



BENGAL STREET BLOCK, BEEHIVE MILLS, ANCOATS, Manchester

Archaeological Excavation



Oxford Archaeology North

January 2007

Nikal Investments

Issue No: 2006-07/620
OA North Job No: L9764
NGR: SJ 8504 9875

Document Title: BENGAL STREET BLOCK, BEEHIVE MILLS, ANCOATS,
MANCHESTER

Document Type: Archaeological Excavation

Client Name: Nikal Investments

Issue Number: 2006-07/620
OA Job Number: L9764
Site Code:

National Grid Reference: SJ 8504 9875

Prepared by:	Sean McPhillips	Chris Wild
Position:	Project Officer	Project officer
Date:	November 2006	December 2006

Checked by:	Ian Miller	Signed.....
Position:	Project Manager	
Date:	December 2006	

Approved by:	Alan Lupton	Signed.....
Position:	Operations Manager	
Date:	January 2007	

Oxford Archaeology North

Storey Institute
Meeting House Lane
Lancaster
LA1 1TF
t: (0044) 01524 848666
f: (0044) 01524 848606

w: www.oxfordarch.co.uk
e: info@oxfordarch.co.uk

© Oxford Archaeological Unit Ltd (2007)

Janus House
Osney Mead
Oxford
OX2 0EA
t: (0044) 01865 263800
f: (0044) 01865 793496

Oxford Archaeological Unit Limited is a Registered Charity No: 285627

Disclaimer:

This document has been prepared for the titled project or named part thereof and should not be relied upon or used for any other project without an independent check being carried out as to its suitability and prior written authority of Oxford Archaeology being obtained. Oxford Archaeology accepts no responsibility or liability for the consequences of this document being used for a purpose other than the purposes for which it was commissioned. Any person/party using or relying on the document for such other purposes agrees, and will by such use or reliance be taken to confirm their agreement to indemnify Oxford Archaeology for all loss or damage resulting therefrom. Oxford Archaeology accepts no responsibility or liability for this document to any party other than the person/party by whom it was commissioned.

CONTENTS

SUMMARY	3
ACKNOWLEDGEMENTS	4
1. INTRODUCTION	5
1.1 Circumstances of Project.....	5
2. METHODOLOGY	6
2.1 Project Design.....	6
2.2 Aims and Objectives	6
2.3 Excavation Trenching	7
2.4 Finds	7
2.5 Archive	7
3. BACKGROUND	8
3.1 Introduction	8
3.2 Location.....	8
3.3 Topography and Geology.....	8
3.4 Historical Background: Development of Ancoats.....	9
3.5 Historical Background: The Study Area	11
4. FIELDWORK RESULTS.....	18
4.1 Introduction	18
4.2 Evaluation Trenches.....	18
4.3 Excavation Trenches: Area 1.....	21
4.4 Excavation Trenches: Area 2.....	29
4.5 Excavation Trenches: Area 3.....	32
4.6 Excavation Trenches: Area 4.....	33
4.7 The Finds	33
4.8 The Palaeoenvironmental Evidence.....	36
5. DISCUSSION.....	38
5.1 Introduction	38
5.2 Phase 1 (18 th Century).....	38
5.3 Phase 2 (Late 18 th Century)	38
5.4 Phase 3 (Mid-19 th Century)	39
5.5 Phase 4 (Late 19 th Century)	39
5.6 Phase 5 (Early 20 th Century).....	40

5.7	Phase 6 (Mid-20 th Century)	40
5.8	Conclusion.....	40
6.	RECOMMENDATIONS.....	41
6.1	Introduction	41
6.2	Recommendations.....	41
7.	BIBLIOGRAPHY	42
7.1	Cartographic Sources	42
7.2	Primary Sources.....	42
7.3	Secondary Sources	43
APPENDIX 1: PROJECT DESIGN.....		45
APPENDIX 2: SUMMARY FINDS CATALOGUE		54
ILLUSTRATIONS		58
Figures		58
Plates		58

SUMMARY

Nikal Investments has proposed a scheme of redevelopment for a mixed residential and commercial end-use at 45 – 47 Bengal Street (centred on NGR SJ 8504 9875), within the Ancoats area of Manchester. Until recently, N^o 45 Bengal Street was occupied by a light industrial unit and associated yard, whilst a disused 19th-century textile mill occupied N^o 47 Bengal Street. During July 2005, this mill building was destroyed by a catastrophic fire, which resulted in the collapse of the bulk of the structure. Elements of the building that did survive, however, included some structures of archaeological significance. Whilst the perilous structural nature of these remains necessitated their demolition as a matter of urgency, a rapid programme of archaeological survey was recommended in advance of their ultimate loss to ensure a record of the structural remains was compiled. In accordance with this recommendation, Oxford Archaeology North (OA North) was commissioned to undertake the survey in August 2005, which was coupled with a desk-based assessment, which identified a potential for buried remains of archaeological significance to survive on the site.

Following on from the building survey and the desk-based assessment, Nikal Investments commissioned OA North to undertake an evaluation of the site to assess the presence or absence of buried archaeological remains, which was required to support a planning application for the redevelopment of the site. The evaluation was undertaken in October 2006, and revealed that extensive archaeological remains survived *in-situ* across the site. Following consultation with the Assistant County Archaeologist for Greater Manchester, it was recommended that a programme further excavation was implemented to provide a detailed mitigation record of the remains in advance of their ultimate destruction. Excavation was targeted on the remains of cellar dwellings adjacent to the Bengal Street and Jersey Street frontages, workers' housing on Shilling Court and Holditch's Court, the steam-power plant associated with the Bengal Street block, and a boundary ditch that had formed part of the pre-urbanised landscape of Ancoats. This work was undertaken in December 2006, and exposed archaeological remains of high local, or even regional significance. In particular, the physical remains of cellar dwellings dating from the late 18th and early 19th century were exposed.

The investigation has provided a detailed mitigation record of the buried remains of archaeological significance across the site in advance of their potential destruction as part of the proposed redevelopment of the site. This record should largely satisfy the requirements of the archaeological condition attached to planning consent for redevelopment. It should, however, be noted that an archaeological watching brief may be required in the event of earth-moving works across the site. It is likely that this will be limited to an in-filled section of a canal arm that crosses the site, the footprint of a former boiler house associated with the Bengal Street block of the Beehive Mill complex, and a building to the north of the former canal that is depicted on Green's detailed map published in 1794. Following the completion of all the fieldwork elements, it is also likely that the significant results obtained from the programme of archaeological investigation will require publication in an appropriate manner, such as a short paper to a relevant academic journal.

ACKNOWLEDGEMENTS

Oxford Archaeology North (OA North) would like to thank Stuart Ingham and Chris Holden of CRE8 Management for commissioning and supporting the project on behalf of Nikal Investments, and for facilitating the programme of archaeological fieldwork. Thanks are also due to Norman Redhead, the Assistant County Archaeologist for Greater Manchester, for his support and advice. Thanks are also expressed to the staff of the Local Studies Unit at Manchester Central Library for facilitating access to the sequence of historic maps, and to Bernard Champness and the Manchester Region Industrial Archaeology Society for supplying background information.

The archaeological evaluation and survey was undertaken by Chris Wild, and the subsequent programme of excavation was directed by Sean McPhillips, assisted by Ged Callaghan, Alex Beben and Pascal Eloy. The historical research was undertaken by Ian Miller. The report was compiled by Sean McPhillips, Chris Wild and Ian Miller, and the illustrations were produced by Chris Wild and Anne Stewardson. The palaeoenvironmental analysis was undertaken by Sandra Bosnall and Elizabeth Huckerby, and the finds were examined by Rebekah Pressler and Andrew Bates. The report was edited by Ian Miller, who was also responsible for project management. The project was funded entirely by Nikal Investments.

1. INTRODUCTION

1.1 CIRCUMSTANCES OF PROJECT

- 1.1.1 Nikal Investments has proposed a scheme of redevelopment for a mixed residential and commercial end-use at 45 – 47 Bengal Street (centred on NGR SJ 8504 9875), within the Ancoats area of Manchester (Fig 1). Until recently, N° 45 Bengal Street was occupied by a light industrial unit and associated yard, whilst a disused 19th-century textile mill occupied N° 47 Bengal Street. During July 2005, this mill building was destroyed by a catastrophic fire, which resulted in the collapse of the bulk of the structure. Elements of the building that did survive, however, included some structures of archaeological significance. Whilst the perilous structural nature of these remains necessitated their demolition as a matter of urgency, a rapid programme of archaeological survey was recommended in advance of their ultimate loss to ensure a record of the structural remains was compiled.
- 1.1.2 In response to a request from Mr J Wrigley of Nikal Investments in August 2005, Oxford Archaeology North undertook the recommended survey of the surviving remains. This was coupled with an archaeological watching brief that was maintained during demolition works, and an appropriate level of research that was intended to place the results of the fieldwork into their historical context (OA North 2005). Furthermore, acting on the advice of the Greater Manchester Assistant County Archaeologist, an archaeological desk-based assessment of the site and the adjoining property was undertaken, which aimed to identify the potential for buried remains of archaeological significance, and was intended to support a future planning application for the redevelopment of the site.
- 1.1.3 The desk-based research traced the development of the study area from the late 18th century to the present day, and concluded that the site was likely to contain buried remains of high local significance. In particular, it was considered likely that the buried remains of former workers' dwellings, an in-filled canal arm, and elements of the steam-power plant associated with the Bengal Street block of the Beehive Mills complex were likely to survive. Whilst these remains were not considered to be of sufficient archaeological significance to merit preservation *in-situ*, it was considered likely that a mitigation record would be required in advance of their ultimate destruction.
- 1.1.4 In accordance with this recommendation, and following consultation with the Assistant County Archaeologist for Greater Manchester, OA North was commissioned to undertake an archaeological evaluation of the site to establish the presence or absence of buried remains. This comprised the targeted excavation of seven trial trenches, which revealed considerable buried remains to survive immediately below the modern ground surface. Following further consultation with the Assistant County Archaeologist, the trenches were extended to allow for the full excavation of exposed structures, and a detailed mitigation record to be compiled.

2. METHODOLOGY

2.1 PROJECT DESIGN

- 2.1.1 In response to a request from Mr Stuart Ingham, of CRE8 Management, OA North submitted a project design for a programme of archaeological evaluation at the Bengal Street Block in Ancoats, Manchester. Following the acceptance of the project design by the Assistant County Archaeologist for Greater Manchester, OA North was commissioned to undertake the work during October 2006. This programme of evaluation revealed *in-situ* archaeological remains of high local, if not regional, significance that were likely to be destroyed during the course of redevelopment.
- 2.1.2 Following discussions with the Assistant County Archaeologist for Greater Manchester, a programme of further excavation was recommended in order to secure archaeological interests. This comprised the excavation of four targeted excavation areas, which were targeted upon the remains of former back-to-back housing in the southern part of the study area, and the steam-power plant associated with a mid-19th century textile mill in the north-western part of the site. The excavation was undertaken in November 2006, and was consistent with the relevant standards and procedures provided by the Institute of Field Archaeologists, in accordance with the updated project design (*Appendix 1*).

2.2 AIMS AND OBJECTIVES

- 2.2.1 The main aim of the evaluation was to characterise the level of preservation and significance of the archaeological remains relating to the former workers' dwellings and the steam-power plant associated with the Bengal Street block of the Beehive Mills, and to provide a good understanding of their potential.
- 2.2.2 The stated objectives of the subsequent programme of detailed excavation were:
- to expose and provide a detailed archaeological record for the former workers' dwellings in the south-western part of the study area, fronting Bengal Street;
 - to expose and provide a detailed archaeological record for a block of former workers' dwellings on the north side of Holditch's Court;
 - to expose and provide a detailed archaeological record for a block of former workers' dwellings between Shilling Place and Shilling Court;
 - to expose and provide a detailed archaeological record for the former steam-power plant associated with Bengal Street Mill. In the first instance, this will focus upon a rectangular building shown on historic mapping, thought to represent the former engine house; the associated

boiler house immediately to the east will not be excavated at this stage due to its close proximity to a dangerous building;

- to excavate a section across a large linear feature identified to the south of Shilling Place, and establish its nature, character, and date;
- to produce a project archive and final report of the archaeological investigations, which will include an updated project design for the publication of the results, if merited, and secure the release of the archaeological planning condition for the development of the site.

2.3 EXCAVATION TRENCHING

2.3.1 The uppermost levels were excavated by a machine fitted with a toothless ditching bucket. The same machine was then used to define carefully the extent of any surviving walls, foundations and other remains, after which all excavations were undertaken manually.

2.3.2 All information was recorded stratigraphically with accompanying documentation (plans, sections and both colour slide and black and white print photographs, both of individual contexts and overall site shots from standard view points). Photography was undertaken with 35mm cameras on archivable black-and-white print film as well as colour transparency, all frames including a visible, graduated metric scale. Digital photography was extensively used throughout the course of the fieldwork for presentation purposes. Photographic records were also maintained on special photographic *pro-forma* sheets.

2.4 FINDS

2.4.1 All finds recovered were bagged and recorded by context number, processed and stored according to current standard practice based on guidelines set by the Institute of Field Archaeologists. The finds have been analysed by OA North in-house specialists, and are discussed in *Section 4.6*.

2.5 ARCHIVE

2.5.1 A full professional archive has been compiled in accordance with the project design (*Appendix 1*), and in accordance with current IFA and English Heritage guidelines (English Heritage 1991). The paper and digital archive will be deposited with the Greater Manchester Textile Mill Survey on completion of the project, with a synthesis (in the form of an index to the archive and the report) deposited with the Greater Manchester SMR.

3. BACKGROUND

3.1 INTRODUCTION

- 3.1.1 An understanding of the archaeological and historical background of a site provides the local context within which the extant structures and buried remains can be assessed archaeologically. The following section provides an outline of the natural setting of the study area, its location both physically and relative to other key textile sectors within the city, and summarises the development of Ancoats. This section also provides a chronological account of the development of the study area in terms of its occupants and uses, and its evolution based on cartographic regression analysis.
- 3.1.2 It is understood that the eastern part of the area studied during the course of the desk-based research, occupied currently by Beehive Mill and a medical centre, will not be effected by the present development proposals. However, this area has been considered in this report as it is linked historically to the area intended for redevelopment.

3.2 LOCATION

- 3.2.1 The study area lies within the Ancoats area of Manchester, which is situated less than 1km to north-east of the city centre (Fig 1). It is centred at NGR SJ 8504 9875, occupying a block of land bounded by Jersey Street, Radium Street, Naval Street, and Bengal Street, forming a rectangular-shaped plot at height of c50m aOD (Plate 1). The site forms part of the Ancoats Conservation Area, but lies just outside the current World Heritage Site proposal boundary.

3.3 TOPOGRAPHY AND GEOLOGY

- 3.3.1 The solid geology of the area comprises Carboniferous sedimentary material and a series of Permo-Triassic rocks, consisting mainly of New Red Sandstone. The overlying drift incorporates Pleistocene boulder clays of glacial origin, and sands, gravels, and clays of fluvial/lacustrine origin (Hall *et al* 1995, 8).
- 3.3.2 Topographically, the Manchester Conurbation as a region is within an undulating lowland basin, which is bounded by the Pennine uplands to the east and to the north. The region comprises the Mersey river valley, which is dominated by its heavily meandering river within a broad flood plain (Countryside Commission 1998, 125). The topography of the study area, however, reflects the shallow valley of Shooters Brook, a rivulet that flows westwards from Newton Heath, through Ancoats and into the river Medlock (Ashworth 1987, 22). Until the early 19th century, the brook flowed through Ancoats at the base of a relatively deep valley, and it was upon the northern berm of this valley that the present study area is situated. However, Shooters Brook had been culverted by 1820 (OA North 2004a), and the topography of the valley has since been masked considerably by urban expansion.

3.4 HISTORICAL BACKGROUND: DEVELOPMENT OF ANCOATS

- 3.4.1 The origin of the name Ancoats is uncertain, although it is likely to have derived from the Old English *ana cots*, which may be translated as ‘lonely cottage’ (Cooper 2002, 13). It was an area of open land throughout the medieval period, considered by Swindells (1908, 19-26) to have been ‘an almost idyllic rural backwater’, and was recorded in a survey of 1320 to have formed one of eight hamlets within the township of Manchester (Harland 1861). It is likely that settlement comprised a few cottages and farmhouses along Ancoats Lane, Newton Lane and Butler Lane, although the most notable building in the area by the end of the medieval period was undoubtedly the timber-framed Ancoats Hall, which overlooked the river Medlock on the eastern fringe of the area.
- 3.4.2 Ancoats retained a semi-rural aspect until the late 18th century, when the population of Manchester expanded at an unprecedented rate, and resulted in the transformation of Ancoats into a key industrial suburb. This process of industrialisation began in the 1770s, when land owned by the Leigh family was sold to Thomas Bound, a builder, who then sold it on to others for development. The focus for initial development was at the corner of Great Ancoats Street and Oldham Road, and contemporary maps depict the main elements of the existing street plan laid out on former fields of the area. Building speculation then drove further expansion, with plots of land within a grid pattern of streets being sold for development. An early stage in the development of the area is depicted on William Green’s *Map of Manchester and Salford*, which was surveyed between 1787 and 1794, and shows in excess of 60 plots laid out (Fig 2).
- 3.4.3 The earliest factories in the area included several water-powered mills erected along Shooters Brook, to the south of Union (now Redhill) Street. However, in seeking a solution to the inadequate power supplied to their waterwheels from Shooters Brook, several firms experimented with steam power. A notable example was Salvins’ Factory, where John Kennedy is reputed to have first applied steam power to one of his spinning mules in 1793 (Lee 1972, 9). In order to achieve this, Kennedy utilised a steam-powered pumping engine that delivered water to a waterwheel, which remained the primary source of motive power. Nevertheless, it was on the basis of a breakthrough in the application of steam power that created the explosion of factory building in Ancoats (Little 2004, 31).
- 3.4.4 The completion of the Ashton-under-Lyne Canal in 1796, and a proposal to construct the Rochdale Canal through the area offered the potential of cheap and reliable transport for goods and materials to and from Ancoats. The completion of the Rochdale Canal in 1804 coincided broadly with the efficient application of steam power to cotton-spinning machinery, and a growth in the national demand for textiles. A small number of enterprising firms seized the opportunity presented by this combination of factors, resulting in the evolution of a new breed of steam-powered mill building in Ancoats, and the creation of ‘the world’s first industrial suburb’ (Williams 2002, 34).

- 3.4.5 **Aspects of housing conditions in Ancoats:** the rapid industrialisation of Manchester from the last quarter of the 18th century was accompanied with an explosion in the population; a local census in 1774 estimated a total of 22,481 inhabitants within the township of Manchester, whilst the census of 1801 recorded over 70,000 people, of which 11,039 resided in Ancoats (Lloyd-Jones and Lewis 1993). By 1851, the total number of residents within Ancoats alone had risen to 53,737, representing a local population far larger than other entire towns in Lancashire, such as Burnley, Blackburn, Rochdale or Wigan, and yet lacked the basic amenities and institutions of self-government.
- 3.4.6 Swindells (1908, 236) identified Thomas Bound as a pioneering force in the early development of Ancoats during the 1770s, after acquiring part of the estate of the Legh family and then land belonging to the Grammar School. It seems that Bound divided his newly-acquired land into small plots, which were then sold individually for development. He is listed in a trade directory of that decade as a 'builder' (Raffald 1777), but in Bancks' directory for 1800 Thomas Bound is registered as a 'gentleman', suggesting that he had generated considerable wealth from property dealing.
- 3.4.7 The earliest dwellings for the new breed of factory worker were erected with little legislative control. The Manchester Police Commissioners had sought to apply a rudimentary form of building regulations as early as 1792, including a requirement to provide party walls between properties. However, in the absence of any practical way of enforcement, the regulations were largely ignored (Hylton 2003, 152).
- 3.4.8 There are several descriptions of the Manchester housing stock during the 19th century that are available within surviving documentary accounts. One such description is provided by Dr J Farriar in the proceedings of the Board of Health in 1805, who noted that *'the number of damp and very ill-ventilated cellars inhabited in many parts of the town is a most extensive and prominent evil...'*. Farriar goes on to describe the average Manchester workers' dwelling as consisting of *'two rooms, the first of which is used as a kitchen, and though frequently noxious by its dampness and closeness, is generally preferable to the back room. The latter has only one small window, which, through on a level with the outer ground, is near the roof of the cellar'* (quoted in Aspin 1995, 130).
- 3.4.9 A major step forward in housing improvement was provided by a local Act of 1844, whereby all new houses were to be provided with a properly built privy, and all existing houses were to have one installed. The important effect of this Act was that it effectively outlawed the building of back-to-back houses, and none were built in Manchester after this date (Lloyd-Jones and Lewis 1993). Unlike earlier legislation, the 1844 Act was enforced by a dedicated committee, which investigated some 9,400 dwellings in the first year alone, and by 1850 over one third of Manchester's dwellings had been 'reconditioned' (Hylton 2003, 153).
- 3.4.10 Further legislation introduced in 1853 had sought to address specifically the problems of cellar dwellings. Investigations completed in preparation for the legislation discovered 65 people living in eight cellars in one workers'

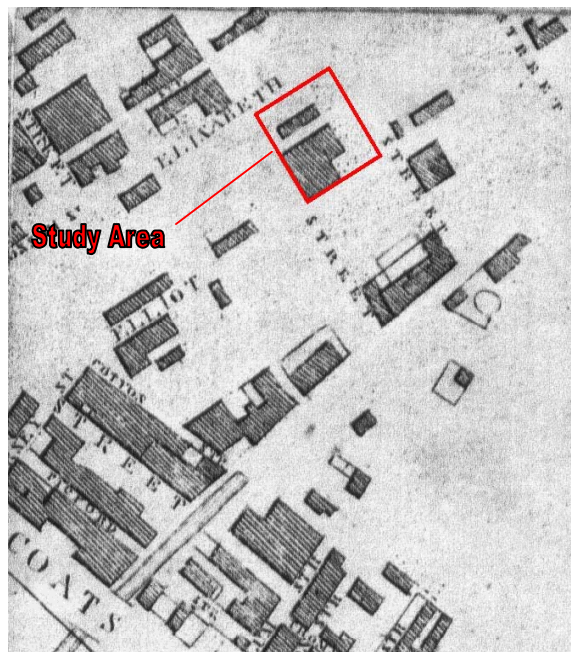
tenement in Ancoats. However, organised opposition from the property owners, united as the Home Owners' Guardian Association, ensured that action against this class of dwelling was largely ineffectual (*op cit*, 154). Renewed efforts commenced in 1868, when Manchester Council introduced a Medical Officer of Health, who largely eradicated cellar dwelling by 1874.

- 3.4.11 In 1901, Manchester City Council bought 238 acres of land at Blackley with a view to erecting affordable housing and addressing the problem of sub-standard dwellings. Nearly 25,000 sub-standard houses were demolished during the following 18 years, and back-to-back housing was 'virtually eliminated by 1913' (Hylton 2003, 184). Nevertheless, the problem of poor quality housing persisted, and by 1954, when Manchester City Council renewed efforts at slum clearance there were an estimated 70,000 homes unfit for human habitation, including many in Ancoats.

3.5 HISTORICAL BACKGROUND: THE STUDY AREA

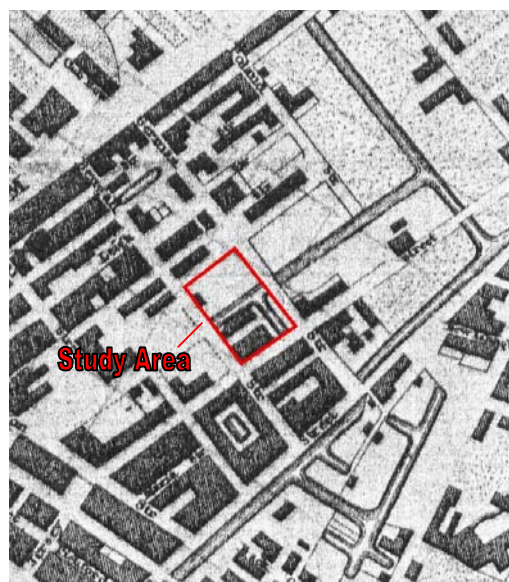
- 3.5.1 One of the earliest cartographic sources to show the study area in detail is William Green's *Map of Manchester and Salford*, published in 1794 (Fig 2). This shows Ancoats at a time when there was a great deal of speculative building going on in the area, and the road layout shown was part of that speculation. Four streets bordered the site: Elliot Street (now Jersey Street), German Street (now Radium Street), Elizabeth Street (now Naval Street), and Bengal Street. The line of the Rochdale Canal had not been laid out at this time, but ran subsequently to the south of Union Street (now Redhill Street), crossing the junction of German Street and Union Street and continuing along a line to the north of Union Street. Heath Street is indicated on the map intersecting the site, but this street was not built as depicted. Green's map also shows several field boundaries crossing the site (Fig 2), undoubtedly relicts of the pre-urbanised landscape.
- 3.5.2 Green's map indicates buildings to have been erected within the study area by the end of the 18th century. Two groups of buildings are shown, although there is no firm indication as to their precise function. However, it is possible that the larger group, situated within the southern part of the study area, represented dwellings, whilst the smaller group to the north may have been of a commercial nature, as suggested by a boundary wall to the rear. A recent document held by the Greater Manchester Archaeological Unit lists 13 textile mills in Manchester that are considered to have been built before 1800. This document refers to a Bengal Street Mill, situated within the present study area, which is listed as a water-powered factory that was converted to steam power in 1796 by the firm of McConnel and Kennedy. However, the evidence for this is not given, and whilst the building shown on Green's map within the northern part of the present study area may have been an early textile mill, this awaits corroboration.
- 3.5.3 The layout of the study area provided by Green's map is reproduced in lesser detail on Bancks and Thornton's *Plan of Manchester and Salford*, which was published in 1800, and Ashton's small-scale map of the area of 1804. The former shows the main line of the Rochdale Canal under construction, whilst

the latter depicts it to have been completed. The next available map of the study area is that produced by Johnson in 1819. Whilst the detail of this map may be unreliable for an analysis of individual buildings, it does provide a good indication as to the extent of development within the present study area. This map shows the Bengal Street branch of the Rochdale Canal to have been constructed, passing underneath German Street, across the study area and terminating at Bengal Street. This formed a crucial transport link for commercial premises along its banks and a water source for steam-power plant in adjacent mills. A short arm extending south from the Bengal Street branch canal is also depicted, taking a route parallel to German Street and across the south-eastern part of the study area. Whether this was intended as a navigable waterway or as a drain/feeder to steam-power plant is uncertain.



Extract from Bancks and Thornton's map of 1800.

- 3.5.4 The remainder of the plot to the south of the Bengal Street branch canal is shown to have been occupied by two rectangular blocks of buildings of different sizes. The same layout is depicted upon a small-scale map published in association with Pigot's trade directory for 1819. Whilst the relative sizes of the buildings vary, it would seem probable that they are the same as those shown on Green's map of 1794. It is possible that the open area to the north of the canal arm served as a coal yard, and that the structure shown is associated with this usage. Entries within a commercial trades' directory published some three years later reinforce this suggestion, as the Duke of Bridgewater's Trustees are listed as coal merchants on Bengal Street (Pigot and Dean 1822, 242). This directory does not contain any other entries for the study area, indicating that Beehive Mill had not been constructed by this date, and that the buildings shown on contemporary mapping were probably residential properties.



Extract from Pigot's map of 1819

- 3.5.5 A map of the area produced by Swire in 1824 is the first cartographic source to depict Beehive Mill. The original component of the mill complex comprised a multi-storey block of 13 bays erected along the western side of German Street, parallel and adjacent to a short arm from the Bengal Street branch canal. The mill appears to have been served by the short arm, whilst the branch canal took a route across the northern gable end of the building.
- 3.5.6 It is believed that the factory was built as a 'room-and-power' mill (Williams and Farnie 1992, 151), which was let to occupiers connected with the cotton trade, including cotton spinners, cotton manufacturers, and machine makers (MCL/M9/40/2/100). The mill was powered by a beam engine that was situated within a transverse engine house of three storeys at the north end of the building, and was separated from the rest of the mill by an internal cross wall (Williams and Farnie 1992, 152). The associated chimney was integral to the internal stone stair tower, which was erected within the north end bay. A six-storey, three-bay extension along Jersey Street was added to the original building in 1824, forming an L-shaped mill complex, as shown on Bancks and Co's map of 1832. The extension is thought to have been intended for warehousing purposes, as suggested by the double taking-in doors contained originally in the north elevation (Williams and Farnie 1992, 153).
- 3.5.7 The construction of this wing seems to have required the in-filling of the short canal arm, and conversion of its route into the mill yard. The line of this former canal arm is marked by the wide entrance to the mill yard from Jersey Street. Bancks and Co's map also shows the buildings within the south-western part of the study area to have been occupied by back-to-back housing, forming court dwellings. The detached range of buildings to the north may also represent dwellings, although their varying sizes suggest that some may have been used as commercial premises. It is probable that these are essentially the same structures as those depicted by Green in 1794, and are thus of late 18th-century origin. The area to the north of the branch canal is labelled on the map as a 'coal yard', and contains small structures that were probably associated with this usage, such as a weighing house.



Extract from Bancks & Co's map of 1832

- 3.5.8 Subsequent to Bancks and Co's map, another block was added to the mill complex, placed across the eastern end of the court dwellings, and butting the northern elevation of the 1824 block. This is likely to have been a narrow, multi-storey block, with its long axis parallel with the original mill. The function of this building is uncertain, although its narrow dimensions suggest

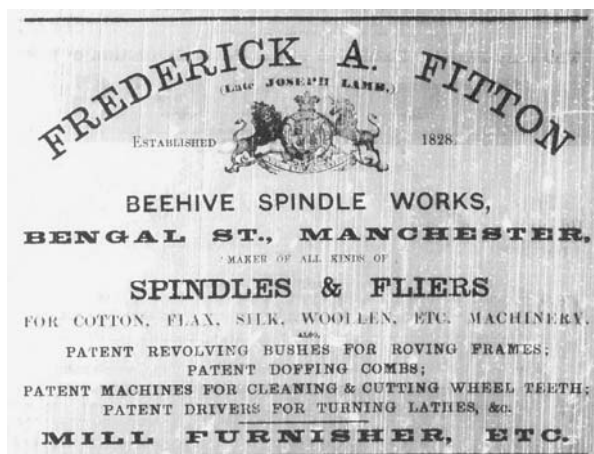
that it may have been intended as an extension to the site's warehousing facilities. However, this building, referred to as the Jersey Street block, was destroyed by fire in 1841, which caused damage to a cost of £14,000 (Axon 1886, 215). In 1843, the vacant building was purchased by Joseph Lamb, and restored to a working condition in 1844. Slater's trade directory for 1845 indicates the rebuilt Jersey Street block to have been occupied by Joseph Lamb, '*spindle and fly manufacturer*'. The Poor Rate returns for 1846 similarly lists the building as belonging to Joseph Lamb, with an assessment of £146 for the 'factory' and £18 for the yard, wharf and smithy (MCL/M9/40/2/146). The relatively high assessment rate suggests that Lamb owned the entire Beehive Mills complex at this time. Entries within contemporary trade directories also provide details of the use of the wider study area. Pigot and Slater's *Directory of Manchester and Salford*, published in 1841, for instance, indicate the buildings parallel and to the south of the branch canal to have been Shilling Place. Whilst it is likely that these properties were dwellings, it seems that some of the residents may have been engaged in domestic industries, as shown in Table 1. Pigot and Slater's trade directory also lists N^o 47 Bengal Street as a private residence, occupied by Betty Smith, and the adjacent property, N^o 49 Bengal Street, was William Mackay's shop (Pigot and Slater 1841, 96).

House Number	Name	Occupation
2	Mary Massey	Reeler
3	John Parry	Engraver
4	John Hare	Weaver
5	John Woodcock	-
6	Mary McCaine	-
8	James McDowell	Weaver

Table 1: List of residents on Shilling Place (Pigot and Slater 1841)

3.5.9 A detailed plan of the study area during the mid-19th century is provided by the Ordnance Survey First Edition 60": 1 mile map, which was surveyed in 1848/9 and published in 1851 (Fig 3). This map largely replicates the layout of the study area as shown on Bancks and Co's map, although does provide some additional details. In particular, a new building along the southern edge of the branch canal, labelled as a spindle works, represent the origins of the Bengal Street block of the mill complex. This had been built by Joseph Lamb in 1848 (*Manchester Guardian* 12/01/1861), who is entered within trade directories as a '*spindle and fly maker*' (Slater 1851, 213). However, it seems that Lamb used only the lower two storeys, whilst the upper three were occupied by Thomas Sykes, a cotton spinner, thread manufacturer and cotton doubler (*Manchester Guardian* 12/01/1861). These processes will almost certainly have required a source of motive power. The only indication of steam-power plant shown on the available mapping is a boiler house, which was connected to the branch canal via a covered entrance, demonstrating a high degree of integration between the canal and the mill's steam-power plant.

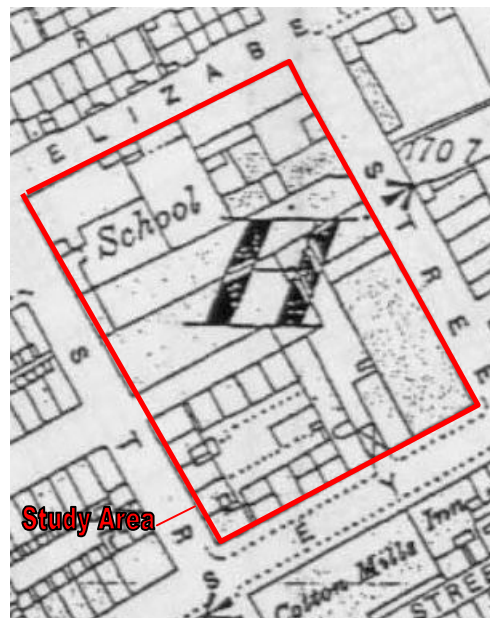
- 3.5.10 The buildings within the south-western part of the plot are labelled as ‘Shilling Court’ and ‘Holditch’s Court’, confirming their use as dwellings. Two of those along the Jersey Street frontage are shown to have incorporated external flights of steps, although it is not clear whether these represent access to a first storey or a basement; the northern edge of the dwellings is formed by Shilling Place. The plot to the north of the branch canal is still utilised as a coal wharf, although the associated structures are shown to have been enlarged relative to Bancks and Co’s map of 1832.
- 3.5.11 Another detailed plan of the site was produced by Adshead in 1851 (Fig 4). Given the date of this map, it is unsurprising that it largely mirrors the Ordnance Survey 60”: 1 mile map. However, some small, but nevertheless significant differences to the site layout are depicted. Lamb’s ‘spindle manufactory’ is shown as physically linked to the north-eastern corner of Beehive Mill and the narrow Jersey Street block, forming a truly enclosed courtyard plan to the mill complex. The north-western corner of Lamb’s manufactory is also shown to have been extended into the end of the branch canal, highlighting the fact that space within the mill complex was at a premium.
- 3.5.12 The next available detailed map of the site is provided by the Ordnance Survey First Edition 10’: 1 mile map, surveyed in 1888 and published in 1891. However, some significant changes to the site were wrought during the intervening period, which may be traced through other primary sources. Most significantly, the Jersey Street and Bengal Street blocks were devastated by fire on January 11th, 1861, with damage estimated at £25,000 (Axon 1886, 282). The fire, described in a newspaper report, was believed to have broken out in a room above the boiler house in the Bengal Street block. It destroyed the upper three storeys of this mill block, which was then occupied by Thomas Sykes, and the top floor and roof of the Jersey Street block (*Manchester Guardian* 12/01/1861). The report also confirms that the entire Beehive Mills complex was owned by Joseph Lamb, referred to as ‘Councillor Lamb’, and that the fire left 300 people out of work for a short while (*ibid*).
- 3.5.13 The Bengal Street and Jersey Street blocks were largely rebuilt after the fire. The new Bengal Street block comprised a 13 bay structure erected to a height of five storeys, which was again occupied by Joseph Lamb, as he is listed as a spindle manufacturer on the premises in a trades’ directory for 1863 (Slater 1863, 286). However, an advertisement for Frederick A Fitton within Slater’s trade directory for 1869 implies that this firm had taken over Joseph Lamb’s business, and a similar advert appears in Slater’s directory for 1879.



Advertisement for Fitton’s spindle works (Slater 1879)

3.5.14 It may be assumed that Fitton only occupied part of the Bengal Street block, as Slater's directories for 1872 and 1874 indicate the firm of McConnell and Kennedy to have been occupying part of the mill. Other parts of the Beehive Mill complex are listed at this time as being occupied by John Emery, a calico printer, and the firms of Barrett Robert Hankinson, and Bazley Brothers, both entered as cotton spinners and manufacturers (Slater 1879).

3.5.15 The 1891 Ordnance Survey 10': 1 mile map shows the rebuilt Bengal Street block as a single structure, with a narrow extension right across the western end of the branch canal. This remodelling presumably involved the replacement of the original boiler house, and associated modifications to the steam-power plant. No indication is provided as to the layout of any replacement power systems, although it would seem likely that the new mill block contained its own steam engine. The court dwellings to the south are shown to have been remodelled with the demolition of the central row of properties, presumably reflecting the implementation of housing improvement acts during the later 19th century. The same layout, although in lesser detail, is provided by the Ordnance Survey First Edition 25": 1 mile map, published in 1893.



Extract from the Ordnance Survey 1893 map

3.5.16 When the next edition of Ordnance Survey mapping was published in 1908, much of the Beehive Mill complex had been converted to a corn mill. This conversion included the addition of a full height extension to the rear of the 1824 Jersey Street wing, which itself was converted to contain six, four-storey high grain bins. This conversion was proposed in 1906, and is shown on a deposited building plan of that date, submitted on behalf of Arthur McDougall Esq (Plan 7547, Manchester City Planning Department). The function of the Bengal Street block at this time is unclear from cartographic evidence. A notable addition, however, is the installation of a passageway between the Bengal Street block and the original mill building, suggesting that the buildings were linked physically and commercially. It seems as though there may have been some modifications to the dwellings within the south-western part of the study area, although again detail is unclear.

3.5.17 The original component of the Beehive Mill complex is shown on the Ordnance Survey map of 1931 to have been converted for use as a soap works, although the Bengal Street block is again unlabelled. This map also shows the branch canal to have been partially in-filled, and new buildings erected across the in-filled portion. Another range of buildings is also shown to have been erected at a right angle to the branch canal, within the area occupied formerly by the school playing fields. Details of these buildings are provided by Goad's

insurance plan (1943 revision) of the site, which shows these new structures to comprise garages and a dairy.

- 3.5.18 Goad's insurance plan also provides details of Beehive Mill complex. The original component was used partly by J Sankey & Son Ltd as a dry soap packing factory, although the second and third floors were occupied by a lithographic printers. The Bengal Street block was occupied by J Rickard & Co for warehousing purposes, with the upper floors being used as an overall factory. Three connections between this building and the original mill are shown: a gangway at second floor level, and passageways at third and fifth floor levels. Most of the dwellings within the south-western part of the study area are shown to have been demolished by this time, with only four houses surviving (85 - 91 Jersey Street). The site of the demolished houses appears to be open land. However, an aerial photograph taken in 1958 (Plate 1) shows the remaining houses to have been demolished, and the entire south-western part of the study area is open land, seemingly used for car-parking purposes.
- 3.5.19 This is confirmed by the detail of the 1969 Ordnance Survey map, which shows the south-western part of the study area as vacant. This map also indicates all of the Beehive Mill complex to have been used as a clothing factory. It seems that the Bengal Street branch canal had been in-filled entirely by this date, and that the garages immediately to the north had been demolished.
- 3.5.20 An aerial photograph of the site taken during the 1980s (Plate 2) indicates little change to the study area since 1969; the study area is shown to have remained undeveloped, and was clearly being used for car-parking purposes. At some point during the late 20th century, a single-storey industrial unit was constructed against the northern elevation of the Bengal Street block. This structure and its associated yard were used subsequently by a building contractor for storage purposes. The site appears to have changed little to 2005 (Plates 3 and 4), until the Bengal Street block caught fire in July (Plate 5), necessitating its demolition (Plate 6). During this period, the mill was vacant.

4. FIELDWORK RESULTS

4.1 INTRODUCTION

4.1.1 The archaeological fieldwork initially comprised the excavation of seven evaluation trenches (Fig 5), targeted on three main areas of interest. The northern trench (Trench 1) was placed across an in-filled arm of the Rochdale Canal, situated to the north of Beehive Mill. Trenches 2 and 3 were targeted on the footprint of the Bengal Street block of the Beehive Mill, most especially the putative location of the engine and boiler houses. The remaining trenches (Trenches 4 to 7) were positioned to the south of Bengal Mill, and comprised an area considered to be occupied by dwellings fronting Jersey and Bengal Streets, Shilling Place and two internal passageways; Shilling and Holditch's Courts.

4.2 EVALUATION TRENCHES

- 4.2.1 ***Trench 1, the Canal Arm:*** this north/south-aligned trench was excavated for a distance of 6m across a section of the in-filled Bengal Street canal arm, the structural remains of which were revealed to survive in good condition (Fig 5); the excavation of a transect across the entire canal arm was precluded by the extant southern façade of modern outbuildings, which lay along the approximate centre of the in-filled canal. The portion of the former canal that was available for investigation was excavated to a depth of 2.3m below the modern ground surface, where mid-brown plastic clay of natural origin was exposed. This did not appear to have been puddled to form a waterproof base to the canal, as its natural plasticity and thickness seemingly formed a natural waterproof boundary; an absence of puddle clay was similarly revealed during an excavation of the canal basin within the Murrays' Mills complex on the opposite side of Jersey Street (Miller *et al* forthcoming).
- 4.2.2 The southern edge of the canal arm was vertically-sided, and was retained by a brick wall that was used subsequently as a foundation for the northern wall of the Bengal Street block (Plate 7). The wall was three-brick wide (0.57m), and was composed of mould-thrown bricks laid in English Garden Wall bond with pale lime mortar. At its base, 2.03m below ground level, it had an half-brick offset plinth, at least three courses high, but cut into the natural clay below the limit of excavation.
- 4.2.3 The lowest fill of the canal arm, overlying the natural geology, comprised a black, slightly clayey silt that contained 5% brick and large quantities of rubbish, including fragments of glass, pottery, heavily-corroded ironwork, most commonly thin circular bars, typically around 0.3m long and 10mm diameter. The deposit was thicker at the southern end of the trench, where it appeared to have accumulated against the canal retaining wall (Plate 8). The fill dropped sharply away from the wall, giving the appearance of the navigable channel within the canal, suggesting that it represented natural

silting of the its use, and thus the finds recovered from within are most probably contemporary with the canal arm's use.

- 4.2.4 The black fill was overlain by a 1.1m deep layer of dark-brown clayey-silt, which contained demolition debris and seemingly represented the deliberate backfilling of the canal arm. This was sealed by a 0.30m thick deposit of compacted mid-brown silty-clay containing numerous brick fragments, which appeared to have been intended as a foundation for an overlying layer of small cobble sandstone sets, placed immediately adjacent to the north external wall of the Bengal Street block. These were sealed beneath the uppermost surface of the trench, which comprised 50mm of tarmac.
- 4.2.5 **Trench 2, the Bengal Street block:** this trench was excavated for a length of 26m on an approximately east/west alignment, and was placed along the northern part of the Bengal Street block (Fig 5). Structural remains of the former mill were exposed immediately beneath the modern ground surface (Plate 9).
- 4.2.6 Towards the eastern end of the trench was a north/south-aligned wall of a single-brick thickness (0.23m). It survived to a depth of at least four courses (0.3m), and was bonded in pale lime mortar. It appears to have represented a continuation of the western elevation of a boiler house shown on the Ordnance Survey map of 1851. It was butted on its eastern face by two perpendicular walls of similar construction, set 1.22m apart, which appear to join a further north/south-aligned wall at a similar distance to the east. It was not possible to establish a relationship with the latter due to the indurated nature of the overlying floor deposit. These walls formed a pit, filled with clinker, silty-clay, and demolition debris to a depth of 0.53m, where it overlay a mixed yellowish clay, quite possibly natural in origin.
- 4.2.7 A similar wall was revealed in the trench 2.13m to the east. It formed the western extent of a concrete capped base, 1.36m wide, butting a vertical concrete face at its eastern side. Centrally within the concrete base was a 0.61m wide, 0.85m long pinkish burnt patch, which appears to have provided an attachment or stand for machinery. To the east, the vertical concrete lining formed the edge of a broken sandstone base, 1.02m wide, surviving for a length of 0.93m, infilling the north-east corner of the mill (Plate 10). A 70mm wide, 5mm deep channel, inset 140mm from the intact north, south and east edges of the base, housed fixing bolts in each corner. A vertically set 88mm internal diameter pipe was situated immediately to the south of the base, at its western end. It had been removed above a 0.21m diameter flange joint, which had four bolts, situated 25mm below the surface of the sandstone block.
- 4.2.8 Within the trench, patches of edge-set brick and flagstone floor survived, with the flags most probably representing the only survival of the original floor. This was sealed by a highly-indurated surface, which was very burnt towards the eastern end of the trench, suggesting that it may have represented the documented mill fire in 1861 (3.5.12 above). A sandstone block, 0.4m wide, projected 0.2m above this surface, but extended only 0.23m from the southern section of the trench, 1.8m from the western end of the trench. It appeared to represent a machine base. A further base, 2.75m to the east, comprised two

sandstone blocks, each 0.99m long, 0.57m wide, and 0.17m in depth. The southern part of each block contained a housing up to 70mm higher than the surrounding block, 0.46m long and 0.86m wide, with a curved north-western corner. The western part incorporated a 70mm wide channel with an iron fixing bolt on its western side, housed in a lead surround, whilst the eastern block incorporated a timber pad, 140 x 65mm, in the centre of the raised section. This pad had two bolts protruding through its upper face, and may have acted as a vibrational damper, or perhaps simply as padding for a machine fixed above. A further pair of sandstone machine bases was revealed in the central part of the trench, 5.3m further to the east. Both bases were 0.97 x 0.62m and 0.27m deep, each with a central, north/south-aligned channel, 0.18m wide, and 35mm deep, with remnants of an iron strap within, and with fixing bolts at either end. The blocks were positioned 0.38m apart, the intervening area possibly forming an associated pit, which was excavated onto a grey clay level at a similar level to the base of the sandstone blocks. Several round sandstone "wheels" also formed part of the indurated surface, each laid horizontally and 0.39m diameter, 65mm thick and with a central hole, typically 80mm in diameter. They appear to be machine weights, re-used within the floor, possibly as repairs or infilling. Several were also recovered from the demolition material in other areas of the site (Trench 7).

- 4.2.9 The trench was sealed with a capping of grey concrete, 35mm thick, with 50% black grit inclusions, representing the final floor surface within Bengal Mill. This overlay 70mm of pale concrete with 50% large brick fragments, typical of the early 20th century, which presumably formed the floor surface at this time, prior to the later addition, or repair, above. This overlay a heavily compacted backfill, comprising boiler ash, brick fragments, pebbles, and mortar/ plaster fragments, typical of 19th- and 20th-century demolition layers. It was up to 0.25m thick and sealed a similar but
- 4.2.10 **Trench 3, the Bengal Street block:** this trench measured 12m in length, linking Trenches 2 and 4 on a north/south alignment, and investigated the putative steam-power system associated with Bengal Mill. Well-preserved *in-situ* remains of part of the boiler house were revealed, and the area was expanded during the subsequent excavation, in an attempt to identify the associated engine house. The results of both the evaluation and excavation trenching in this area is combined within the excavation area section (Area 3 (4.5, below)).
- 4.2.11 **Trench 4, Shilling Place:** this trench was positioned along Shilling Place, on an east/west alignment for a length of 20m (Plate 11). Well-preserved *in-situ* remains of Shilling Place itself, and associated housing on its southern side were revealed, leading to the area being included in the subsequent excavation (Plate 12), the results being combined within that section (Area 2 (4.4, below)).
- 4.2.12 **Trench 5, Shilling Place and Holditch's Court:** this trench was positioned across Shilling Court and Holditch's Court, on a north/south alignment for a length of 22m. Well-preserved *in-situ* remains of Holditch's Court and dwellings associated with Shilling Court were revealed, leading to the area

being included in the subsequent excavation, the results being combined within that section (Area 2 (4.4, *below*)).

4.2.13 **Trench 6:** this trench investigated the cellars aligned parallel to Jersey Street, which were excavated in more detail subsequently within Area 1.

4.2.14 **Trench 7:** this trench investigated properties along the northern edge of Holditch's Court, which were excavated in more detail subsequently.

4.2.15 The quality of the *in-situ* remains encountered during the early stages of the evaluation led to the expansion of Trenches 3 - 7 into four excavation areas (Fig 6):

- Area 1 comprised cellared dwellings across the southern and western parts of the site, along the site boundaries with Jersey and Bengal Streets;
- Area 2 incorporated the un-cellared dwellings within the areas bounded by Holditch Court and Shilling Place, situated to the north-east of Area 1;
- Area 3 targeted the putative steam-raising plant associated with the Bengal Street Block of Beehive Mill;
- Area 4 investigated a ditch identified to the south of Shilling Place, located cross the north-western area of the study area.

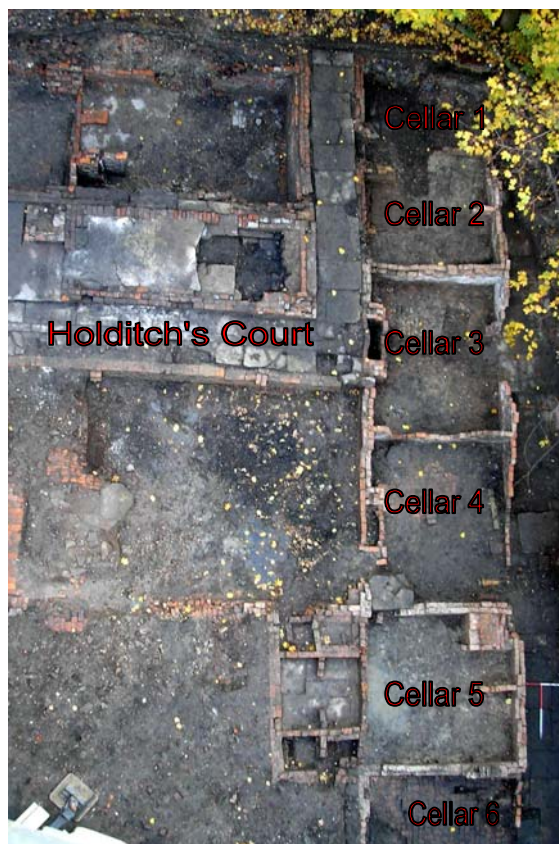
4.3 EXCAVATION TRENCHES: AREA 1

4.3.1 The earliest record of buildings within the south-western part of the site is provided by William Green's '*Map of Manchester and Salford*', published in 1794 (Fig 2), although it is uncertain for what purpose the buildings were originally intended. However, by 1832 the buildings are shown on contemporary mapping as back-to-back housing, and it seems likely that this had been their original function. Each successive map of the study area depicts buildings within this part of the site until the early 20th century; the properties fronting onto Jersey Street had largely been demolished by 1958, and it appears that the Bengal Street properties were demolished sometime between 1931 and 1943. Remains of walls encountered during the excavation pertain to several periods of construction that can be correlated to the sequence of historic maps. The following narrative describes these remains in chronological order.

4.3.2 In total, six small cellars of varying depths (numbered **1** to **6**) were exposed aligned north/south and parallel to Bengal Street. A further four cellars were revealed lying parallel to Jersey Street (numbered **7** to **10**) at the southern end of the site. These cellars were bordered along their eastern edge by a stone-flagged alley that followed a north/south alignment from Jersey Street for a distance of at least 10m, separating them from the Bengal Street properties. The alley returned sharply to the east for a distance of 16m to the rear of the excavated cellars. The eastern end of the alley widened into a courtyard directly north of Cellar **9**, and is identified on the 1851 Ordnance Survey map

as Holditch Court (Fig 7). The parts of the buildings that had fronted onto Bengal Street and Jersey Street were not fully excavated, although it was established that they had incorporated cellars.

- 4.3.3 **Bengal Street cellars:** the cellars excavated were bordered to the east by a north/south-aligned wall exposed for a distance of 20m, representing the eastern external wall. It comprised a single brick-thick wall of mould-thrown bricks bonded with a soft lime mortar. The western wall of the excavated cellars formed internal partitions, and were generally only a single skin wide, although within Cellars 2 and 5 the partitions were of a full brick thickness. All of the excavated cellars were bordered along their western edge by a large room or passageway within the properties fronting Bengal Street. This comprised an evenly-laid flagstone surface that was interspaced in parts with brick. The surface was exposed over a distance of 18m in length and 2m in width up to the limit of excavation. The brick element of the surface was generally concentrated along the western edge of Cellar 3. Each flagstone measured between 0.85m by 0.63m and 0.95m by 0.45m, and were encountered at a depth of 1.40m below the modern ground surface. The surface may have represented the original late 18th-century floor, although this could not be corroborated.



Excavated cellars parallel to Bengal Street

- 4.3.4 Scarred remnants of two cross walls, both aligned east/west, were observed keyed into the western wall of Cellars 3 and 5. Each wall was a single brick thick (0.35m wide), and survived for a length of 1.34m, seemingly representing internal partitions. The western edge of the southern wall next to Cellar 3 was keyed into a L-shaped brick pier surviving to a height of 0.70m. The pier dimensions measured 0.78m long by 0.62m wide. Its components comprised eight courses of hand-made brick married with sandy-lime mortar. The southern faces of the bricks were painted blue, with remnants of plaster surviving on the internal northern elevation. The northern edge of the bricks along the north/south part of the structure contained a vertical channel, which resembled a housing for a door or gate. Another similarly-constructed brick structure was encountered at the western edge of the northern cross wall near Cellar 5. The structure measured 0.63m by 0.47m, and survived to a height of 0.87m. It comprised six courses of lime-washed bricks laid in an English

Garden Wall bond. It contained a rectangular-shaped interior hollow within its upper surface that had probably served as a drain.

- 4.3.5 Cellar **1** was partially revealed at the south-western limit of the excavation (Plate 13). The exposed area measured 3.40m long by 1.8m wide, and incorporated a brick and flagstone floor at a depth of 0.9m below the contemporary ground level. In total, three lime-washed walls were exposed in variable condition and disrepair. The western wall survived to a height of 11 courses comprising hand-made brick (each measuring 220mm x 110mm x 80mm) married with lime mortar. It was laid in an English Garden Wall bond, measuring two bricks thick wide. The wall was keyed into the remains of the north wall of the cellar, aligned east/west, which survived as a single course footprint. A floor composed of flagstones and bricks survived throughout the cellar, although the flagstone element was concentrated along the western edge. No internal features were observed in the cellar, which suggests that it had possibly been used for storage or other commercial function.
- 4.3.6 Cellar **2** was located to the immediate north of Cellar **1**, from which it was separated by the vestiges of a 0.22m-wide brick partition (Plate 14). The cellar measured 3.40m by 3.30m, and contained the remnants of a brick floor. The floor had been laid directly onto the natural clay. The clay was sealed along the eastern half of the room by the remains of a rectangular structure, which comprised two double-skin wide walls, aligned east/west and set 1.30m apart against the eastern wall of the cellar. It is likely that these walls represented the remains of a fireplace, although diagnostic features such as a grate were absent. All of the walls were coated across their internal face with a lime wash. The west wall survived to a height of five courses including a single step foundation above the natural clay. The wall was butted by a single-skin wide wall that survived to a height of three courses, representing a partition. The north wall of the cellar was keyed into the west wall, and survived to a height of five courses, lessening to a single course along its eastern edge. Whilst there was no surviving physical evidence for a doorway into the cellar, access may have been afforded via the north wall. Another possible entrance was observed along the eastern wall of cellar, directly south of the fireplace, represented by a 0.50m gap (Plate 15). The western section of the gap contained a ceramic drain overlaid by the alley flagstones. The base of the pipe sealed the remains of a wall that survived to a depth of two courses which was in turn placed on top of a clay layer. This clay layer measured 0.20m thick above the natural clay seen throughout the room, possibly suggesting levelling for steps.
- 4.3.7 Cellar **3** measured 3.80m long by 3.22m wide, with the vestiges of a stone-flagged floor at a depth of 0.93m below the surface of the adjacent alley, and some 0.23m lower than the floor level exposed in Cellar **2** (Plate 16). The southern wall, which divided Cellar **3** from Cellar **2**, was a single brick thick. The eastern wall of the cellar was also a single brick thick, surviving to a height of 11 courses, and retained evidence for a lime-wash coating on its internal elevation. The northern wall of the cellar survived to a height of five courses and was similarly lime washed.

- 4.3.8 A brick-lined drain, aligned east/west across the centre of the cellar beneath the floor, was 0.36m wide and had been cut into the natural clay. The drain had a height of two brick courses (Plate 17). The western end of the drain ran beneath a 1m-wide doorway into the room, and its eastern end lay beneath the remains of the fireplace. The fill of the drain comprised loose silty-clay, measuring 0.16m deep, which yielded fragments of late 18th-century pottery, a coin dated to the reign of George III (1760-1820), and a crucible. The presence of the crucible suggests that metal working may have been undertaken in the cellar, emphasising its function as a workshop. The vestiges of an unevenly-laid stone surface in the south-eastern corner of the cellar probably represented part of the original floor; natural clay was exposed elsewhere across the base of the excavated area.
- 4.3.9 The surviving elements of the floor were bordered to the north by a rectangular structure that probably represented the remains of a fireplace, which measured 1.6m long by 0.6m wide, and survived to a height of 0.80m (Plate 18). It comprised two brick walls set 0.90m apart. The northern wall survived to a height of ten courses, coated across its external elevation with a lime wash. The southern wall survived to an identical height, although its internal face was scorched, demonstrating that the chimney had been positioned along the southern end. The internal depth between the walls measured 0.70m, and was filled with soot and 18th- and 19th-century debris. Both walls were bridged along their western edge by an eight course high, regularly-laid and loosely-mortared wall, comprising hand-made bricks, representing blocking of the fire grate. It is possible that the structure may have been adapted latterly to aid drainage; the east/west-aligned gully along the centre of the alley leading to Holditch's Court was situated directly toward the top of the fireplace and the drain beneath its base was directly in line with the gully.
- 4.3.10 Cellar 4 measured 3.80m long by 3.30m wide, and was excavated to a depth of 0.90m to reveal a degraded brick and stone-flagged floor (Plate 18). The surviving remnants of the floor measured 1.90m by 1.10m, concentrated at the southern end of the room. Four contiguous walls, each coated with a lime wash, survived in varying states of preservation. The northern wall survived to a height of seven courses along its western edge, laid above a step foundation that had been cut into the natural clay. The eastern edge of the wall had been damaged by the insertion of a sewer pipe, which was lay east/west across the cellar. The pipe was sealed by a thick deposit of clay, which was in turn overlaid with three layers of thin stone flags that provided a platform in the north-east corner of the cellar. The western wall survived to a similar height of seven courses, although it was only a single skin wide. A 0.77m gap at the southern end of the wall suggests the possible location of a doorway into the cellar from the courtyard. The southern wall was also a single skin thick, and survived to a height of ten courses (0.90m). Poorly-preserved remains of a fireplace, damaged by tree roots, survived in the eastern wall. The entire structure measured 1.6m long and 0.56m wide, and comprised two walls, each 0.34m wide, that projected 0.56m from the eastern wall. The two walls were bridged by a 0.90m long irregularly-laid and unbonded brick wall that appeared to have been hastily stacked. All the external elevations were coated

with a lime wash. The brick sizes of the fireplace were slightly smaller than the brick used on the other walls of the cellars (200mm x 100mm x 70mm, compared with 220mm x 110mm x 80mm).

4.3.11 Cellar **5** measured 3.28m by 3.10m and was excavated to a maximum depth of 0.49m from the upper surviving course of the eastern wall (Plate 19). No floor survived in the cellar, other than a clay horizon, which may have been the original ground surface. All the walls were poorly preserved, the bricks showing visible degradation. The northern wall survived to a height of 0.49m, comprising six courses of stretcher bond married with a whitish sand and lime mortar. It was keyed into the western wall, although it does not appear to be bonded to the eastern wall. This may be due to the insertion of a north/south-aligned sewer pipe across the eastern edge of Cellars **5** and **6**, which connected with the pipe revealed in Cellar **4**, damaging the eastern edge of the northern wall. The western wall survived to four courses in height (0.33m) with similar stretcher bonding. The wall appeared to be of a contemporary construction as the northern and southern walls, with their corner edges keyed into one another. A short partition lay at a right angle to the western wall, extending across the room for 0.75m. The wall was not attached to the west wall, although it is likely that the bonding between the walls had been eroded. The single-brick wide eastern wall was poorly constructed, surviving to a height of seven courses of stretcher bond that sealed a row of header bond foundation. All the brick components comprised hand-made bricks, each measuring 220mm x 106mm x 71mm. A rectangular brick structure exposed in the south-western corner of the cellar did not appear to be bonded to the external walls. The structure measured 0.75m north/south and 1.05m east/west, surviving to a height of seven brick courses above the natural clay horizon.

4.3.12 A rectangular structure (**17**) lay directly east of Cellar **5**, attached to its eastern wall (Plate 19). It comprised a complex of small rooms/chambers that were bordered to the north and south by four smaller cells. It is probable that the entire structure was constructed after the cellar, possibly as a response to improve/provide drainage for the structures along Bengal Street. The middle room/chamber measured 1.65m east/west, and 1.42m north/south, with three courses of brickwork surviving to a height of 0.23m. The floor comprised unevenly-laid flagstones that sloped to a channel in the middle of the room. Within the centre of the room were two 'stud' brick walls of single-skin construction, which were not keyed to the main walls. Each 'stud' wall measured 0.37m long. The western wall of the entire structure was of single-skin construction with rough stretcher bonding married with degraded sand mortar. The eastern wall was of double-skin construction comprising stretcher bond keyed into the north and south returns. The southern and northern walls were each double skinned, laid in a stretcher bond. All the walls were constructed of hand-made brick measuring 220mm x 104mm x 65mm. The mortar generally comprised sand and lime mixture that had degraded significantly. Two of the cells (**b** and **c**) located at the southern end of the middle chamber, and the other two (**d** and **e**) across the northern end of the chamber. Cell **b** had internal dimensions of 0.48m north/south, and 0.68m east/west. It contained large amounts of dark brown silty-sand mixed with brick rubble and broken flag stones. Cell **c** comprised an L-shaped single-skin

brick wall located to the east of cell **b**. The cell had a small chamber along its eastern edge. Cells **d** and **e** were separated by a short north/south-aligned partition, that was bonded to the northern wall of the middle room/chamber, although each cell were effectively part of the same construction. The internal dimensions of cell **d** measured 0.39m north/south, and 0.60m east/west. Cell **e** dimensions measured 0.68m north/south and 0.70m east/west. A gap within the brickwork of the northern wall of cell **d** and **e** possibly represented a channel to presumably to gain access into the cells. Both cells **d** and **e** probably served similar functions to cells **b** and **c**, and were likely to be part of a sewage system for the dwellings.

4.3.13 Cellar **6** measured 3.23m long by 2.29m wide, and contained a brick floor (Plate 20). The northern wall comprised nine courses that survived to a height of 0.86m. It butted the western wall, demonstrating a slightly later date of construction. The poorly-preserved western wall was a single skin construction, surviving to a maximum height of seven courses (0.63m). A 1.03m wide gap across the centre of the wall marked the position of a doorway. The eastern wall measured two brick skins wide, although much of the upper courses had been destroyed by the insertion of a north/south-aligned sewer pipe. The two-skin wide southern wall that separated Cellars **5** and **6** retained an attached skin to the walls northern face, which seemingly represented a modification to the original build. It measured 0.80m high and displayed cross bonding laid in a stretcher pattern. The well-preserved brick floor was evenly laid with a slight slope to the west, butting all the walls.

4.3.14 **Jersey Street properties:** whereas the excavated cellars along Bengal Street may have been used latterly as workshops or storage areas, the cellars along Jersey Street contained evidence of domestic habitation. Three of cellars investigated were bordered along their northern edge by a 0.47m-wide wall. Two of the cellars (**7** and **8**) retained attached yard areas along the northern edge of the boundary walls. The area to the rear of Cellar **9** was bordered by a courtyard. Cellar **10** in the south-eastern corner of the site was partially excavated. This layout closely mirrors that shown on the 1931 Ordnance Survey map, although their design had seemingly changed little since the buildings shown on Bancks and Co's map, published in 1832.



Excavated cellars parallel to Jersey Street

4.3.15 Cellar **7** comprised four contiguous walls in various state of preservation, and contained a concrete floor that had presumably replaced an earlier surfacing (Plate 21). The northern wall of the cellar had at some stage been widened to four skins, perhaps reflecting modifications to the rear yard along the northern edge of the cellar at ground surface level. The additional skin was set in a dark

greyish-black mortar, which suggests a late 19th-century episode of remodelling. The rest of the wall comprised 11 courses of degraded hand-made bricks with sand and lime-based mortar, surviving to a height of 1m. The internal elevation was coated with a lime wash, which appeared to be consistent throughout the cellar. The western wall of the cellar survived to a height of 13 brick courses above a single brick-wide stepped foundation. The upper surviving course was bordered along its western edge by Holditch's Court alley that ran from Jersey Street. The eastern wall survived to a similar height as the western wall, although a single skin wide, but had degraded badly at the southern end near its bonding with the southern wall. A possible doorway was identified at the southern end of the wall, which connected Cellar 7 and 8, although little physical evidence survived. Two short walls of varying lengths were aligned east/west and keyed into the eastern wall. The southernmost of these walls resembled a small pier that measured 0.6m long by 0.40m wide, surviving as a single brick course in height. The northernmost short wall extended 1.2m into the room as a three course thick construction that narrowed to two courses along its western end. A 1.3m long section of wood was retained along the floor within Cellar 8 that ran across the alignment between the two short walls, perhaps representing a runner or rail for a sliding door. The southern partition which divided the cellar from the unit fronting onto Jersey Street was in extremely poor preservation; it was single-brick skin thick, although 14 courses survived at the south-western corner where it was bonded to the western wall. It was laid in an English Garden bond, with a row of headers along the bottom course. The central section of the wall was missing, which maybe as a result of collapse.

- 4.3.16 Remains of a doorway were encountered along the mid-section of the north wall (Plate 22), which was likely to have provided rear access into the cellar, perhaps prior to the modification to the rear yard area. The entrance measured 0.90m wide and 0.9m high with a sandstone tread keyed into the lower courses of the wall. The tread was sealed by another single course of bricks, set behind the line of the wall, which probably represented the base for an overlying tread. The bricks were in turn overlaid with brick rubble and concrete infill, sealed by a sandstone flag.
- 4.3.17 There was no structural evidence of recent domestic habitation, such as a fireplace, although the missing section along the southern wall may have accommodated a grate. It is therefore possible that the cellar may have been used latterly as a storage area.
- 4.3.18 Cellar 8 measured 4.70m long by 3.30m wide, and contained a concrete-lined floor similar in depth as that recorded in Cellar 7 (Plate 23). The lime-washed walls survived to a similar height as the walls in Cellar 7, and were constructed from identical fabric components, with each brick measuring on average 220mm x 110mm by 70mm. The northern wall was four skins thick, surviving to a height of 14 brick courses. The eastern, western and southern walls survived to a similar depth of 1.54m, and were each a single brick-skin thick, although much of the southern and western walls had been destroyed.
- 4.3.19 The west-facing elevation contained a 1.65m-wide fireplace in the central area of the wall (Plate 24). The fireplace had seemingly undergone repair or

consolidation, indicated by an area of brick infill married with dark brownish-black ash-rich mortar butting the southern end of the structure, which effectively sealed the grate. This would suggest a change in function for the room from domestic occupation to some other purpose, such as storage. Further changes to the function of the room were identified within the southern corner of the eastern wall, and included a large worn shaped limestone block near the base of the wall. The block jutted out 0.15m from the western face of the wall, and 0.11m above the cellar floor. It is possible that the block represented the vestigial remains of a stone step that once provided access to the cellar via the south-west corner of the room. Attempts to seal the area around the stone with brick in-fill bonded with a dark grey cement mortar were clearly observed.

- 4.3.20 A brick column, measuring 0.68m long by 0.55m wide and 0.33m high, was exposed in the south-west corner of the room butting the southern and western walls. The column survived to a maximum height of 0.33m, comprising four courses of hand-made bricks. It was difficult to ascertain a function for the column during the excavation, although it was perhaps associated with a doorway connecting to Cellar 7.
- 4.3.21 Cellar 9 represented the deepest sub-surface structure on the site, with three of the four contiguous lime-washed walls exposed to a maximum depth of 21 brick courses above a brick-lined floor. The cellar was rectangular in shape, measuring 5m long by 3.19m wide (Plate 25). Its components comprised an eastern and western wall, each measuring two bricks thick. The southern wall measured a single skin-brick thick that at some stage appeared to have been partially removed for a distance of 2.33m, with a separated section measuring 2.65m at a distance of 0.13m north of the original wall. The north wall was four-bricks thick with a single step brick foundation. The central area of the wall contained the remains of a multi-phased window-light. The upper surface of the wall was bordered by a flagstone surface representing Holditch's Court.
- 4.3.22 The window light appeared to have undergone at least three stages of repair/improvement. It measured 1.02m by 0.76m, and was originally a two brick wide construction that measured three courses deep, retaining a wooden frame attached to its southern brick face. The window was at some stage extended and lined with concrete, a modification that is likely to have been associated with the insertion of a larger window frame.
- 4.3.23 Entrance into the cellar was accessed via the eastern wall, represented by a 0.94m wide doorway located in the north-eastern corner (Plate 26). A similar gap was observed in the southern wall, although this was probably the result of the collapse of material, rather than an intentional entrance.
- 4.3.24 A large fireplace built into the western wall indicated that the cellar was at some stage used for domestic habitation (Plate 27). Its position almost mirrored the location of the fireplace in Cellar 8, with a single brick-thick partition separating each structure. The fireplace survived to a height of 19 brick courses (2.09m), comprising a single brick arch construction raised 1m above the floor, forming the hearth area. The area above the area had largely collapsed, although much of the structure was intact, retaining part of a

wooden lintel. The area below the arch had at some stage been filled in with a ten course high hand-made brick wall, demonstrating a change in the cellar's function.

- 4.3.25 Cellar **10** comprised the partial remains of a room along the eastern edge of Cellar **9**. No floor was uncovered, although the northern wall was exposed for a distance of 1m, and was of identical thickness as the northern wall of each of the investigated cellars bordering Holditch's Court. The excavated area measured approximately 3m by 1.2m.
- 4.3.26 The upper surface of two brick structures were exposed representing internal features within the room. They comprised the probable remains of a fireplace attached to the western wall, and a rectangular-shaped chamber located along the eastern limit of the excavated area. The putative fireplace comprised a 1m long single-skin wall, aligned north/south, which was exposed to a height of four brick courses. The wall returned to the east at the northern end for a distance of 0.30m, and abutted the upper course of a single-skin wide wall that ran parallel to the western wall. The southern edge of the wall ran beyond the excavation edge.
- 4.3.27 The excavated remains of the rectangular brick chamber measured 1m long by 0.33m wide, and was exposed to a depth of five brick courses (0.35m), although its full dimensions were not exposed. The chamber was divided by a single-brick wide wall bonded with lime mortar, which created two 0.30m wide internal chambers. The structure's function was not determined although it was possibly associated with drainage.

4.4 EXCAVATION TRENCHES: AREA 2

- 4.4.1 Area 2 comprised a L-shaped trench that targeted the foundations of buildings thought to have been located along the northern edge of Holditch's Court (Buildings **11** and **12**), and the site of former buildings (Buildings **13**, **14**, **15**, and **16**) along the eastern edge of the excavated area up to Shilling Place. Green's map of 1794 depicts a block of buildings along the southern edge of the excavated area, although by 1832 the entire area is shown to have been developed. Few remains pertained to the early part of the 19th century, although wall scars associated with the position of structures as shown on Banks and Co's map of 1832, and successive maps, were visible along the southern part of the excavated area. None of the structures in this part of the excavated area were cellared. It would seem that many of these buildings had been modified or removed by the late 19th century.
- 4.4.2 ***Holditch's Court properties:*** the remains of buildings along the northern edge of Holditch's Court were bordered by a 16m long two-skin wide brick wall, which was exposed to a depth of five courses. It comprised hand-made bricks bonded with a sandy-lime mortar, and survived to the height of the flagstone surface of Holditch's Court.
- 4.4.3 The physical remains of Buildings **11** and **12**, situated along the northern edge of Holditch's Court, comprised two north/south-aligned walls, set 3.5m apart,

abutting Holditch's Court (Plate 28); the walls survived to a maximum height of 0.20m, and probably represented the former partitions separating each house. They comprised hand-made bricks, each measuring 220mm by 110mm by 70mm, with traces of lime mortar bonding. Traces of an east/west-aligned wall, located at a distance of 4m from the southern wall, represented the northern perimeter wall of each building. It had been largely destroyed by the structure along the eastern edge of Cellar 5, although part of the wall survived for a distance of at least 11m and to a height of three courses.

- 4.4.4 No floor was encountered within Building 11 or 12 (Plate 28), although natural clay was exposed at a depth of 0.52m below the upper surface of Holditch's Court. However, remains of a flagstone and brick surface that was probably associated with the floor level of an adjoining building was encountered to the immediate east of Building 12. The flagstone surface survived over a distance of 1.60m by 1.20m, and lay at a similar level to Holditch's Court. The surface sealed a 0.28m thick layer of clay that had been used for levelling, and was bordered along its south-eastern edge by a sloping brick surface comprising half-edged laid bricks compacted tightly. The brick surface may originally have formed part of a threshold providing access into the eastern side of Building 12. Another brick surface was observed east of Building 12, which butted the northern wall of the buildings along this row. The surface survived for a length of 2.3m and width of 0.75m and contained a central gully that was aligned north/south. It is possible the surface represented an alley between the buildings. Another possible alleyway was exposed along the northern edge of the north perimeter wall, probably representing the remains of Shilling Court.
- 4.4.5 Building 13 comprised a large rectangular structure shown on the Ordnance Survey map published in 1851. The building was aligned north/south, and had seemingly been demolished during the late 19th or 20th century to allow for an expansion of Holditch's Court. The remains of the original building comprised a 1.76m-long eastern wall, exposed to a depth of six courses (0.55m) consisting of three courses of stretcher's, one soldier course and two header foundation courses (Plate 29). The wall was 0.25m wide and was double skinned. It was bonded to an east/west-aligned wall forming the northern perimeter of the building. The northern wall was three-skins wide (0.32m), with a further foundation course giving an overall maximum width of 0.43m, and was exposed to an overall depth of eight courses (0.64m). The western wall was double-skinned at a width of 0.21m and was exposed to a depth of five courses (0.49m high), comprising upper stretcher bonding and lower header foundation. The southern wall was sealed below the flagged surface associated with the alley pertaining to Holditch's Court, although it was clearly not keyed into the western wall. It survived to a depth of six courses (0.55m) and was exposed along its northern elevation for a distance of 1.97m and was double skinned, providing a width of 0.21m.
- 4.4.6 The remodelled building retained an extensive flagstone floor, which lay at a similar level as the flagged surface of Holditch's court. The internal structure measured 2.07m east/west and 4.28m north/south, with an opening along the southern wall onto Holditch's Court. The eastern wall formed the boundary

wall for the larger original building, and was exposed to a depth of two brick courses (0.14m), comprising a double brick skinned width of 0.22m. The western wall was 0.22m wide, and two courses exposed and were keyed into the northern wall. The northern wall was identical in width, although five courses were exposed comprising stretcher bond construction with two courses of foundation headers. The components of the original walls comprised unfrogged bricks that each had an average brick size of 222mm x 103mm x 74mm.

- 4.4.7 *Shilling Court properties:* few physical remains of the buildings along the eastern edge of the excavated area survived. However, footprint remains of walls, surfaces and drains testified the presence of former structures that possibly originate to the layout of buildings as shown on the 1851 Ordnance Survey map.
- 4.4.8 The remains associated with Building **14** comprised a two-skin wide southern external wall that had a two step header foundation (which also formed the north wall of Building **13**), that was butted by two north/south-aligned walls, set 4m apart (Plate 30). Both walls were two brick skins thick, comprising hand-made bricks married with lime mortar. The eastern wall survived over a length of 3.26m and the western wall for 1.3m, although further traces of the western wall was exposed in patches; the northern wall did not survive. Traces of a brick surface which measured 0.95m by 0.35m was located in the southern part of the room. It is probable the surface represented a residue of the original floor.
- 4.4.9 The room was bordered along its western edge by an area of irregular-sized Yorkstone flags (Plate 30), which sealed a cambered brick surface. Both surfaces were aligned north/south, and extended over a distance of 2.74m by 1.85m. The original brick surface was probably an alleyway associated with Shilling Court, which had been sealed by the flags when the buildings along the eastern side of Shilling Court were abandoned. Further traces of Shilling Court were identified along the northern edge of the room, bordered by the southern wall of Building **15**. The remains were represented by the bases of three square-shaped brick drains. Two of the drains were positioned along the southern edge of the wall pertaining to Building **15**, and were spaced nearly 5m apart, the third drain was located 1.3m south of the same wall, which suggested the width of the alleyway between the former buildings. Each drain had an internal socket that measured 0.24m², and generally measured an overall dimension of 0.65m by 0.60m.
- 4.4.10 Building **15** was rectangular in shape and was aligned east/west, measuring 4.75m by 2.39m, and comprised four contiguous walls and a clay floor (Plate 31). The northern wall provided the internal division between Buildings **15** and **16**. It survived to a height of four courses (0.34m), and was keyed into the eastern and western walls. The southern wall was double skin brick wide and survived to a similar height of four courses, comprising stretcher bond and header foundation. The eastern wall survived to a height of three courses, and extended north for a further 3.75m providing the eastern wall of Building **16**. The western wall was retained at a similar depth and fabric and extended for an identical distance as the eastern wall. No internal features such as a floor

surface survived, although natural clay was exposed at a depth of 0.49m below the eastern wall. All the components were hand-made bricks that had an average size of 210mm x 102mm x 70mm. The bricks were bonded with light whit/brown sandy lime mortar.

- 4.4.11 Building **16** was located directly north of Building **15**, and fronted onto Shilling Place (Plate 31). It was rectangular in shape, measuring 5m by 3.75m, and was excavated to a maximum depth of 0.37m onto natural clay. The eastern wall was a single skin width construction comprising four courses of stretcher bond. The western face of the wall retained the remnants of two short partition walls each measuring 0.46m long and spaced 1.3m apart, which possibly formed the base of a fireplace. A similar arrangement of short walls was observed along the western face of the adjoining building to the west. The northern wall was double skin in width and survived to a depth of five courses with a stepped header foundation. The wall was truncated by two concrete piles that were keyed into the eastern and western wall. The piles represented a residue of a later building construction. The western wall survived to a similar height of 0.49m comprising five brick courses.

4.5 EXCAVATION TRENCHES: AREA 3

- 4.5.1 Area 3 targeted the putative steam-raising plant associated with the Bengal Street Block of Beehive Mill. There were few remains surviving in this part of the site that provided an indication of the power source demanded from the mill (Plate 33). Natural clay was encountered at a depth of 0.6m below a concrete surface in the north-western corner of the excavated area.
- 4.5.2 The targeted excavated area measured approximately 12m by 6m, and was contained between two east/west-aligned walls composed of hand-made bricks, thought to have contained the engine room. The southern wall bordered the edge of Shilling Place, and was exposed for a distance of 12m and width of 0.44m. The wall was butted by three buttresses that were spaced 1.3m apart constructed from refractory brick, that provided three bays. A single-skin wide wall along the northern wall was exposed for a distance of 2.7m although much of the eastern edge of the wall had been removed by the insertion of a concrete floor. The surviving section a 0.32m high construction of five brick courses in height, coated along its southern face with blue paint. Each brick measured 220mm x 110mm x 60mm.
- 4.5.3 No engine beds of significant dimensions were encountered in the room. Although a small rectangular stone block measuring 1.80m by 1.10m was observed within the eastern edge of the room. The upper surface of the block was perforated with 25mm diameter iron pins, that would have restrained a small engine. Two smaller blocks (measuring 0.60m by 0.45m and 0.76m by 0.40m) were observed along the northern edge of the room bordering the single skin wide wall. Each block may have provided support for a machine, although their dimensions suggest something for a smaller engine.
- 4.5.4 The entire room was filled with fuel waste which was in turn overlaid with an extensive brick surface measuring 6m by 2.32m that represented an internal

floor area (Plate 34). The upper surface of the floor was inter-spaced with stone wheels of varying diameters, the largest measuring 1.3m and some at 0.27m. The floor was almost identical in make-up as the floor encountered in the evaluation trenches. It was likely that this part of the site was latterly used as a workshop associated with a later occupation of the mill

4.6 EXCAVATION TRENCHES: AREA 4

- 4.6.1 Trench 4 was targeted specifically on a ditch that was revealed at the western end of evaluation Trench 4. The position of the ditch corresponded broadly with a boundary feature depicted on Green's map of 1794, which seemingly represented a relic of the pre-urbanised landscape. Excavation revealed the feature to comprise an asymmetrical flat-bottomed ditch, some 2.8m wide, that had been cut into the natural clay (Plate 35, Plate 36). The original depth of the ditch could not be established with confidence as it is most likely to have been truncated during late 18th-century development of the site; it was excavated to a depth of 0.6m.
- 4.6.2 Analysis of the ditch fill indicated that the pre-industrial landscape contained some scrubby vegetation and open waste ground. No evidence of cultivated plants was found, although a damson stone and seeds from brambles imply those species to have been growing in the vicinity. Similarly, large quantities of wood fragments and thorns in the sample suggest that trees and shrubs may have been growing near to the ditch (4.8 below).

4.7 THE FINDS

- 4.7.1 In total, 238 artefacts were recovered from the excavation, the majority of which date to the 19th century, although several fragments of 18th-century pottery and some coins were also discovered. The assemblage was dominated by fragments of pottery (144 fragments), which included at least 30 complete stoneware bottles. Other material categories represented in the assemblage include fragments of glass (47 fragments), animal bone (16 fragments), clay tobacco pipe (14 fragments), ironwork (nine fragments), and ceramic building materials. In broad terms, the assemblage is in good condition, and reflects not only the former industrial activity in the immediate vicinity, but also domestic activity on the site.
- 4.7.2 **The Pottery:** a collection of stoneware bottles and other miscellaneous sherds was recovered from the excavation, the majority being recovered from the in-filled canal arm at the northern edge of the site (001). Many of the bottles were stamped with a trademark identifying that the firms concerned were local. In particular, 'mineral water' and 'botanic beer' manufacturers '*J Pratt & Son*', '*Dales & Son*', and '*R Nichols*' were well represented. All of these were based in Ancoats or the adjacent township of Newton Heath, and were active from the late 19th or early 20th century. The firm of J Pratt & Son were the closest to the excavated site, based at 58 Leigh Street, and is listed in trade directories until issues for the 1909. The firm of Dales & Son is not listed in trade directories until 1900, when it was based at Philips Park Road, Beswick

(Slater 1897). The firm originated, however, as William Dales, a manufacturer of 'botanic beer' on George Leigh Street in Ancoats, and moving to Philips Park Road in c1897. The firm is not listed in Slater's trade directory for 1909, suggesting that they had ceased trading by this date. The firm of R Nichols does not appear in contemporary trade directories until 1901, where it is listed as 'botanic beer brewers', based at Irlam Street in Newton Heath (Slater 1901, 1479). Incongruous within the stoneware bottle collection is a salt-glazed bottle stating '*Pride 5 or C Bristol*', which is probably a mid- to late 19th-century soda bottle.

- 4.7.3 Other fragments of stoneware vessels recovered from the excavation include a marmalade jar, with the trademark '*James Keiller & Sons. Dundee*'. Two similar vessels are complete salt-glazed stoneware jars of a probable 19th-century date. The larger of the two is perhaps the more interesting, as it is inscribed on the base '*W P Hartley and Aintree*', or William Pickles Hartley, a jam manufacturer from the 19th century onwards. Also of interest is a Nottingham-type stoneware teapot lid, again of a 19th-century date (Cellar 2/019).
- 4.7.4 A range of domestic kitchen and table wares were also recovered. Part of a transfer-printed saucer is possibly a cheaper reproduction of 'Asiatic pheasants', and probably dates to the latter half of the 19th century. Two Cornishware sherds, including a fragment of a jug base, are rather fine table wares, and similarly date to the latter half of the 19th century. Also notable within the collection are four sherds of a transfer-printed pearlware cup, detailing chinoiserie and tripod type feet, dating to the late 18th century. Seven fragments of 'Rockingham' or 'Rockingham-type ware' of 19th-century date are rather interesting and reflect the every day pottery of the 19th century.
- 4.7.5 Five fragments of a remarkably fine moulded salt-glazed stoneware jug or vase was recovered from Cellar 3. This was likely to have been a product of the Staffordshire potters, and may be ascribed an 18th-century date. Similarly, a single fragment of a marbled and trailed slipware vessel is most likely from Staffordshire, and is again of an 18th-century date. It is tempting to suggest that these fragments reflect a more prosperous period of domestic occupation on the site, perhaps associated with the initial development of Ancoats as a residential area.
- 4.7.6 The fragments of kitchen wares included several fragments yellow ware vessels, a particular concentration being recovered from Area 4 (009), and Midlands-type blackwares. None of these fragments can be closely-dated, and were in wide circulation between the seventeenth and nineteenth centuries.
- 4.7.7 **Animal bone:** a small assemblage (17 fragments) of animal bone was recovered from the excavations. This included small fragments of medium-sized mammals and a cow skull from the backfill within Cellar 3, and a pig mandible, a sheep/goat phalanx and, curiously, a tarso-metatarsus of a large bird, possibly a swan, from the fill of a drain in Cellar 3. Fragments of a cow scapula and humerus were also recovered from unstratified contexts in evaluation Trench 4.

- 4.7.8 **Glass:** the majority of the glass assemblage was recovered from the in-filled canal arm in the northern part of the site. The assemblage included several mineral water bottles, bearing the trademark of J Pratt & Co. Among the smaller bottles from the same context, a bottle with '*Davis. Pain Killers. Vegetables*' is probably '*Perry Davis*' - an American drug manufacturer. A small glass bottle fragment (031) from the fill of the excavated ditch in Area 4 is interesting and probably dates to the 18th century. Most intriguing is a small bottle with the ledger '*Spring's delights*', of which very little can be discovered, except that it may be a London product. However, a quote from punch "When those "*Spring's delights*" of which you melodiously twangle are a leetle more en évidence" (<http://www.sakoman.net>) suggests it to be some sort of stimulant, possibly even a recreative drug.
- 4.7.9 **Clay tobacco pipes:** in broad terms, the 14 fragments of clay tobacco pipes recovered from the site are of an 18th- to 19th-century date. Of interest is part of a pipe bowl (039), recovered from an unstratified deposit, with the impressed ledger '*Manchester*', which may be identified with '*Pollocks of Manchester*', based on Harding Street in Ancoats.
- 4.7.10 **Coins:** in total, five coins were recovered from the excavation, of which two were minted during the reign of George III, and may be dated 1770-90.
- 4.7.11 **Other copper alloy:** several finds of finer type metalwork on the site, as well as the usual industrial and household type debris. A copper thimble (Cellar 3/027) dating broadly to the 18th or 19th century hints at the type of domestic activity in the area, as does a Victorian hallmarked silver spoon. A copper/brass button and buckle (both probably dating from the late 19th to early 20th century) are both military in appearance; the buckle being ornate and portraying two cannons, a sword (which appears to be a cuirass) and a gun. The flimsy nature of the piece, however, suggests a ceremonial rather than a practical use as well as endorsing a probable military presence.
- 4.7.12 **Ceramic building materials:** eight fragments of ceramic building materials were recovered from Cellar 3. These comprised seven 20th-century wall tile fragments (006), and a single, partially-reduced pan tile (005).
- 4.7.13 **Molluscs:** fragments of mollusc shell (021) from trench are probably oyster, and interestingly suggest something of the diet of the area. A small mother of pearl button (Cellar 3/026), is rather attractive and most probably from a Victorian ladies' gown.
- 4.7.14 **Stone:** a stone marble (040), probably of a Victorian date, appeared to be a child's toy rather, than a bottle stopper, due to the size.

4.8 THE PALAEOENVIRONMENTAL EVIDENCE

- 4.8.1 **Introduction:** one environmental bulk sample was taken from a pre-industrial ditch for the assessment of waterlogged plant remains. It was hoped that the sample would inform about the economy and environment around the site prior to the onset of urbanisation in the late 18th century.
- 4.8.2 **Quantification and Methodology:** one 40l bulk sample was taken and processed for the assessment of charred and waterlogged plant remains. The sample was hand-floated, and the flot was collected on a 250 micron mesh and air dried. The flot was scanned with a Leica MZ60 stereo microscope, and the plant material recorded and provisionally identified. The data are shown in Table 1. Botanical nomenclature follows Stace (1991). Plant remains were scored on a scale of abundance of 1-5, where 1 is rare (less than 5 items), and 5 is abundant (more than 100 items). The components of the matrix were noted.
- 4.8.3 **Results:** the results of the assessment are shown in Table 1. The sample was waterlogged and the matrix components contained abundant amorphous organic material with high quantities of coal, wood, thorns, and insect remains; no charred plant remains were present. The waterlogged seeds identified were from plants that thrive around wet ditches, and others which prefer waste/cultivated or open ground. The plants which prefer a damp environment included *Juncus* (rushes), *Carex* sp. (Sedges), *Ranunculus repens* (Creeping buttercup), *Ranunculus scleratus* (Celery-leaved buttercup), *Rorippa* (Water-cresses) and *Lychnis flos-cuculi* (Ragged robin). *Ranunculus repens* is found growing in damp conditions, but can also be an invasive weed of cultivated ground. The plants which thrive on waste/cultivated or open ground included *Persicaria maculosa/lapathifolium* (Redshank/Pale persicaria), *Cirsium* (Thistles), *Polygonum aviculare* (Knotgrass), *Rumex acetosella* (Sheep sorrel) and *Chenopodium album* (Fat-hen). The most abundant of all the plants was the *Persicaria maculosa/lapathifolia*. No evidence of cultivated plants were found, a culm node was present which may have come from a wild grass. A *Prunus domestica* (Damson) stone, possibly cultivated, together with seeds from *Rubus fruticosus* (Brambles), which could also have been growing in the vicinity were recorded.
- 4.8.4 The large quantities of wood fragments and thorns in the sample suggest that trees and shrubs may have been growing near to the ditch. The presence of coal in the fill possibly indicates human activity close by before industrialisation.
- 4.8.5 In conclusion the plant assemblage recorded in the fill from this pre-industrialisation feature is indicative of a damp environment nearby with some scrubby vegetation and areas of waste, open or cultivated ground existing before the plot was developed.

MATRIX	
Amorphous organic	5
Wood	3
Thorns	3
Culm node	1
Fly puparia	3
Insect remains	3
Clinker	1
Coal	4
Earthworm egg cases	3
WATERLOGGED Seeds	
Grassland	
Culm node	1
<i>Rumex acetosella</i> - Sheep's sorrel	1
Waste, cultivated or open ground	
<i>Chenopodium album</i> - Fat hen	1
<i>Polygonum convolvulus/aviculare</i> –Knotgrass	2
<i>Urtica dioica</i> - Stinging nettle	2
Wet ground	
<i>Carex trigonous</i> - Sedge	1
<i>Carex lenticular</i> - Sedge	1
<i>Juncus</i> -Rushes	3
<i>Lychnis flos-cuculi</i> -Ragged robin	1
<i>Persicaria maculosa/lapathifolium</i> -Redshank/Pale persicaria	4
<i>Rorippa</i> -Watercress	1
<i>Sonchus</i> -Sow thistle	1
Broad	
<i>Cirsium</i> sp. - Thistles	1
<i>Ranunculus repens</i> type - Creeping Buttercup	2
Solanaceae – Nightshade Family	1
Woodland/Scrub	
<i>Betula</i> seeds (Birch)	2
Possible food and economic taxa	
<i>Prunus domestica</i> -Damson	1
<i>Rubus fruticosus</i> seed - Blackberry	2
Unknown Seed Pod	1

Table 1: Assessment of waterlogged plant remains from Bengal Mill (1 is rare, 5 is abundant)

5. DISCUSSION

5.1 INTRODUCTION

- 5.1.1 Ancoats is widely acknowledged as the world's first industrial suburb based on steam power, and the programme of archaeological investigation has provided a valuable opportunity to investigate the physical remains of the initial development and urbanisation of part of the area during the late 18th century. In particular, the present study has facilitated an examination of the key elements: workers' housing, a section of an in-filled canal, and elements of a steam-powered mill. Moreover, excavation has provided a rare snapshot of the environmental conditions of the area immediately before the onset of urbanisation. The following section presents a summarised, phased account of the development of the site, based on the results of the archaeological investigation.

5.2 PHASE 1 (18TH CENTURY)

- 5.2.1 The boundary feature depicted on Green's map of 1794 seemingly represented a relic of the pre-urbanised Ancoats landscape. Palaeoenvironmental analysis of the ditch fill has provided a rare indication of the pre-urbanised environment of Ancoats, which was evidently one of open ground.

5.3 PHASE 2 (LATE 18TH CENTURY)

- 5.3.1 William Green's map of 1794 shows the initial stages of development, with several buildings having been erected within the study area by this date. The buildings mapped by Green comprised four blocks within the southern part of the study area, and a single structure with a boundary wall to a large yard to the north. Whilst the map only shows block outlines for the structures, the detailed nature of these outlines and the associated outlines provides important detail, from which several conclusions can be drawn. The map illustrates narrow passageways behind either end of the buildings fronting Bengal Street, both of which afforded access to the central east/west-aligned block positioned centrally behind the Bengal Street block. This demonstrates that the passages connecting Holditch's Court and Shilling Court to the main streets was in place by this time, even though they are not shown again until the Bancks and Co's map of 1832. It also strongly suggests that the central block, and quite possibly the northern block, comprised back-to-back dwellings, forming one of the earliest blocks of back-to-back housing in Ancoats. It is of note that the two passages are too narrow for access to an industrial property, and it is also unlikely that such a property would have been afforded access from streets to both the north and south.
- 5.3.2 The fact these passages split the site into separate blocks is also of significance, and when combined with the slight differences in the depth of each element on the map, suggests that they were probably built as separate entities, although quite possibly contemporarily. Working class housing in the

expanding industrial towns of the early 19th century was rarely built by employers (notable exceptions include Titus Salt's Saltaire development outside Bradford, West Yorkshire), but by speculators capitalising on the increasing demand for residential properties. This led to an unregulated, piecemeal expansion of the urban areas with blocks of housing built at differing angles, following only the alignment of the intervening streets. This led to the creation of many small alleys and blind courtyards within this part of Manchester, typical of early 19th-century working class housing (Muthesius 1982, 107). This is borne out by the evidence from the excavation, which identified several different plan types for the housing within the areas of structures shown on Green's map. The most striking of these differences is that those properties fronting Jersey and Bengal Streets were cellared, whereas those to the north-east were not. However, further, more subtle differences were also identified, regarding size, access and positioning of fireplaces.

5.4 PHASE 3 (MID-19TH CENTURY)

- 5.4.1 The maps for the intervening period between the publication of Green's map of 1794 and the Bancks and Co's map of 1832, show several inconsistencies within the area of housing to the south of Shilling Place. The evidence from the excavation strongly suggests that rather than wholesale demolition and rebuilding of structures, this represents errors within the mapping, most of which was of much larger scale, and appears to have been focussed on the factories, which would have been seen as far more important than low-class housing. Bancks and Co's map shows much greater detail within the plan of the housing than the earlier block plan produced by Green, clearly showing back-to-back housing along the southern side of Shilling Place, but being far less clear about the other properties. It does show an open yard within the block on Shilling Place, and although this would appear unlikely, it is possibly demonstrated by the excavation, where a fireplace in the corresponding position was lacking, although none was observed in the dwelling to the east.
- 5.4.2 The most significant development during this phase was the extension of the dwellings along the Jersey Street frontage. The front dwelling on Jersey Street is shown on Bancks and Co's map of 1832, with a yard to the rear, but the buildings are shown as full-depth blocks on both Adshead's map of 1851 and the Ordnance Survey 60" map of 1851. As with the Phase 2 dwellings, a difference in construction is again demonstrated in comparison with the earlier structures to the east. Not only is the cellar deeper, but also has a different position of the fireplace and the doorway providing access from the front cellar. This cellar (Cellar 9) also retained the only well-preserved cellar-light window, which appears to have been remodelled, probably during Phase 4, before being blocked completely, most probably during Phase 5.

5.5 PHASE 4 (LATE 19TH CENTURY)

- 5.5.1 This phase is dated by the 1893 Ordnance Survey map, which is the next map chronologically following the alterations during Phase 3. Whilst the internal detail of the blocks of housing differs from the earlier maps, most notably

showing those dwellings in the block fronting Shilling Place as single entities, rather than back-to-backs, the major alteration shown by the map was the demolition of the housing along the northern side of Holditch's Court, although some structures are shown on the subsequent edition of 1931. This may well correspond to an increased effort during this period to improve the conditions of the poorest housing. The removal of the central block of housing within the site would not only improve air and light quality, but would also relieve some of the pressure on facilities and outhouses, and hopefully reduce the spread of infection that was rife in areas of such close-quarter living.

5.6 PHASE 5 (EARLY 20TH CENTURY)

- 5.6.1 The Ordnance Survey 1931 map again shows some clearance within the area of the dwellings, but also shows some expansion to the surviving structures. The structures shown along the northern boundary of Holditch's Court do not appear to contradict the earlier mapping, as the relatively detailed plan shows them to be much smaller, and more irregularly-shaped than the earlier dwellings. This suggests that they were newly-built structures, possibly suggesting a change of use of Shilling Court to a more industrial or artisan usage. This is supported by the demolition of properties along the northern side of the court, and more importantly at its western end, affording wider, presumably vehicular access from a main road. Expansion to the south of, and at the end of Holditch's court was also demonstrated by the archaeological evidence, with both the probable lean-to structures shown butting the narrowed passage of Holditch's Court, and the rectangular structure built across its eastern end, both surviving as footprints at street level.

5.7 PHASE 6 (MID-20TH CENTURY)

- 5.7.1 This phase comprises the demolition of the structures, and the subsequent re-use of the land as a car park. The archaeological deposits suggest a rapid episode of demolition, probably as a result of slum clearance by local authorities, a programme which was widespread throughout the city by the end of Phase 5.

5.8 CONCLUSION

- 5.8.1 The archaeological investigation of the study area has provided a record of buried archaeological remains of high local, if not regional significance. In particular, the excavated remains of former workers' dwellings represent a key element in the character of Ancoats: tracts of housing intended solely for the occupation of the new urban working class (Roberts 1993, 15). The net results was one of the most intensely-developed industrial townscapes in the world, and the manufacturing heart of Manchester: 'Ancoats is to Manchester what Manchester is to London' (*Manchester Chronicle* 1849).

6. RECOMMENDATIONS

6.1 INTRODUCTION

- 6.1.1 A distinction may be drawn between remains of national importance, which should be preserved *in-situ*, and remains of lesser significance, which may undergo preservation by record. No extant or buried remains within the study area are considered to have a potential for being of national significance, and therefore meriting preservation *in-situ*. The high local, or regional significance of the remains, however, clearly merited a detailed mitigation record in advance of their ultimate destruction. This record has been largely completed as part of the programme of archaeological excavation. The significance of the archaeological record for the site, however, does merit formal publication in a relevant academic journal, such as the *Industrial Archaeology Review*. The scope and extent of any such publication could only be finalised upon completion of all elements of the fieldwork.

6.2 RECOMMENDATIONS

- 6.2.1 The excavation examined the parts of the former Bengal Street block of the Beehive Mill complex that were considered to be of potential interest, although the results have demonstrated that much of the remains had been destroyed by late 19th- and 20th-century development. A detailed examination of the entire footprint of the boiler house shown on the 1851 Ordnance Survey map, however, was precluded by its proximity to the dangerous extant remains of the Jersey Street block. Should this part of the scheme area be subject to earth-moving works, an archaeological watching brief may be considered to be an appropriate mitigation response to allow for the rapid recording of any buried remains pertaining to the former boiler house (Fig 12).
- 6.2.2 It is envisaged that the redevelopment of the site may necessitate the whole-scale removal of material within the in-filled canal arm that lies across the centre of the scheme area. Should this be undertaken, it is recommended that the earth-moving works are monitored by an archaeological watching brief that should be targeted at recording any structural features within the vertical elevations of the canal wall, and recovering artefacts of archaeological interest (Fig 12).
- 6.2.3 It is understood that the northern part of the study area, to the north of the in-filled canal arm, will not be subject to substantial earth-moving works as part of the proposed development. Should such work be necessitated as part of the final design, however, it is recommended that an archaeological watching brief is maintained during any works in the vicinity of a large building shown on Green's map of 1794 (Fig 12). This should be targeted at establishing the nature of the building, should any buried remains survive.

7. BIBLIOGRAPHY

7.1 CARTOGRAPHIC SOURCES

Map of Manchester and Salford, drawn from a survey by William Green, begun in 1787 and completed in 1794

A Plan of Manchester and Salford, by Bancks and Thornton, 1800

Plan of Manchester and Salford, by Ashton, 1804

Plan of Manchester and Salford, by Pigot, 1809

Plan of Manchester, Johnson, 1819

Map of Manchester and its Environs, by R Thornton, 1824

A Map of Manchester and Salford, Bancks and Co, 1832

Plan of the Township of Manchester, Adshead, 1851

Ordnance Survey 6": 1 mile map, Manchester sheet 24, surveyed 1848-49, published 1851

Ordnance Survey 1:2500 First Edition map, Lancashire sheets CIV.7, surveyed 1888-91, published 1893

Ordnance Survey 1:2500 map, Lancashire sheets CIV.7, 1908 Edition, (surveyed 1905)

Ordnance Survey 1:2500 map, Lancashire sheets CIV.7, 1922 Edition, (surveyed 1915)

Ordnance Survey 1:2500 map, Lancashire sheets CIV.7, Revision of 1931

Ordnance Survey 1:2500 map, Lancashire sheets CIV.7, Revision of 1969

7.2 PRIMARY SOURCES

MCL/M9/40/2/100 Poor Rate Assessments, Manchester District 1, Part 1, 1829

MCL/M9/40/2/146 Poor Rate Assessments, Manchester District 1, Part 1, 1846

Manchester Guardian 12th January, 1861

Plan 7547, Manchester City Planning Department, 1906

Goad's Insurance Plan, Vol II, Sheet 217 (1943 Revision)

7.3 SECONDARY SOURCES

- Ashworth, G, 1987 *The Lost Rivers of Manchester*, Altrincham
- Axon, WEA, 1886 *The Annals of Manchester: A Chronological Record*, Manchester
- Cooper, G, 2002 *Illustrated History of Manchester's Suburbs*, Manchester
- Countryside Commission, 1998 *Countryside Character Volume 2: North West*, Cheltenham
- DoE, 1990 *Planning Policy Guidance 16: Archaeology and Planning*
- English Heritage, 1991 *Management of Archaeological Projects*, 2nd Edn, London
- Fletcher, M, 1996 Industrial Archaeology, in R Newman (ed) *The Archaeology of Lancashire*, 157-69
- Hall, D, Wells, CE, and Huckerby, E, 1995 *The Wetlands of Greater Manchester*, Lancaster Imprints **3**, Lancaster
- Hartley, LS, 1974 *A typology of Brick: with numerical coding of brick characteristics*, Jour Brit Archaeol Assoc 3rd Ser, **37**, 64-87
- Huntley, J, and Stallybrass, S, 1995 *Plants and Vertibrate Remains from Archaeological Sites in Northern England*. Research rep **4**, Architectural and Archaeological Society of Durham and Northumberland
- Lee, CH, 1972 *A Cotton Enterprise 1795-1840: A History of M'Connel and Kennedy, Fine Cotton Spinners*, Manchester
- Little, S, 2004 Ancoats – The First Industrial Suburb, in R McNeil and JSF Walker (eds), *The Heritage Atlas 4: Manchester – The Archetype City of the Industrial Revolution*, Manchester, 31-33
- Menuge, A, 2001 The Cotton Mills of the Derbyshire Derwent, in Falconer KA (ed) 2001 *Derwent Valley Textile Mills*, p38-61, Belper North Mill Trust
- Miller, I, Wild, C, Little, S, and Moth, K, forthcoming *A & G Murray and the Cotton Mills of Ancoats*
- OA North, 2004a *New Islington Mill, Ancoats: Archaeological Evaluation*, unpubl rep
- OA North, 2004b *Murrays' Mills, Ancoats, Manchester: Old and Decker Mills Archaeological Investigation*, unpubl rep
- OA North 2005 *Bengal Street Block, Beehive Mills, Ancoats, Manchester: Archaeological Research, Survey and Assessment*, unpubl rep
- Pigot, J, 1819 *Manchester and Salford Directory*, Manchester
- Pigot, J, 1832 *Manchester and Salford Directory*, Manchester

- Pigot, J, 1835 *Manchester and Salford Directory*, Manchester
- Pigot, J, and Dean, R, 1822 *Manchester and Salford Directory*, Manchester
- Pigot, J, and Slater, I, 1841 *Directory of Manchester and Salford*, Manchester
- Slater, I, 1845 *General and Classified Directory and Street Register of Manchester and Salford*, Manchester
- Slater, I, 1851 *Manchester and Salford Directory*, **1**, Manchester
- Slater, I, 1855 *Manchester and Salford Directory*, **1**, Manchester
- Slater, I, 1863 *Manchester and Salford Directory*, **1**, Manchester
- Slater, I, 1869 *The Business Directory of Manchester*, London
- Slater, I, 1874 *Manchester and Salford Directory*, **1**, Manchester
- Slater, I, 1876 *Royal National Commercial Directory of Manchester*, Manchester
- Slater, I, 1877 *Manchester and Salford Directory*, **1**, Manchester
- Slater, I, 1879 *Manchester and Salford Directory*, **1**, Manchester
- Stace, C, 1997 *New Flora of the British Isles*, Cambridge
- Tann, J, 1970 *The History of the Factory*, London
- Williams, M, 2002 Ancoats – Where the Steam-Powered Textile Mill Began, in R McNeil and JSF Walker (eds), *The Heritage Atlas 4: Manchester – Archetype City of the Industrial Revolution*, UMFAC, Manchester, 34-38
- Williams, M, and Farnie, DA, 1992 *Cotton Mills of Greater Manchester*, Preston
- Worrall, J, 1894 *Cotton Spinners & Manufacturers' Directory*, Oldham
- Worrall, J, 1891 *Cotton Spinners & Manufacturers' Directory*, Oldham

APPENDIX 1: PROJECT DESIGN

October 2006

**Oxford
Archaeology
North**

**BENGAL STREET MILL,
JERSEY STREET,
MANCHESTER**

ARCHAEOLOGICAL EXCAVATION PROJECT DESIGN

Proposals

The following project design is offered in response to a request from Mr Stuart Ingham, of CRE8 Management Ltd, for an archaeological excavation in advance of the proposed development of land at Bengal Street Mill, Jersey Street, Manchester.

1 BACKGROUND

1.1 CIRCUMSTANCES OF PROJECT

- 1.1.1 Nikal Investments are proposing a scheme of redevelopment for 45 – 47 Bengal Street, within the Ancoats area of Manchester, for a mixed residential and commercial end-use. Until recently, N^o 45 Bengal Street was occupied by a light industrial unit and associated yard, whilst a disused 19th century textile mill occupied N^o 47 Bengal Street. During July 2005, this mill building was destroyed by a catastrophic fire, which resulted in the collapse of the bulk of the structure. Elements of the building that did survive, however, included some structures of archaeological significance. Whilst the perilous structural nature of these remains necessitated their demolition as a matter of urgency, a rapid programme of archaeological survey was recommended in advance of their ultimate loss. The survey was coupled with a programme of historical research, which investigated the potential for buried remains of archaeological significance to survive on the site. This concluded that the site is likely to contain the remains of former workers' housing, the steam-power plant associated with the former mill, and part of a canal arm.
- 1.1.2 Following on from the archaeological survey and assessment, the Assistant County Archaeologist for Greater Manchester recommended that a programme of archaeological evaluation is undertaken in advance of the development of the site. This was targeted upon the remains of the former workers' housing, the mill's steam power plant, and the canal arm, and was undertaken by OA North during October 2006. This revealed that extensive buried remains survived across the study area, immediately below the modern ground surface. In particular, the cellared remains of early workers' housing survived across the southern part of the study area, fronting Jersey Street, together with the remains of Holditch's Court and Shilling Court. The evaluation also revealed that the workers' housing associated with Holditch's Court and Shilling Court was not cellared, but the foundations of the former buildings did survive, allowing their internal arrangement to be mapped. In addition, several features pertaining to pre-industrialised Ancoats were also exposed immediately to the south of Shilling Place.
- 1.1.3 Following discussions with the Assistant County Archaeologist for Greater Manchester, it was recommended that a programme of further archaeological investigation was implemented. It is proposed that this focuses upon four discrete areas of the study area, and provides a mitigation record of buried archaeological structures in advance of their ultimate destruction. This project design is for the required programme of archaeological works, and has been formulated to meet the requirements of the Assistant County Archaeologist for Greater Manchester.

1.2 OXFORD ARCHAEOLOGY

- 1.2.1 Oxford Archaeology has over 30 years of experience in professional archaeology, and can provide a professional and cost effective service. We are the largest employer of archaeologists in the country (we currently have more than 200 members of staff) and can thus deploy considerable resources with extensive experience to deal with any archaeological obligations you or your clients may have. We have offices in Lancaster and Oxford, trading as Oxford Archaeology North (OA North), and Oxford Archaeology (OA) respectively, enabling us to provide a truly nationwide service. Watching briefs, evaluations and excavations have taken place within the planning process, to fulfil the requirements of clients and planning authorities, to very rigorous timetables. OA is an Institute of Field Archaeologists Registered Organisation (No 17), and is thus bound by the IFA's Code of Conduct and required to apply the IFA's quality standards.
- 1.2.2 Given the geographical location of Manchester, it is intended to co-ordinate the project from our northern office in Lancaster, though the project team will use the most appropriate resources from both offices. Between our two offices our company has unrivalled experience of working on post-medieval sites, and is recognised as one of the leading archaeological units in the country with regard to dealing with Industrial Period archaeological projects.
- 1.2.3 OA North has considerable experience of the assessment, survey, evaluation and excavation of sites of all periods, and has particular experience of Industrial Archaeology in the North West having undertaken in recent years excavation, survey, building recording and post-excavation projects in both urban and rural environments; two major projects undertaken *inter alia* (locally to Manchester) include the on-going programme of survey, excavation, recording, and analysis of the Murrays' Mills in Ancoats, and the evaluation and excavation of the Jersey Street Flint Glass Works, also in Ancoats. Of particular relevance, OA North has recently undertaken a series of evaluations and building surveys associated with the New Islington development in Manchester on behalf of English Partnerships and Urban Splash Ltd. This has included the evaluations of New Islington Mill, Waller's Mill, and Salvin's Factory, all of which are broadly contemporary with the mills that form the focus of this project design.

2 AIMS AND OBJECTIVES

2.1 ACADEMIC AIMS

- 2.1.1 The main research aim of the investigation, given the commercial nature of the development, will be to provide a mitigation record of buried structures in the study area in advance of development.

2.2 OBJECTIVES

- 2.2.1 The objectives of the project may be summarised as follows:

- to expose and provide a detailed archaeological record for the former workers' dwellings in the south-western part of the study area, fronting Bengal Street;
- to expose and provide a detailed archaeological record for a block of former workers' dwellings on the north side of Holditch's Court;
- to expose and provide a detailed archaeological record for a block of former workers' dwellings between Shilling Place and Shilling Court;
- to expose and provide a detailed archaeological record for the former steam-power plant associated with Bengal Street Mill. In the first instance, this will focus upon a rectangular building shown on historic mapping, thought to represent the former engine house; the associated boiler house immediately to the east will not be excavated at this stage due to its close proximity to a dangerous building;
- to excavate a section across a large linear feature identified to the south of Shilling Place, and establish its nature, character, and date;
- to produce a project archive and final report of the archaeological investigations, which will include an updated project design for the publication of the results, if merited, and secure the release of the archaeological planning condition for the development of the site.

3 METHOD STATEMENT

3.1 The following work programme is submitted in line with the aims and objectives summarised above, and in accordance with the requirements specified by the Greater Manchester Assistant County Archaeologist.

3.2 EXCAVATION

3.2.1 **General Methodology:** it is proposed that the site be investigated via four targeted excavation areas, which will be placed in the positions shown in Figure 1.

3.2.2 *Area 1:* will be T-shaped, with maximum dimensions of 25m by 20m, and will be placed across the former worker's dwellings in the south-western part of the study area. As much of this area as possible will be excavated, although logistical considerations, such as modern services, may preclude the area extending right up to the site boundary.

3.2.3 *Area 2:* will be placed to the north-east of Area 1, and will measure 18m by 6m. This will be placed across former workers' dwellings in Holditch's Court and Shilling Court.

3.2.4 *Area 3:* will be targeted on the site of the steam-raising plant associated with Bengal Street Mill, and will measure 10m by 4m.

- 3.2.5 *Area 4:* will be placed across the linear feature identified to the south of Shilling Place.
- 3.2.6 Excavation of the uppermost levels of modern overburden/demolition material will be undertaken by a machine fitted with a toothless ditching bucket to the top of the first significant archaeological level. The work will be supervised by a suitably experienced archaeologist. Spoil from the excavation will be stored at a safe distance from the trench, and will be backfilled upon completion of the archaeological works.
- 3.2.7 Machine excavation will then be used to define carefully the extent of any surviving walls, foundations, and other remains. Thereafter, structural remains will be cleaned manually to define their extent, nature, form and, where possible, date. It is anticipated that elements of the excavation areas will proceed below a depth of 1.2m, whereupon the trench sides will be battered back to a safe angle of repose.
- 3.2.8 **Context Recording:** all contexts will be recorded using *pro-forma* sheets, and details will be incorporated into a Harris matrix. Similar object record and photographic record *pro-formas* will be used. All written recording of survey data, contexts, photographs, artefacts and ecofacts will be cross-referenced from *pro-forma* record sheets using sequential numbering.
- 3.2.9 **Photography:** a full and detailed photographic record of individual contexts will be maintained and similarly general views from standard view points of the overall site at all stages of the evaluation will be generated. Photography will be undertaken using 35mm cameras on archivable black and white print film as well as colour transparency, and all frames will include a visible, graduated metric scale. Extensive use of digital photography will also be undertaken throughout the course of the fieldwork for presentation purposes. Photographs records will be maintained on special photographic *pro-forma* sheets.
- 3.2.10 **Planning:** the precise location of the evaluation trenches, and the position of all archaeological structures encountered, will be surveyed by EDM tacheometry using a total station linked to a pen computer data logger. This process will generate scaled plans within AutoCAD, which will then be subject to manual survey enhancement. The drawings will be generated at an accuracy appropriate for 1:20 scale, but can be output at any scale required. Sections will be manually drafted as appropriate at a scale of 1:10. All information will be tied in to Ordnance Datum.
- 3.2.11 Human remains are not expected to be present, but if they are found they will, if possible, be left *in situ* covered and protected. If removal is necessary, then the relevant Home Office permission will be sought, and the removal of such remains will be carried out with due care and sensitivity as required by the *Burials Act 1857*.
- 3.2.12 Any gold and silver artefacts recovered during the course of the excavation will be removed to a safe place and reported to the local Coroner according to the procedures relating to the Treasure Act, 1996.

3.2.13 ***Finds policy:*** finds recovery and sampling programmes will be in accordance with best practice (following current Institute of Field Archaeologists guidelines) and subject to expert advice in order to minimise deterioration. OA North employs in-house artefact and palaeoecology specialists, with considerable expertise in the investigation, excavation, and finds management of sites of all periods and types, who are readily available for consultation. Finds storage during fieldwork and any site archive preparation will follow professional guidelines (UKIC). Emergency access to conservation facilities is maintained by OA North with the Department of Archaeology, the University of Durham. Samples will also be collected for technological, pedological and chronological analysis as appropriate. OA North employs palaeoecology and soil micromorphology specialists with considerable expertise in the investigation, excavation and analysis of sites of all periods and types, who are readily available for consultation.

3.3 **HEALTH AND SAFETY**

3.3.1 Full regard will, of course, be given to all constraints during the course of the project. OA provides a Health and Safety Statement for all projects and maintains a Safety Policy. All site procedures are in accordance with the guidance set out in the Health and Safety Manual compiled by the Standing Conference of Archaeological Unit Managers (3rd Edition, 1997). A risk assessment will be completed in advance of any on-site works. Details of the Safety Policy are presented in *Appendix 1*.

3.3.2 OA North has professional indemnity to a value of £2,000,000, employer's liability cover to a value of £10,000,000 and public liability to a value of £15,000,000. Written details of insurance cover can be provided if required.

3.3.3 Normal OA North working hours are between 9.00 am and 5.00 pm, Monday to Friday, though adjustments to hours may be made to maximise daylight working time in winter and to meet travel requirements. It is not normal practice for OA North staff to be asked to work weekends or bank holidays and should the Client require such time to be worked during the course of a project a contract variation to cover additional costs will be necessary.

3.4 **OTHER MATTERS**

3.4.1 Access to the site will be arranged via the Client/main contractor.

3.4.2 The costings presented at the rear of this document do not allow for the erection of fencing to enclose the evaluation trenches, as it is assumed that the Client/main contractor will provide a secure enclosed area for the archaeological work to take place within.

3.4.3 The excavation areas will be backfilled upon completion of the archaeological works. However, paved areas and tarmac surfaces removed during the course of the works will not be reinstated to their current standard.

3.4.4 The Client/main contractor is asked to provide OA North with information relating to the position of live services on the site. OA North will use a cable

detecting tool in advance of any machine excavation. The Client/main contractor is also asked to supply OA North with the results obtained from any geo-technical boring across the site, and any other information on ground conditions that will allow a risk assessment to be formulated.

3.5 POST-EXCAVATION AND REPORT PRODUCTION

- 3.5.1 **Archive:** the results of the fieldwork will form the basis of a full archive to professional standards, in accordance with current English Heritage guidelines (*The Management of Archaeological Projects*, 2nd edition, 1991) and the *Guidelines for the Preparation of Excavation Archives for Long Term Storage* (UKIC 1990). The project archive represents the collation and indexing of all the data and material gathered during the course of the project. The deposition of a properly ordered and indexed project archive in an appropriate repository is considered an essential and integral element of all archaeological projects by the IFA in that organisation's code of conduct.
- 3.5.2 The paper and finds archive for the archaeological work undertaken at the site will be deposited with the Science and Industry Museum at Manchester, as this is the nearest museum which meets Museums' and Galleries' Commission criteria for the long term storage of archaeological material (MGC 1992). This archive can be provided in the English Heritage Centre for Archaeology format, both as a printed document and on computer disks as ASCII files (as appropriate). The archive will be deposited with the museum within six months of the completion of the fieldwork. Except for items subject to the Treasure Act, all artefacts found during the course of the project will be donated to the receiving museum.
- 3.5.3 A synthesis (in the form of the index to the archive and a copy of the publication report) will be deposited with the Greater Manchester Sites and Monuments Record. A copy of the index to the archive will also be available for deposition in the National Archaeological Record in London.
- 3.5.4 **Report:** four copies of a bound and collated final report will be submitted to the Client within six weeks of the completion of the fieldwork. Further copies will be sent to the Manchester Planning Department, the Assistant County Archaeologist, the Greater Manchester Sites and Monuments Record, and the Museum of Science and Industry at Manchester. The final report will include a copy of this project design, and indications of any agreed departure from that design. It will include an historical and archaeological background to the study area, an outline methodology of the investigation, and present, summarise, assess, and interpret the results of the programme of archaeological works detailed above. It will also include an assessment of the finds, which will be accompanied by relevant proposals for detailed finds analysis and conservation with costs, and assess the validity of producing an academic publication of the findings obtained from the archaeological work.
- 3.5.5 A summary of the results produced from the archaeological investigation will be published in the CBA North West magazine, although a more detailed article will be provided should the results be of sufficient merit. This would be subject to an additional cost.

- 3.5.4 **Confidentiality:** the final report is designed as a document for the specific use of the Client, and should be treated as such; it is not suitable for publication as an academic report, or otherwise, without amendment or revision. Any requirement to revise or reorder the material for submission or presentation to third parties beyond the project brief and project design, or for any other explicit purpose, can be fulfilled, but will require separate discussion and funding.

4 WORK TIMETABLE

- 4.1 A three week period should be allowed to excavate, record and backfill the excavation areas.
- 4.2 A report will be submitted within six weeks of the completion of the fieldwork.
- 4.3 OA North can execute projects at very short notice once an agreement has been signed with the Client.

5 STAFFING PROPOSALS

- 5.1 The project will be under the overall charge of **Ian Miller BA** (OA North Project Manager) to whom all correspondence should be addressed. Ian has considerable experience and particular research interests in Industrial Archaeology and, amongst numerous other projects, was involved in the excavation recording, analysis and publication of the Netherhall blast furnace site in Maryport, Cumbria, the excavation, recording and publication of work at Carlton Bank alum works in North Yorkshire, and the excavation of Macintosh Mill in Manchester. Ian also managed the archaeological work at Murrays' Mills and the Jersey Street Flint Glass Works, both in Manchester, and is currently managing the evaluation of a series of former cotton-spinning mills in Ancoats, Manchester.
- 5.2 His role will be to ensure that the project design is implemented within the framework of the Project Objectives. He will be responsible for all aspects of staff and resource logistics, ensuring the smooth running of the project programme. He will liaise with the Client and County Archaeologist with regard to progress, and will maintain relationships with other contractors.
- 5.3 The excavation is likely to be undertaken by **Sean McPhillips BA** (OA North Project Officer). Sean is an highly experienced field archaeologist, who has a particular interest in Industrial Archaeology, and especially that of Manchester. He recently directed the archaeological investigation of a complex of textile mills at the Torrs in New Mills, and the recent excavation of New Islington Mill in Manchester. Sean also played a key role in the excavations at Calprina Works, Salybridge, and Macintosh Mill, Manchester.
- 5.4 It is not possible to provide details of specific technicians that will be involved with the fieldwork at this stage, but all shall be suitably qualified

archaeologists with proven relevant experience. It is anticipated that up to three technicians will be required during the course of the fieldwork.

5.5 The report will be written jointly by **Sean McPhillips** and **Chris Wild** (OA North Project Officer), who undertook the building survey and initial archaeological evaluation of the site.

5.6 Assessment of any finds recovered from the evaluation will be undertaken by OA North's in-house finds specialist **Christine Howard-Davis BA** (OA North Finds Manager). Christine has extensive knowledge of all finds of all periods from archaeological sites in northern England, and is a recognised expert in the analysis of post-medieval artefacts.

6 MONITORING

6.1 Monitoring meetings will be established with the Client and the archaeological curator at the outset of the project. Monitoring of the project will be undertaken by the Greater Manchester Assistant County Archaeologist, who will be afforded access to the site at all times.

APPENDIX 2: SUMMARY FINDS CATALOGUE

OR No	Provenance	Material	Quantity	Description	Date
001	U/S	Pottery	30	Stoneware bottles	19 th century
002	U/S	Glass	32	Glass bottles	19 th century
003	Cellar 3	Pottery	5	Salt-glazed stoneware with press moulded decoration (probably Staffordshire)	18 th century
003	Cellar 3	Pottery	1	Salt-glazed stoneware cup? base	18 th century / 19 th century
003	Cellar 3	Pottery	2	Transfer-printed pearlware plate rims detailing flowers.	Mid- to late 19 th century
003	Cellar 3	Pottery	1	Pearlware plate fragment with painted rim	19 th century
003	Cellar 3	Pottery	2	Creamware cup base and handle with flowers painted centrally to the base	18 th century / 19 th century
003	Cellar 3	Pottery	3	Porcelain/bone china cup fragments	19 th century
004	Cellar 3	Bone	3	Medium-sized mammal rib fragments	Undated
004	Cellar 3	Bone	1	Cow skull fragment	Undated
004	Cellar 3	Bone	1	Unidentifiable	Undated
005	Cellar 3	CBM	1	Partially-reduced pan tile fragment	18 th century / 19 th century
006	Cellar 3	Ceramic	7	Wall tiles	20 th century
007	Cellar 3	Cu	1	Brass/copper incised thimble	18 th century?
008	U/S Tr4	Ceramic	3	Clay tobacco pipe.	19 th century
009	U/S Tr4	Pottery	2	Midlands yellow ware	17 th century / 18 th century
009	U/S Tr4	Pottery	1	English stoneware (bowl base)	18 th century
009	U/S Tr4	Pottery	1	Midlands blackware	18 th century
009	U/S Tr4	Pottery	1	Manganese mottled ware	18 th century
010	Drain fill, Cellar 3	Bone	1	Pig mandible	Undated
010	Drain fill, Cellar 3	Bone	1	Sheep/goat 1st phalanx	Undated
010	Drain fill, Cellar 3	Bone	1	Bird tibio-tarsus	Undated
010	Drain fill, Cellar 3	Bone	1	Medium mammal rib	Undated
010	Drain fill, Cellar 3	Bone	1	Bird tarso-metatarsus - large swan?	Undated
011	Drain fill, Cellar 3	Ceramic	3	Clay tobacco pipe stems	19 th century

OR No	Provenance	Material	Quantity	Description	Date
012	Drain fill, Cellar 3	Pottery	2	Stoneware	19 th century
012	Drain fill, Cellar 3	Pottery	2	Rim painted pearlware (plate)	19 th century
012	Drain fill, Cellar 3	Pottery	1	Transfer-printed white earthenware	20 th century
012	Drain fill, Cellar 3	Pottery	1	Black-glazed white earthenware	19 th century / 20 th century
013	Cellars	Glass	1	Lampshade	19 th century
013	Cellars	Glass	1	Water bottle (aerated water)	19 th century
014	U/S	Pottery	1	Stoneware marmalade jar fragment	19 th century
014	U/S	Pottery	2	Cornishware	19 th century
014	U/S	Pottery	2	Sherds of blue/brown striped pearlware jar (base and body present) and pot/dish	Early 19 th century
014	U/S	Pottery	2	Willow pattern saucer sherds	Mid- to late 19 th century
014	U/S	Pottery	7	Porcelain/bone china saucer fragments (makes up one complete and more)	19 th century / 20 th century
014	U/S	Pottery	2	Pearlware cup and saucer	19 th century
014	U/S	Pottery	1	Saucer fragment - Asiatic pheasants?	19 th century
014	U/S	Pottery	1	Transfer-printed pearlware rim sherd - early willow pattern?	18 th century / 19 th century
014	U/S	Pottery	2	Painted pearlware cup (clover)	18 th century / 19 th century
014	U/S	Pottery	3	White earthenware saucer	20 th century
014	U/S	Pottery	1	Stoneware base with a brown streaky glaze	19 th century
014	U/S	Pottery	2	Midlands Blackware	18 th century / 19 th century
014	U/S	Ceramic	1	Toilet flusher handle	19 th century / 20 th century
014	U/S	Pottery	1	Marbled/trailed slipware (Staffordshire)	18 th century
014	U/S	Pottery	2	Salt-glazed stoneware pots/jars - larger one 'W.P. Hartley and Aintree	19 th century
014	U/S	Pottery	2	Yellow/cream-glazed stoneware flagon	19 th century
014	U/S	Pottery	1	Jackfield-type ware base	18 th century
014	U/S	Pottery	1	Salt-glazed stoneware	19 th century

OR No	Provenance	Material	Quantity	Description	Date
014	U/S	Pottery	1	Brown-glazed earthenware	19 th century
014	U/S	Pottery	1	Whiteware vessel	20 th century
014	U/S	Pottery	4	Transfer-printed pearlware cup (chinoiserie) with tripod feet	18 th century
014	U/S	Pottery	7	Rockingham ware teapot	19 th century
014	U/S	Pottery	5	Stoneware	19 th century
014	U/S	Pottery	4	Blue striped pearlware (Cornish ware type)	19 th century / 20 th century
014	U/S	Pottery	1	Creamware complete pot	19 th century
014	U/S	Pottery/ceramic object	2	Lustreware	19 th century / 20 th century
014	U/S	Pottery	2	Painted pearlware - 'MG Port pottery' plate and another sherd	20 th century
014	U/S	Pottery	1	White earthenware sherd	20 th century
015	U/S	Ceramic	2	Clay tobacco pipe	19 th century
016	U/S	Pottery	2	File and tongs	20 th century
017	U/S	Cu	1	Ceremonial brass buckle	19 th century / 20 th century
018	U/S	Ag	1	Hallmarked silver/silver-plated spoon	19 th century
019	Cellar 2	Pottery	2	One and a half stoneware bottle	19 th century
019	Cellar 2	Pottery	1	Jackfield/Jackfield-type ware	18 th century
019	Cellar 2	Pottery	1	Nottingham stoneware teapot lid	19 th century
019	Cellar 2	Pottery	1	Yellow-glazed red ware of local production	19 th century
019	Cellar 2	Pottery	2	Cornishware	20 th century
019	Cellar 2	Pottery	1	White salt-glazed stoneware	18 th century / 19 th century
019	Cellar 2	Pottery	1	Cream/white-glazed stoneware	C19th-20th
019	Cellar 2	Pottery	1	Buff earthenware and speckled glaze	20 th century
020	Cellar 2	Cu	1	Queen Victoria halfpenny c1837-60	19 th century
021	Tr6 U/S	Shell	1	Shell fragments	19 th century?
022	Cellar 4	Cu	1	George III halfpenny	1771
023	Cellar 4	Cu	1	George VI coin	1937

OR No	Provenance	Material	Quantity	Description	Date
024	Tr 6 U/S	Shell/ wood	1	Victorian hair comb	19 th century?
025	Tr 4 U/S	Bone	1	Cow Scapula	Undated
025	Tr 4 U/S	Bone	2	Cow Humerus	Undated
026	Cellar 3	Mainly shell	1	Button - probably a Victorian ladies' dress button	19 th century / 20 th century
027	Cellars	Glass	9	Bottles	19 th century
028	Cellars	Pottery	1	Christening plate - probably Edwardian	20 th century
029	Ditch fill	Pottery	2	Midlands blackware	18 th century / 19 th century
030	Ditch fill	Bone	1	Cow metatarsus	Undated
031	Ditch fill	Glass	1	Bottle fragment	18 th century
032	Tr6 U/S	Cu	1	George III half penny. In poor condition	18 th century
033	Drain fill	Cu	1	George III half penny	18 th century
034	Tr7 cellar	Glass	2	Bottles	19 th century
035	Tr7 cellar	Pottery	1	Pearlware	19 th century
035	Tr7 cellar	Pottery	1	Transfer-printed pearlware	19 th century
035	Tr7 cellar	Pottery	1	Transfer-printed whiteware	20 th century
036	U/S	Cu	1	Copper/brass button	19 th century
037	U/S	Bone	1	Rib	Undated
038	U/S	Glass	1	Bottle - 'Spring's delights'	19 th century
039	U/S	Ceramic	3	Clay tobacco pipe	19 th century
040	U/S	Stone		Marble - child's toy?	19 th century
041	U/S	Bone	1	Sheep/Goat/Roe deer rib	Undated
042	Tr 7 cellar	Ceramic	3	Clay tobacco pipe	19 th century
043	U/S	Cu	1	Cog - possibly from a clock	19 th century

ILLUSTRATIONS

FIGURES

- Figure 1: Location Map
- Figure 2: Extract from William Green's, published in 1794, showing the boundary of the proposed development
- Figure 3: Extract from the Ordnance Survey 60": 1 mile map, 1851
- Figure 4: Extract from Adshead's map, 1851
- Figure 5: Location of the evaluation trenches, superimposed on the Ordnance Survey map of 1851
- Figure 6: Location of excavation trenches, superimposed on the Ordnance Survey map of 1851
- Figure 7: Location of excavated cellars in Area 1, superimposed on the Ordnance Survey map of 1851
- Figure 8: Archaeological detail of excavated areas, superimposed on the Ordnance Survey map of 1851
- Figure 9: Digital reconstruction of cellars along Jersey Street
- Figure 10: Digital reconstruction of cellars along Jersey Street
- Figure 11: Section excavated across ditch in Area 4
- Figure 12: Parts of the development area recommended for an archaeological watching brief in the event of earth-moving works, superimposed on Green's map of 1794

PLATES

- Plate 1: Aerial view of Ancoats taken in 1958, looking north-east, showing the study area
- Plate 2: Aerial view of Ancoats taken in the 1980s, looking north, showing the study area
- Plate 3: The north-west-facing elevation of the Bengal Street block in June 2005
- Plate 4: The south-west-facing elevation of the Bengal Street block in June 2005

- Plate 5: The smouldering remains of the Bengal Street block after the fire in July 2005
- Plate 6: The Jersey Street block and the vestiges of the Bengal Street block
- Plate 7: Excavation across the Bengal Street canal arm, showing the brick retaining wall along the southern edge
- Plate 8: Excavation across the Bengal Street canal arm
- Plate 9: View along Trench 2, showing the exposed remains of the Bengal Street block
- Plate 10: Machine base exposed in evaluation Trench 2
- Plate 11: View south-west along evaluation Trench 4
- Plate 12: Shilling Place and associated workers' housing
- Plate 13: Surviving floor within excavated part of Cellar **1**
- Plate 14: Looking north across the excavated remains of Cellar **2**
- Plate 15: Remnants of possible entrance into Cellar **2**
- Plate 16: Overhead view of Cellars **2** and **3**
- Plate 17: Excavated remains of a drain and fireplace against eastern wall of Cellar **3**
- Plate 18: Excavated remains of Cellar **3** and Cellar **4** to left
- Plate 19: Excavated remains of Cellar **5**, showing structure **17**
- Plate 20: Looking west across the excavated remains of Cellar **6**
- Plate 21: Cellar **7** during excavation, looking east
- Plate 22: Probable doorway in north wall of Cellar **7**
- Plate 23: Excavated remains of Cellar **8**
- Plate 24: Blocked fireplace in west-facing elevation of Cellar **8**
- Plate 25: Excavated remains of Cellar **9**
- Plate 26: Doorway in eastern wall of Cellar **9**
- Plate 27: Looking west across the excavated remains of Cellar **9**
- Plate 28: The excavated remains of Buildings **11** and **12**, along northern edge of Holditch's Court

- Plate 29: Excavated remains of Building **13**
- Plate 30: Excavated remains of Building **14**
- Plate 31: Excavated remains of Buildings **15** and **16**
- Plate 32: Looking south-east across the excavated remains of Buildings **15** and **16**
- Plate 33: Archaeological remains exposed in Area 3
- Plate 34: Brick floor in Area 3
- Plate 35: Ditch in Area 4 partially excavated
- Plate 36: Section excavated across ditch in Area 4

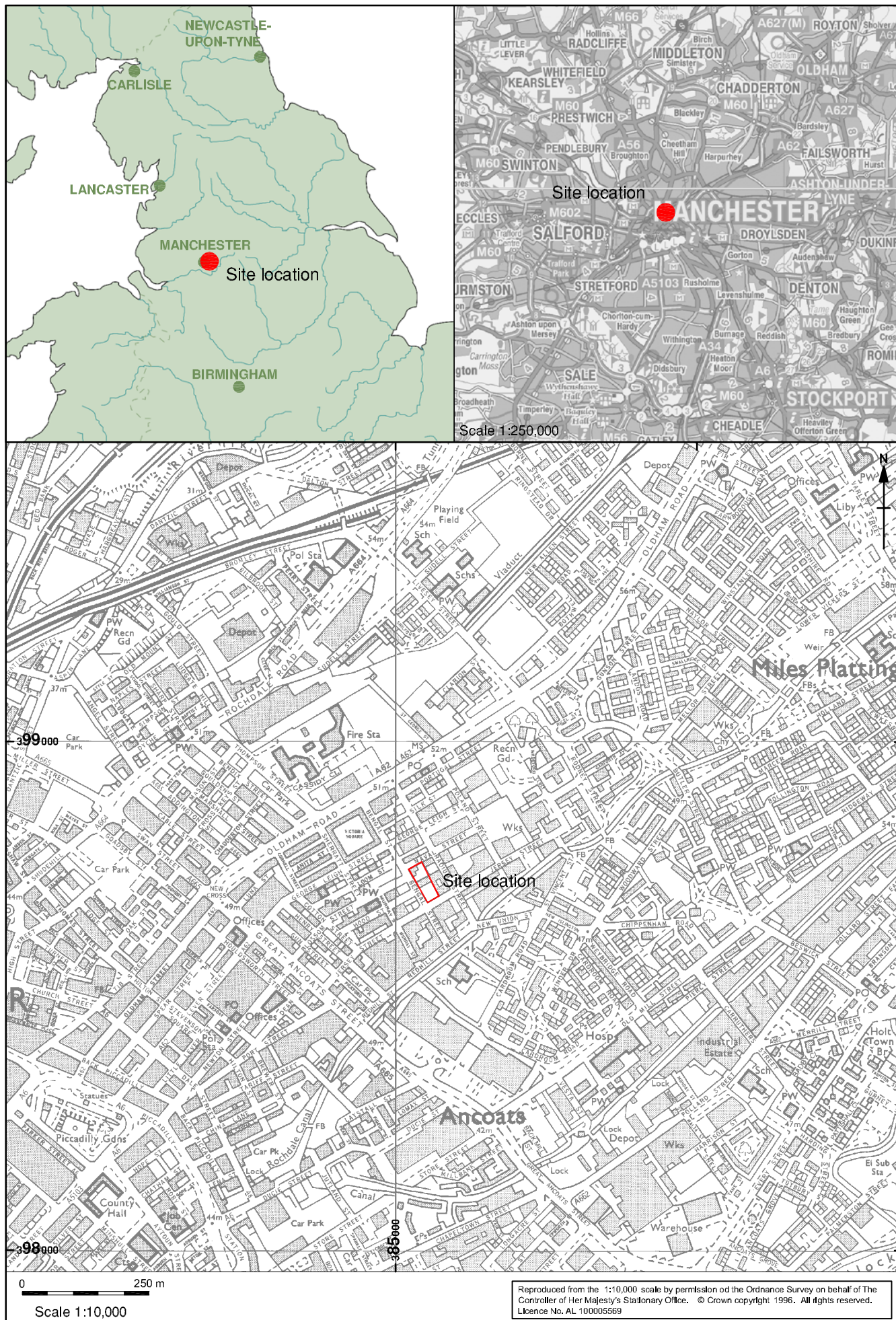


Figure 1: Site Location



Footprint of proposed building



Line of boundary features

0 20m
Scale 1:1000 @ A4



Figure 2: Extract from William Green's map, published in 1794, showing the boundary of the proposed development



Figure 3: Extract from the Ordnance Survey 60": 1 mile map, 1851



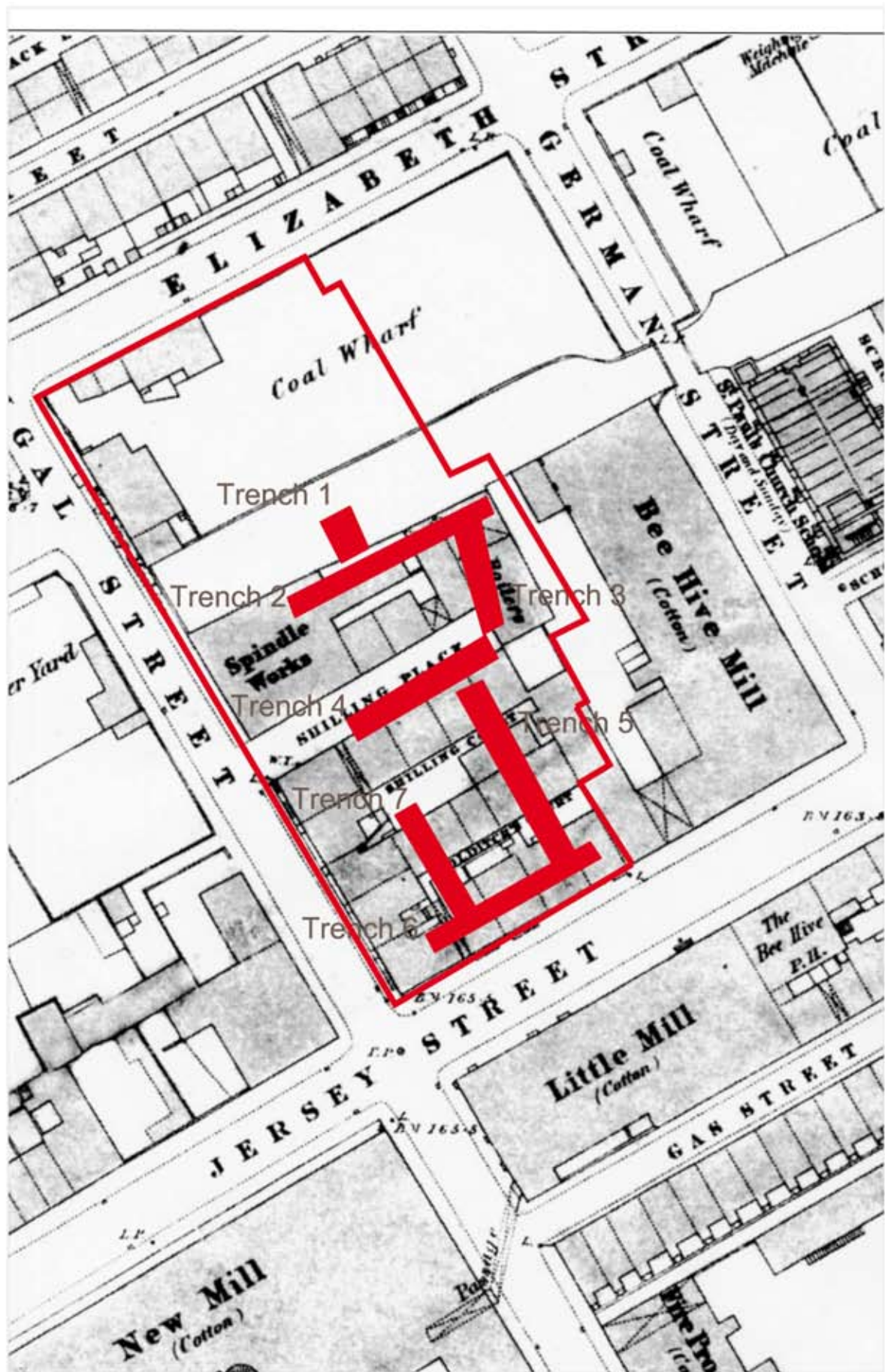
Figure 4: Extract from Adhead's map, 1851



Footprint of proposed building

0 20m
Scale 1:1000 @ A4





Footprint of
proposed building

Not to Scale



Figure 5: Location of evaluation trenches, superimposed upon the Ordnance Survey map of 1851



Footprint of
proposed building



Figure 6: Location of excavation trenches, superimposed upon Ordnance Survey map of 1851

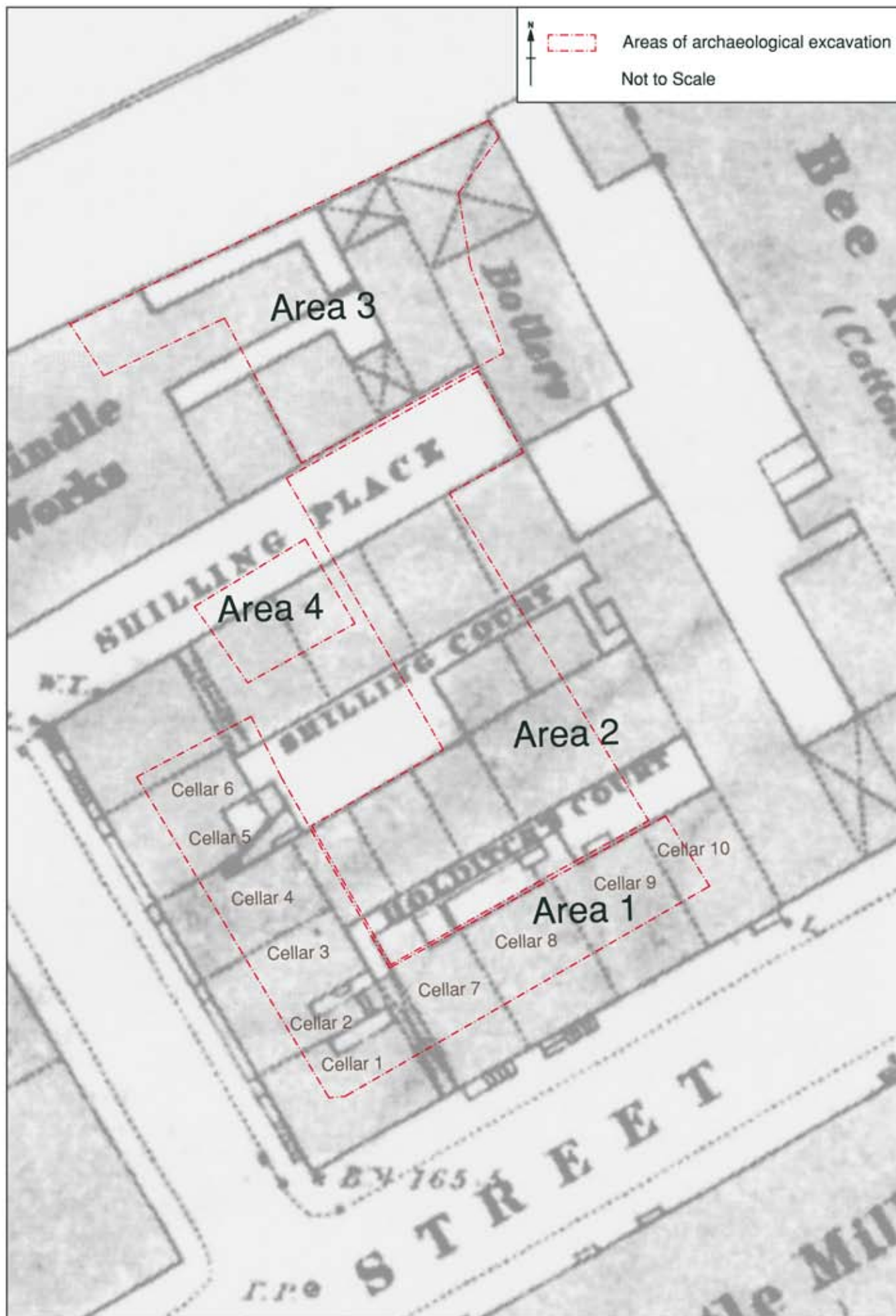


Figure 7: Location of excavated cellars in Area 1 superimposed upon Ordnance Survey map of 1851

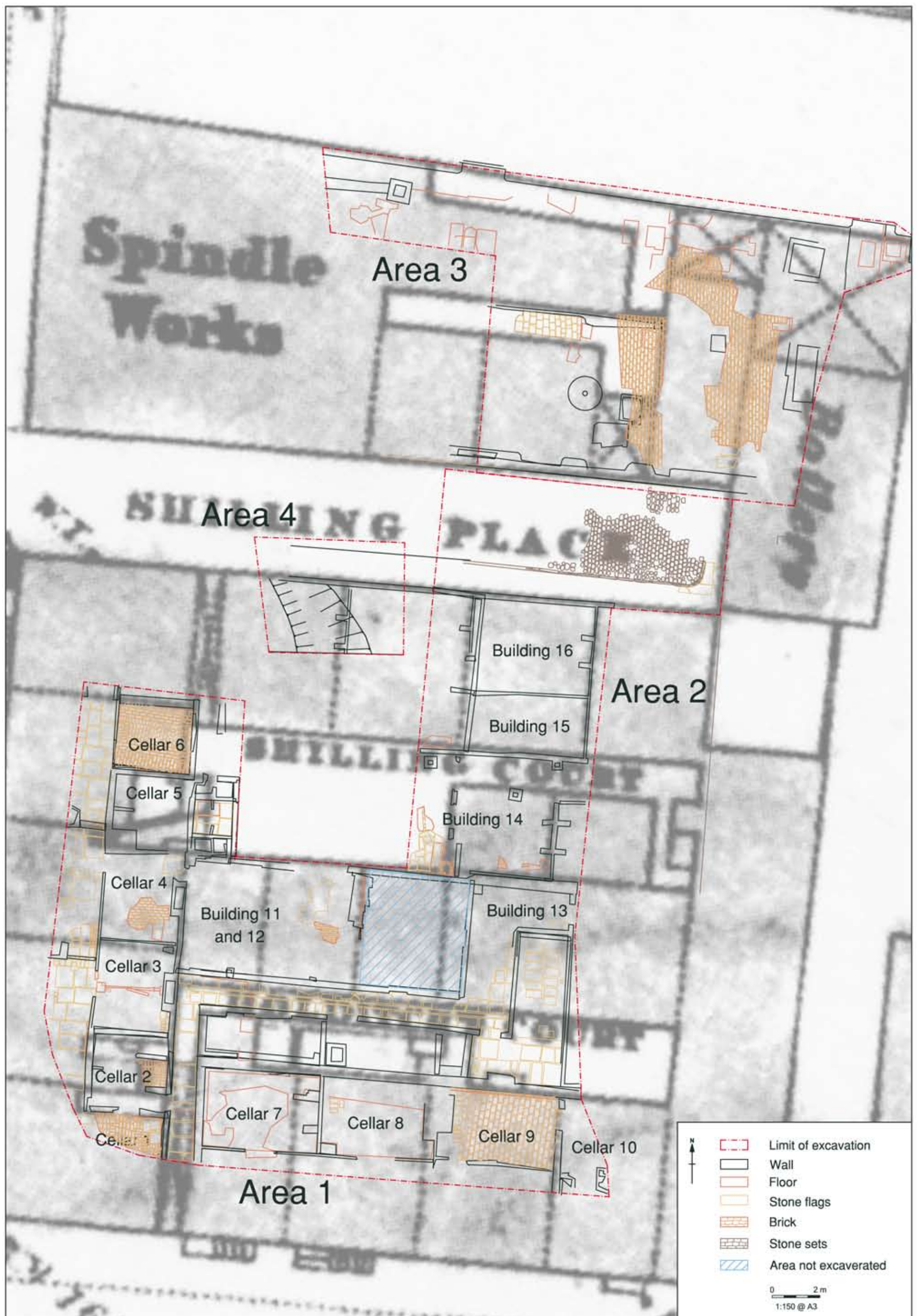


Figure 8: Archaeological detail of excavated areas, superimposed on the Ordnance Survey map of 1851

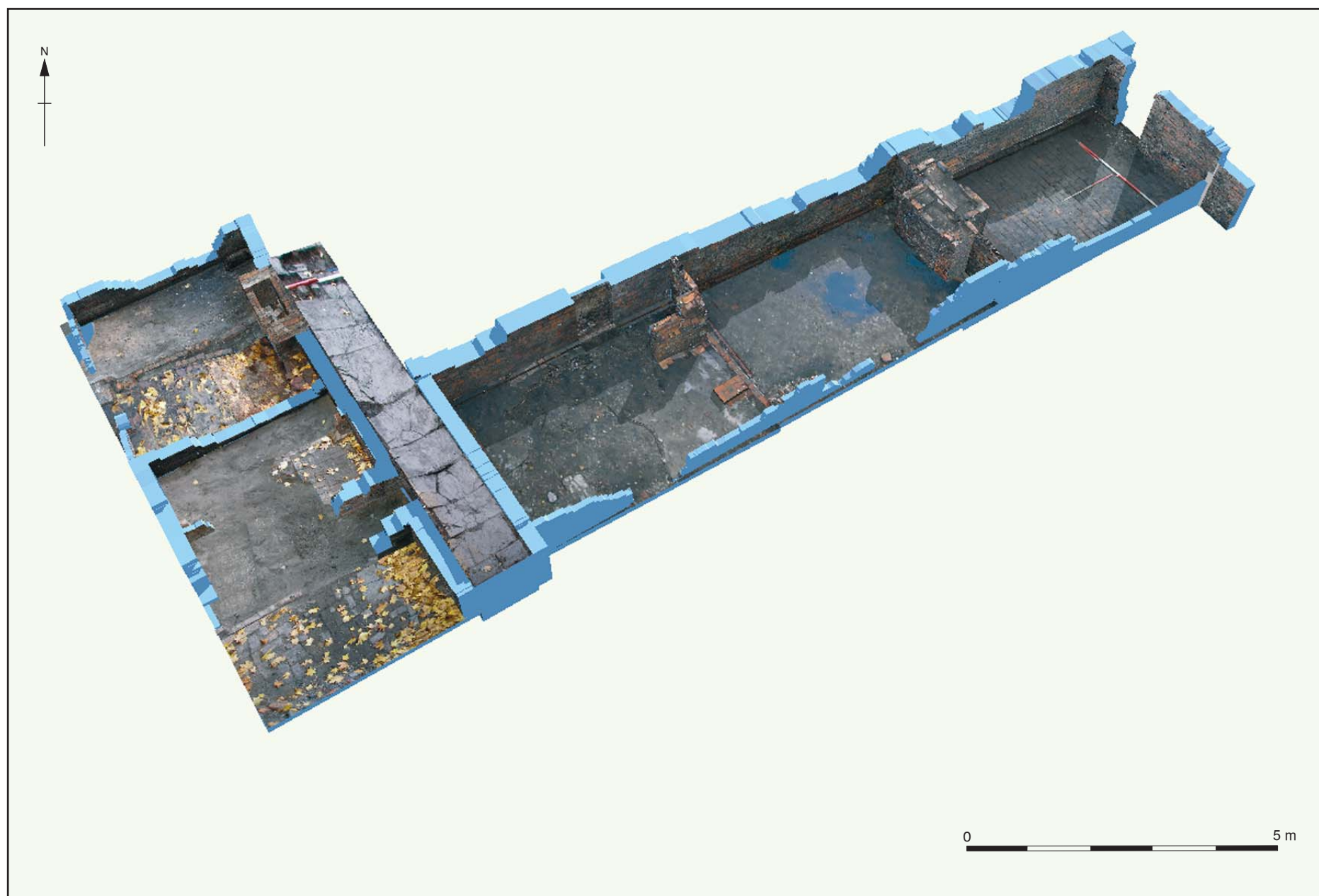


Figure 9: Isometric view of excavated cellars

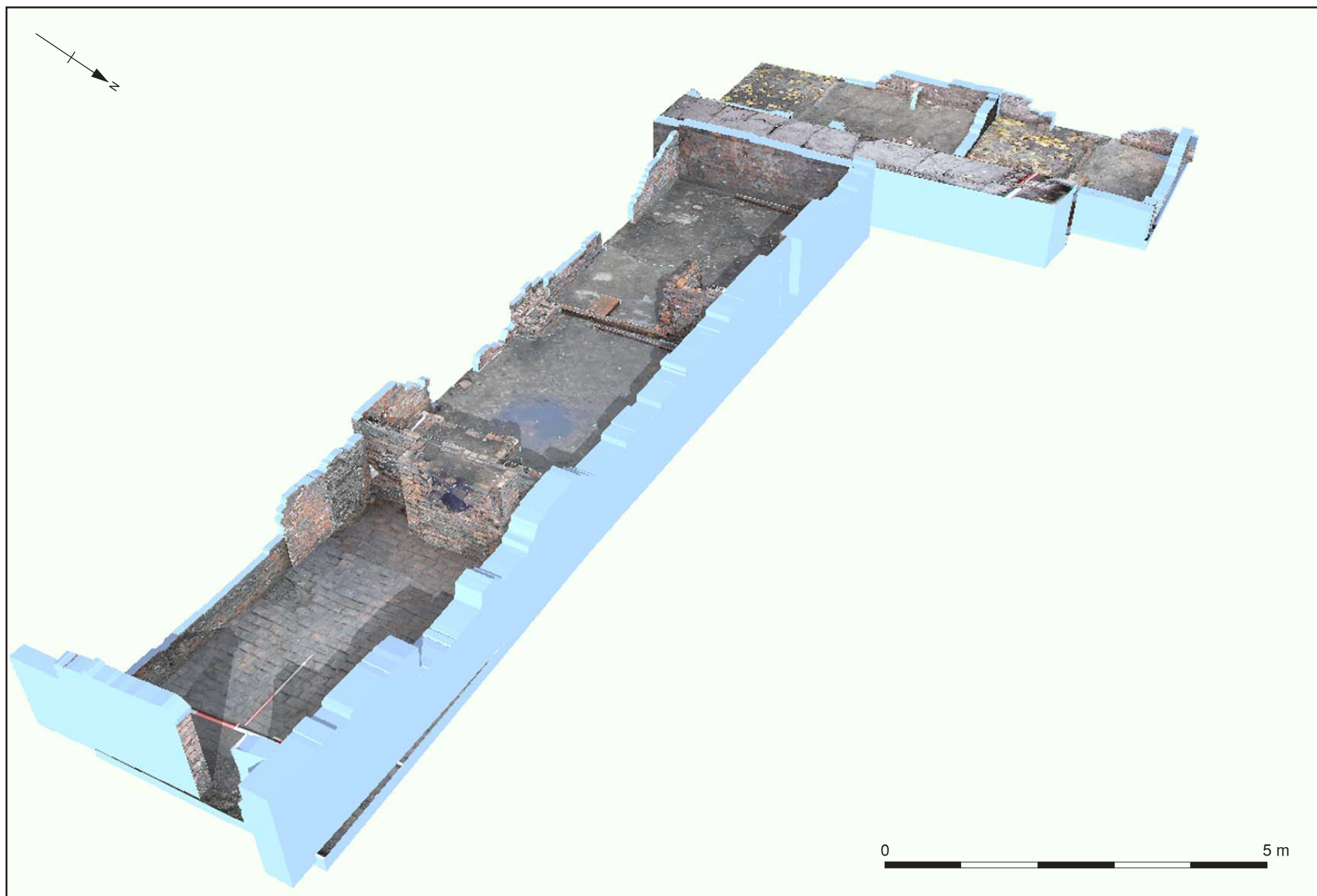
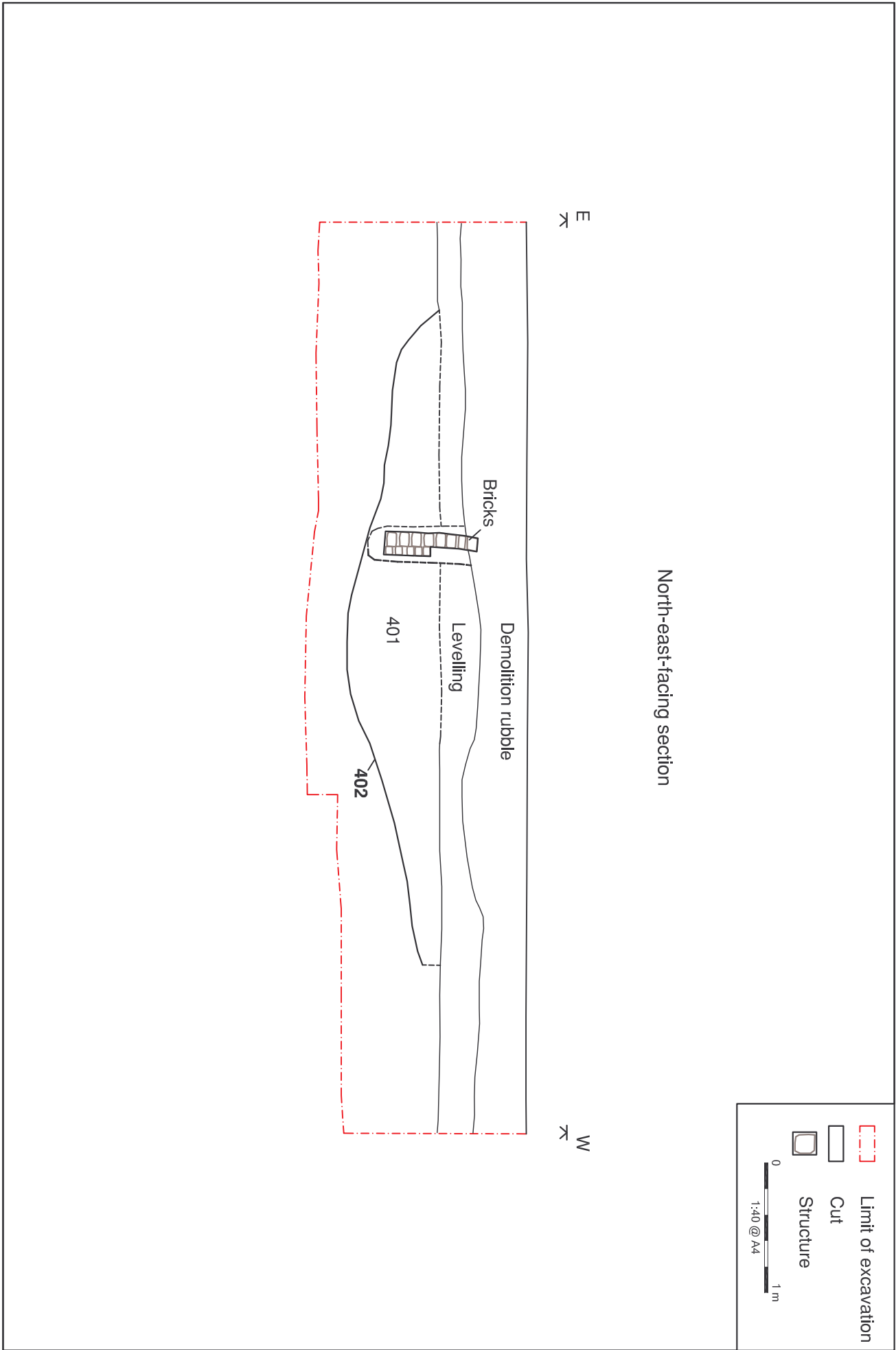


Figure 10: Isometric view of excavated cellars

Figure 11: Excavated section across ditch 402





Footprint of proposed building

Area Recommended for
Archaeological Watching Brief

0 20m
Scale 1:1000 @ A4



Figure 12: Parts of the development area recommended for an archaeological watching brief in the event of earth-moving works, superimposed on Green's map of 1794

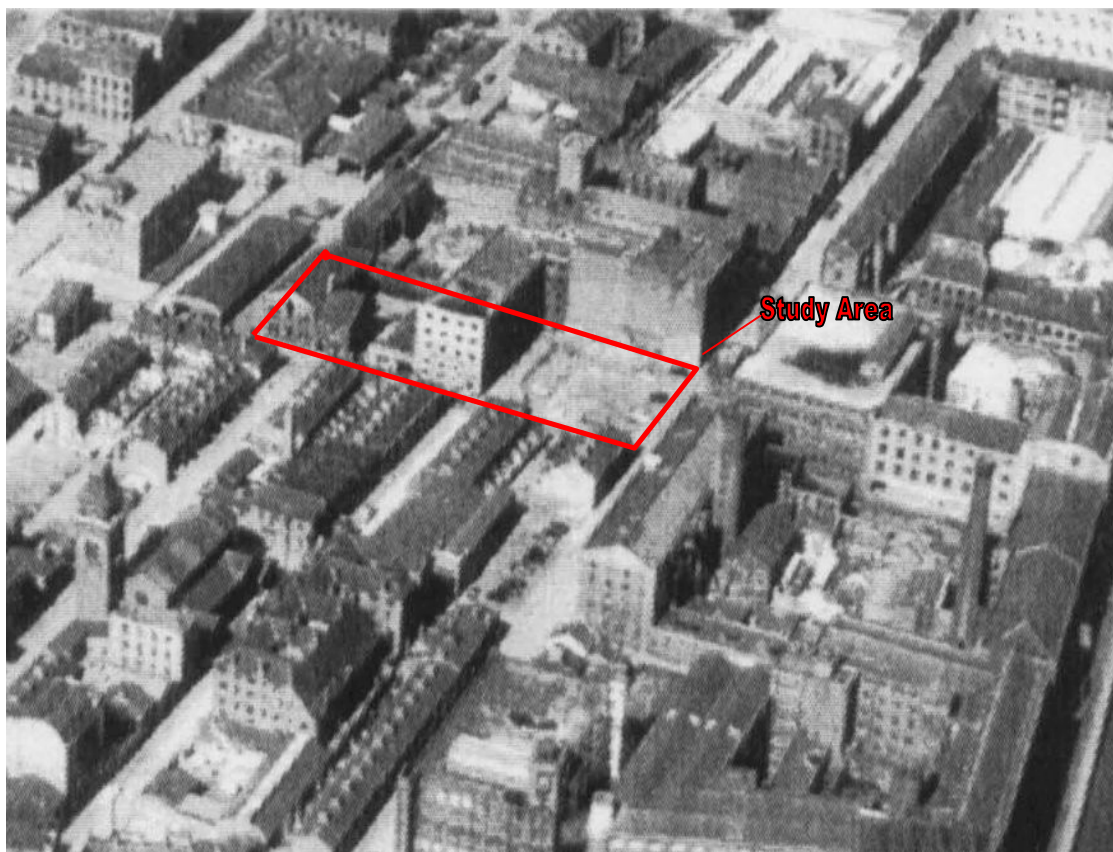


Plate 1: Aerial view of Ancoats taken in 1958, looking north-east, showing the study area

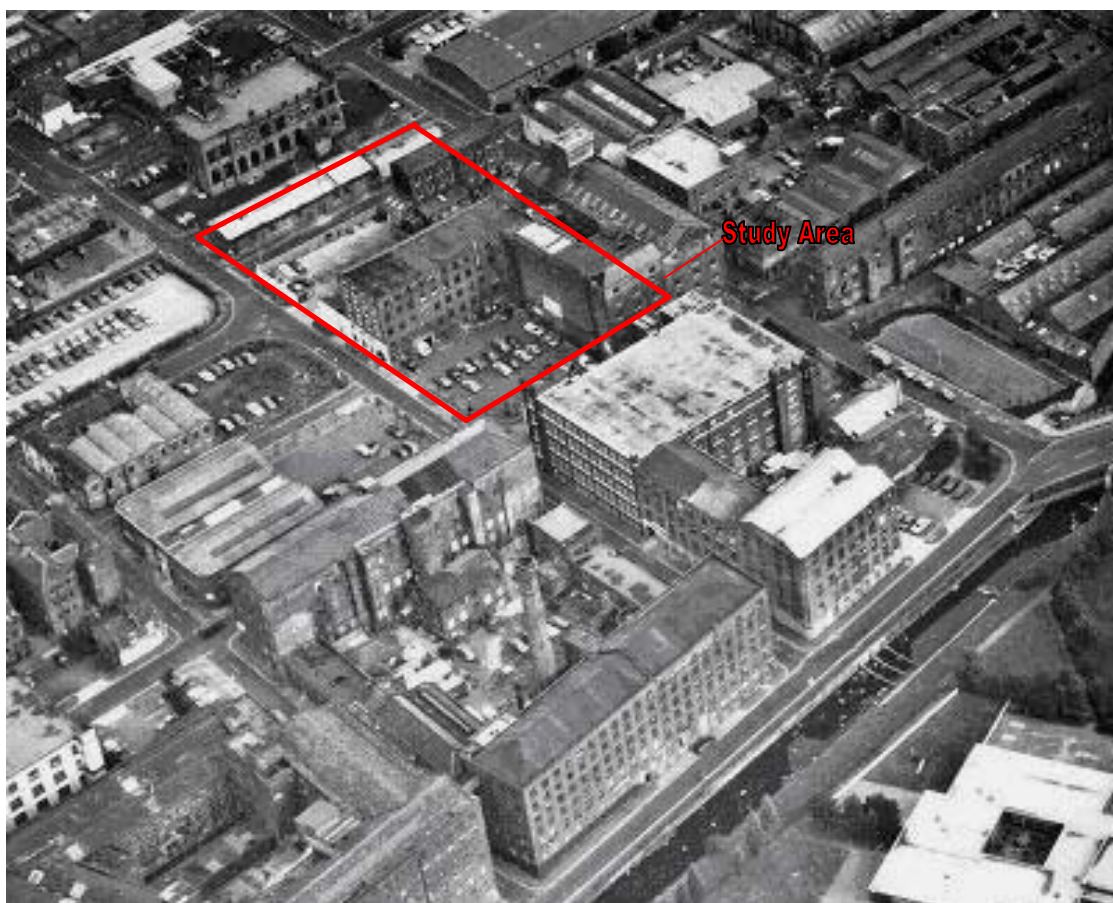


Plate 2: Aerial view of Ancoats taken in the 1980s, looking north, showing the study area



Plate 3: The north-west-facing elevation of the Bengal Street block in June 2005



Plate 4: The south-west-facing elevation of the Bengal Street block in June 2005



Plate 5: The smouldering remains of the Bengal Street block after the fire in July 2005



Plate 6: The Jersey Street block and the vestiges of the Bengal Street block



Plate 7: Excavation across the Bengal Street canal arm, showing the brick retaining wall along the southern edge



Plate 8: Excavation across the Bengal Street canal arm



Plate 9: View south-west along Trench 2, showing remains of the Bengal Street block



Plate 10: Machine base exposed in evaluation Trench 2



Plate 11: View south-west along evaluation Trench 4



Plate 12: Shilling Place and associated workers' housing



Plate 13: Surviving floor within excavated part of Cellar 1



Plate 14: Looking north across the excavated remains of Cellar 2



Plate 15: Remnants of probable cellar light in Cellar 2



Plate 16: Overhead view of Cellars 2 (top) and 3 (bottom)



Plate 17: Excavated remains of a drain and fireplace against eastern wall of Cellar 3



Plate 18: Excavated remains of Cellar 3 and Cellar 4 to left



Plate 19: Excavated remains of Cellar 5, showing structure 17



Plate 20: Looking west across the excavated remains of Cellar 6



Plate 21: Cellar 7 during excavation, looking east



Plate 22: Probable doorway in north wall of Cellar 7



Plate 23: Excavated remains of Cellar 8



Plate 24: Blocked fireplace in west-facing elevation of Cellar 8



Plate 25: Excavated remains of Cellar 9



Plate 26: Doorway in eastern wall of Cellar 9



Plate 27: Looking west across the excavated remains of Cellar 9



Plate 28: The excavated remains of Buildings **11** and **12**, along northern edge of Holditch's Court



Plate 29: Excavated remains of Building 13



Plate 30: Excavated remains of Building 14



Plate 31: Excavated remains of Buildings **15** and **16**



Plate 32: Looking south-east across the excavated remains of Buildings **15** and **16**



Plate 33: Archaeological remains exposed in Area 3



Plate 34: Brick floor in Area 3



Plate 35: Ditch in Area 4 partially excavated



Plate 36: Section excavated across ditch in Area 4