and north-west of the site, riverside industrial development is depicted at Deptford and Pallion. A possible waggonway embankment is shown running to the north-east from Diamond Hall, towards the riverfront shipyards.
- 2.4.3.4 Meik and Morgan's 1851 'Plan of the town of Sunderland... including Bishopwearmouth, Monkwearmouth, Deptford and Southwick' shows and names numerous industrial developments at Deptford, including a dye works, chemical works, bottle works, brick fields and ship yards. The proposed line (it opened in 1852 or 1854) of the Penshaw Branch of the York, Newcastle and Berwick Railway is shown skirting the south-western limit of the site. Diamond Hall was still located in a rural setting, evidently with orchards to its west and south.
- 2.4.3.5 The 1st edition Ordnance Survey map from 1858 shows the site still essentially undeveloped. In fact, cartographic evidence gives no indication of industrial activity on the site prior to the 2nd edition map of 1897 and documentary evidence suggests there was no industrial development until the 1870s at the earliest. By 1858, the railway had been built along the south-western edge of the site. Diamond Hall is shown sub-divided into separate ownerships, one of which is identified as a smithy. The Diamond Bottle Works was in place to the west of Diamond Hall and short terraces of houses had been built on Lisburn Terrace. Millfield Station and the Millfield Engine Works are shown to the immediate south of the site, the latter with its own sidings.
- 2.4.3.6 The construction of the Penshaw Railway in the 1850s is generally credited as the catalyst for industrialisation and development of the Millfield area. Terraced housing (known locally as 'Sunderland Cottages') rapidly infilled the land to the east and south of the site, with some or all of Alfred Street, Medomsley Street, Cornwall Street, Carol Street and Leopold Street actually lying within the easternmost portion of the site.
- 2.4.3.7 The 2nd edition Ordnance Survey map of 1897 shows the Wear Flint Glass Works occupying the south-westernmost portion of the site. This manufactory was built c. 1873 by Henry Greener. It was served on its south side by a railway line feeding into the Penshaw Railway and by this time the North Eastern Railway's Lambton Railway (opened 1865) skirted the northern edge of the site.
- 2.4.3.8 Henry Greener, a former apprentice at the Sowerby glass works in Gateshead, went into partnership with James Angus in 1858, buying a flint glass works set-up by Nicholas French in 1852 on Trimdon Street, to the east of the site. Until Angus's death in 1870, the partnership traded as 'Angus and Greener'. As previously mentioned, Greener opened a new glass works off Alfred Street in the southern part of the site in the early 1870s, trading as 'Henry Greener, The Wear Flint Glass Works'. Decorative tablewares – jugs, plates, bowls and vases, *etc.* - and commemorative items were a speciality of the firm, which produced items in a wide range of colours. Between 1875 and 1885 the company had the trademark of a demi-lion rampant holding a five pointed star in its right paw.

- 2.4.3.9 With the company experiencing financial difficulties during this period - the glass works was mortgaged for £9,000 in the late 1870s – there was a concerted effort to manufacture less intricate domestic items and move towards commercial products such as pavement lights and slab glass.
- 2.4.3.10 After Greener's death in 1882, the company continued under the direction of his son Edward. Again though the firm enjoyed mixed financial fortunes and was purchased in 1885 by James Augustus Jobling, a Newcastle industrialist and the principal creditor of the struggling firm. Glassmaking was not Jobling's main interest (an early 20th century trade directory describes him as an 'oil merchant and manganese mine owner') and the business continued to operate as 'Greener and Company'. From 1885 had a new trade mark of a demi-lion rampant holding a battleaxe in both paws.
- 2.4.3.11 In 1887 Greener and Company advertised new designs including commemorative pieces for Queen Victoria's Jubilee and at that time continued to produce a combination of domestic items in a variety of colours and commercial products, including lenses for ships, railways, lighthouses and tramcars, and the aforementioned pavement lights. It is Jobling's works - named as the Wear Flint Glass Works - which are depicted on the Ordnance Survey map of 1897. In fact, the previous year Jobling commuted the name to the Wear Glass Works capitalising on the closure in 1894 of James Hartley's Sunderland glass works of the same name (Hartley's works was the largest such manufactory in the 19th century town, employing 700 people by the 1860s and supplying one third of all plate glass being used in the country at the time). The glass works shown on the 1897 map comprised a large rectangular building with four square chimneys and one circular chimney or glass cone, all in the southern part of the building. As well as the aforementioned rail connection to the Penshaw Railway from a yard to the south, a number of ancillary buildings and storage bays complete the complex.
- 2.4.3.12 After Jobling's nephew, Ernest Jobling Purser, a dynamic and visionary businessman, joined the company as manager in 1902, the operation was revitalised with major investments in the glass works and a concerted attempt was made to move towards a profit-making situation.
- 2.4.3.13 By the time of the 3rd edition Ordnance Survey map of 1919, a new railway line was in place linking the Queen Alexandra Bridge (opened 1909) with Millfield Station and the Penshaw Railway. The new line ran north-west through the western part of the site, crossing over the North Eastern Railway's Lambton Railway. Two new manufactories had been established on the eastern side of this line, to the north of the glass works. These were the Sunderland Pottery Company (later the Wearside Pottery Company) and an engineering works. At least part of the engineering works was occupied by H. A. Davies Limited in 1915. The Sunderland Pottery Company traded between 1913 and 1957. Initially it produced a range of brown wares from local clay, but later specialised in fireproof cooking ware, ornamental ware and mixing bowls. In addition, a large quarry is shown in the north-western portion of the site, in the angle created by the new railway line and the Lambton Railway.

- 2.4.3.14 The 1941 edition of the Ordnance Survey map shows that the Wear Glass Works had expanded north from its original buildings and the Wearside Pottery had also developed its premises. The expansion of the glass works is likely to be the result of Jobling's obtaining the British licence for the manufacture of heat resistant Pyrex glassware in 1921 from the American glass maker Corning's. This proved a highly successful business move for the firm, by then known as 'James A. Jobling and Company'. Pyrex rapidly became the most profitable part of the business and between 1900 and 1930 Jobling's works grew from around one hundred employees to over a thousand.
- 2.4.3.15 During the 1930's Jobling's introduced their Opalique glass, a hand-pressed opalescent glass made from molds commissioned and made in France by Frankhauser, a prominent Parisian art-glass mold-maker. The quality of Jobling's fire-polished pressed art glass during the mid to late 1930's is recognised to be the highest ever achieved in England. They made vases, candlesticks, bowls, jars, dressing table sets, flower rings and posy bowls and much more. However, the recession of the 1930s and the Second World War effectively ended Jobling's production of art glass.
- 2.4.3.16 The aforementioned engineering works is no longer identified on the 1941 edition of the Ordnance Survey map, instead another large warehouse is depicted at this location, evidently the adapted buildings of the former works. A 'Stone Works' and the 'Millfield Joinery Works' are depicted in the central and north-western parts of the site, respectively, and a large warehouse had been constructed on the site between the Lambton Railway and Leopold Street.
- 2.4.3.17 In 1949 Ernest Jobling Purser evidently sold the company and at a later date later the majority of its shares came to be owned by the Thomas Tilling Group, although the glass works continued to operate throughout this period as 'Jobling's'. By 1969 the glass works had expanded further, obliterating all trace of Diamond Hall, the railway branch line serving Queen Alexandra Bridge and the Wearside Pottery. In 1973, Jobling's parent company, the Thomas Tilling Group, sold its majority share to Corning Glass Works, the original American makers of Pyrex, and the glass works on the site became known as 'Corning's'.
- 2.4.3.18 By the late 1970s provision of car parks for the glass works and possibly urban clearance saw the works' boundary expand to the size of the current site. This required the demolition of parts of adjacent streets Carol Street, Cornwall Street, Leopold Street, Medomsley Street and Alfred Street. By 2008, all manufacturing had ceased at the site and demolition of the standing buildings commenced in 2009.

3. PROJECT AIMS AND RESEARCH OBJECTIVES

3.1 Project Aims

- 3.1.1 The project is threat-led with potential to disturb or destroy important sub-surface archaeological remains of the late post-medieval/early modern industrial era in particular. Therefore, the broad aim of the project was to inform St. Modwen, the Client and the LPA regarding the character, date, extent and degree of survival of archaeological remains within the southern part of the site.
- 3.1.2 Archaeological trial trenching was chosen as the investigative tool to test the archaeological potential of the site. Five trenches (Trenches 1-5) were sited within the southern part of the site to target the locations of specific structures depicted on historic mapping from the mid 19th century.
- 3.1.3 Additional aims of the project were:
- to compile a Site Archive consisting of all site and project documentary and photographic records, as well as all artefactual, technological and, if appropriate, palaeoenvironmental material recovered;
 - to compile a report that contains an assessment of the nature and significance of all data categories, stratigraphic, artefactual, etc.

3.2 Research Objectives

- 3.2.1 The DBA concluded that archaeological remains of both the Wear Flint Glass Works and the Wearside Pottery would be of regional significance. Evidence of Sunderland's 19th - 20th century glass and ceramic industries falls within the remit of key research priorities for the post-medieval (PM) and the 20th century (MO) within *Shared Visions: The North-East Regional Research Framework for the Historic Environment (NERRF)*.⁶
- 3.2.2 NERRF research priority 'PMii. Industrialisation' states that it is important to explore both the technological side of the industrial revolution in the North-East and the wider social impact of the explosive growth of the region's industrial economy. Research priority 'MOi. Industry' stresses that 20th century industrial archaeology has often been ignored in preference to work on earlier periods. The importance of the railways in the development of industry in 19th century Sunderland is also significant, although well represented through documents, maps and photographs. Therefore, archaeological remains relating to railways at the site would likely be of no more than local significance.

⁶ Petts and Gerrard 2006.

4. ARCHAEOLOGICAL METHODOLOGY

4.1 Fieldwork

- 4.1.1 The evaluation fieldwork was undertaken 21 September to 13 October 2010. All 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 evaluation was undertaken according to the Project Design compiled by PCA, which should be consulted for full details of methodologies employed regarding archaeological excavation, recording and sampling.
- 4.1.2 Five trial trenches were investigated within the southern part of the site to target the locations of specific industrial structures depicted on historic mapping (Figures 2, 8 and 9). All plant and welfare was provided by Hawk Contracts, the Principal Contractor for the re-development scheme. The trenches were set out by PCA using a Leica Viva Smart Rover Global Navigation Satellite System (GNSS), with pre-programmed co-ordinate data determined by an office-based CAD operative. The Smart Rover GNSS provides corrected Ordnance Survey co-ordinates in real time, to an accuracy of 1 cm.
- 4.1.3 Trench 1 was sited to investigate the location of an engineering works shown on the 1919 Ordnance Survey map (Figure 8). Orientated roughly east-west, it measured 25.0m x up to 4.80m wide at ground level and was stepped down centrally along much of its length to reach a maximum depth of c. 6.0m below ground level, this at its eastern end. The natural sub-stratum was not reached, even at this maximum depth.
- 4.1.4 Trench 2 was sited to investigate the location of a pottery (initially the premises of the Sunderland Pottery Company) shown on the 1919 Ordnance Survey map (Figure 8) and annotated 'Wearside Pottery' on the 1941 Ordnance Survey map (Figure 9). Orientated roughly east-west, it measured c. 24.0m x up to 5.30m wide at ground level and in places was stepped down centrally to reach a maximum depth of c. 2.20m below ground level, this in its eastern part where the natural sub-stratum was exposed.
- 4.1.5 Trench 3 was sited to investigate the north-western part of the Wear Flint Glass Works, as shown on the 1897 and 1919 Ordnance Survey maps (Figure 8 shows the later map). Orientated roughly north-south, it measured c. 23.30m x up to 4.90m wide at ground level and in its northern part was stepped down centrally to reach a maximum depth of c. 2.35m below ground level, this in its northern part where the natural sub-stratum was exposed. It was not possible – on the advice of the Principal Contractor - to investigate an area between 1.60m and 3.10m wide in the southern half of the trench due to the presence of a possible live service.
- 4.1.6 Trench 4, as proposed, was intended to investigate the location of a railway branch line serving the Wear Flint Glass Works and an ancillary building to the south, as shown on the 1897 and 1919 Ordnance Survey maps (Figure 8 shows the later map). It was re-located c. 5.0m further north at the request of the Principal Contractor in order to maintain the required safe distance from standing buildings at the site perimeter. Orientated roughly north-south, it measured c. 22.0m x up to 4.80m wide at ground level and had a maximum depth of c. 1.45m below ground level, with the natural sub-stratum exposed along its entire length.

⁷ IfA 2008a.

- 4.1.7 Trench 5 was sited to investigate the south-eastern part of the Wear Flint Glass Works, as shown on the 1897 and 1919 Ordnance Survey maps (Figure 8 shows the later map). Orientated roughly east-west, it measured c. 24.90m x up to 4.50m at ground level and was stepped down centrally along much of its length to reach a maximum depth of 1.95m below ground level, this in its western part where the natural sub-stratum was exposed.
- 4.1.8 Machine excavation of the trenches was undertaken by plant provided by the Principal Contractor, directed by PCA. Where historic structures were encountered they were exposed and for the most part retained *in situ* for archaeological investigation. Elsewhere machine excavation continued to the required depth to reach the undisturbed natural sub-stratum, with the exception of Trench 1 where overburden extended to such a depth that the natural sub-stratum could not be reached, even in the deepest eastern portion of the trench. Trench 1 was subject to limited hand cleaning, photography and archaeological recording due to the unstable nature of the exposures. Trenches 2-5 were hand cleaned, then photographed and fully recorded.
- 4.1.9 Temporary Bench Marks (TBMs) were established on the site using the Smart Rover GNSS. TBM 1 - used for Trench 4 - had a value of 39.19m OD, TBM 2 - used for Trenches 3 and 5 - had a value of 38.70m OD, TBM 3 - used for Trenches 1 and 2 - had a value of 37.44m OD. The height of all principal strata and features were calculated relative to Ordnance Datum and indicated on the appropriate plans and sections.

4.2 Post-excavation

- 4.2.1 The stratigraphic data generated by the project is represented by the written, drawn and photographic records. A total of 289 archaeological contexts were defined in the five trenches (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 The artefactual material from the evaluation comprised an assemblage of pottery, ceramic building material and glass. Specialist examination of the material was undertaken and relevant comments integrated into Section 5 with the report on the artefactual material comprising Appendix C to this report. No other categories of inorganic artefactual material were represented.
- 4.2.3 No deposits suitable for palaeoenvironmental sampling were encountered and therefore no bulk samples were recovered. No other biological material was recovered.
- 4.2.4 None of the material recovered during the evaluation required specialist stabilisation or an assessment of its potential for conservation research.

- 4.2.5 The complete Site Archive, in this case comprising the written, drawn and photographic records (including all material generated electronically during post-excavation) and the artefactual material 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 the IfA standard and guidance document on archaeological archives.¹⁰
- 4.2.6 The depositional requirements of the body to which the Site Archive will be ultimately transferred will be met in full. At the time of writing, this will be Tyne and Wear Archives and Museums, at Arbeia Roman Fort and Museum, Baring Street, South Shields, NE33 2BB.

⁸ Brown 2007.

⁹ Walker, UKIC 1990.

¹⁰ IfA 2008b.

5. RESULTS: THE ARCHAEOLOGICAL SEQUENCE

During the evaluation, separate stratigraphic entities were assigned unique and individual 'context' numbers, which are indicated in the following text as, for example [123]. Context numbers start in Trench 1 at [100], in Trench 2 at [200], etc. The archaeological sequence in each trench described in turn, within an overall site-wide scheme of phasing. Attempts have been made to add interpretation to the data and to correlate the phasing to known historical (and geological) periods.

5.1 Trench 1 (Figure 3 and Plates 1-2)

5.1.1 Phase 5. Mid 20th Century and Later

5.1.1.1 The entire stratigraphic sequence in Trench 1 has been interpreted as being derived from an episode of extensive dumping for ground make-up in the modern era. The exposed material, [100], was generally loose in composition and predominantly comprised banded, mid to dark brownish grey and dark grey to black, sandy silt with lenses of black and purple ash and cinders, ferrous material and mid yellowish brown sand and gravel throughout. Inclusions were generally occasional, including brick and concrete fragments.

5.1.1.2 Dump deposit [100] was recorded in section at a maximum height of 37.20m OD and had a maximum thickness of c. 4.30m, falling to a minimum height of 32.85m OD, this in the deepest, eastern end of the trench. Machine excavation of the material originally extended to a depth of more than 6.0m below existing ground level in this part of the trench, but partial backfilling was undertaken immediately for Health and Safety reasons. Even at this maximum depth, the natural sub-stratum was not reached.

5.1.1.3 A sample of pottery was recovered from deposit [100] during machining (see Appendix C). This assemblage included a fragment of kiln furniture possibly from the early to mid 20th century pottery known to have operated on the site and large fragments of redware which could have been products of the manufactory, although this is not certain.

5.2 Trench 2 (Figure 4 and Plates 3-7)

5.2.1 Phase 1. Natural sub-stratum

5.2.1.1 The earliest deposit encountered in Trench 2 was the natural clay sub-stratum, [236]. It was mostly exposed in the easternmost of three machine-excavated sondages, as well as at the eastern end of the adjacent sondage. It comprised firm, light to mid brownish or orange yellow clay, with occasional sandstone fragments throughout, recorded at a maximum height of 36.04m OD, this c. 1.50m below the existing ground surface. This material represents the typical Pelaw Clay drift geology of this part of Sunderland, being of glacial origin.

5.2.2 Phase 2. Undated

5.2.2.1 Overlying the natural sub-stratum in the south-facing section of the easternmost machine excavated sondage in Trench 2 was a sandy clay layer, [245], with very occasional pebbles and flecks of coal throughout. This deposit, exposed in section for a total length of c. 2.85m and up to 0.10m thick, likely represents the surviving portion of a sub-soil horizon. Its period of origin is uncertain, but is likely to be medieval or earlier.

5.2.2.2 Exposed in section cutting into the probable sub-soil, was what may have been a linear feature, [253]. Although potentially running north-south, it was not observed in the north-facing section of the machine-excavated sondage. The feature was 1.60m wide and up to 0.47m deep and had a concave profile. Two sterile fills, [252] and [251], were recorded, the primary deposit, [252] comprising gritty sand, 0.32m thick. Neither fill yielded any artefactual material. The period of origin of this feature is uncertain.

5.2.3 Phase 3. Mid to Late 19th Century

5.2.3.1 A field drain, [247], was recorded in the south-facing section of the easternmost machine-excavated sondage in Trench 2. Probably aligned north-south, its silty fill, [246], contained a broken ceramic drain pipe. Although located immediately adjacent to possible linear feature [253], no relationship could be established between the two features. The field drain is likely to be of late post medieval, probably 19th century, date.

5.2.4 Phase 4. Early to Mid 20th Century

5.2.4.1 Recorded in the south-facing sections of the two easternmost machine-excavated sondages in Trench 2, was a mid greyish brown clayey silt layer, [235]. Amongst the inclusions noted were frequent flecks and small fragments of coal, moderate flecks of brick and occasional flecks of lime mortar. The total length of the deposit, although interrupted, as seen in section, was c. 11.0m. It attained a maximum thickness of 0.35m and was recorded at a maximum height of 36.46m OD. This material is interpreted as a developed soil, which having been re-worked to some degree, likely formed the ground surface at the time of construction of Building [201], as described below. A small assemblage of eight sherds of late 19th and early 20th century pottery was recovered from this layer, along with a clay tobacco pipe bowl of likely 20th century date (see Appendix C).

5.2.4.2 Several deposits were recorded – both in plan and in section - in the three machine-excavated sondages in Trench 2 that have been interpreted as make-up and consolidation dumps laid down ahead of construction of Building [201], as described below. The easternmost of these deposits, overlying layer [235], was a distinctive layer, [249], up to 0.20m thick and comprising loose, generally black, crushed and fragmented cinders and coal and ash, this material clearly fire debris. Occasional small brick fragments and medium to large lumps of iron slag and glass slag were noted throughout this deposit, which was recorded at a maximum height of 36.69m OD. To the west, was another fire debris deposit, [244], this mostly comprising purple cinders and ash, up to 0.10m thick. Layers [249] and [244] were overlain by a compact, more mixed layer, [248], this up to 0.22m thick. To the west, layer [235] was overlain by another loose, very mixed deposit, [234], up to 0.15m thick. In turn this was overlain to the east by a compact layer, [241], comprising crushed lime mortar, up to 0.11m thick and to the west by an interrupted layer, [233], comprising compact sand and gravel, up to 70mm thick. In the westernmost machine-excavated sondage another dump layer, [260], was exposed, this similar in composition to layer [232], as described below.

- 5.2.4.3 Parts of two features were recorded in the central machine-excavated sondage in Trench 2. Of the first, feature [240], only part of the curving northern edge was seen in plan, cutting into layer [235]. It met the limit of excavation in all other directions, so that its exposed dimensions were 0.70m west-east by 0.30m north-south and it was just 60mm deep, as seen. The second feature, seen only in section to the north cutting layer [233], was feature [238], which had near vertical sides and a flat base and measured 0.33m wide and up to 0.25m deep. The fills of the two features, [239] and [237] respectively, were identical in composition to layer [232], as described below. The functions of these features are uncertain, due to the limited degree to which it was possible to investigate them; they may have been related to the setting out of Building [201]. Fill [239] of feature [240] yielded a small sherd of late 19th century pottery.
- 5.2.4.4 Layer [232] was the uppermost of the make-up and consolidation dumps evidently laid down ahead of construction of Building [201]. It was traced for a total of c. 8.25m in section, although interrupted, and was also recorded in plan. Recorded at a maximum height of 36.69m OD, it was very similar in composition to the aforementioned layer [249], also comprising loose, generally black, crushed and fragmented cinders and coal and ash. Again, occasional small brick fragments and medium to large lumps of iron slag and glass slag were noted throughout.
- 5.2.4.5 The remains of Building [201] were revealed throughout the full c. 24.0m west-east length and up to c. 5.30m north-south width of Trench 2. Building [201] is interpreted as part of the manufactory of the Sunderland Pottery Company first depicted on the 1919 Ordnance Survey map and named on later mapping as the 'Wearside Pottery' (Figures 8 and 9). Parts of four separate internal 'rooms' were exposed, numbered Rooms 201a-201d from west to east, with Room 201b containing the remains – demolished to floor level - of a brick-built kiln, [205], likely to be a coal-fired downdraught kiln, possibly of the 'beehive' type.
- 5.2.4.6 Very little of Room 201a was exposed. It was defined to the east by a north-south aligned brick wall, [204], but on all other sides it met the limit of excavation, so that its dimensions as seen were 4.50m north-south by 2.20m west-east. Wall [204] comprised an inner element 0.23m wide, laid in English bond, with outer and inner skins of brickwork, laid in the same bond, to the north and south, giving a maximum width of 0.50m. To the north, the wall appeared to come to an end, with unexcavated brick rubble, [200], lying beyond this. The wall was recorded at maximum height of 37.24m OD, this c. 0.30m below existing ground level, and it survived to a maximum height of 0.65m. The bricks comprising wall [204] were unfrogged red bricks measuring (on average) 9 x 4½ x 3 inches (229 x 114 x 76 mm) and the bonding material was hard grey cement mortar. The floor of Room 201a comprised a concrete slab, [221], up to 0.12m thick, probably 'poured in' after wall [204] had been constructed. A machine-excavated sondage through this floor exposed make-up deposit [260], as previously described.
- 5.2.4.7 East of Room 201a was Room 201b, the full c. 10.60m width of which was revealed, delimited by partition wall [204] to the west, as described, and by another north-south aligned wall, [203], to the east. To the north, a west-east aligned wall, [202], formed the northern limit of the room, indeed the limit of excavation in this part of the trench.

- 5.2.4.8 Wall [202] survived to a maximum height of 0.96m and was built with the same bricks as wall [204], these laid in English Garden Wall bond with hard brownish grey cement mortar. Its width could not be determined as it continued beyond the northern limit of excavation. To the west, the wall had evidently been demolished, with its line continuing as brick rubble forming the limit of excavation. To the east, wall [202] had wall [203] keyed into it, and this ran to the south to form the eastern limit of Room 201b, as described. Beyond partition wall [203], wall [202] may have been demolished, although this was not certain. At approximately the mid-point of wall [202] an integral section of brickwork 0.50m wide, which extended some 0.15m from the face of the wall. To the west of this was a formal opening in the brickwork of the wall, this filled with brick rubble, [200], as seen.
- 5.2.4.9 Wall [203] extended c. 3.90m from the line of wall [202], seemingly terminating, and survived to maximum height of 0.33m (up to three courses). It was up to 0.24m thick, built with unfrogged red bricks measuring (on average) 9½ x 4½ x 3 inches (241 x 114 x 76 mm), laid in English Garden Wall bond using hard greyish brown sandy lime mortar. A brick recovered from the wall displayed evidence of sooting on its header face and is dated broadly to the early 20th century (see Appendix C). On the western side of the wall was a rectangular pillar of brickwork, [224], measuring 0.48m north-south by 0.23m east-west and surviving to a height of 0.36m (up to four courses). This evidently post-dated the wall, and indeed the floor of Room 201b, and was presumably a strengthening element. The floor comprised a concrete slab, [222], up to 0.12m thick, probably 'poured in' after all the previously described walls delimiting the room had been constructed. A machine excavated sondage through this floor exposed the uppermost make-up deposit, [232], as previously described. This material had evidently been cut through to construct kiln base [205], which was contained within Room 201b, and it is likely that the 'pouring-in' of the concrete of floor [222] also post-dated construction of the kiln.
- 5.2.4.10 Within Room 201b, less than half of the northern part of kiln base [205] was exposed, measuring c. 3.80m north-south and meeting the limit of excavation to the south. It was circular in form and its full diameter is estimated as c. 8.50m. A small part of the construction cut, [231], was recorded in section and in plan in the machine-excavated sondage in the eastern part of Room 201b. Cutting into the uppermost ground make-up layer [232], this had a near vertical side in the visible portion but was not fully excavated. The lower part of the construction cut was occupied by the earliest structural element of the kiln base, a substantial circular concrete sub-floor, [206]. An exploratory sondage against its north-eastern side, this excavated into underlying layer [235], indicated that this sub-floor was at least 0.45m thick. The upper part of the construction cut had been backfilled with brick rubble, [230], this seen only in section. A buff firebrick recovered from the rubble was likely manufactured after c. 1884 (see Appendix C).
- 5.2.4.11 Onto concrete sub-floor [206] had been constructed a series of regularly spaced brickwork structures, [207], [208], [209], [210] and [211], of which only [208], [209] and [210] were fully exposed. Each structure had curved inner and outer sides, with the other two sides straight but converging towards the centre of the structure (these are thus technically 'circular trapezoids' in form but are hereafter referred to as 'segments'), The complete segments measured c. 1.75m at their widest, narrowing to c. 1.25m. Up to four courses of brickwork survived in the segments and all comprised mostly unfrogged red bricks measuring (on average) 9 x 4½ x 3 inches (229 x 114 x 76 mm), bonded with hard grey cement mortar.

- 5.2.4.12 A pressed and wire-cut unfroged red brick recovered from segment [210] - manufactured by the South Birtley Brick Works - is dated to 1935 by its stamp commemorating the Silver Jubilee of George V (see Appendix C). This may represent a repair to the structure. Frogged buff voussoir firebricks were observed at some outer corners of some courses of some segments. With each brick segment in place on the sub-floor, a series of 'vents' was thus created, these radiating outwards to the perimeter of the structure, and widening from c. 0.40m to c. 0.60m.
- 5.2.4.13 A crudely constructed brick floor, [212], had been laid onto concrete sub-floor [206] in the central part of kiln [205], butting up against the inner edge of each brickwork segment. This floor mostly comprised the same type of brick used for the brick segments, but with several other brick types – some only part bricks - noted throughout, including frogged red voussoir bricks and buff firebricks. It thus had a somewhat patchwork appearance and although not bonded, loose coarse sand observed between the bricks is likely to have been the bedding material. A press moulded frogged (on both beds) red voussoir brick recovered from floor [212] dates to 1911 or later by its stamp (see Appendix C).
- 5.2.4.14 A circular inner wall, [213], had been constructed upon brick floor [212], using unfroged red bricks measuring (on average) 9 x 4½ x 3 inches (229 x 114 x 76 mm) bonded with hard grey ashy mortar. This survived to height of two courses (one header course and one stretcher course) and was thus 0.23m thick. Internal to this wall was a partially surviving brick floor/infill, [225], which met the limit of excavation to the south and of which parts of two courses survived, again with sand bedding material noted. The same bricks had again been used for the most part, although some frogged examples were noted and one example recovered from the lowermost course was a pressed wire-cut frogged (on both bedding faces) red brick manufactured by the Penshaw Brick Works, County Durham and thus dating to 1897-1925 (see Appendix C). The gap between inner wall [213] and the various brick segments had been infilled, upon floor [212], with brickwork [226], this comprising a combination of unfroged and frogged red bricks, again bedded in sand.
- 5.2.4.15 The outermost part of kiln base [205] comprised a circular concrete 'apron', of which two portions survived, [214] to the west and [216] to the east, these up to c. 0.50m wide. At its eastern extent, concrete apron [214] appeared to have been laid against a small brick 'structure', [215], this laid onto sub-floor [206], and possibly representing a simple formwork for the concrete. At the position of the vents between brickwork segments [207]/[208] and [208]/[209], the concrete apron had been neatly formed into a smooth, even ramp. At its northern extent, concrete apron [216] had evidently been repaired at the location of the vent ramp between brick segments [210]/[211], with a slightly different concrete, [217], which only partly survived, with another section of possible brick formwork, [218], exposed below it. This repair could relate to brickwork [219], which had been laid along the floor of the vent between brick segments [210]/[211]. Comprising unfroged red bricks measuring (on average) 9 x 4½ x 3 inches (229 x 114 x 76 mm), with no bonding material apparent, brickwork [219] may have been a later addition, possibly representing a functional variation, although no such brickwork was recorded in any of the other vents. None of the upper part of the kiln survived within the trench.

5.2.4.16 The concrete floor, [222], of Room 201b, as previously described, abutted the outer edge of concrete apron [214]/[216] and thus had probably been laid after construction of kiln base [205]. This floor was recorded at a maximum height of 36.62m OD, c. 0.95m below existing ground level.

5.2.4.17 East of Room 201b was Room 201c, the full c. 8.55m width of which was revealed, delimited by wall [203] to the west, as described, and by another north-south aligned wall, [220], to the east. The aforementioned southern termination of wall [203] indicates an opening allowing access between Rooms 201a and 201b. To the north and south, unexcavated brick rubble, [200], formed the limits of the excavation in this part of the trench. To the east, wall [220] survived to a maximum height of 0.90m, up to 37.34m OD, and it was 0.23m wide. It had been built with the same bricks as wall [204], these laid in an English Garden Wall bond variant, using friable light brownish grey mortar. On its western face was a stub of keyed-in brickwork, c. 0.40m wide in length, this likely a supporting pillar. An essentially similar element of brickwork was recorded on the eastern face of wall [203] to the west, although this survived in far more fragmentary fashion. The concrete floor, [223], of Room 201c had evidently been laid after construction of wall [203] and possibly following the laying down of concrete floor [222], which it abutted to the west beyond the southern end of wall [203]. A rubble make-up layer, [261], for the floor was recorded in section. To the east, the floor did not survive as far as wall [220], and for this wall it is possible only to say that it had probably been constructed upon underlying make-up layer [249]. Floor [223] was recorded at a maximum height of 36.68m OD. The purpose of Room 201c is not certain, given the limited degree to which it was possible to expose it.

5.2.4.18 East of Room 201c was Room 201d, of which only a c. 1.60m width was revealed, delimited by wall [220] to the west, as described, and by the limit of excavation to the east. Unexcavated concrete slab – the existing ground surface - formed all limits of excavation in this part of the trench. As previously described, on its western side – within Room 201c - wall [220] survived to a maximum height of 0.90m, whereas, to the east, the associated concrete floor surface, [227], was elevated, surviving to a height, 37.11m OD, this c. 0.25m below existing ground level to the east. Between wall [220] and surface [227] was a 0.17m wide gap containing compact black organic silt, [228], which was not excavated. This could represent the location of a now removed element of the wall. The purpose of Room 201d is not certain, given the limited degree to which it was possible to expose it. However, its elevated floor – probably at contemporary ground level - suggests that that the functional portion of Building [201], as represented by the rooms to the west, were set at sub-ground level.

5.2.5 Phase 5. Mid 20th Century and Later

5.2.5.1 Structural and other additions to Building [201] were recorded. In Room 201c, two probable service trenches, [243] and [256], had been excavated through concrete floor [223]. Both were aligned north-south. To the west, feature [243] was at least 0.80m deep, although not fully excavated. It had a sandy fill, [242], and had been capped with concrete, [257], at floor level. To the east, feature [256] was far less substantial, in terms of depth. A raft, [250], of buff firebricks had been laid along its base and above this the floor had been patched with concrete, [255].

- 5.2.5.2 In Room 201d the remains of a concrete footing, [229] were exposed against the eastern side of wall [220] and overlying concrete floor [227]. A cut-off steel I-beam upright was recorded on the footing, with a section of brickwork to the north of this. This is assumed to relate to re-development of the adjacent glass works in the mid 20th century, presumably following closure of the pottery manufactory.
- 5.2.5.3 Two rubble dumps, [259] and [254], both possibly related to demolition of Building [201], were recorded. The former overlay kiln base [205] against the southern limit of excavation, while the latter abutted the western side of wall [220], towards the eastern end of the trench.
- 5.2.5.4 All overburden in Trench 2, numbered [200], mostly comprising brick rubble, is interpreted as being derived from demolition of the pottery complex in the mid 20th century.

5.3 Trench 3 (Figure 5 and Plates 8-12)

5.3.1 Phase 1. Natural Sub-stratum

- 5.3.1.1 The earliest deposit encountered in Trench 3 was the natural clay sub-stratum, [341]. It was exposed in the machine-excavated deeper central portion of the northern half of Trench 3 and comprised firm, light to mid pinkish brown sandy clay, with occasional pebbles throughout. It was recorded at a maximum height of 36.70m OD, this c. 1.95m below the existing ground surface. This material represents the typical Pelaw Clay drift geology of this part of Sunderland, being of glacial origin.

5.3.2 Phase 3. Mid to Late 19th Century

- 5.3.2.1 Recorded in section overlying the natural clay sub-stratum in the northern half of Trench 2 was a sequence of deposits that likely represent ground consolidation and make-up ahead of the construction of substantial structure, Building [300], which occupied the entire southern half of the trench, with some elements extending into the northern half, all to be described in due course.
- 5.3.2.2 The earliest of these make-up deposits, layer [340], comprised bluish grey silty clay, with few inclusions noted. Its north-south extent, as seen in section, was c. 7.75m and it attained a maximum thickness of 0.40m and was recorded at a maximum height of 36.94m OD. As the earliest of the aforementioned sequence of deposits, this layer potentially represents a former developed soil, which having been re-worked to some degree, formed the ground surface ahead of the construction of Building [300], as described below.
- 5.3.2.3 Overlying layer [340], was a silty clay layer, [339], up to 0.20m thick, this partly overlain by a lens, [348], of gritty ash, up to 30mm thick. In turn, this was overlain by a silty clay layer, [338], up to 0.17m thick, which was recorded at a maximum height of 37.17m OD. These deposits are interpreted as representing ground make-up layers ahead of the construction of Building [300].
- 5.3.2.4 Recorded in section at the northern end of Trench 3 was a sequence of deposits which were probably broadly contemporary with the deposits described above, thus pre-dating the construction of Building [300]. The earliest of these, a sandy silt layer, [336], was up to 0.16m thick but was not fully exposed, continuing below the basal limit of excavation in this part of the trench. It was overlain by a silty ash deposit, [335], this 80mm thick, in turn overlain by a reddish orange sand deposit, [334], this evidently burnt, up to only 30mm thick.

- 5.3.2.5 A brick wall, [328], was recorded running west-east across the full c. 4.30m width of the northern part of Trench 3. This likely represents the north wall of the 19th century glass works. It had been constructed, on a narrow mortar footing, with hand moulded unfrosted red bricks measuring (on average) 9 x 4½ x 3 inches (229 x 114 x 76 mm), these laid in a variant of English Garden Wall bonded with friable, light grey lime mortar. The wall was 0.35m thick and survived to a height of 0.98m, at 38.20m OD. A brick recovered from wall [328] dates broadly to the mid 19th century (see Appendix C). Although not proven, it is considered probable that the wall was constructed on the ground surface formed by the previously described strata. Recorded in section to the south of and abutting – and likely post-dating - putative boundary wall [328] was a substantial dump deposit, [337], which extended southwards towards, again abutting and also likely post-dating, the northernmost elements of Building [300]. This deposit is described in greater detail in due course. On the north side of wall [328] was another substantial dump deposit, [329], mostly comprising ash and cinders, up to 0.80m thick and interpreted as having been dumped to raise the ground level on the north side of the wall. A series of thin dump layers, [333], [333] and [331], were recorded overlying this material.
- 5.3.2.6 Building [300] occupied the southern half of Trench 3. It is interpreted as representing the north-western part of Henry Greener's Wear Flint Glass Works, constructed at the site in the early 1870s. The surviving structural remains were exposed below overburden, [349], then cleaned and recorded, but not excavated. In places, a deposit, [359], comprising yellowish brown sandy clay or clayey sand and gravel was exposed below some elements of Building [300], this tentatively interpreted as dump material laid down immediately ahead of the construction of the building. The structural remains of Building [300] were recorded at a maximum height of 38.49m OD, this c. 0.20m below existing ground level adjacent to that portion of the trench. The core structural elements recorded in the trench were three parallel north-south aligned walls, wall [302] to the west, wall [305] centrally, and wall [310] to the east, all probably internal walls within the glass works. At the north-easternmost corner of these remains was an associated square brick structure, [321], probably a chimney or tank depicted in an external angle of the building on the 1897 and 1919 Ordnance Survey maps (Figure 8 shows the later map).
- 5.3.2.7 Wall [302], the westernmost wall of Building [300], was exposed for a total length of 9.80m – this interrupted by the area it was not possible to investigate - running south-north adjacent to and continuing beyond the western limit of excavation. It was recorded at a maximum height of 38.41m OD. To the south, it met the limit of excavation, while, to the north, it terminated at the limit of the building. It was at least 0.80m wide and comprised pressed and wire-cut unfrosted red bricks, measuring (on average) 9 x 4¼ x 2¾ inches (229 x 108 x 70 mm). A sample brick from the wall dates broadly to the late 19th century (see Appendix C). The bonding material was hard, light grey lime mortar. Two sections of masonry, [303] and [312], within the wall, were notable for the greater concretion of the lime mortar bonding mostly fragmented, rather than neatly coursed, bricks. Both these sections of masonry, c. 0.90m in length north-south, are interpreted as representing the locations of possible openings at a higher level in the wall, *i.e.* above the level of demolition.

- 5.3.2.8 Wall [305], the central wall of Building [300], was exposed for a total length of 8.90m – although again interrupted - running south-north. To the south, it met the limit of excavation while, to the north, it terminated within the building. Recorded at a maximum height of 38.35m OD, it was 0.73m wide and was built with the same red bricks as wall [302]. The southernmost portion had been heavily disturbed, evidently by later modifications, as described below. Further north, was a section of masonry, [317], which corresponded with the position of the previously described masonry, [312], in wall [302] to the west. Of broadly the same construction as masonry [312], this extended c. 1.05m north-south, although heavily disturbed along its southern extent.
- 5.3.2.9 Wall [310], the easternmost wall of Building [300] was exposed for a length of 8.20m – although again interrupted - running south-north and forming the eastern limit of excavation in the portion of the trench in which it was exposed. It was recorded at a maximum height of 38.19m OD. To the south it met the limit of excavation and to the north it ran into the limit of excavation where structure [321] was situated. It was at least 0.40m wide and was built with the same red bricks as wall [302].
- 5.3.2.10 A partition wall, [320], was recorded for a length of c. 2.0m running between and parallel to the northernmost portions of walls [305] and [310]. To the south, it met the unexcavated portion of the trench, while, to the north, it ran into a limit of excavation formed by later modifications to the building. It was recorded at a maximum height of 37.75m OD. The wall as seen comprised a header course of unfrosted buff firebricks to the east, flanked to the west by a skin of unfrosted red bricks, laid end to end, giving a total width of 0.36m.
- 5.3.2.11 All three of the main walls described above had had firebrick skins built along their faces, although these appeared to have been added following the laying down of brick floors between the walls and are thus described in due course.
- 5.3.2.12 The surviving floors in the building were: floor [304] - between the southernmost parts of walls [302] and [304], floor [319] - between the northernmost parts of walls [302] and [304], floor [309] - between the southernmost parts of walls [305] and [310], and floor [357] - between the northernmost part of wall [310] and partition wall [320]. Floor [319] was the best preserved of all the sections of floor, built with similar bricks as used for wall [302], all laid on face and aligned north-south. It was recorded at a maximum height of 37.91m OD. To the south, a damaged section of floor [304] indicated that it was a one brick thick, laid on a mortar foundation, [361]. A sample brick from floor [304] dates broadly to the mid 19th century (see Appendix C). Floors [304] and [319] had light grey lime mortar between the bricks whereas, to the east, the bonding material for floor [309] was a distinctive soft bluish grey clayey mortar. Where the putative openings in walls [302] and [305] were located, as represented by masonry elements [312] and [317], respectively, the brick floor, [318], was slightly elevated and generally less well constructed – indicating that this portion of the floor was not exposed to be visible when the corridor was in use.

- 5.3.2.13 The aforementioned firebrick skins to western and central core walls, [302] and [305], respectively, were one brick wide, with the bricks laid in stretcher bond, and comprised pressed and wire-cut unfrosted buff firebricks measuring (on average) 9 x approx. 4¼ x 2¾ inches (229 x 112 x 70 mm). Wall [302] had a skin, [361], along its eastern face, this built upon floors [304], [318] and [319], as described, with up to four courses surviving. A sample firebrick from skin [361] dates to after 1870 by its stamp, which indicates that it was manufactured by the North Hetton Colliery Firebrick Works (see Appendix C). The northernmost portion of wall [305] had a firebrick skin, [363], along its eastern face, this extending c. 0.90m beyond the north end of the wall to line the external face of the west wall of structure [321], as described in due course. This northern extension was built upon floor [319], but further south no associated floor evidently survived, with dump deposit [359] being exposed in plan. The western face of wall [305] had a firebrick skin, [362], this built upon floors [304], [318] and [319], as described, and this returned to the east to line the northern end of the wall, then butted up against aforementioned skin [363] and thus probably post-dated that element.
- 5.3.2.14 A firebrick skin, [358], to the northernmost portion of the western face of core wall [310], was also one brick wide, but in this case the bricks were laid at right angles to the wall (in header bond), thus mirroring the eastern element of partition wall [320] to the west. Beyond the unexcavated portion of the trench, the corresponding skin of the southernmost portion of the same wall had not survived, although a slight linear depression in brick floor [309], adjacent to the wall, likely represents the former location of the presumably removed firebrick skin. A similar indication of a former brick skin to the west (in line with the eastern element of partition wall [320]) was recorded, although, as previously described, this area had been heavily disturbed by later structural modifications.
- 5.3.2.15 With the core walls, floors and firebrick wall skins in place, brick-lined corridors were thus created running south-north through the building. The western corridor, between walls [302] and [305] and c. 0.95m wide, was traced for total length of c. 9.45m. With central wall [305] terminating to the north, within the building, there was a short eastern extension, c. 0.60m in length, to this corridor, ending at the west wall of structure [321], as described in due course. The wider eastern corridor, between walls [305] and [310], probably originally ran northwards up to structure [321], although later modifications to the structure obscured the relationship between the corridor – at this point sub-divided by a partition wall [320] - and structure [321]. The easternmost portion of the sub-divided corridor, with floor [357], was 0.80m wide. To the south, where there was no evidence of sub-division, the corridor would have been c. 0.90m wide, when the firebrick skins to the walls were in place, although these had not survived, as previously described. It is worthy of note that the eastern corridor was set at a lower level – c. 0.45m - than that to the west, for example floor [309], to the east, was recorded at a maximum height of 37.46m OD, compared to floor [304], to the west, which was recorded at a maximum height of 37.93m OD.

- 5.3.2.16 At the north-easternmost extent of Building [300] were the remains of the aforementioned structure, [321], almost certainly a chimney or tank external to the glass works building, as depicted on the 1897 and 1919 Ordnance Survey maps (Figure 8 shows the later map). This may have been constructed after the eastern firebrick skin of wall [305] was in place. The structure measured c. 2.40m square externally and had been built with possibly pressed unfrosted red bricks, measuring (on average) 9 x 4½ x 2¾ inches (229 x 114 x 70 mm) using friable light grey lime mortar. It was recorded at a maximum height of 38.49m OD - this being the highest surviving part of Building [300]. Its north and west walls were built in English Garden Wall bond and its east wall in English bond, all being c. 0.38m wide. A sample brick from the north wall dates broadly to the mid 19th century (see Appendix C). The south side of the structure, approached from the south by the aforementioned corridor, had been subject to later structural modifications and it was not possible to determine its original form. The deeper northern portion of Trench 3 allowed the north side of structure [321] to be partially exposed for the purposes of a provisional examination and this established that the structure survived to a height of at least 1.95m, likely having been built on the prepared ground surface as previously described. The interior of the structure was filled with an ash deposit, [322], which presumably accumulated during usage of the structure.
- 5.3.2.17 The area between putative boundary wall [328] and the northernmost elements of Building [300], including structure [321], had been infilled, probably immediately following construction of these structures, by an extensive, mixed, but generally mid brown sandy silt, dump deposit [337]. In section, this was recorded for a distance of c. 9.40m north-south. Up to 1.15m thick, it was recorded at a maximum height of 38.25m OD.
- 5.3.2.18 Following deposition of layer [337], a series of dump deposits, [346], [347], [345], [344] and [343], had been laid down, likely to level and consolidate the ground immediately to the north of Building [300]. Upon these survived the fragmentary remains of a brick surface, [342]. It extended c. 6.10m north-south in section and comprised a much disturbed single course of unfrosted red bricks measuring (on average) 9 x 4½ x 2¾ inches (229 x 114 x 70 mm) with friable light grey lime mortar. It was recorded at a maximum height of 38.50m OD. This brick surface may have formed an external yard surface – this area is depicted on the 1897 and 1919 Ordnance Survey maps as being external to the main glass works building.
- 5.3.2.19 Several structural modifications to Building [300] were recorded, all presumed to have taken place during the lifetime of its usage. Of note was the possible modification of a former opening in the southernmost portion of wall [305], manifest as an area of disturbed brickwork, [316], a brickwork infill, [307], and two possible brickwork supports, [313] and [314], all of which may have been related to the insertion of stepped arrangement of firebricks, [311], and a probably associated small concrete platform, [308], within the fabric of the wall. The platform was recorded at a height of 37.86m OD and may have been inserted to allow access between the western and eastern corridors. Another stepped arrangement of firebricks, [352], was recorded in section towards the southern end of the trench. This appeared to have been inserted through wall [310], as an integral structural element. Positioned directly opposite the previously described structure, [311], and being largely identical in form to that, it probably served the same function, whatever that may have been. The subsequent removal/demolition of brickwork [352] was represented by an overlying infill of brick rubble, [353].

- 5.3.2.20 Modifications to the south side of structure [321] have been alluded to previously. It appeared that the original south wall had been demolished at some point. A mound of brick rubble, [323], was recorded at the northern end of the eastern corridor, extending into the southern part of the structure. Upon this, a rudimentary replacement south wall, [324], had been constructed, in unfrosted red bricks, along with an L-shaped area of brickwork, [325], these delimiting a crude firebrick surface, [326], which in turn had evidently been repaired using another area of firebricks, [327], which to the north also appeared to have been laid to repair and build-up wall [324], with the combined structure having clearly subsided into the underlying rubble infill.
- 5.3.2.21 In the western corridor of Building [300], brick floor [304] had been disturbed and removed in a small area close to the southern limit of excavation. An iron pipe, [306], remained *in situ* adjacent to this area of disturbance and this probably fed an appliance, long since removed, sited upon the floor at this location. To the west, the pipe disappeared into a mortar repair to the floor, indicating that the appliance was likely a later addition, while to the south, the pipe continued to meet the limit of excavation.
- 5.3.2.22 At the north end of the western corridor of Building [300], wall [360] spanned the c. 1.50m wide interval between wall [302] and firebrick skin [363], which extended north of wall [305]. Up to 0.24m wide, this was probably a later addition to the original structure, with four courses of bricks surviving. Three comprised unfrosted red bricks (in a noticeably different fabric to those seen throughout the remainder of the building), measuring (on average) 9 x 4½ x 3 inches (229 x 114 x 75 mm), laid in stretcher bond. The remaining course comprised unfrosted buff firebricks laid in header bond, these possibly re-used from an earlier structural element. The bonding material was a soft bluish grey clayey mortar. On the south side of this wall, the brick floor, [319], displayed evidence of subsidence, and it is possible that an original wall at this location had collapsed, to be replaced by wall [360].

5.3.3 Phase 4. Early to Mid 20th Century

- 5.3.3.1 Evidence of probable 20th century re-development of the glass works was recorded in Trench 3. It is possible that the original building was demolished to ground level and buried below the floor levels of the re-developed works in this era, although this is not certain. The surviving part of a concrete floor slab, [350], 0.33m thick, along with an underlying silty ash make-up layer, [351], were recorded in section at the southern end of Trench 3, these overlying the remains of wall [310] and associated stepped brickwork, [352].
- 5.3.3.2 At the northern end of Trench 3, more substantial evidence of re-development of the glass works was identified, in the form of Structure [301]. This comprised a concrete wall, [354], with steel reinforcing bars throughout and bricks embedded within the concrete. It was up to 0.54m thick and extended c. 3.80m from the eastern limit of excavation, with a square 'cell' associated with its western end. With slightly narrower walls, this measured 1.20m square internally and potentially represents a tank or chimney base in the re-developed works. It was filled with loose chalky ash, [355], incorporating frequent glass slag.

5.3.3.3 Overall, Structure [301] was recorded at a maximum height of 38.04m OD and survived to a maximum height of c. 1.0m. It is assumed that the concrete of the walls of the structure was 'poured' into a construction trench that had been cut into previously described dump deposit [329], although this is not certain. A pad of concrete, [356], was recorded external to the south-eastern corner of the cellular portion of Structure [301], overlying deposit [329].

5.3.4 Phase 5. Mid 20th Century and Later

5.3.4.1 The uppermost deposit recorded throughout Trench 3 was the existing concrete surface treatment, [330], up to 0.30m thick and recorded at a maximum height of 38.65m OD.

5.4 Trench 4 (Figure 6 and Plates 13-14)

5.4.1 Phase 1. Natural Sub-stratum

5.4.1.1 The earliest deposit encountered in Trench 4 was an element of the natural sub-stratum, [413]/[430]. This material - exposed in the southern half of the trench - comprised loose, mid pinkish brown sand and gravel, recorded at a maximum height of 38.50m OD, this c. 0.40m below the existing ground surface. Progressing northwards, layer [430] was overlain by successive bands of gravel or sandy clay, [429], [428] and [464], with the uppermost element of the natural sub-stratum represented by a layer, [427], comprising firm, mid orange pink clay, recorded at a maximum height of 38.04m OD, this c. 0.50m below the existing ground surface towards the centre of trench.

5.4.2 Phase 2. Undated

5.4.2.1 Overlying the natural sub-stratum in the west-facing section of Trench 4 was a sandy clay layer, [426], with very occasional pebbles and flecks of coal throughout. This deposit, exposed in section for a total length of c. 7.0m and up to 0.30m thick, likely represents the surviving portion of a sub-soil horizon. It was recorded at a maximum height of 38.34m OD. To the north, this material was recorded in plan as layer [449] and elsewhere in the trench as layers [448] and [456]. The period of origin of this horizon is uncertain but it is of likely medieval or earlier origin.

5.4.3 Phase 3. Mid to Late 19th Century

5.4.3.1 The fragmentary remains of a structure, Building [468], were recorded within the north-eastern corner of Trench 4. Building [468] is interpreted as representing part of the south-western portion, possibly including part of the south wall, of Henry Greener's Wear Flint Glass Works, constructed at the site in the early 1870s. The remains were recorded at a maximum height of 38.47m OD, this at existing ground level adjacent to that portion of the trench. The earliest element of the building, as seen in the trench, comprised a short length of west-east aligned wall, [434], this probably part of the south wall of the glass works, with a return, wall [424], to the south, this possibly an external element, as depicted on the 1897 and 1919 Ordnance Survey maps (Figure 8 shows the later map).

- 5.4.3.2 A length of c. 2.10m of the roughly west-east aligned construction cut, [435], of wall [434], was exposed in plan. The wall itself was exposed for a length of c. 1.35m against the northern limit of excavation, appearing to angle to the south-west in its westernmost portion. It survived to a maximum height of c. 0.45m, at 38.46m OD, this at the existing ground surface. The exposed portion was 0.25m wide – this likely its full width – and comprised unfrogged red bricks measuring (on average) 9½ x 4½ x 3 inches (241 x 114 x 76 mm), with hard grey sandy mortar, laid in English Garden Wall bond. The wall incorporated a large worked sandstone block, this situated roughly centrally in the exposed portion. The clayey sand backfill, [436], of the construction cut was exposed in plan, but not excavated.
- 5.4.3.3 In the north-eastern corner of the trench, wall [434] returned to the south, as wall [424], this structure forming the eastern limit of excavation for a length of c. 6.60m. Part of the narrow construction cut, [425], for this wall was exposed in plan. Although not excavated, it appeared to cut through the backfill of the construction cut for wall [434]. The backfill, [433], of construction cut [425] comprised loose sand and gravel. The wall itself survived to a maximum height of c. 0.55m, at 38.47m OD, this at the existing ground surface. The exposed portion was 0.25m wide – this possibly its full width - and it comprised unfrogged red bricks measuring (on average) 9½ x 4½ x 3 inches (241 x 114 x 76 mm), using hard grey sandy mortar and laid in English Garden Wall bond. A brick recovered from wall [424] broadly dates the period during which the glass works was initially operational (see Appendix C).
- 5.4.3.4 A very poorly preserved brick wall, [431], was revealed in the southernmost part of Trench 4, laid directly upon the natural sand gravel sub-stratum. It was 0.36m wide and was traced across the full c. 4.85m width of the trench, although interrupted, and comprised a single course of unfrogged red bricks, measuring (on average) 9 x 4½ x 3 inches (229 x 114 x 75 mm), with no bonding material. It was recorded at a maximum height of 38.56m OD. The structure likely represents an ancillary building of the glass works, as depicted on the 1897 and 1919 Ordnance Survey maps (Figure 8 shows the later map).

5.4.4 Phase 4. Early to Mid 20th Century

- 5.4.4.1 Structural remains related to the development of Building [468], attributed broadly to the early to mid 20th century, were recorded in Trench 4. The earliest element of these remains was a service trench, [418], housing an iron pipe, [467], and backfilled with a silty clay fill, [419], running west-east across the southern half of the trench. The service trench had been cut through by the construction cut, [416], for a west-east aligned brick wall, [415], and an underlying concrete footing, [417]. The wall was traced across the full c. 4.50m width of the trench and was recorded at a maximum height of 38.75m OD; it was 0.38m wide and comprised unfrogged red bricks measuring (on average) 9½ x 4½ x 3 inches (229 x 114 x 76 mm), with friable yellowish brown sandy mortar. The silty backfill, [438], of the construction cut was exposed in plan adjacent to the wall. This wall probably relates to modern era development on the south side of the original glass works building, activity which continued into Phase 5.

5.4.5 Phase 5. Mid 20th Century and Later

- 5.4.5.1 Numerous structural remains recorded in Trench 4 have been attributed broadly to mid 20th century or later development of the south side of the original glass works building. The main elements of these remains were narrow brick partition walls, [446], [452] and [441], built upon concrete footings, [447], [466] and [439], respectively. For the most part these ran north-south through the central and northern parts of the trench, with the southernmost element, wall [452], evidently post-dating wall, [415], as previously described. Another concrete footing, [443], was recorded in the north-western part of the trench. Towards the northern limit of excavation, concrete footing [439] ran on an angle to the line of this partition, without any brick wall surviving upon it, to meet the previously described truncated wall, [434]. A compact black gritty layer, [450], revealed in the western side of the trench, and probably post-dating footings [447] and [466], may have been the remains of a surface. It was recorded at a maximum height of 38.36m OD.
- 5.4.5.2 A sequence of dump deposits or possible fills, [412], [411], [410], [432] and [409], all recorded in section in Trench 4, may have been related to an underlying service not exposed due to the presence of a concrete lined drain, [414], within a service trench, [440]. Similar features recorded in Trench 4 were: a water supply trench, [458] (fill [459]) with associated brick hydrant [457], and other service trenches: [403] (fills [406], [405], [404]), [444] (fill [445]), [420] (fill [421]), [422] (fill [423]), and [461] (fill [460]).
- 5.4.5.3 In the southernmost part of Trench 4, the existing ground surface was formed by a concrete bedding layer, [408], overlain by tarmac, [402], up to 0.12m thick and recorded at a maximum height of 38.94m OD.

5.5 Trench 5 (Figure 7 and Plates 15-17)

5.5.1 Phase 1. Natural Sub-stratum

- 5.5.1.1 The earliest deposit encountered in Trench 5 was the natural sub-stratum, [511]. This material - exposed as the basal deposit in deeper machine-excavated sondages at the western and eastern ends of the trench - comprised firm, mottled light orange brown clay, recorded at a maximum height of 37.03m OD, this c. 1.35m below the existing ground surface.

5.5.2 Phase 3. Mid to Late 19th Century

- 5.5.2.1 The remains of two structures, Building [594] and Structure [595], were recorded in Trench 5. Both are interpreted as representing elements of the south-eastern portion of Henry Greener's Wear Flint Glass Works, constructed at the site in the early 1870s.

- 5.5.2.2 The main element of Building [594] was a brick wall, represented by three separate sections of west-east aligned masonry, [500], [506] and [559], recorded adjacent to the northern limit of excavation of Trench 5. This wall was probably a main internal wall of the glass works. In the north-western corner of the trench was the first of the three sections of the wall, [500], of which a c. 2.30m length was exposed, meeting the limit of excavation to the west and ending at the location of former aperture to the east. It survived to a height of c. 0.75m and was at least 0.50m wide, continuing beyond the limit of excavation to the north. It had been built with unfrogged red bricks measuring (on average) $9\frac{1}{2} \times 4\frac{1}{2} \times 3$ inches (241 x 114 x 76 mm), using hard grey cement mortar, laid in English Garden Wall bond. It had been constructed on a substantial foundation, [501], comprising squared blocks of sandstone, laid in courses, with some buff firebricks incorporated, and bonded with hard light grey cement mortar. This foundation was at least 0.35m high, with its base not seen, and it projected c. 0.15m south of the line of the wall which it supported.
- 5.5.2.3 Beyond the aforementioned aperture, which was 1.50m wide, was the second portion of wall, [506], of which a c. 15.50m length was exposed, truncated by a later foundation to the east. It survived to a height of c. 0.75m, to a maximum height of 38.63m OD, c. 0.10m below the existing ground surface, this the uppermost surviving portion of Building [594]. The wall was at least 0.50m wide, continuing beyond the limit of excavation to the north, and it was built with the same bricks as wall [500] and constructed on a similar substantial foundation, recorded variously as foundations [507], [519] and [552]. This foundation was at least 0.35m high, with its base not seen, and it projected c. 0.20m south of the line of the overlying wall. The line of the same wall was continued in the north-eastern corner of the trench by the third section of wall, [559], of which a c. 1.30m length was exposed, terminating to the east, with the foundation here recorded as foundation [553].
- 5.5.2.4 Structure [595] was recorded in the central portion of the trench, adjacent to the southern limit of excavation and continuing beyond it. It was recorded at a maximum height of 38.71m OD, this at existing ground level adjacent to that portion of the trench. The surviving elements of the structure, as seen in the trench, comprised a west-east aligned wall, [516], with returns, [517] and [526], to the south at the western and eastern ends, respectively. The overall structure potentially represents the north side of one of the internal chimneys of the glass works, as depicted on the 1897 and 1919 Ordnance Survey maps (Figure 8 shows the later map).
- 5.5.2.5 The main wall of Structure [595], as seen, was wall [516], of which a length of c. 8.10m was exposed close to the southern limit of excavation. It survived to a height of at least c. 1.10m, with the base not seen, to a maximum height of 38.71m OD, at the existing ground surface. The wall was 0.26m wide and it mostly comprised unfrogged pressed and wire-cut red bricks measuring (on average) $9 \times 4\frac{1}{2} \times 2\frac{3}{4}$ inches (229 x 114 x 70 mm), using hard grey sandy mortar. A sample brick recovered from the wall broadly dates to the period of construction of the glass works (see Appendix C). The bonding pattern was irregular and the wall incorporated some buff firebricks. With mortar messily extruding between the bricks across the entire north elevation, as exposed, it appeared that this was in fact the back of the wall when it was built. A patch of mortar [573], was recorded adhered to the base of the eastern end of the wall. Within its western portion, the brickwork incorporated a large sandstone block overlying an infilled aperture, which had once housed a pipe, removed during machine excavation of the trench.

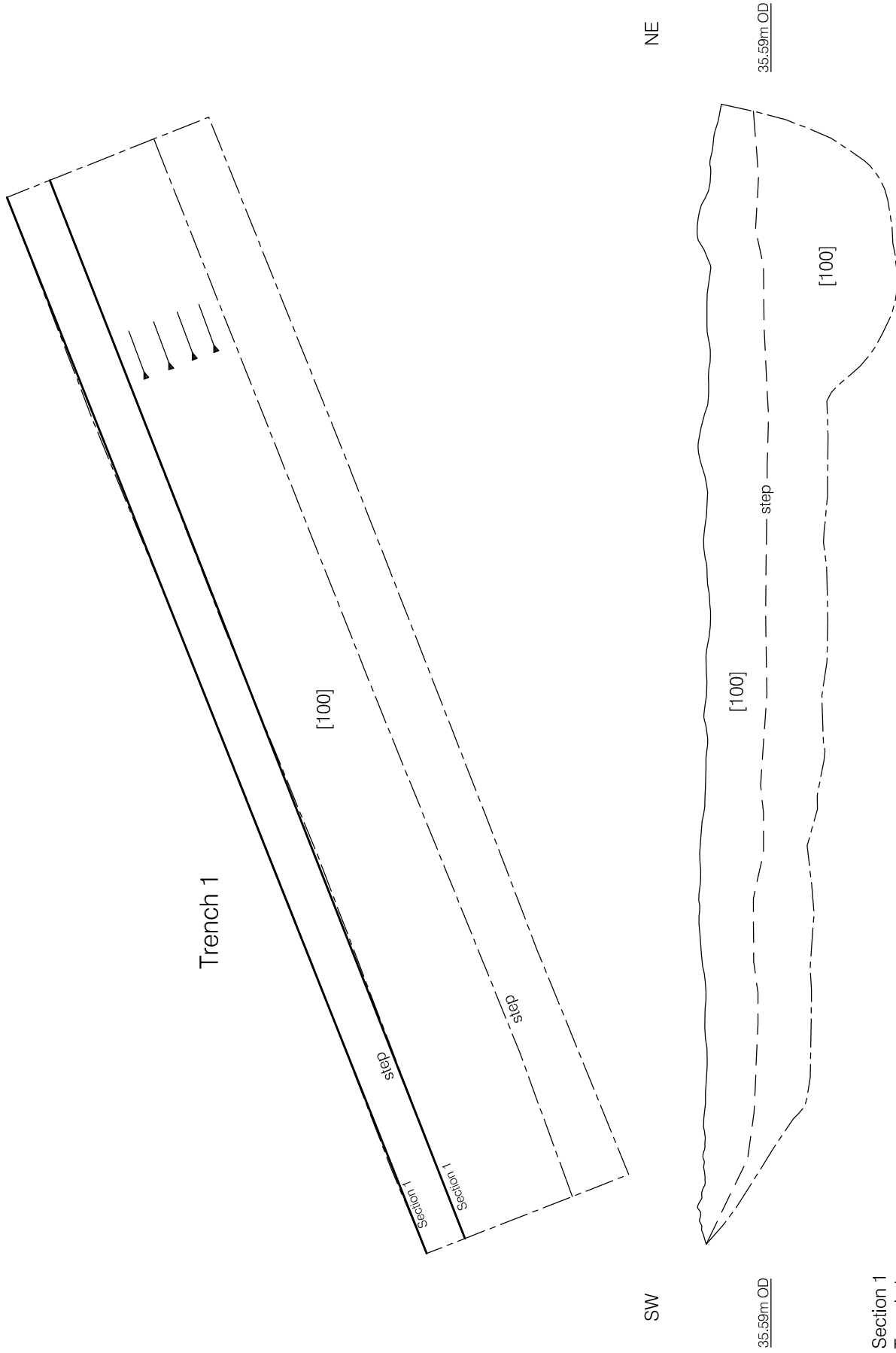
- 5.5.2.6 The western return wall, [517], of wall [516], was c. 1.20m long, meeting the limit of excavation to the south, and 0.36m wide. It survived to a height of 0.53m. Eastern return wall, [526], was c. 1.65m long, meeting the limit of excavation to the south, and was 0.23m wide, but this was only seen in plan.
- 5.5.2.7 Extensive dump deposits were mostly removed by machine along the entire length of the trench, including the c. 2.75m wide interval between Building [594] and Structure [595]. Surviving portions of this material, recorded in plan and in section in the base of the trench as layer [508], which directly overlay the natural sub-stratum, comprised firm, mid orange brown sandy silty clay with thin lenses of coal fines throughout but generally few other notable inclusions. Its maximum thickness is estimated as c. 1.75m. This material is interpreted as having been dumped between the structures to raise and consolidate the ground surface upon which the buildings were constructed. Other dump deposits, layer [574], overlain by layer [515], and a sequence of layers and lenses, [588], [587], [585], [586], [584], [583], [582] and [593], were recorded in section to the west of Structure [595], all post-dating dump layer [508], but considered to be broadly contemporary with it, contributing to the overall episode of ground raising and consolidation. The uppermost element of this group of deposits was layer [593], comprising firm, light yellowish orange silty sand, up to 0.33m thick and recorded at a maximum height of 38.26m OD, c. 0.10m below the existing ground surface.
- 5.5.2.8 Other structural remains were recorded adjacent to the eastern end of Structure [595]. A rectangular brick drain, [534], the earliest element of these remains, measured c. 1.0m west-east and at least 1.25m north-south, continuing beyond the southern limit of excavation. Four courses of brickwork survived, comprising bricks measuring (on average) 9½ x 4½ x 3 inches (241 x 114 x 76 mm), with hard grey cement mortar. It was recorded at maximum height of 38.48m OD. On the eastern side of and abutting the drain was a rudimentary rectangular area of mortared masonry, [535], comprising squared sandstone blocks and buff firebricks. This structure – possibly a supporting element – was c. 0.45m wide and at least 0.40m high.
- 5.5.2.9 Drain [534] had been cut through by the construction cut, [533] for a culvert, [596], which ran to the north-east from the southern limit of excavation for length of c. 3.20m and was then truncated. This was potentially related to the probable chimney, Structure [595], which lay immediately to the west. The 0.80m wide floor, [532], of the culvert, was composed of buff firebricks, laid on edge and measuring (on average) 9 x 4¼ x 2½ inches (229 x 108 x 64 mm), with a distinct soft grey clay bonding material. It was recorded at a maximum height of 37.83m OD. The culvert side walls, [530] to the north-west and [531] to the south-east, were constructed of the same firebricks, two bricks wide, with the bricks laid in stretcher bond. A sample brick recovered from wall [530] was possibly hand moulded. Frogged on one bedding face, it bore the initialled stamp of the manufacturer, probably the North Hetton Coal Company, thus dating it broadly to the period of construction of the glass works (see Appendix C). The disturbed culvert roof, [529], comprised 620mm square, 80mm thick, concrete capping slabs, recorded at a maximum height of 38.23m OD. At its south-western extent, the roof of culvert [596] comprised an area of mortared firebricks, [528].

5.5.3 Phase 4. Early to Mid 20th Century

- 5.5.3.1 A demolition deposit, [518], infilled Structure [595] and overlay its uppermost surviving remains. This material probably represents demolition of earlier structural elements ahead of re-development of the glass works in the early to mid 20th century. It was recorded at a maximum height of 38.72m OD, forming the existing ground surface in this part of the trench.
- 5.5.3.2 In section to the west, demolition layer [518] was cut through by the construction cut, [575], for a brick structure, [562], probably an inspection chamber. It comprised unfrogged red bricks, measuring (on average) 9 x 4¼ x 2¾ inches (229 x 108 x 70 mm), bonded with cement mortar, and was recorded at a maximum height of 38.50m OD. The construction cut backfill, [576], comprised firm silty sand and brick rubble. The insertion of this structure probably relates to re-development of the glass works.
- 5.5.3.3 Three portions of a linear service trench were recorded, as features [510] (fill [509]), [521] (fill [520]), and [525] (fill [524]), running west-east along the majority of Trench 3. Although unexcavated, this likely housed a drain that fed into a brick inspection chamber, [504], exposed at the western end of the trench, although this was not proven.

5.5.4 Phase 5. Mid 20th Century and Later

- 5.5.4.1 Probable drain [510], *etc.*, had been punctuated by the insertion of a series of substantial regularly-spaced, rectangular concrete footings, [514] (construction cut [513]), [523] (construction cut [522]), [547] (construction cut [551]) and [556] (construction cut [558]) along the northern part of the trench, which likely relate to further re-development of the glass works in the modern era. These stepped footings measured at least 1.40m north-south, all continuing beyond the northern limit of excavation and were up to 1.10m wide. All were at least 1.35m high, although the base of none was seen. Each footing had the remains of a steel I-beam bolted onto its upper surface.
- 5.5.4.2 A brick inspection chamber, [538] (construction cut [540], backfill [539]), also punctuated the line of the aforementioned drain. Other remains related to modern era services recorded in Trench 5 were: drain [542] (construction cut [541]), brick drain [544], brick drain [545] with pipe [550] (construction cut [548] and backfill [549]) and inspection chamber [561] (construction cut [589] and backfills [512] and [590]).
- 5.5.4.3 'Made ground' dump deposits of the modern era recorded in Trench 5 were: [502], [505], [578], [579] and [592].
- 5.5.4.4 Other modern era features recorded in Trench 5 were: feature [581] (fill [580]), feature [555] (fills [568] and [554]), feature [591] (containing concrete lintel [567] and with backfills [569], [566], [565] and [564]).
- 5.5.4.5 The fragmentary remains of a modern era concrete surface, [527]/[572] (construction cut [571]), were recorded in Trench 5, adjacent to the eastern side of Structure [595].
- 5.5.4.6 Various demolition rubble deposits of the modern era were recorded in Trench 5: layer [503] (within inspection chamber [504]), layer [536] and layer [570]. The existing ground surface in the eastern and western parts of the trench was formed by other demolition rubble layers, [563] and [577], respectively, recorded at a maximum height of 38.92m OD.



Section 1
Trench 1
South Facing

Figure 3
Trench 1: Plan and Section
Plan and Section - 1:125 at A4

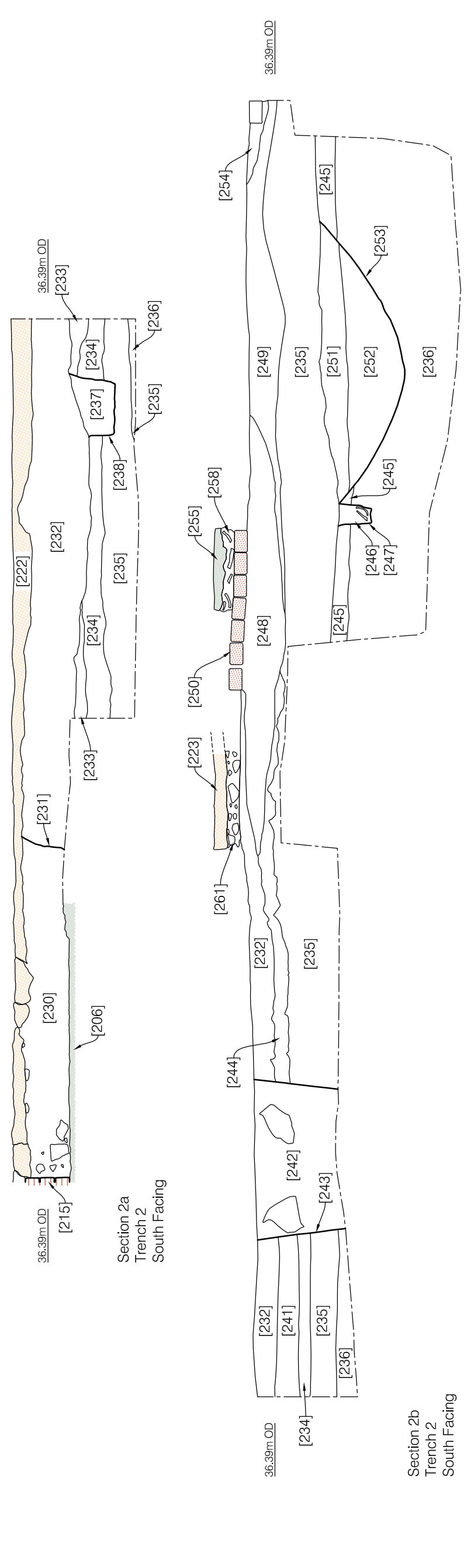
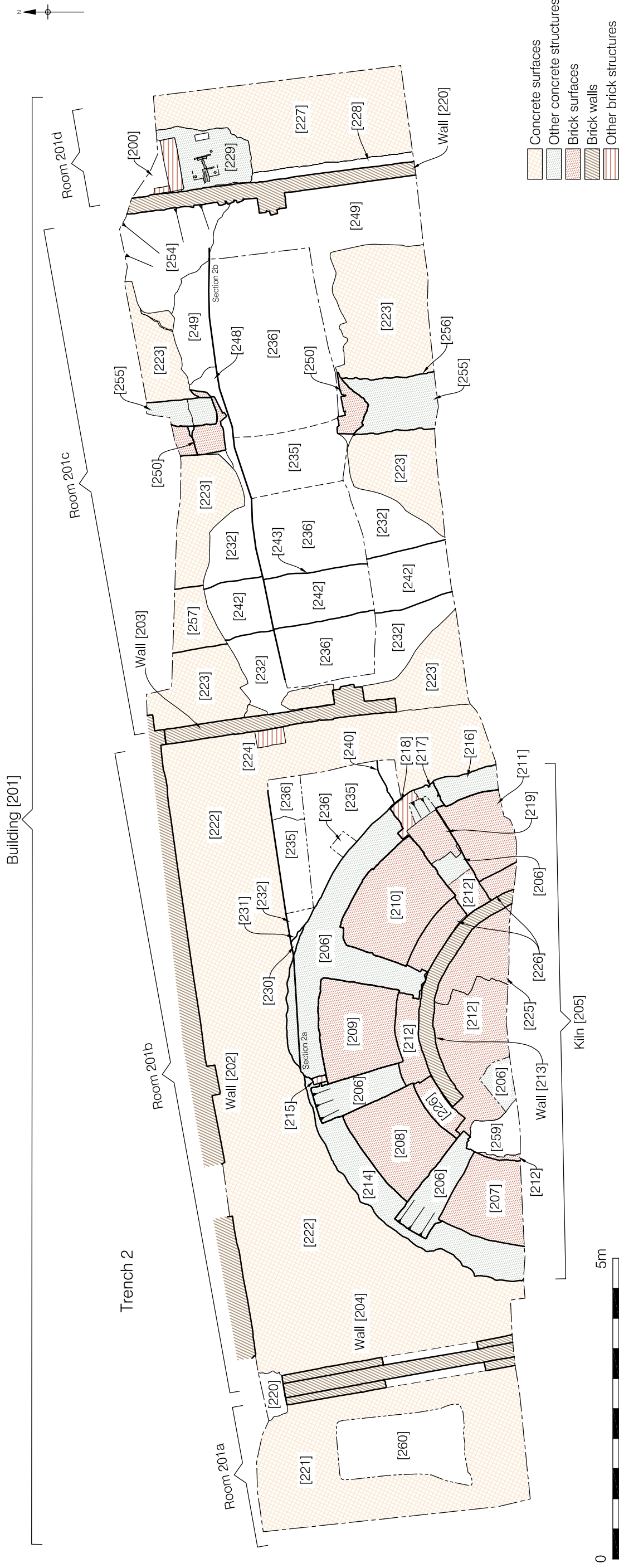


Figure 4
Trench 2: Plan and Sections
Plan - 1:70, Sections - 1:25 at A3

© Pre-Construct Archaeology Ltd 2010

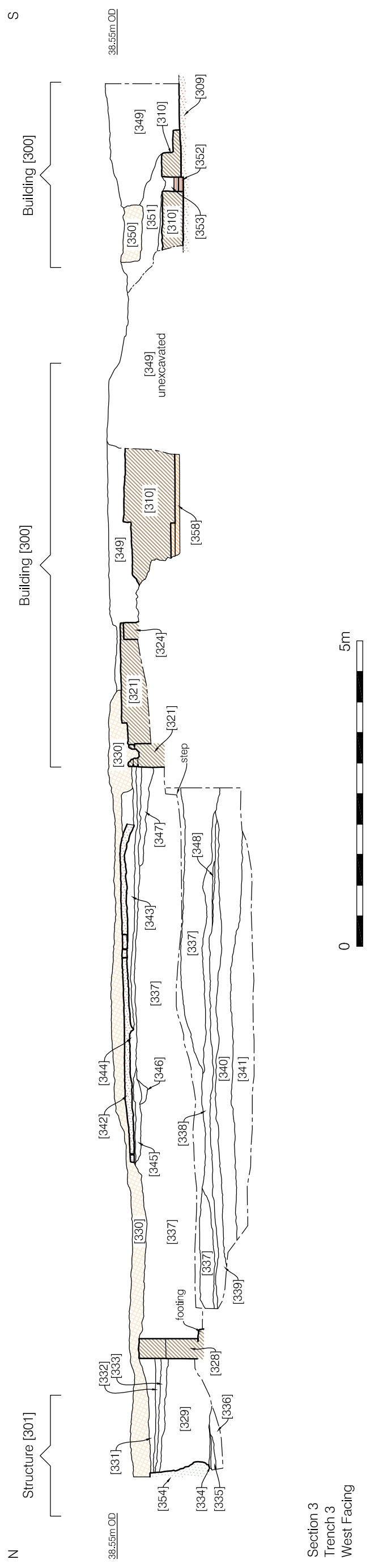
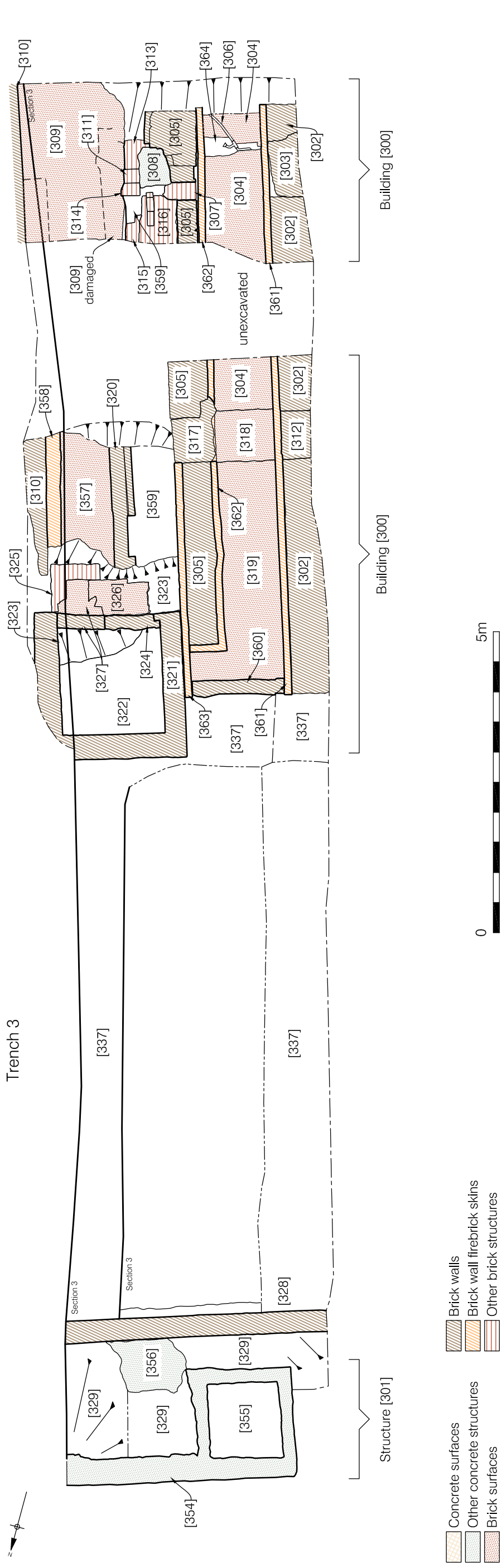


Figure 5
Trench 3: Plan and Sections
1:70 at A3

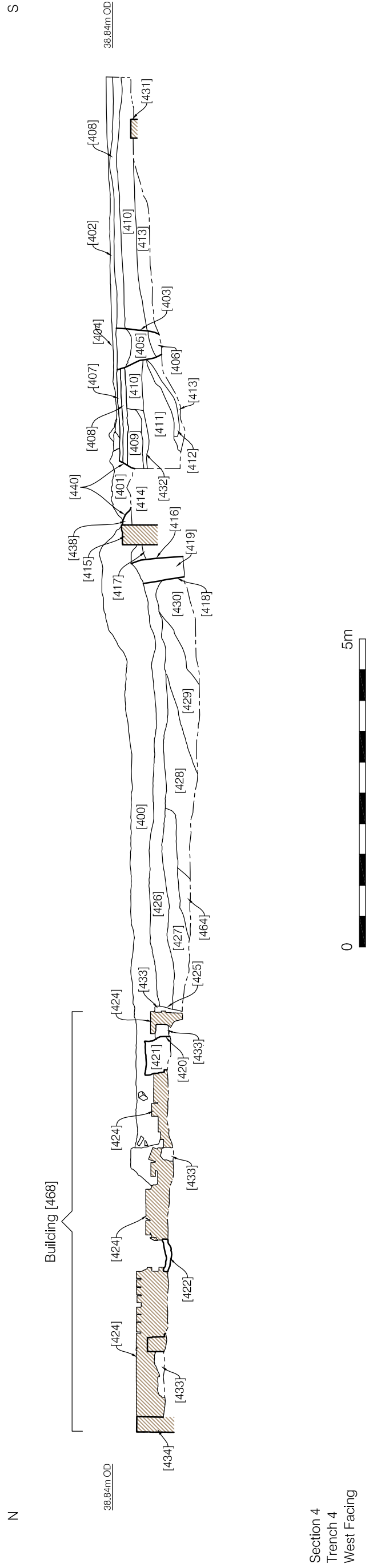
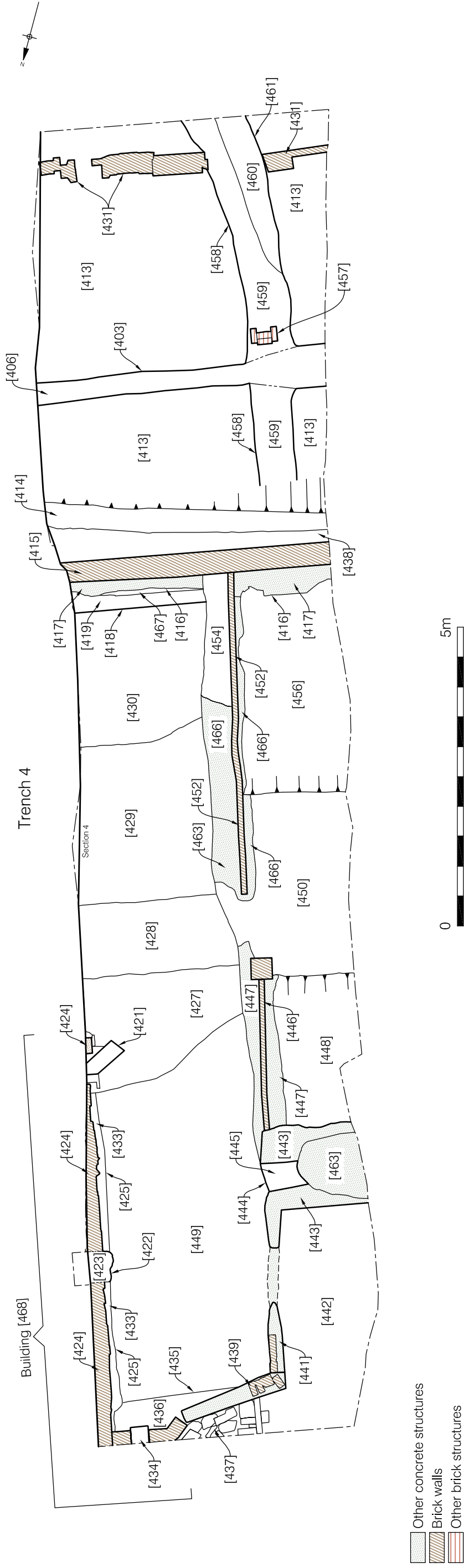
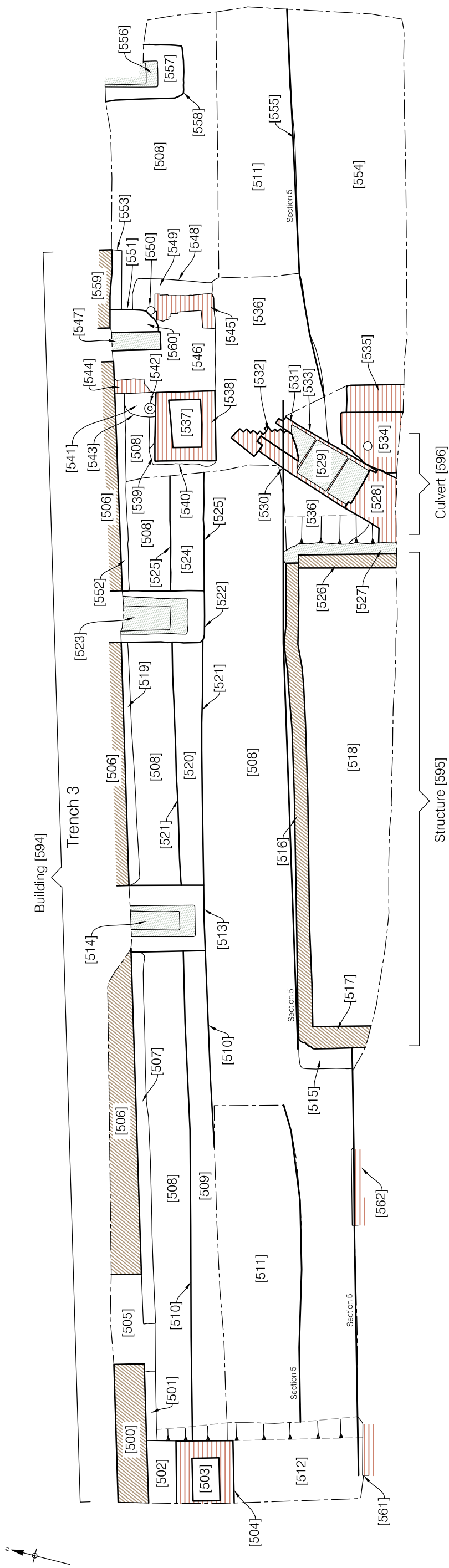


Figure 6
 Trench 4: Plan and Section
 1:70 at A3

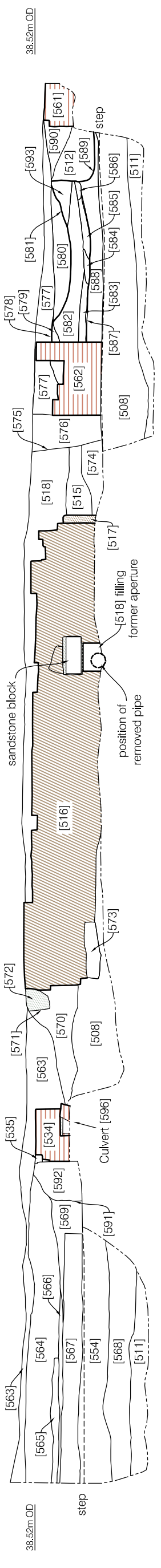


- Other concrete structures
- Brick walls
- Other brick structures



E

W



Section 5
Trench 5
North Facing



Figure 7
Trench 5: Plan and Section
1:70 at A3

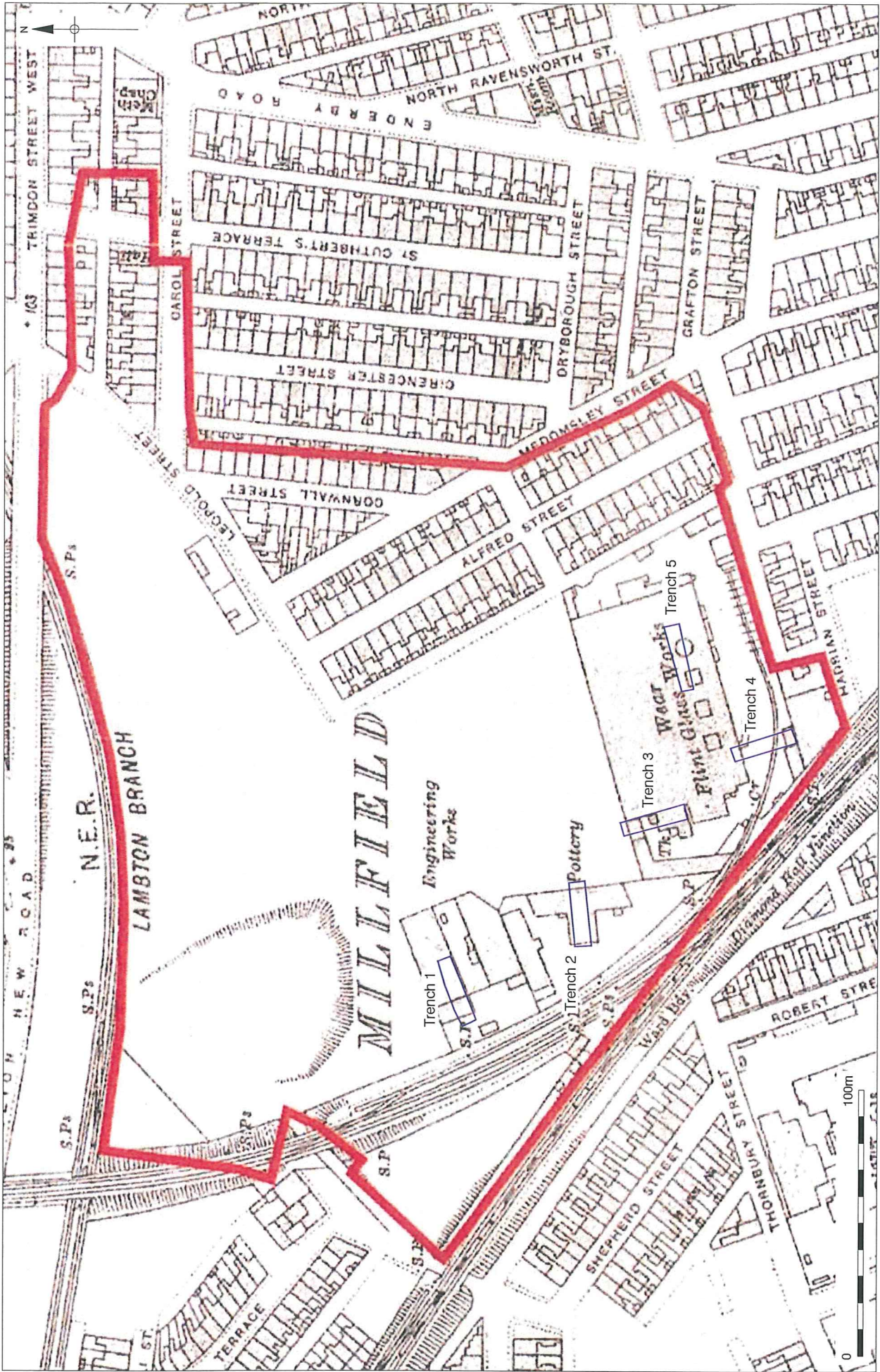


Figure 8
Trench Locations overlain on Ordnance Survey map, 1919
1:2,000 at A4

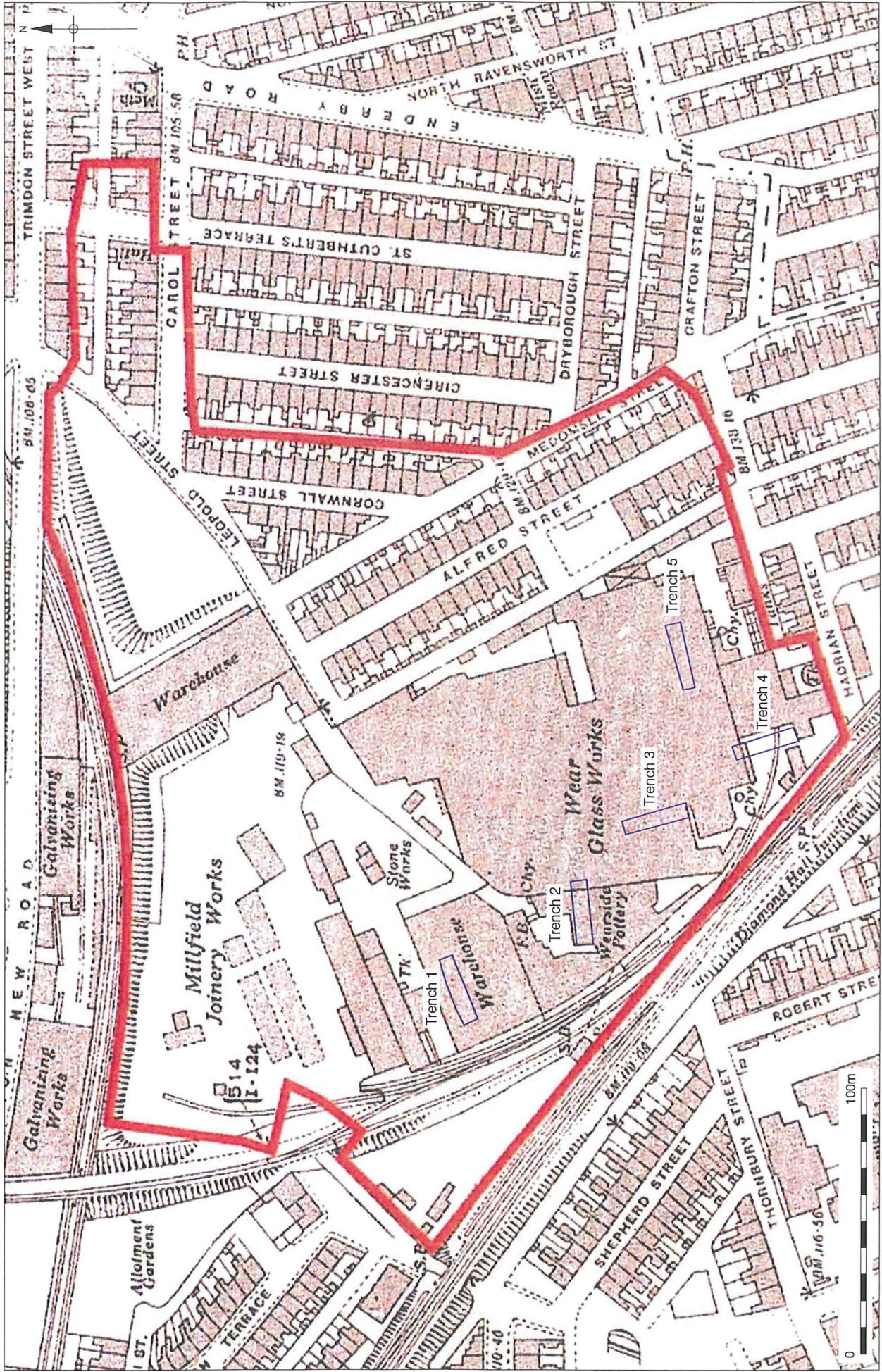


Figure 9
Trench Locations overlain on Ordnance Survey map, 1941
1:2,000 at A4

6. CONCLUSIONS

6.1 Geological deposits and archaeological deposits and features encountered during the evaluation have been assigned to five broad phases of activity:

- Phase 1 – the natural sub-stratum. The natural clay sub-stratum was recorded in all five trenches, this material being of geological origin;
- Phase 2 - undated. Remains probably pre-dating the post-medieval period were recorded in section in Trenches 2 and 4. In both trenches, a sterile sub-soil horizon was recorded, this cut by a possible ditch with two sterile fills in Trench 2.
- Phase 3 – mid to late 19th century. Trenches 3, 4 and 5 contained structural remains of the Wear Flint Glass Works built in the early 1870s. The remains in Trench 3 were the most substantial and well-preserved, these likely representing the north-western portion of the original glass works building. Evidence of significant ground-raising ahead of the construction of the glass works was recorded. Three substantial brick walls, with associated brick floors, forming parallel north-south corridors within the works were recorded, along with an associated square structure, probably the base of a chimney or tank shown in an external angle of the building on the 1897 and 1919 Ordnance Survey maps. A west-east aligned brick wall in the northernmost part of the trench was probably the north wall of the works, with the fragmentary remains of a brick surface to the south of this probably representing an external yard surface. The structural remains in Trench 3 were revealed at a depth of c. 0.30m below the existing ground surface and in the area of the chimney/tank base continued to a depth of at least 1.95m.

The northern part of Trench 4 contained sections of brick wall probably representing the south wall of the glass works and possibly a southern extension, with the fragmentary remains of a west-east aligned wall in the southern part of the trench probably representing an ancillary structure to the south.

The northern part of Trench 5 contained a west-east aligned brick wall probably representing an internal wall within the glass works, with a brick structure likely representing the north side of a chimney base recorded in the southern part of the trench, along with a probably related firebrick culvert.

- Phase 4 - early to mid 20th century. Trench 2 contained the well-preserved structural remains of the Sunderland (later the Wearside) Pottery, built c. 1913. Evidence of ground-raising ahead of the construction of the manufactory was identified. Brick walls and associated concrete floors within the works were recorded, along with the base of an integrated kiln, likely to be a coal-fired downdraught kiln, possibly of the 'beehive' type – demolished to floor level. The structural remains in Trench 2 were revealed at a depth of c. 0.30m below the existing ground surface and in places continued to a depth of at least 1.90m. Modifications to the works during its period of usage were also assigned to this broad phase of industrial era activity. Remains of lesser archaeological significance of this phase were recorded in Trenches 3, 4 and 5.

- Phase 5 – mid 20th century and later. All five trenches contained remains assigned to this phase, all of negligible archaeological significance.

6.2 In sum, therefore, it is concluded that:

- the earliest structural remains of the glass works are considered to be of local to regional archaeological significance, given the importance of Sunderland in the history and development of glassmaking in the north-east of England, and Britain as a whole, from the post-medieval period onwards. The relatively well-preserved remains recorded in Trench 3 are considered of greater significance, with the remains recorded in Trenches 4 and 5 considered of lesser significance, given the lesser degree to which they survive;
- the structural remains of the pottery recorded in Trench 2 are considered to be of local to regional archaeological significance, given the role of the works in the history and development of ceramic manufacture in the north-east in the first part of the 20th century.

6.3 It is considered that the structural remains encountered in Trenches 2 and 3 warrant further exposure, to be archaeologically supervised, followed by a programme of targeted archaeological investigation, comprising hand cleaning, photography, measured drawing and survey, recording and sample hand-excavation, with sampling of brick types and collection of other dating evidence and relevant technological residues as priorities. This 'open area archaeological excavation' should be designed to address specific research objectives with regard to the design, layout, form of construction and development of, as well as the technological processes used by, the manufactories under investigation.

6.4 The data collected during this 'open area archaeological excavation' will initially require a stage of post-excavation 'Assessment', as defined in the aforementioned English Heritage document *Management of Research Projects in the Historic Environment*, and it is probable that the final results of the work will require publication within an appropriate academic outlet, such as the *Industrial Archaeology Review*.

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.

Dodd, G., 1975. *Days at the Factories. Manufacturing in the Nineteenth Century*, facsimile of chapters 1-17 of the 1st edition, 1843, of *Days at the Factories or The Manufacturing Industry of Great Britain Described*, EP Publishing Limited.

English Heritage, 2006. *Management of Research Projects in the Historic Environment*, English Heritage.

Institute for Archaeologists, 2008a. *Standard and guidance for archaeological field evaluation*, IfA.

Institute for Archaeologists, 2008b. *Standard and guidance for the creation, compilation, transfer and deposition of archaeological archives*, IfA.

Petts, D. and Gerrard, C. 2006. *Shared Visions: The North-East Regional Research Framework for the Historic Environment*, Durham County Council.

Pre-Construct Archaeology Limited, 2010. *Project Design for an Archaeological Evaluation on Land off Lisburn Terrace, Millfield, Sunderland, Tyne and Wear*, unpublished document.

Under Construction Archaeology Limited, 2009. *Former Corning's Glass Factory, Lisburn Terrace, Millfield, Sunderland*, unpublished desk-based assessment report.

Walker, K., 1990. *Guidelines for the preparation of Excavation Archives for Long-term Storage*, UKIC.

Online Sources

British Geological Survey website at www.bgs.ac.uk/

Sitelines, the Tyne and Wear Historic Environment Record at www.twsitelines.info/

20th Century Glass website at www.20thcenturyglass.com

Wearside online website at www.wearsideonline.com

8. ACKNOWLEDGEMENTS AND CREDITS

Acknowledgements

Pre-Construct Archaeology would like to thank Nansi Rosenberg of Prospect Archaeology for commissioning the archaeological evaluation herein described on behalf of St. Modwen.

The on site assistance of the Principal Contractor, Hawk Contracts, particularly Paul Green and Wayne Edwards, is acknowledged,

The roles of Ian Ayris, Historic Environment Section Manager, and Jennifer Morrison, Archaeology Officer, of the Tyne and Wear Specialist Conservation Team attached to Newcastle City Council, are acknowledged.

PCA Credits

Fieldwork: Amy Roberts (Site Supervisor), Robin Taylor-Wilson (acting Site Supervisor), Rory Foster, Aaron Goode, Neal Lythe, Scott Vance, Rebekah Watson

Post-excavation: Robin Taylor-Wilson and Amy Roberts

Report: Robin Taylor-Wilson

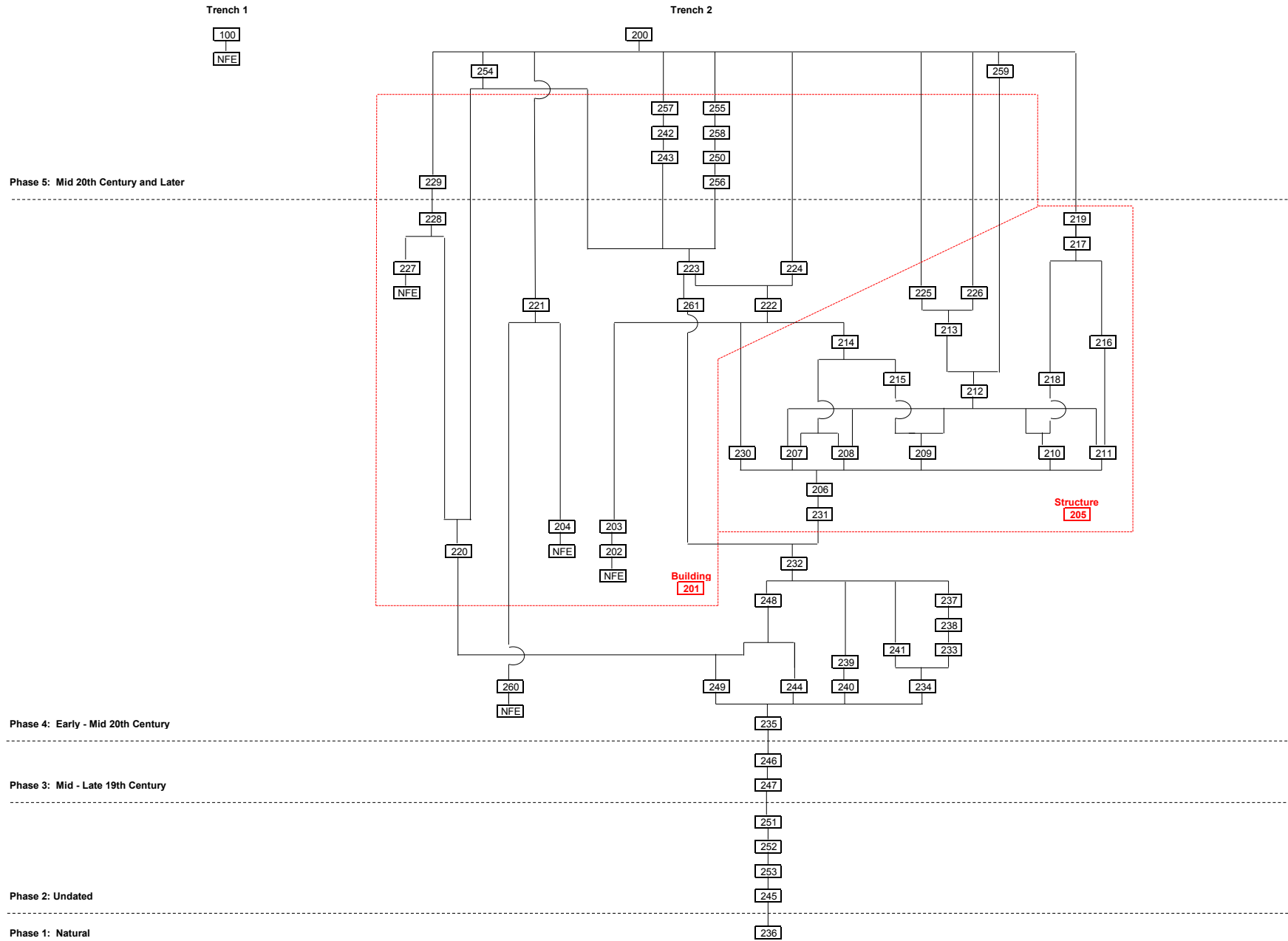
Illustrations: Mark Roughley

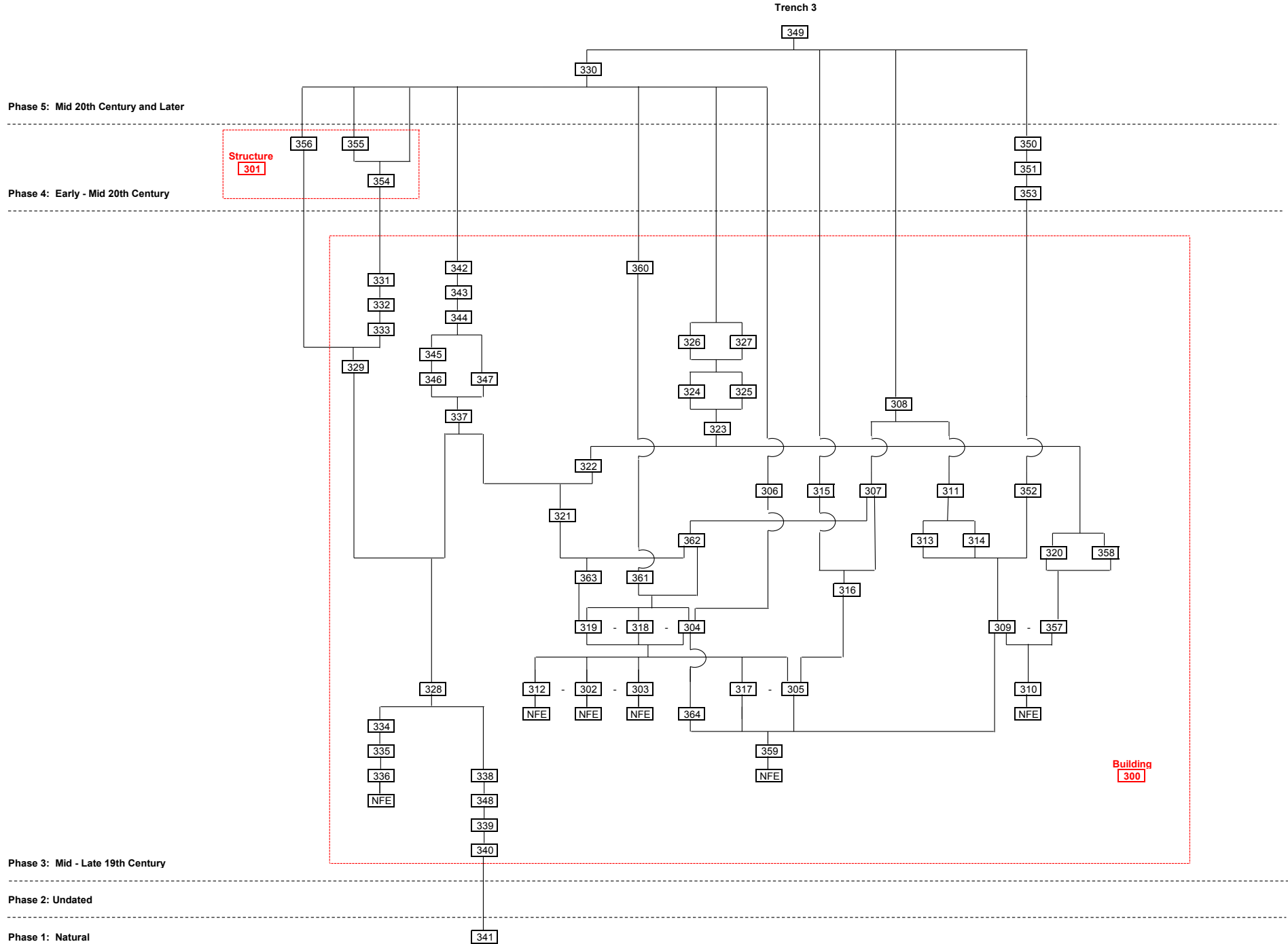
Other Credits

Finds Report: Jenny Vaughan and John Nolan (Northern Counties Archaeological Services)

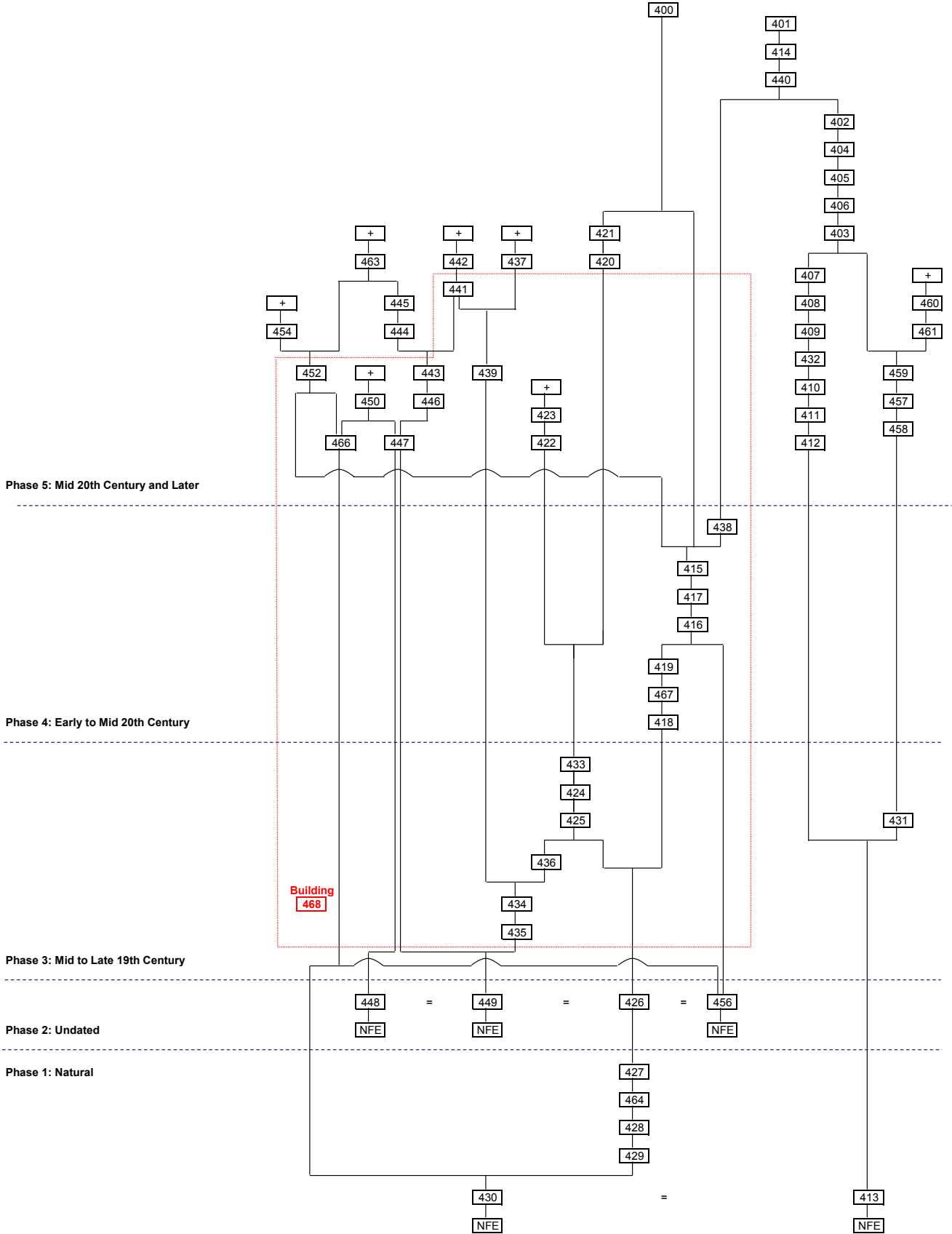
APPENDIX A
STRATIGRAPHIC MATRICES

LTS 10: STRATIGRAPHIC MATRICES

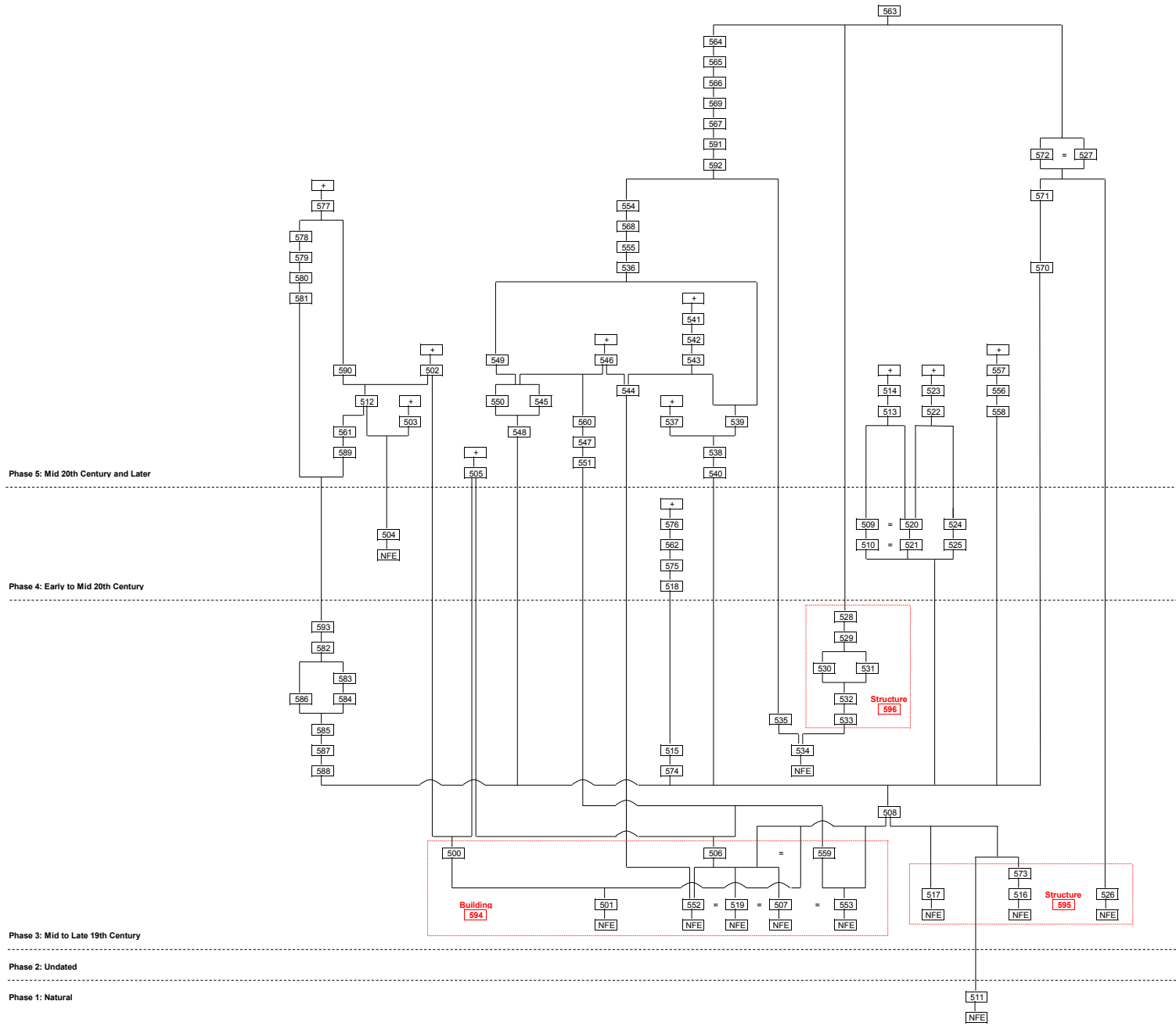




Trench 4



Trench 5



**APPENDIX B
CONTEXT INDEX**

LTS 10: CONTEXT INDEX

| Context | Trench | Phase | Type 1 | Type 2 | Interpretation |
|----------------|---------------|--------------|---------------|---------------|---|
| 100 | 1 | 5 | deposit | layer | made ground |
| 200 | 2 | 5 | deposit | layer | demolition rubble |
| 201 | 2 | 4 | structure | building | pottery manufactory - group number |
| 202 | 2 | 4 | masonry | wall | north wall of Room 2b in Building [201] |
| 203 | 2 | 4 | masonry | wall | partition wall between Rooms 2b & 2c in Building [201] |
| 204 | 2 | 4 | masonry | wall | partition wall between Rooms 2a & 2b in Building [201] |
| 205 | 2 | 4 | structure | kiln | kiln base - group number |
| 206 | 2 | 4 | structure | surface | concrete sub-floor of kiln [205] |
| 207 | 2 | 4 | masonry | segment | brickwork segment within kiln [205] |
| 208 | 2 | 4 | masonry | segment | brickwork segment within kiln [205] |
| 209 | 2 | 4 | masonry | segment | brickwork segment within kiln [205] |
| 210 | 2 | 4 | masonry | segment | brickwork segment within kiln [205] |
| 211 | 2 | 4 | masonry | segment | brickwork segment within kiln [205] |
| 212 | 2 | 4 | structure | surface | inner brick floor of kiln [205] |
| 213 | 2 | 4 | masonry | wall | inner brick wall of kiln [205] |
| 214 | 2 | 4 | structure | apron | western part of concrete perimeter apron of kiln [205] |
| 215 | 2 | 4 | masonry | formwork | brick formwork for ramped vent in apron [214] of kiln [205] |
| 216 | 2 | 4 | structure | apron | eastern part of concrete perimeter apron of kiln [205] |
| 217 | 2 | 4 | structure | wall | repair of ramped vent in apron [216] of kiln [205] |
| 218 | 2 | 4 | masonry | formwork | brick formwork for ramped vent [217] in kiln [205] |
| 219 | 2 | 4 | masonry | surface | brick floor/infill in vent of kiln [205] |
| 220 | 2 | 4 | masonry | wall | partition wall between Rooms 2c & 2d in Building [201] |
| 221 | 2 | 4 | structure | surface | concrete floor in Room 2a of Building [201] |
| 222 | 2 | 4 | structure | surface | concrete floor in Room 2b of Building [201] |
| 223 | 2 | 4 | structure | surface | concrete floor in Room 2c of Building [201] |
| 224 | 2 | 4 | masonry | pillar | brickwork associated with wall [203] |
| 225 | 2 | 4 | masonry | surface | brick floor/infill in central portion of kiln [205] |
| 226 | 2 | 4 | masonry | surface | brick floor/infill in kiln [205] exterior to wall [213] |
| 227 | 2 | 4 | structure | floor | concrete floor in Room 2d of Building [201] |
| 228 | 2 | 4 | deposit | fill | dump deposit? |
| 229 | 2 | 5 | structure | footing | concrete footing for steel beam upright |
| 230 | 2 | 4 | deposit | fill | backfill of construction cut [231] |
| 231 | 2 | 4 | cut | discrete | construction cut for kiln [205]; filled by [230] |
| 232 | 2 | 4 | deposit | layer | dump deposit |
| 233 | 2 | 4 | deposit | layer | dump deposit |
| 234 | 2 | 4 | deposit | layer | dump deposit |
| 235 | 2 | 4 | deposit | layer | reworked developed soil |
| 236 | 2 | 1 | deposit | layer | natural clay |
| 237 | 2 | 4 | deposit | fill | fill of feature [238] |
| 238 | 2 | 4 | cut | linear | ?linear feature; filled by [237] |
| 239 | 2 | 4 | deposit | fill | fill of feature [240] |
| 240 | 2 | 4 | cut | linear? | ?linear feature; filled by [239] |
| 241 | 2 | 4 | deposit | layer | dump deposit |
| 242 | 2 | 5 | deposit | fill | backfill of service trench [243] |
| 243 | 2 | 5 | cut | linear | ?service trench; filled by [242] |
| 244 | 2 | 4 | deposit | layer | dump deposit |
| 245 | 2 | 2 | deposit | layer | developed soil/palaeosol |
| 246 | 2 | 3 | deposit | fill | backfill of field drain [247] |
| 247 | 2 | 3 | cut | linear | field drain; filled by [246] |
| 248 | 2 | 4 | deposit | layer | dump deposit |
| 249 | 2 | 4 | deposit | layer | dump deposit |
| 250 | 2 | 5 | structure | fill | brick raft/fill within service trench [256] |
| 251 | 2 | 2 | deposit | fill | upper fill of feature [253] |
| 252 | 2 | 2 | deposit | fill | primary fill of feature [253] |
| 253 | 2 | 2 | cut | linear? | feature; filled by [251] & [252] |
| 254 | 2 | 5 | deposit | layer | demolition dump |
| 255 | 2 | 5 | deposit | fill | concrete upper fill of ?service trench [256] |
| 256 | 2 | 5 | cut | linear | ?service trench; filled by [250] & [255] |
| 257 | 2 | 5 | deposit | fill | concrete upper fill of ?service trench [243] |
| 258 | 2 | 5 | deposit | layer | make-up for concrete [255] |
| 259 | 2 | 5 | deposit | layer | demolition rubble |
| 260 | 2 | 4 | deposit | layer | dump deposit |
| 261 | 2 | 5 | deposit | layer | make-up for concrete [223] |
| 300 | 3 | 3 | structure | building | glass works building - group number |
| 301 | 3 | 4 | structure | building | glass works building ?extension - group number |
| 302 | 3 | 3 | masonry | wall | west wall of Building [300] |
| 303 | 3 | 3 | masonry | wall | brickwork infill in wall [302] |
| 304 | 3 | 3 | masonry | floor | brick floor of western corridor in Building [300] |

LTS 10: CONTEXT INDEX

| | | | | | |
|-----|---|---|-----------|------------|---|
| 305 | 3 | 3 | masonry | wall | central wall of Building [300] |
| 306 | 3 | 3 | object | service | iron pipe in floor [304] |
| 307 | 3 | 3 | masonry | wall | brickwork infill in wall [305] |
| 308 | 3 | 3 | structure | platform | concrete platform within wall [305] |
| 309 | 3 | 3 | masonry | floor | brick floor of eastern corridor in Building [300] |
| 310 | 3 | 3 | masonry | wall | east wall of Building [300] |
| 311 | 3 | 3 | masonry | ?support | stepped arrangement of fire bricks |
| 312 | 3 | 3 | masonry | wall | brickwork infill in wall [302] |
| 313 | 3 | 3 | masonry | ?support | brickwork associated with wall [305] |
| 314 | 3 | 3 | masonry | ?support | brickwork associated with wall [305] |
| 315 | 3 | 3 | masonry | ?support | brickwork associated with wall [305] |
| 316 | 3 | 3 | masonry | wall | ?rebuilt section of wall [305] |
| 317 | 3 | 3 | masonry | wall | brickwork infill in wall [305] |
| 318 | 3 | 3 | masonry | floor | brick infill between floors [304] & [319] |
| 319 | 3 | 3 | masonry | floor | brick floor in western corridor of Building [300] |
| 320 | 3 | 3 | masonry | wall | partition wall in eastern corridor of Building [300] |
| 321 | 3 | 3 | masonry | chimney | part of Building [300] |
| 322 | 3 | 3 | deposit | fill | fill of chimney [321] |
| 323 | 3 | 3 | deposit | layer | demolition rubble |
| 324 | 3 | 3 | masonry | wall | rebuilt south wall of chimney [321] |
| 325 | 3 | 3 | masonry | wall | brickwork associated with chimney [321] |
| 326 | 3 | 3 | masonry | floor | brick floor associated with chimney [321] |
| 327 | 3 | 3 | masonry | wall/floor | rebuild of wall [324] and floor [326] |
| 328 | 3 | 3 | masonry | wall | ?boundary wall |
| 329 | 3 | 3 | deposit | layer | dump deposit |
| 330 | 3 | 5 | structure | surface | concrete slab |
| 331 | 3 | 3 | deposit | layer | ground levelling dump |
| 332 | 3 | 3 | deposit | layer | ground levelling dump |
| 333 | 3 | 3 | deposit | layer | ground levelling dump |
| 334 | 3 | 3 | deposit | layer | ground raising dump |
| 335 | 3 | 3 | deposit | layer | ground raising dump |
| 336 | 3 | 3 | deposit | layer | ground raising dump |
| 337 | 3 | 3 | deposit | layer | ground raising dump |
| 338 | 3 | 3 | deposit | layer | ground raising dump |
| 339 | 3 | 3 | deposit | layer | ground raising dump |
| 340 | 3 | 3 | deposit | layer | ground raising dump |
| 341 | 3 | 1 | deposit | layer | natural clay |
| 342 | 3 | 3 | structure | floor | brick ?yard surface |
| 343 | 3 | 3 | deposit | layer | ground levelling dump |
| 344 | 3 | 3 | deposit | layer | ground levelling dump |
| 345 | 3 | 3 | deposit | layer | ground levelling dump |
| 346 | 3 | 3 | deposit | layer | ground levelling dump |
| 347 | 3 | 3 | deposit | layer | ground levelling dump |
| 348 | 3 | 3 | deposit | layer | ground raising dump |
| 349 | 3 | 5 | deposit | layer | demolition dump |
| 350 | 3 | 4 | structure | surface | concrete floor slab |
| 351 | 3 | 4 | deposit | layer | ground raising dump |
| 352 | 3 | 3 | structure | ?support | stepped arrangement of fire bricks in wall [310] |
| 353 | 3 | 3 | deposit | fill | demolition dump |
| 354 | 3 | 4 | structure | wall | concrete cellular walls of Building [301] |
| 355 | 3 | 4 | deposit | fill | infill of Structure [301] |
| 356 | 3 | 4 | structure | ?support | concrete pad |
| 357 | 3 | 3 | structure | floor | brick floor; continuation of [309] |
| 358 | 3 | 3 | structure | wall | fire brick skin of wall [310] |
| 359 | 3 | 3 | deposit | layer | dump deposit |
| 360 | 3 | 3 | structure | wall | ?rebuilt north wall of western corridor in Building [300] |
| 361 | 3 | 3 | structure | wall | fire brick skin of wall [302] |
| 362 | 3 | 3 | structure | wall | western fire brick skin of wall [305] |
| 363 | 3 | 3 | structure | wall | eastern fire brick skin of wall [305] |
| 364 | 3 | 3 | deposit | layer | mortar bedding layer for floor [304] |
| 400 | 4 | 5 | deposit | layer | demolition rubble |
| 401 | 4 | 5 | deposit | layer | demolition rubble |
| 402 | 4 | 5 | structure | surface | tarmac surface |
| 403 | 4 | 5 | cut | linear | service trench; filled by [404], [405] & [406] |
| 404 | 4 | 5 | deposit | fill | fill of service trench [403] |
| 405 | 4 | 5 | deposit | fill | fill of service trench [403] |
| 406 | 4 | 5 | deposit | fill | fill of service trench [403] |
| 407 | 4 | 5 | structure | surface | tarmac surface |
| 408 | 4 | 5 | structure | surface | concrete surface |

LTS 10: CONTEXT INDEX

| | | | | | |
|-----|------|-----|-----------|------------|--|
| 409 | 4 | 5 | deposit | layer | dump deposit |
| 410 | 4 | 5 | deposit | layer | dump deposit |
| 411 | 4 | 5 | deposit | layer | dump deposit |
| 412 | 4 | 5 | deposit | layer | dump deposit |
| 413 | 4 | 1 | deposit | layer | natural sand and gravel |
| 414 | 4 | 5 | structure | service | concrete drain lining |
| 415 | 4 | 4 | masonry | wall | south wall of Building [468] |
| 416 | 4 | 4 | cut | linear | construction cut for wall [415] & footing [417]; filled by [438] |
| 417 | 4 | 4 | deposit | foundation | concrete footing for wall [415] |
| 418 | 4 | 4 | cut | linear | service trench; filled by [467] & [419] |
| 419 | 4 | 4 | deposit | fill | backfill of service trench [418] |
| 420 | 4 | 5 | cut | linear | service trench; filled by [421] |
| 421 | 4 | 5 | deposit | fill | backfill of service trench [420] |
| 422 | 4 | 4 | cut | linear | service trench; filled by [423] |
| 423 | 4 | 4 | deposit | fill | fill of service trench [422] |
| 424 | 4 | 3 | masonry | wall | east wall of Building [468] |
| 425 | 4 | 3 | cut | linear | construction cut for wall [424]; filled by [433] |
| 426 | 4 | 2 | deposit | layer | developed soil |
| 427 | 4 | 1 | deposit | layer | natural clay |
| 428 | 4 | 1 | deposit | layer | natural clay |
| 429 | 4 | 1 | deposit | layer | natural sand and gravel |
| 430 | 4 | 1 | deposit | layer | natural sand and gravel |
| 431 | 4 | 3 | masonry | wall | ?boundary wall |
| 432 | 4 | 5 | deposit | layer | dump deposit |
| 433 | 4 | 5 | deposit | fill | fill of construction cut [425] |
| 434 | 4 | 3 | masonry | wall | north wall of Building [468] |
| 435 | 4 | 3 | cut | linear | construction cut for wall [434]; filled by [436] |
| 436 | 4 | 3 | deposit | fill | fill of construction cut [435] |
| 437 | 4 | 5 | deposit | layer | demolition rubble |
| 438 | 4 | 4 | deposit | fill | backfill of construction trench [416] |
| 439 | 4 | 5 | structure | foundation | concrete footing in Building [468] |
| 440 | 4 | 5 | cut | linear | service trench; filled by drain [414] and fill [401] |
| 441 | 4 | 5 | masonry | wall | brick partition wall in Building [468] |
| 442 | 4 | 5 | deposit | layer | demolition rubble |
| 443 | 4 | 5 | structure | foundation | concrete footing in Building [468] |
| 444 | 4 | 5 | cut | linear | ?service trench; filled by [445] |
| 445 | 4 | 5 | deposit | fill | fill of ?service trench [444] |
| 446 | 4 | 5 | masonry | wall | partition wall in Building [468] |
| 447 | 4 | 5 | structure | foundation | concrete footing for wall [446] |
| 448 | 4 | 2 | deposit | layer | developed soil |
| 449 | 4 | 2 | deposit | layer | developed soil |
| 450 | 4 | 5 | deposit | layer | ?surface |
| 451 | VOID | | | | |
| 452 | 4 | 5 | masonry | wall | brick partition wall in Building [468] |
| 453 | VOID | | | | |
| 454 | 4 | 5 | deposit | layer | dump deposit |
| 455 | VOID | | | | |
| 456 | 4 | 2 | deposit | layer | developed soil |
| 457 | 4 | 5 | structure | hydrant | brick hydrant within service trench [458] |
| 458 | 4 | 5 | cut | linear | service trench; with hydrant [457] and fill [459] |
| 459 | 4 | 5 | deposit | fill | backfill of service trench [458] |
| 460 | 4 | 5 | deposit | fill | backfill of service trench [461] |
| 461 | 4 | 5 | cut | linear | service trench; filled by [460] |
| 462 | VOID | | | | |
| 463 | 4 | 5 | deposit | layer | demolition rubble |
| 464 | 4 | 1 | deposit | layer | natural sand and gravel |
| 465 | VOID | | | | |
| 466 | 4 | 5 | structure | foundation | concrete footing for wall [452] |
| 467 | 4 | 4 | deposit | fill | iron pipe in service trench [418] |
| 468 | 4 | 3-5 | structure | building | glass works building - group number |
| 500 | 5 | 4 | masonry | wall | part of north wall of Building [594] |
| 501 | 5 | 4 | masonry | foundation | concrete foundation for wall [500] |
| 502 | 5 | 5 | deposit | layer | dump deposit |
| 503 | 5 | 5 | deposit | fill | demolition rubble within inspection chamber [504] |
| 504 | 5 | 4 | structure | chamber | brick inspection chamber |
| 505 | 5 | 5 | deposit | layer | dump deposit |
| 506 | 5 | 4 | masonry | wall | part of north wall of Building [594] |
| 507 | 5 | 4 | masonry | foundation | concrete foundation for wall [506] |
| 508 | 5 | 4 | deposit | layer | dump deposit |

LTS 10: CONTEXT INDEX

| | | | | | |
|-----|---|---|-----------|------------|--|
| 509 | 5 | 4 | deposit | fill | backfill of service trench [510] |
| 510 | 5 | 4 | cut | linear | service trench; filled by [509] |
| 511 | 5 | 1 | deposit | layer | natural clay |
| 512 | 5 | 5 | deposit | fill | fill of construction cut [589] |
| 513 | 5 | 5 | cut | discrete | construction cut; filled by footing [514] |
| 514 | 5 | 5 | structure | foundation | concrete footing within construction cut [513] |
| 515 | 5 | 4 | deposit | layer | dump deposit |
| 516 | 5 | 3 | masonry | wall | north wall of Structure [595] |
| 517 | 5 | 3 | masonry | wall | west wall of Structure [595] |
| 518 | 5 | 4 | deposit | layer | demolition rubble |
| 519 | 5 | 5 | masonry | foundation | concrete footing for wall [506] |
| 520 | 5 | 4 | deposit | fill | backfill of service trench [521] |
| 521 | 5 | 4 | cut | linear | service trench; filled by [520] |
| 522 | 5 | 5 | cut | discrete | construction cut; filled by footing [523] |
| 523 | 5 | 5 | structure | foundation | concrete footing within construction cut [522] |
| 524 | 5 | 4 | deposit | fill | backfill of service trench [525] |
| 525 | 5 | 4 | cut | linear | service trench; filled by [524] |
| 526 | 5 | 3 | masonry | wall | eastern wall of Structure [595] |
| 527 | 5 | 5 | structure | surface | concrete ?surface |
| 528 | 5 | 4 | masonry | ?roof | brickwork on culvert [596] roof |
| 529 | 5 | 4 | masonry | capping | concrete capping slabs of culvert [596] |
| 530 | 5 | 4 | masonry | wall | north-west wall of culvert [596] |
| 531 | 5 | 4 | masonry | wall | south-east wall of culvert [596] |
| 532 | 5 | 4 | masonry | surface | floor of culvert [596] |
| 533 | 5 | 4 | cut | linear | construction cut for culvert [596] |
| 534 | 5 | 4 | structure | drain | structure ?associated with culvert [596] |
| 535 | 5 | 4 | masonry | structure | masonry abutting drain [534] |
| 536 | 5 | 5 | deposit | layer | demolition rubble |
| 537 | 5 | 5 | deposit | fill | rubble infill of inspection chamber [538] |
| 538 | 5 | 5 | structure | chamber | brick inspection chamber |
| 539 | 5 | 5 | deposit | fill | backfill of construction cut [540] |
| 540 | 5 | 5 | cut | discrete? | construction cut; containing chamber [538] & backfilled by [539] |
| 541 | 5 | 5 | deposit | fill | backfill of construction cut [543] |
| 542 | 5 | 5 | deposit | fill | ceramic drain within construction cut [543] |
| 543 | 5 | 5 | cut | discrete | construction cut for drain [542]; backfilled by [541] |
| 544 | 5 | 5 | structure | service | drain |
| 545 | 5 | 5 | structure | service | drain |
| 546 | 5 | 5 | deposit | fill | infill ?of drain [545] |
| 547 | 5 | 5 | deposit | fill | concrete footing within construction cut [551] |
| 548 | 5 | 5 | cut | discrete? | construction cut for drains [545] & [550]; backfilled by [549] |
| 549 | 5 | 5 | deposit | fill | backfill of construction cut [548] |
| 550 | 5 | 5 | deposit | fill | ceramic drain within construction cut [548] |
| 551 | 5 | 5 | cut | discrete? | construction cut for concrete footing [547]; backfilled by [560] |
| 552 | 5 | 5 | structure | foundation | concrete footing for wall [506] |
| 553 | 5 | 4 | structure | foundation | concrete footing for wall [559] |
| 554 | 5 | 5 | deposit | fill | fill of uncertain feature [555] |
| 555 | 5 | 5 | cut | linear? | uncertain feature; filled by [554] & [568] |
| 556 | 5 | 5 | structure | foundation | concrete foundation within construction cut [558] |
| 557 | 5 | 5 | deposit | fill | Backfill of construction cut [558] |
| 558 | 5 | 5 | cut | discrete | construction cut for footing [556]; backfilled by [557] |
| 559 | 5 | 4 | masonry | wall | part of north wall of Structure [594] |
| 560 | 5 | 5 | deposit | fill | backfill of construction cut [551] |
| 561 | 5 | 5 | structure | structure | brick inspection chamber |
| 562 | 5 | 4 | structure | structure | brick inspection chamber |
| 563 | 5 | 5 | deposit | layer | demolition rubble |
| 564 | 5 | 5 | deposit | fill | fill of construction cut [591] |
| 565 | 5 | 5 | deposit | fill | fill of construction cut [591] |
| 566 | 5 | 5 | deposit | fill | fill of construction cut [591] |
| 567 | 5 | 5 | deposit | fill | concrete lintel within cut [591] |
| 568 | 5 | 5 | deposit | fill | fill of feature [555] |
| 569 | 5 | 5 | deposit | fill | fill of construction cut [591] |
| 570 | 5 | 5 | deposit | layer | demolition rubble |
| 571 | 5 | 5 | cut | discrete | construction cut for ?surface [572]; filled by [572] |
| 572 | 5 | 5 | deposit | fill | backfill of construction cut [571] |
| 573 | 5 | 3 | deposit | surface | mortar on wall [516] |
| 574 | 5 | 4 | deposit | layer | dump deposit |
| 575 | 5 | 4 | cut | discrete | construction cut for inspection chamber [562]; backfilled by [576] |
| 576 | 5 | 4 | deposit | fill | backfill of construction cut [575] |
| 577 | 5 | 5 | deposit | layer | demolition rubble |

LTS 10: CONTEXT INDEX

| | | | | | |
|-----|---|---|-----------|----------|--|
| 578 | 5 | 5 | deposit | layer | dump deposit |
| 579 | 5 | 5 | deposit | layer | dump deposit |
| 580 | 5 | 5 | deposit | fill | fill of feature [581] |
| 581 | 5 | 5 | cut | linear? | uncertain feature; filled by [580] |
| 582 | 5 | 3 | deposit | layer | dump deposit |
| 583 | 5 | 3 | deposit | layer | dump deposit |
| 584 | 5 | 3 | deposit | layer | dump deposit |
| 585 | 5 | 3 | deposit | layer | dump deposit |
| 586 | 5 | 3 | deposit | layer | dump deposit |
| 587 | 5 | 3 | deposit | layer | dump deposit |
| 588 | 5 | 3 | deposit | layer | dump deposit |
| 589 | 5 | 5 | cut | linear? | construction cut for inspection chamber [561]; backfilled by [512] & [590] |
| 590 | 5 | 5 | deposit | fill | backfill of construction cut [589] |
| 591 | 5 | 5 | cut | linear? | construction cut for lintel [567]; backfilled by [564]-[566] and [569] |
| 592 | 5 | 5 | deposit | layer | dump deposit |
| 593 | 5 | 4 | deposit | layer | dump deposit |
| 594 | 5 | 5 | structure | building | glass works building - group number |
| 595 | 5 | 3 | structure | building | cellar in glass works building - group number |
| 596 | 5 | 3 | structure | culvert | culvert ?in glass works building - group number |

**APPENDIX C
FINDS ASSESSMENT**

Finds Assessment

Pottery

Introduction

A small assemblage of 40 sherds of pottery weighing 3.996 kg was recovered from the site. Half the sherds came from the overburden in Trench 1, though in terms of weight this was a much larger quantity than the material from Trench 2 (see quantification table below). At least one piece from Trench 1 was of early 20th century date. The unstratified pottery from context [219] was early 20th century. Other vessels could be of 19th century manufacture.

| Context | Sherds | Weight (g) |
|--------------------|--------|------------|
| 100 | 20 | 3,185 |
| Unstratified Tr. 2 | 11 | 668 |
| 235 | 8 | 108 |
| 239 | 1 | 4 |

Table 1. Quantification of pottery by context

Range and Variety

| Context | Type | Sherds | Weight (g) | Comments |
|--------------------|-------------------------------|--------|------------|---|
| 100 | Brown glazed earthenware | 1 | 251 | Complete small jar in buff fabric with glossy brown glaze. |
| 100 | Ceramic object | 1 | 31 | Insulator? |
| 100 | China | 2 | 91 | Both are small flatwares/saucers. One with gold lines, one with printing and painting. |
| 100 | Coarse earthenware | 1 | 1,034 | Large disc of coarse yellowish buff fabric with green glaze on one side. Perhaps kiln furniture, sagger lid? |
| 100 | Later redware | 1 | 680 | Large base. |
| 100 | Later redware | 1 | 297 | With internal slip – base. |
| 100 | Refined whiteware | 4 | 228 | Plain white but with some moulding. All are small flatwares (eg. saucers/dishes). One is marked W.H. Grindley & Co. and probably 'England' above. |
| 100 | Refined whiteware - decorated | 2 | 134 | Rim fragment with moulded decoration and some painting and a ring base with small patch of paint/sponging. |
| 100 | Refined whiteware - printed | 1 | 31 | Green printed plate rim. |
| 100 | Refined whiteware - printed | 4 | 314 | Blue transfer printed wares - two plates and two hollow vessels. |
| 100 | Refined whiteware - sponged | 1 | 82 | Saucer with cut sponge decoration. |
| 100 | Utilitarian stoneware | 1 | 43 | Jam jar. |
| Unstratified Tr. 2 | Biscuit | 11 | 668 | Two biscuit fired vessels. One (10 sherds) is a large mixing bowl with internal slip, the other perhaps a casserole type vessel with seating for lid. |
| 235 | Light brown earthenware | 1 | 4 | - |
| 235 | Pearlware | 1 | 8 | Shell edge rim. |

| | | | | |
|-----|-----------------------------|---|----|---|
| 235 | Refined whiteware | 1 | 4 | Moulded and painted. |
| 235 | Refined whiteware | 2 | 71 | Two joining sherds of small jar (profile) - perhaps pharmaceutical. |
| 235 | Refined whiteware - printed | 3 | 21 | Blue transfer printed. |
| 239 | Refined whiteware - printed | 1 | 4 | Blue transfer printed. |

Table 2. Catalogue of pottery

Discussion/Potential

Sherds of refined white tablewares, with various types of decoration, were most numerous in this small group.

The pottery from Trench 1 included a large fragment of a coarse earthenware disk. This may well be a piece of kiln furniture from the Sunderland (later Wearside) Pottery Company. The two large redware fragments might be products of the Company but it is impossible to tell. These coarse earthenwares were made at many Wearside, and Tyneside, potteries. However, the firm did not make the refined tablewares which make up most of the rest of this group. These included a fragment with the mark of a Staffordshire manufacturer W.H. Grindley & Co. The form of the mark dates it to the period 1914–1925 (www.thepotteries.org).

The material from Trench 2 includes fragments of two biscuit-fired vessels. One of these is a mixing bowl with external moulding and the other a casserole type dish. These are almost certainly products of the pottery on the site here. These types of vessels were made after the firm became the Wearside Pottery in 1927 and continued to be made there until its closure in 1957 (Baker 1984, 68-69). A small white earthenware jar from context [235] could potentially be an earlier product of the Sunderland Pottery Company.

The other material is of no particular interest and the assemblage is too small to have any potential for further work. The biscuit-fired wares could perhaps be offered to the Sunderland Museum.

Bricks

Introduction

Thirteen samples of brick types were submitted for assessment. Of these, three were firebricks, the others were house, or common, bricks. One of the latter was a wedge or voussoir brick.

The samples were examined, described, and their dimensions recorded. Where maker's marks were present, these were identified to source and potential date by reference to Davidson (1986) and other reference material held by NCAS.

The recorded data was entered into a simple database table (see below).

The Assemblage

The assemblage can be roughly divided on typological grounds into three date groups. The earliest are hand-moulded common bricks without frogs ([304], [321], [328]), and are contextually associated with construction of the Wear Flint Glass Works in the early 1870s. Typologically these bricks are of broadly mid-19th century form, but their continued manufacture and use into the 1870s is not problematic.

The next group are pressed and wire-cut common and firebricks ([203], [225], [230], [302], [424], [516], [530]). The firebricks include two maker's stamps for North Hetton Colliery ([302], [530]) which commenced firebrick manufacture in 1870, so their presence in structures [302] and [530], elements of the 1870s glass works complex, is consistent. Typologically the samples in this group span the late 19th and early 20th century, even continuing into the 1930s. These include maker's stamps of Penshaw Brick Works (1897-1925) and (D)ougall, tentatively identified as Dougall's Bonnyside Works, Bonnybridge, Stirlingshire, which began manufacture in 1884.

The latest two bricks belong to the period 1935 or later ([210], [212]). Of these, the brick from structure [210] in kiln [205] is most noteworthy with an end-stamp giving the maker, J Swinburne of Birtley, and commemorating the Silver Jubilee of George V with the date – 1935. The other brick assigned to this group is a wedge or voussoir for an arch made by ?Jones Brothers of Pelaw, though the Pelaw works were operating from 1911, so it is possible that the brick sample from structure [212] in kiln [205] could belong with the second of three groups identified.

Discussion and Potential

From the suggested dating of the bricks it seems likely that structures [302], [321], and [328] are all contemporary structures and belong to the establishment of the Wear Flint Glass Works in the early 1870s. Firebricks from structures [302] and [516] are also likely to belong to this phase of construction.

Other samples from groups two and three ([212], [225] and [230]) which are associated with construction of a kiln for the Sunderland Pottery, c. 1913, have the stamps of makers operating between 1884 and 1960. The presence in this structure of a brick dated 1935 (from structure [210]) is presumably evidence for later repair.

Overall the assemblage offers little further potential for study unless the dating of the earliest group markedly conflicts with the final stratigraphic and historical interpretation of the structures from which they derive. It would however be desirable to try and firmly identify the maker's stamp interpreted as '(D)ougall', which does not appear to be a local stamp, and to clean out the infilled frog/stamp of the brick from structure [302] to record that maker.

Recommendations

Following any further study as recommended above, it is considered that only the stamped bricks should be retained. These could be offered to the Tyne and Wear Archaeology Officer who is forming a reference collection of stamped bricks.

Other Finds

A clay pipe bowl inscribed 'THE PLUG PIPE' came from the overburden in Trench 1 and a fragment of stem (bore 6/64") from context [235]. The pipe bowl is a very late type without spur. The stem is undateable.

A small fragment of roof tile was also recovered from context [235].

The base of a clear (white) glass bottle was recovered as unstratified material in Trench 2 and a moulded clear glass fragment and a small piece of green glass ?waste came from context [239] in the same trench. The bottle glass is of 20th century date. The other two fragments are not particularly dateable.

References

Baker, J.C., 1984. *Sunderland Pottery*.

Davison P.J., 1986. *Brickworks of the North-East*, Gateshead Public Library.

Douglas G. and Oglethorpe M., 1993. *Brick, Tile, and Fireclay Industries in Scotland*, Scottish Industrial Archaeological Survey 1977-85, RCHMS.

| Context | Type | Length (mm) | Width (mm) | Thickness (mm) | Comments | Maker | Date |
|---------|------------------|-------------|------------|----------------|---|---|-----------------|
| 203 | Housebrick | 240 | 114 | 77 | No frog. Mid red, occasional small gritty inclusions. Parallel grooves along the edge of one bedding face. Header face looks sooted, some lime mortar adhering. | - | e. 20 C |
| 210 | Housebrick | 233 | 114 | 76 | No frog. Dark red, pressed and wire-cut. Grey mortar on one bedding face. | (SWIN)BURNE&SONS ROYAL JUBILEE (19)35 (SOUTH BIRTLEY BRICK) WORKS | 1935-1938 |
| 212 | Housebrick wedge | 225 | 108-180 | 74 | Frog on both bedding faces. Dark red. Press-moulded wedge or voussoir. Header faces discoloured. Probably product of Jones Yard (Davison, 121, 122). | IRIS PELAW | 1911-1960 |
| 225 | Housebrick | 225 | 106 | 76 | Frogs on both bedding faces. Dark red. Pressed and wire-cut. Heavy, well-sorted fabric with no visible inclusions. Penshaw brickworks (Davison, 187). | PENSHAW BRICK WORKS DURHAM | 1897-1925 |
| 230 | Firebrick | - | 110 | 76 | Buff fabric, dense and fine-grained. Discoloured mortar adhering to one header face. ?Dougall's Bonnyside Works, Bonnybridge, 1884+ (Douglas and Oglethorpe, 62). | (D)OUGALL | ?e. 20 C |
| 302 | Housebrick | 226 | 107 | 67 | Frog on one bedding face. Mid red. Pressed and wire-cut. Frog possibly has maker's mark but infilled with mortar. | - | l. 19 - e. 20 C |
| 302 | Firebrick | 228 | 112 | 69 | No frog. Buff sandy gritty. Pressed and wire-cut. One end broken. North Hetton Colliery Firebrick Works at Low Moorsley (Davidson, 187, 282). | N HETTON | 1870-1914 |
| 304 | Housebrick | 240 | 115 | 72 | No frog. Dark red. Possibly hand moulded. Upper bedding face wiped, slight yellow wash to surfaces. White lime mortar on lower bedding face and both sides. | - | ?mid 19 C |
| 321 | Housebrick | 230 | 113 | 71 | No frog. Mid-dark red, occasional sandstone chip inclusions, ?pressed. | - | ?mid 19 C |
| 328 | Housebrick | 239 | 115 | 75 | No frog. Dark red, well sorted fabric. Hand moulded. White lime mortar on all but one end face. | - | ?mid 19 C |
| 424 | Housebrick | 237 | 114 | 76 | As [203]. | - | e. 20 C |
| 516 | Housebrick | 222 | 110 | 73 | No frog. Dark red. Pressed and wire-cut. Some dark grey mortar adhering. | - | l. 19 - e. 20 C |
| 530 | Firebrick | 233 | 112 | 60 | Frog on one bedding face. Buff yellow gritty fabric with occasional small iron inclusions. Possibly hand moulded. Presumably North Hetton Coal Company product (Davison, 187, 282). | NHC | 1870-1914 |

**APPENDIX D
PLATES**



Plate 1: Overview of Trench 1, looking east (*scale 1m*)



Plate 2: South facing section of easternmost part of Trench 1, looking north (*scale 1m*)



Plate 3: Overview of Trench 2, looking west (*scale 1m*)



Plate 4: Overview of kiln [205] in Trench 2, looking south-west (*scale 1m*)



Plate 5: Overview of kiln [205] in Trench 2, looking east (*scale 1m*)



Plate 6: Detail of brick infill [219], within kiln [205], in Trench 2, looking north-east (*scale 1m*)



Plate 7: Overview of wall [202], with partition wall [203] in Trench 2, looking north-west, (scale 1m)



Plate 8: Overview of Structure [301], with wall [328], in Trench 3, looking east (scale 1m)



Plate 9: Overview of northern extent of Building [300], with Structure [321], in Trench 3, looking east (*scale 1m*)



Plate 10: Western corridor of Building [300] in Trench 3, looking north (*scale 1m*)



Plate 11: Floor [304] and wall [305] of Building [300] in Trench 3, looking east
(scale 1m)



Plate 12: Detail of modifications to wall [305] of Building [300] in Trench 3, looking north-west
(scale 1m)



Plate 13: Wall [424] in Trench 4, looking east (*scale 1m*)



Plate 14: Southern extent of wall [424], with wall [446] in the foreground, in Trench 4, looking east (*scale 1m*)



Plate 15: Overview of Trench 5, looking east (*scale 1m*)



Plate 16: Overview of Structure [595], including wall [516], in Trench 5, looking south-east (*scale 1m*)



Plate 17: Overview of Trench 5, looking west (*scale 1m*)

PCA

PRE - CONSTRUCT ARCHAEOLOGY LIMITED

UNIT 54

BROCKLEY CROSS BUSINESS CENTRE

96 ENDWELL ROAD

BROCKLEY

LONDON SE4 2PD

TEL: 0207 732 3925 0207 639 9091

FAX: 0207 639 9588

EMAIL: info@pre-construct.com

PRE-CONSTRUCT ARCHAEOLOGY LIMITED (NORTHERN OFFICE)

UNIT 19A

TURSDALE BUSINESS PARK

DURHAM DH6 5PG

TEL: 0191 377 1111

FAX: 0191 377 0101

EMAIL: info.north@pre-construct.com

