National Graphene Institute,

Booth Street East,

Manchester

Archaeological Excavation

Oxford Archaeology North

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SUMMARY

In April 2013, Oxford Archaeology North was commissioned by the University of Manchester to undertake an archaeological investigation of land situated on Booth Street East in Manchester (centred on NGR 384598 396909). The work was carried out prior to the development of the new National Graphene Institute, the construction of which will inevitably necessitate considerable earth-moving works.

An archaeological desk-based assessment that was carried out to support and inform the planning process demonstrated that the site had been developed initially between 1824 and 1831 as part of the growth of Chorlton-upon-Medlock as a suburb of Manchester. The earliest buildings on the site comprised workers' housing and a building at 26 Clifford Street, which in the nineteenth century was variously a villa, a social club with an association with Friedrich Engels, an early example of a Victorian Turkish baths, and a hospital for women and children. The assessment concluded that whilst the site did not contain any known archaeological remains that would merit preservation *in-situ*, there was considerable potential for buried remains of local interest to survive.

In order to secure archaeological interests, the Heritage Director with the Greater Manchester Archaeological Advisory Service recommended that an appropriate programme of archaeological investigation was carried out in advance of development. In the first instance, it was recommended that a scheme of trial trenches were excavated across the site to determine the nature and significance of any buried remains, and the impact of the development upon this resource. Oxford Archaeology North (OA North) was commissioned by the University of Manchester to carry out the specified programme of trial trenching, which demonstrated clearly that well-preserved structural remains of the former Albert Club/Turkish baths and nineteenth-century houses survived *in-situ* and merited further archaeological investigation to mitigate their ultimate loss during development construction work. Following discussions with GMAAS and the University of Manchester, more extensive excavation was undertaken.

The excavation enabled a detailed record to be compiled of the cellars from a row of domestic dwellings that were erected in 1837. In addition, rare physical remains of a Victorian Turkish baths were exposed, together with historic fabric that had formed part of the Albert Club. Although relatively small in its scale, the excavation has significantly increased the growing dataset of typologies of nineteenth-century workers' housing, and provided an opportunity to excavate examples of an unusual plan form dating to the late 1830s. Large-scale changes to drainage and sanitation were also identified, representing improvements that were probably implemented in response to legislation introduced during the later nineteenth century.

ACKNOWLEDGEMENTS

Oxford Archaeology North (OA North) would like to thank Stuart Lockwood, of the Directorate of Estates and Facilities, for commissioning and supporting the project on behalf of the University of Manchester, and to Paul Jones of Keelagher Okey Klein for logistical support. Thanks are also expressed to Norman Redhead, the Heritage Management Director with the Greater Manchester Archaeological Advisory Service (GMAAS), for his guidance and advice. OA North is also grateful to Professor Kostya Novoselov for his support and interest in the excavation.

The excavation was undertaken by Graham Mottershead, Mike Birtles, Phil Cooke, Jon Onraet and Lewis Stitt. The report was written by Graham Mottershead and Ian Miller, and Mark Tidmarsh prepared the illustrations. The historical research was carried out by Dr Peter Arrowsmith, and the finds were examined by Christine Howard-Davies. The project was managed by Ian Miller, who also edited the report.

1. INTRODUCTION

1.1 CIRCUMSTANCES OF THE PROJECT

1.1.1 The University of Manchester has submitted proposals to construct a new National Graphene Institute on land to the south of Booth Street East in Manchester. In order to support the planning application for the proposed development, the University of Manchester commissioned an archaeological desk-based assessment of the site, which was carried out by Dr Peter Arrowsmith in October 2012 (Arrowmith 2012). This demonstrated that the site had been developed initially between 1824 and 1831 as part of the growth of Chorlton-upon-Medlock as a suburb of Manchester. The earliest buildings on the site comprised workers' housing and a building at 26 Clifford Street, which in the nineteenth century was variously a villa, a social club with an association with Friedrich Engels, an early example of a Victorian Turkish baths, and a hospital for women and children. The assessment concluded that whilst the site did not contain any known archaeological remains that would merit preservation *in-situ*, there was considerable potential for buried remains of local interest to survive.

1.1.2 In order to establish the potential for archaeological remains, the University of Manchester commissioned Oxford Archaeology North (OA North) to undertake a programme of evaluation trenching. This was formulated to meet the requirements of the Greater Manchester Archaeology Advisory Service (GMAAS), which provides planning advice on archaeological issues to Manchester City Council, and in the first instance allowed for the excavation of four trial trenches (*Appendix 1*), which were targeted on the sites of interest identified in the desk-based assessment.

1.1.3 Excavation of the evaluation trenches demonstrated clearly that well-preserved structural remains of eighteenth- and nineteenth-century houses survived *in-situ* within all areas of the site, which merited further archaeological investigation to mitigate their ultimate loss during development construction work. Following discussions with GMAAS and the University of Manchester, more extensive excavation was undertaken.

1.2 SITE LOCATION AND GEOLOGY

1.2.1 The study lies at the south side of Manchester city centre (NGR SJ 8460 9691), bounded by Booth Street East to the north-west, the former Rumford Street to the north-east, the former Clifford Street to the south-east, and an unnamed access road into the University to the south-west (Fig 1). It currently comprises vacant waste ground, having been occupied until recently by the former Lamb Buildings (Plate 1), a series of prefabricated structures that have since been demolished.

1.2.2 The site occupies level ground that lies at a height of *c* 38m above Ordnance Datum (aOD). The ground was mostly grass covered with recently cut tree stumps to the north-western, north-eastern and south-eastern sides. Two large circular concrete manholes had been recently inserted along with three concrete filled vibration piles.

1.2.3 Geologically, the area is underlain a series of glaciofluvial sheet deposits of sand and gravel with till at the south-east. Underlying this is strata of the Chester Pebble Beds Formation of the Sherwood Sandstone Group and the Manchester Marls Formation of the Cumbrian Coast Group. The West Manchester Fault runs north-west/south-east across the centre of the study area.

Plate 1: Recent aerial view of the study area, prior to the demolition of the Lamb Building

1.3 HISTORICAL BACKGROUND

1.3.1 The following section summarises the historical development of the study area, and is intended to place the excavated remains in their wider context. The historical information is drawn largely from the desk-based assessment of the site (Arrowsmith 2012), which has been enhanced by further research carried out by Dr Pete Arrowsmith.

1.3.2 Laurent's map of 1793 shows that the study area lay within a group of fields situated between the Corn Brook and Rusholme Road, and which were crossed by a trackway on the line of the later Booth Street. Rusholme Road was an early routeway that ran from the Stockport Road, swinging southward to follow the line of Oxford Road. Oxford Road is shown on Laurent's map as a broad thoroughfare, creating a link from St Peter's Square (Brumhead and Wyke nd, ii). The land to the west of Oxford Road is identified on Laurent's map as being in the ownership of Sir Gore Booth, bart. The Gore Booth family were heirs to the estate of Humphrey Booth, the seventeenth-century Salford merchant and benefactor who is recorded as holding land in Chorlton in the 1630s (Farrer and Brownbill 1911, 208-9). This family connection is presumed to have given rise to the name of Booth Street.

1.3.3 The character of Chorlton-upon-Medlock was transformed after the late eighteenth century by the rapid expansion of Manchester. Shortly after the opening of Oxford Road in the early 1790s, the Chorlton Hall estate on the north side of Boundary Lane was bought by local entrepreneurs with an intention to develop the land as a suburb to Manchester. The centrepiece of this development was to be a new square, originally known as Grosvenor Square and later as All Saints after the church that was built there in 1819-20. Notwithstanding this impressive development, however, the initial growth of Chorlton-upon-Medlock was relatively slow, although the population of the township had reached 8209 by 1821 (Brumhead and Wyke nd, ii-iii). As a consequence of Chorlton's accelerated growth in population during the following decade, the township was included within the boundary of the new municipal borough of Manchester in 1838 (Farrer and Brownbill 1911, 252).

1.3.4 The creation of new streets to the south of the former Chorlton Hall estate seems to have been more piecemeal. Johnson's map of 1818-19 shows that the old Brook Street had been straightened and continued to the south of Rusholme Road to form the present line of Upper Brook Street. Johnson's map also indicates that two new streets had been laid to the south of Rusholme Road, namely Rosamond Street on the north and Booth Street on the south. However, except for scattered buildings on the north side of Rosamond Street this area was as yet undeveloped. This situation had changed within a few years, however, as shown on Swire's map of 1824. Clifford Street, which lay along the southern boundary of the study area, had been added and development had begun to take place to the south of Rosamond Street. This was concentrated initially along Oxford Road and Upper Brook Street, but some development had also begun within the streets between these, including one building on the north side of Booth Street.

1.3.5 ***Lawson Street Houses:*** Bancks & Co's map of 1831 shows that two new streets had been laid out between, and parallel to, Oxford Road and Upper Brook Street, comprising Rumford Street on the east and New York Street (later Higher York Street) on the west (Plate 2). These created a new grid-iron of streets, which included a rectangular block between Rumford Street, Clifford Street, New York Street and Booth Street, containing the study area. Bancks & Co's map shows this block further divided into two by a narrow central street, named on later mapping as Lawson Street. A row of eight houses is shown to have been built on the south side of Booth Street. These were double-depth houses, each with an outshut and a rear yard which continued to Lawson Street. Because of later road widening, the site of most of these houses is now occupied by Booth Street East, but the site of the outshuts of the western six houses lies within the study area.

1.3.6 Bancks & Co's map of 1831 also shows a single small building on Lawson Street to the rear of 27 Booth Street East. This building has not been identified as a separate property in the rate books and may therefore have formed part of number 27. From 1831 to 1835, the rate books name James Napier as the tenant of William Lawson at this Booth Street property. A directory of 1832 lists him as a gingham manufacturer at 50 Church Street in Manchester, and gives his home address as '9 Booth Street'.

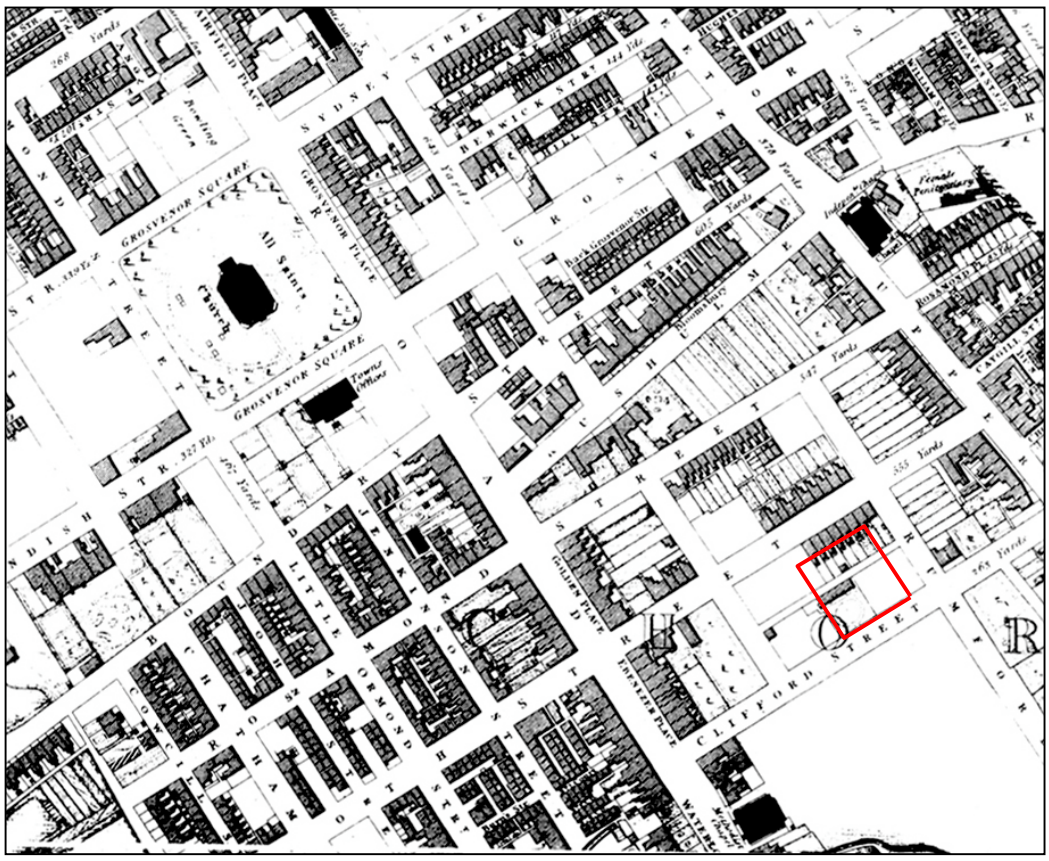

Plate 2: Extract from Bancks & Co's map of 1831, marking the approximate position of the study area

1.3.7 The historic mapping shows that the houses on Lawson Street were built in the back yards of six earlier houses on Booth Street East, variously numbered in the sources, from east to west, as 21-31 and 11-21. The rate books indicate that these Booth Street houses were built in stages (Table 1). Number 21 is first listed in 1824, and 23-25 in 1831, with all three being in the ownership of a William Turner. Numbers 27-29 were also first listed in 1831 but the owner in this case was William Lawson. Between 1835 and 1837, Lawson acquired Turner's three houses, allowing him then to build the row of six new houses to the rear.

1.3.8 Census Returns and rate books for Chorlton-upon-Medlock show the six Lawson Street houses to have been numbered 2-12 from east to west. Lawson Street is first listed in the rate books in 1837 when all six were described as 'new', and they are first shown as occupied in the rate book of the following year (Table 2); the rate book for 1836 is missing. The houses were owned from 1837 onwards by William Lawson, after whom Lawson Street was named, and who also can also be credited with their construction. Data obtained from the Census Returns is presented in *Appendix 2*.

	No 17	**No 19**	**No 21**	**No 23**	**No 25**	**No 27**	**No 29**	**No 31**
1823	M Bagnall							
1824	M Bagnall	William Turner						
1825	Mary Bagnall		W Turner					
1830	Mary Bagnall		W Turner					
1831	Mary Bagnall		William Turner			William Lawson		
1832	Mary Bagnall		William Turner			William Lawson		
1835	Mary Bagnall		William Turner			William Lawson		
1837	Mary Bagnall		William Lawson					
1843	Hannah Bagnall		William Lawson					
1846	Hannah Bagnall		William Lawson					

Table 1: Occupants of Nos 17-31Booth Street East given in the rate books for 1823-46

	No 2 Lawson St	**No 4 Lawson St**	**No 6 Lawson St**	**No 8 Lawson St**	**No 10 Lawson St**	**No 12 Lawson St**
1837	New	New	New	New	New	New
1838	Empty	J Lewis	R Fletcher	H Hughes	W Bales	T Whitaker
1839	Empty	W Mason	J Goodwin	E Furness	W Bales	T Whitaker
1840	D Ball	W Hodkinson	E Lowe	T Burgess	G Simmons	G Ferns
1841	D Ball	M McKernan	W Swindell	J Trueman	T Perry	Empty
1842	J Lord	M McKernan	W Swindell	E Taylor	Empty	Empty
1843	W Lawson	M McKernan	W Trueman	E Taylor	J Horner	W James

Table 2: Occupants of Nos 2-12 Lawson Street given in the rate books for 1837-43

1.3.9 Directories list a William Lawson as a 'tin-plate worker, ironmonger &c' in 1832 at 97 Ebenezer Place, Oxford Street, in Chorlton-upon-Medlock, and as a tin-plate worker in 1836 at 189 Oxford Road. From 1840 William Lawson and his wife Elizabeth lived first in one of their properties on Booth Street East and then, from about 1842-3, at 2 Lawson Street (Table 3). In the Census of 1851 the widowed Elizabeth, living at that address, gave her occupation as 'proprietor of houses'.

1840 Rate Book	William Lawson	29 Booth Street East
1841 Rate Book	William Lawson	29 Booth Street East
1841 Census	Elizabeth Lawson	19 Booth Street East
1842 Rate Book	William Lawson	11 Booth Street East
1843 Rate Book	William Lawson	2 Lawson Street
1843 Trade Directory	William Lawson	2 Lawson Street
1844 Rate Book	William Lawson	2 Lawson Street
1845 Rate Book	William Lawson	2 Lawson Street
1845 Trade Directory	Elizabeth Lawson	2 Lawson Street
1846 Rate Book	Elizabeth Lawson	2 Lawson Street
1850 Trade Directory	Elizabeth Lawson	13 Booth Street East
1851 Census	Elizabeth Lawson	2 Lawson Street

Table 3: Details of William and Elizabeth Lawson at Booth Street East and Lawson Street

1.3.10 Large-scale Ordnance Survey mapping of 1849 annotates the row as Ebenezer Plat Terrace, and shows the houses to have had front steps and small lightwells to both front and rear, implying the presence of cellars (Plate 3). At the end of the outshuts there were probably privies with ashpits. On Bancks & Co's map one house is also shown with a rectangular building at the end of its yard, flanked by a narrow passage leading from Lawson Street.

1.3.11 Ebenezer Plat Terrace does not appear in any other historical documentation, but might derive from the address of William Lawson the ironmonger, and strengthen his identification with the builder of the Lawson Street houses. From 1824 the rate books also name William Lawson as the landlord of a house on Clifford Street which he continued to own after building the Lawson Street houses.

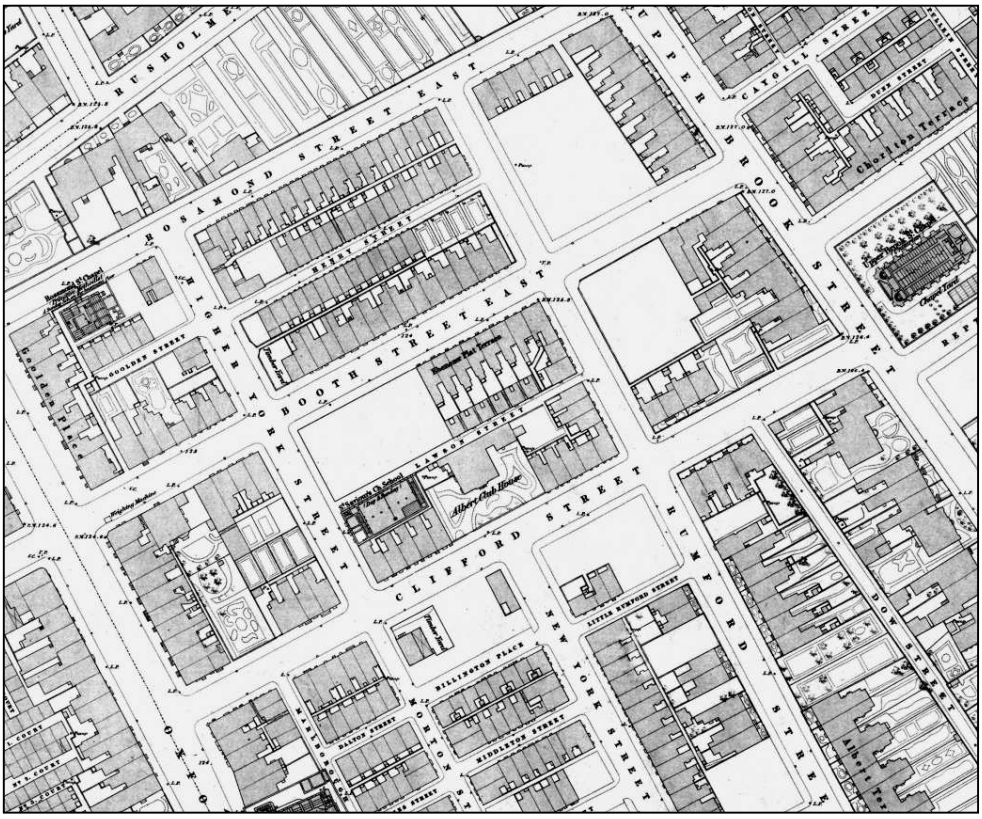

Plate 3: Extract from the Ordnance Survey map of 1849

26 Clifford Street: Bancks & Co's map of 1831 shows a rectangular, single-depth on the south side of Lawson Street range, fronted by the circular path or drive (Plate 2). By 1845 this building had been remodelled, or replaced, by a larger building with a square footprint with a smaller wing attached at the north-east, as shown on the Ordnance Survey map of 1849 (Plate 3). This building, 26 Clifford Street, was fronted by a formal garden area, through which twin curving drives led from Clifford Street to the front door. The Ordnance Survey map depicts steps leading to that door and also steps and lightwells to a side elevation, implying that the building was cellared. A photograph of 1971 shows this building to have been two-storeys high and three-bays wide, with a hipped roof and a chimney stack to each of the two side elevations.

1.3.13 The original use of this building shown is unknown. The grounds suggest it to have been a villa residence, of which a number were built in the southern part of Chorlton-upon-Medlock in the first half of the nineteenth century, although its long narrow plan is not typical of such buildings. Its history becomes clearer in the late 1830s, in that by 1838 (and probably no earlier than 1836) this was the home of Jeptha Pacey, an architect. The 1841 census shows that he was born outside Lancashire and it seems likely that he was the architect of this name who earlier in the nineteenth century designed a number of Fenland churches. He may also have been responsible for enlarging his house at 26 Clifford Street, to create the building shown on the Ordnance Survey map of 1849 (Plate 3).

1.3.14 ***The Albert Club:*** in 1843, the house on Clifford Street was converted into a private social club, named the Albert Club after Queen Victoria's consort (Arrowsmith 2012, 7-8). This was founded primarily for Manchester's community of middle-class Germans, involved in the cotton trade, although later about half of its members were English. Facilities at Clifford Street included billiards, a smoking room, a reading room and library, a kitchen and a wine cellar. In 1859 the club moved to larger premises at Dover House, again a former villa, situated at the corner of Oxford Road and Dover Street. This seems to have offered similar facilities to Clifford Street and was described in 1869 as containing a library, a newsroom and a dining room on the ground floor, with a billiard room, smoking room, card room, committee room and private dining room upstairs (*ibid*). This last building was demolished in 1963 (*Manchester Guardian* 6 Feb 1888; Henderson 1976, 229; Petch 1962; Whitfield 1988, 95-6).

1.3.15 The German members of the Albert Club included Friedrich Engels. He first stayed in Manchester from late 1842 to 1844, revisited the city in 1845 when he was accompanied by Karl Marx, and returned in 1850, making Manchester his home for the next 20 years. Engels is known to have served on the committee of the Albert Club throughout the 1860s and retained his membership of the club after moving from Manchester to London in 1870 (Henderson 1976, 229). According to Moses Baritz, Engels joined the club during his first visit to Manchester in 1842-4, when it was situated on Clifford Street (*Manchester Guardian* 10 Oct 1934).

1.3.16 ***Potter's Turkish Baths:*** the Albert Club moved premises in 1859, and 26 Clifford Street was acquired by William Potter and converted into a Turkish baths. Potter originally referred to the premises as the 'Sultan's Bath', although once opened they were variously called 'Turkish Baths', 'Roman and Turkish Baths' and 'Roman or Turkish Baths'. In reality, they belonged to the phenomenon of the Victorian Turkish bath, the first of which was constructed in 1856 near Blarney in County Cork. In the following year the first such premises in England opened at Broughton Lane in Manchester with William Potter as the manager.

1.3.17 Within a Victorian Turkish bath, patrons passed through progressively hotter rooms heated by dry air, before receiving a massage and body wash and finally relaxing in a cooling-down room. In July 1859 Potter announced that he was 'about to open a suite of baths on the premises recently occupied by the 'Albert Club', Clifford Street...consisting of Turkish Baths, Medicated and Mineral Baths, Electro-chemical Baths, &c'. A contemporary illustration shows how part of the baths was intended to look, and depicts an ornate Turkish-style room with a floor and walls decorated with tiles and with a domed ceiling (Plate 4). It is uncertain to what extent this matched the finished baths, but in 1860 Potter claimed to have spent £2000 on the building, while one local newspaper described it as 'fitted up with great elegance and comfort, in the Oriental style', and another wrote that the baths 'are so completely Oriental in their character as to look like an Oriental dream'.

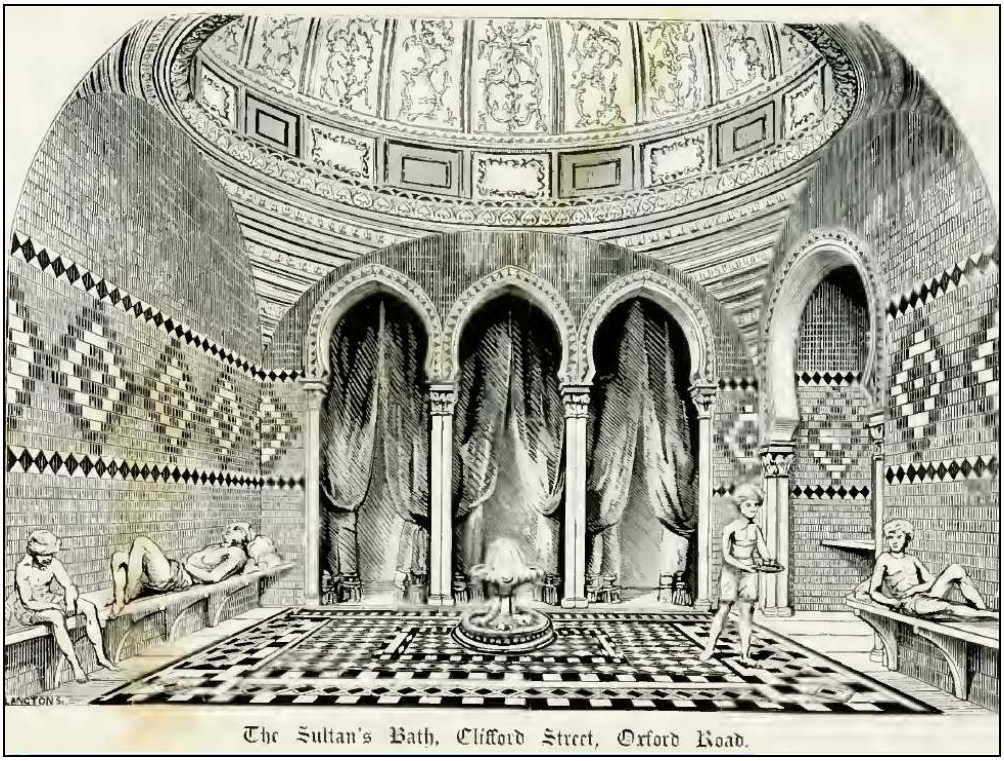

Plate 4: The intended interior of the Turkish bath (reproduced from Potter 1859)

1.3.18 The rapid rise in the popularity of the Victorian Turkish bath meant that by 1860, in addition to Potter's two establishments, there were at least six others in Manchester. In 1864 the Clifford Street baths were taken over by Matthew Thomas. He attempted to dispose of the property, without success, in 1865 and again in 1867 (Shifrin 2011).

1.3.19 ***The Manchester Southern Hospital:*** based on cartographic evidence, the building was expanded between 1849 and 1888. This remodelling included the addition of a wing on the west, which from the depiction of lightwells and steps on historical mapping appears to have been cellared (Plate 5). It was announced in June 1868 that the building had been bought for £1880 to become the new home of the Manchester Southern Hospital for Women and Children (Arrowsmith 2012, 8). It was reported at the time that the building required 'little alteration to make it ready for the reception of patients' (*Manchester Guardian* 13 June 1868), suggesting that the alterations apparent from historical mapping may have been implemented when the Albert Club was converted for use as a Turkish bath.

1.3.20 The Manchester Southern Hospital for Women and Children was a charitable hospital serving the southern districts of Manchester and in particularly the crowded industrial townships of Chorlton-upon-Medlock, Ardwick and Hulme. It was originally founded in 1866 with premises on Grosvenor Street, before moving to 26 Clifford Street. By 1870, as well as treating outpatients, the Clifford Street hospital contained eighteen beds, eight for women, and ten for children (*Manchester Guardian* 13 June 1868; 17 Feb 1870; Young 1964, 72-3). In 1904 it was agreed to amalgamate the Southern Hospital with St Mary's. Patients continued to be admitted to Clifford Street until May 1907 (Young 1964, 83).

Plate 5: Extract from the Ordnance Survey 10ft: 1 mile map, surveyed in 1888, showing the boundary of the present development site.

1.3.21 Another wing was also added on the east side of the building between 1888 and 1904, to create a single continuous frontage. This wing is shown on historic photographs to have been of two storeys, with a hipped roof and a chimney stack to the front elevation (Arrowsmith 2012, 10).

1.3.22 In *c* 1910 the building was sold for £1250 to the Salvation Army, under whose ownership it was described subsequently as a 'social work home and institute' (Young 1964, 83). The Ordnance Survey map of 1915 annotates the building simply as an 'Institute'. By 1932 it had been renamed Clifford House, which is described on mapping of 1961 and 1968 as a men's hostel. This was run by the Salvation Army, which retained ownership of the building up to demolition in the 1970s (Arrowsmith 2012, 10).

1.3.23 ***Aspects of housing conditions in Manchester:*** the rapid industrialisation of Manchester from the last quarter of the eighteenth 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 (Lloyd-Jones and Lewis 1993).

1.3.24 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). There was a marked contrast between the housing from the late eighteenth century, and that from the 1820s and 1830s, even including the use of poorer quality bricks and mortar (Nevell 2008, 136; Pearlman 1956, 3). Most of the workers' houses built during this period were erected without any form of water supply or sanitation; at best, an open drain from an ashpit privy might have been installed down the middle of the street or court (Parkinson-Bailey 2000, 35).

1.3.25 The better quality eighteenth-century houses had also been compromised by this time, by the infilling of areas between these dwellings with back-to-back and blind-back housing, and by the increasing use of these buildings, originally designed for occupation by one family, as tenements, that were occupied by two or more families. The houses were therefore increasingly overcrowded and cellars were used as separate dwellings (Nevell 2008, 152; Marr 1904, 34 and 60).

1.3.26 There are several contemporary descriptions of Manchester's nineteenth-century housing stock, including that 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). A survey carried out in 1835 by the Manchester Statistical Society, of dwellings of the working classes, recorded that 18,295 people out of 169,223 were living in cellars. This equated to approximately 12% of the working class population in Manchester (Pearlman 1956, 7).

1.3.27 A major step forward in housing improvement was provided by the Manchester Borough Police 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 significance 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).

1.3.28 Further legislation introduced in 1853, under the Manchester New Streets Act, 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, and only 176 cellars were closed in the first six years (Hylton 2003, 154). Renewed efforts commenced in 1867 with the introduction of the Manchester Waterworks and Improvement Act, which specified the minimum requirements for room sizes and window areas in dwellings, and also required that every new house had a yard at the rear, which had to be at least $70'^2$. The Act also required a minimum street width of 30' (9.14m), or 36' (10.97m) where buildings were two storeys, and 45' (13.71m) for buildings of three storeys or more. Importantly, the Act allowed buildings to be closed without compensation to their owners, an issue which had consistently been a sticking point in Manchester (Pearlman 1956, 28).

1.3.29 The enforcement of these new regulations was facilitated by the appointment of the first Medical Officer of Health, Dr John Leigh, by Manchester Council in 1868 as part of the Artisans' and Labourers' Dwellings Act (The Torrens Act) of that year, and the Building and Sanitary Regulations Committee then replaced the Health Committee. Although the 1868 Torrens Act recognised a national housing problem, it was limited in its effectiveness as it only dealt with single houses, providing for the gradual improvement or demolition of sub-standard housing (Parkinson-Bailey 2000; Pearlman 1956, 27).

1.3.30 One of the major contributing factors to the poor conditions in the slums was the lack of water supply, with typically only one pump per 32 houses in the mid-nineteenth century, and also a lack of drainage, so that people had to carry used dirty water out of their houses to dispose of it. Privies often had to be shared by numerous households, with back-to-backs typically having one privy per 12 houses. An earlier bye law requiring one privy per three houses had been evaded by providing four seats within one privy. Not only were these shared conditions highly unacceptable, but the over-used brick-lined privies tended to leak, with the contents inevitably ending up entering the cellars of the nearest houses (Pearlman 1956, 25-6).

1.3.31 Dr John Leigh had wished to deal with the issue of privies and the ashpits as a first priority, but he met with opposition to this and therefore turned his attention to addressing the issues of cellar dwellings and common lodging houses, both of which were also recognised as major contributing factors to the spread of disease (*op cit*, 27). As a result of Dr Leigh's work 2400 cellars were closed between 1868 and 1872. By 1878 Dr Leigh was able to report that there were only 108 cellar dwellings remaining in the city. These were all occupied by elderly residents and would be closed when these occupants moved or died (*op cit*, 28). The study area was located within Area 24 of St George's, as designated by the Medical Officer of Health, bounded by Charter Street, Ashley Lane, Angel Street, Shude Hill and Miller Street. The death rate per 1000 for this area was reported as improving from 33.9 in 1861-70 to 23 in 1871-75 (Manchester Medical Officer of Health Report Vol 1868-78).

1.3.32 In 1875, the Artisans' and Labourers' Dwellings Improvement Act was introduced to provide the mechanism of slum clearance, the first act of its kind, as others, such as the 1868 Torrens Act, only dealt with individual buildings (Pearlman 1956, 28). However, Manchester Council was opposed to this on the grounds of expenditure, and it preferred to adopt a policy of gradually reconditioning areas. Most major slum clearance at this time was actually as a result of commerce, where areas were cleared for large warehouses or for railway lines (*ibid*). Finally, in 1890, the Artisans' and Labourers' Dwellings Improvement Act was reconsolidated, so that the council were to take responsibility for the construction of new dwellings. Slum clearance and regeneration then began in earnest in Manchester in the 1890s, almost 20 years after the government had envisaged it (*op cit*, 34). However, at the end of the nineteenth century, although approximately 6000 houses had been cleared, less than 3000 replacements had been built, resulting in a continued problem of overcrowding (*op cit*, 37).

2. METHODOLOGY

2.1 INTRODUCTION

2.1.1 The fieldwork undertaken followed the method statement detailed in the approved Written Scheme of Investigation (*Appendix 1*), and was consistent with the relevant standards and procedures provided by the Institute for Archaeologists, and their code of conduct.

2.2 EXCAVATION

2.2.1 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.

2.2.2 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.

2.3 FINDS

2.3.1 ***Artefactual procedures:*** all finds recovered during the excavations were lifted, cleaned, bagged and boxed in accordance with the United Kingdom Institute for Conservation (UKIC) *First Aid For Finds* (1998). Recovery programmes were in accordance with best practice (current IfA guidelines) and subject to expert advice.

2.4 ARCHIVE

2.4.1 A full professional archive has been compiled in accordance with the Updated Project Design (*Appendix 1*), and in accordance with current IfA and English Heritage guidelines (English Heritage 1991). The project archive will be deposited with the Museum of Science and Industry in Manchester, with a synthesis (in the form of an index to the archive and the report) deposited with the Greater Manchester Historic Environment Record. The Arts and Humanities Data Service (AHDS) online database project *Online Access to index of Archaeological Investigations* (OASIS) will also be completed as part of the archiving phase of the project.

3. RESULTS

3.1 INTRODUCTION

3.1.1 The initial stage of intrusive archaeological investigation of the site comprised the excavation of four trial trenches (Fig 2). These were placed across the footprint of buildings of interest highlighted in the desk-based assessment (Arrowsmith 2012). Trenches 1 to 3 were excavated further subsequently, and the results have been integrated with the excavation site narrative (*Section 3.3 below*). However, the area investigated by evaluation Trench 4 was not subject to further excavation due to the discovery of asbestos fragments in the demolition rubble, and the results obtained from the trench are presented below.

3.2 EVALUATION TRENCH 4

3.2.1 Trench 4 measured approximately 8.63 x 4.20m, and was excavated to a maximum depth of 2.36m (Plate 6). It was aligned broadly north-east/south-west across the south-eastern corner of the site, and was targeted on the footprint of a row of three double-depth workers' houses that were built between 1831 and 1845 (Fig 3).

*Plate 6: General view across Trench 4, looking east, showing wall **406** in the foreground*

3.2.2 A brick-built wall (***402***) was exposed along the southern edge of the excavated trench at a depth of 0.42m below the modern ground surface. The wall was revealed for a distance of 4.8m, and continued beyond the end of the excavated trench (Fig 3). The fabric of wall ***402*** comprised hand-made bricks, bonded with lime-based mortar, consistent with an early to mid-nineteenth-century construction date. This wall returned (***403***) to the north-west at the north-eastern end of the trench, seemingly representing an internal partition within one of the mid-nineteenth-century cellars (Fig 3). Several other north-west/south-east-aligned walls that were keyed into the north-facing elevation of wall ***402*** were also exposed in the trench. These included wall ***404***, the position of which corresponded with the dividing wall between two properties shown on historical mapping (Fig 3), and wall ***405***, which seemingly represented another internal partition in the main cellar exposed in the excavated trench.

3.2.3 The remains of a more substantial brick wall (***406***) was revealed towards the south-western end of the excavated trench (Plate 6), situated 3.55m to the west of wall ***404***. Wall ***406*** was similarly composed of hand-made bricks set in a lime-based mortar, and was aligned north-west/south-east, seemingly representing the end wall of the terraced houses (Fig 3). The wall only survived to a few courses in height, as it had been reduced during the installation of a modern service pipe.

3.2.4 The cellar in the end house, represented by walls ***402***, ***405*** and ***406***, was 3.55m (11ft 7in) wide, and retained a stone-flagged floor at a depth of 2.36m below ground level. A 1.24m wide cellar window was visible within wall ***402***, presumably the front of the house, below which was a 1.1 x 0.66m stone sink, set on a brick platform. The sink was of a 'gamekeeper' type, and was 0.25m deep with a lead lined hole in one corner, presumably intended for a plug (Plate 7).

Plate 7: The stone sink following removal

3.2.5 A vertical ceramic drainpipe (***407***), with a diameter of 0.11m, was exposed to the south-west of the stone sink, set against wall ***402***. A 35mm diameter cast-iron pipe connected with pipe ***407***, and passed through wall ***402***. Another pipe had been inserted through wall ***402*** to the north-east of the sink, and seemingly represented a water feed pipe. These pipes all appeared to be later insertions, representing late nineteenth-century improvements to drainage and sanitation.

3.2.6 Excavation of the north-eastern part of the trenches exposed a 1.24m wide passageway between walls ***403*** and ***404***, leading from a brick-built arch in wall ***402*** (Plate 8). The arch was 0.69m wide, and probably afforded access via steps from Clifford Street to the cellar adjacent to the excavated example. A similar passage was exposed within the excavated cellar, bounded by walls ***405*** and ***406***. This continued beyond the edge of the trench, and thus an access arch was not encountered. An electric cable had been installed against the south-western wall (***404***) of the passage at the north-eastern end of the trench. A similar cable was also identified in the passage between walls ***405*** and ***406***.

*Plate 8: Arch through wall **402**, looking south-east*

3.2.7 Excavation to the west of wall ***406***, at the south-western end of the trench, revealed a thick deposit of cultivated soil (***408***), overlying a layer of light yellow mixed clay. The latter almost certainly represented the natural geology, with layer ***408*** perhaps deriving from the gardens shown at the front of the Albert Club on historical mapping.

3.2.8 It had been intended to carry out further excavation of this trench to enable the entire footprint of one of the cellars. However, excavation had to be abandoned due to the presence of a large amount of chrysotile asbestos sheeting fragments amongst the demolition rubble.

3.3 EXCAVATION RESULTS

3.3.1 Following on from the results obtained from the initial evaluation trenches, a larger, irregularly shaped trench measuring approximately 26 x 20m was subject to more detailed excavation (Fig 4). The trench was divided conveniently into two principal components by the former Lawson Street, which lay north-east/south-west across the excavation area (Plate 9). The remains of the cellars beneath the Lawson Street properties were exposed to the north of Lawson Street, and the foundations of the Albert Club / Turkish baths to the south. The remains of the club / baths were split into five distinct areas of cellarage, designated C1 to C5. The cellars beneath the Lawson Street houses were designated H1 to H5, with cross passages designated G1 to G4 (Fig 4).

Plate 9: High-level view of the excavated remains

3.3.2 The surface of Lawson Street was buried beneath a mixture of loamy topsoil and mixed rubble. The insertion of a large, circular, pre-cast concrete manhole immediately to the east of the excavated area had removed any archaeological remains to the east, whilst excavation to the south-west was precluded by the route of live fibre optic communications cables. This entire footprint of the cellar for the Albert Club was thus not exposed, whilst excavation of the south-western corner of the trench was limited due to further fragments of asbestos chrysotile sheeting and possible asbestos insulation material resulting from refurbishment of the hospital carried out during the 1930s.

3.3.3 ***Lawson Street:*** a 24m long section of the former Lawson Street was uncovered within the excavated area (Plate 10). This was 2m wide, and comprised tightly laid sandstone sets of varying sizes, with an average of 230 x 120 x 100mm. The surface incorporated a slight camber, with kerbs formed from stone flags of varying sizes placed on edge along both sides.

Plate 10: General view looking west across Lawson Street

3.3.4 Cast-iron drain grids, each measuring 500 x 340mm, were set into the road surface. Two grids were exposed on each side of the street, each retaining a three-bar iron grate (Plate 11).

3.3.5 A modern intrusion revealed towards the south-western end of the exposed section of the street had resulted in the removal of some of the stone sets, and the resultant gaps had been infilled with concrete. Further damage to the street surface was noted in the north-eastern part of the excavated area, where some localised subsidence had occurred. This was restricted to an area covering approximately 2 x 1.2m, and had resulted in the slumping of the road surface to a depth of *c* 200mm (Plate 12). It seems likely that this subsidence may have derived from the collapse of the original sewer pipe running below Lawson Street.

Plate 11: Drain covers set into Lawson Street

Plate 12: Localised collapse in the road surface, looking north

3.3.6 The fragmentary remains of a narrow, stone-flagged pavement survived *in-situ* in places along the side of Lawson Street (Plate 13). These included a 4.6m long section adjacent to the northern corner of the Albert Club (Cellar C1) on the southern side of the street, and a 3.7m long section on the northern side between Cellars H4 and H5. Both sections of pavement were 420mm wide.

Plate 13: Section of pavement surviving along the northern side of Lawson Street

3.3.7 ***Cellars to the south of Lawson Street:*** excavation along the southern side of Lawson Street exposed the remains of the Albert Club / Turkish baths, and comprised five basement structures (Cellars C1 – C5). The largest of these (Cellar C1) occupied the north-eastern part of the nineteenth-century building, and measured 8.42 x 6.25m (Plate 14).

3.3.8 The main outer wall, situated adjacent and parallel to Lawson Street, was three brick courses wide, with a foundation that was offset by another 50mm, and survived to a height of 13 courses. The fabric of this wall comprised hand-made bricks bonded with a lime-based mortar, indicative of a nineteenth-century construction date. The wall was aligned north-east/south-west, from the east corner of the cellar for 6.23m then returned to the south-east (Fig 4).

Plate 14: The excavated remains of Cellar C1, looking south-west

3.3.9 The south-eastern wall of Cellar C1 incorporated three distinct sections of hand-made bricks with gaps between them, and may have represented elements of the original villa, depicted on Bancks & Co's map of 1831. A wall continued south-west from the east corner of the cellar for 1.05m, and terminated at a 2.6m wide gap. Beyond this was a 1.32m stretch of walling, with a 2.1m gap at its south-western side, followed by a 1.35m section of wall. This fabric was different from the walls to the north-east and north-west, with footings 200mm shallower and being built from varying sized hand-made bricks placed on stone footings between 100mm and 240mm deep (Plate 15). These footings mainly comprised broken pieces of reused architectural stone masonry.

3.3.10 This walling continued to the north-west from the south-eastern corner of the south-western wall for 0.71m, then had a 1.32m gap for a doorway that afforded access between Cellars C1 and C5 (Fig 4). This then continued for another 1.34m, terminating at a 0.9m wide gap forming an entrance into Cellar C2. Beyond this gap was a single brick course wide wall, with a 40mm splayed foundation, which the original north-western wall. Butted against the interior of the north-eastern wall were two roughly square brick structures (Plate 16). These were placed 0.86m apart, the north-western structure was 0.6m square, and that to the south-east measured 0.62 x 0.55m. These structures comprised hand-made bricks bonded in a lime-based mortar, and had been placed on reused sandstone masonry fragments as a foundation, similar to the south-eastern and south-western walls of Cellar C1. Although they resembled a hearth, there was no indication for the fabric to have been subject to any high temperatures.

Plate 15: The north-eastern corner of Cellar C1, showing the stone foundations

Plate 16: Brick structures abutting the north-eastern wall in Cellar C1

3.3.11 No remains of an internal floor was found within Cellar C1, although there was some indication for the ground to have been disturbed to foundation level, suggesting that the floor had been removed. A modern 0.43m diameter concrete vibration pile was exposed in the room (Plate 15), and its construction may have necessitated the removal of buried floor surfacing.

3.3.12 Cellar C2 lay immediately to the south-west of Cellar C1, and measured 3.6 x 2.23m (Plate 17). The north-western wall of this cellar formed part of the original three-course wide external wall running along the length of the building at the side of Lawson Street (Fig 4).

Plate 17: General view across Cellar C2, looking north-west

3.3.13 The north-eastern wall of Cellar C2 incorporated a 0.9m wide doorway, which seemingly afforded the sole access into the room (Fig 4). The south-western wall incorporated a 0.53m long section of wall that was three courses wide, and was keyed into the north-western wall. Situated to the south-east was a 3.07m long partition, which was two courses wide and divided Cellar C2 from Cellar C3.

3.3.14 Cellar C2 incorporated a brick floor that sloped slightly downwards to the south-east (Plate 17). Built into the north-west wall was a 0.7 x 0.64m alcove with a brick-built chute leading from Lawson Street (Plate 18). This feature appeared to have been inserted into the north-western wall of the building, and had almost certainly been intended as a mechanism of delivering coal into the basement, suggesting that this cellar may have been used for storing coal required in the furnace room for the Turkish bath. The interpretation of this feature having been a late addition is supported by its absence from the detailed Ordnance Survey map of 1849.

Plate 18: The coal chute in Cellar C2, looking north-west

3.3.15 Cellar C3 measured 4.6 x 4.0m, and lay between Cellar C2 and C4, with Cellar C5 to the south-east (Fig 4). Access into Cellar C3 was afforded via Cellar C4, which was at a slightly lower level, was afforded via a 0.92m wide doorway in the south-western part of the cellar (Plate 19). This doorway was marked by a 0.45m high stone-capped step. At the top of the step was a 0.9 x 0.7m slab of concrete, presumably representing a twentieth-century repair.

3.3.16 A brick structure measuring 1.3 x 1.18m was exposed in the north-west corner of the room, abutting the north-western and south-western walls. Full excavation demonstrated that the structure did not have a solid floor, and was filled entirely with demolition rubble, which provided no indication for its intended function. However, it was clearly an addition to the original structure, and the fabric was consistent with a mid-nineteenth-century date, suggesting that it may have been associated with the Turkish baths, perhaps forming part of the heating system.

3.3.17 Set into the north-west wall was a 1.7m wide and 0.91m deep alcove, with a 0.6 x 0.5m brick drain at its base (Plate 20). Excavation revealed that the drain led vertically to a stone-capped and brick-lined drain that ran south-eastwards beneath the floor of the cellar. The floor of the cellar comprised dark grey, square 'quarry' type tiles with several patches of repair in concrete, representing twentieth-century repairs.

Plate 19: General view across Cellar C3, looking north-west

Plate 20: The alcove set into the north-west wall of Cellar C3, looking north-west

3.3.18 Removal of the tiled floor in Cellar C3 revealed the remains of the heating system for the Turkish baths. The tiles were laid onto stone slabs which in turn were carried by cast-iron beams fixed into the top of a series of elaborate firebrick flues. This created a raised floor surface above the heating flues, somewhat like a hypocaust system. A north-east/south-west-aligned flue, 0.46m wide, lay against the south-eastern wall of the cellar (Fig 5).

3.3.19 Two additional sections of flue ran through the south-eastern wall, blocked by upright stone slabs, below the concrete floor of Cellar C5. The first ran north-east then curved back around to the north-west to join up with the angled wall in the north-eastern corner of the cellar. The second flue continued straight to along the south-western wall of the room. A further section of flue also ran straight along to the centre of the room, heading south-east to the curving flue below Cellar C5 (Fig 5).

3.3.20 The south-eastern part of the room beneath the floor was taken up by 2m wide U-shaped flue that ran into the north-eastern flue (Plate 21). This had the vestiges of cast-iron supporting beams radiating across the curve of the structure at its top, and had a series of short flue walls radiating from its exterior.

3.3.21 A 0.9m wide and 0.34m deep brick channel, which terminated in a slight step up of brick at its north-eastern end, was excavated in the northern part of Cellar C4, and continued beneath the floor of Cellar C5. The southern end of this channel had been destroyed by twentieth-century activity, although it may have connected originally with other elements of the flue system. The channel was lined with firebricks, an infilled with ash, adding weight to an interpretation of it having formed part of the flue system. The continuation of this structure into Cellar C5 suggests that this may have been a stokehole for the heating system.

Plate 21: General view across the under-floor heating system, looking south

3.3.22 Cellar C4 lay to the south-west of Cellars C3 and C5 (Fig 4). Due to the presence of fibre optic communications cables to the south-west, only half of the room was excavated. The room also continued further to the north-east than the edge of the excavation trench, but work was halted in this area due to the presence of asbestos derived from hospital refurbishment during the 1930s. The excavated portion of the room was 2.7m wide (Plate 22).

Plate 22: General view across Cellar C4, looking south-west

3.3.23 The south-east edge of the excavated area followed a north-west/south-east-aligned wall that partitioned the room longitudinally, creating two rooms that were *c* 2.5m wide. This partition appeared to incorporate a wide gap at its north-western end, presumably to allow access between the two parts of the room. Two doorways were evident in the surviving fabric of the north-eastern wall, providing separate access to Cellars C3 and C5. The threshold of each doorways was marked by a stone slab atop a 0.45m high step into the adjacent rooms (Fig 4).

3.3.24 The south-western wall of the cellar, adjacent to Lawson Street, was three courses wide, and comprised hand-made bricks bonded with a lime-based mortar. It is likely that this step is due to the floors in Cellars C2, C3 and C5 being raised to accommodate the under-floor heating system, and that this room represents the original floor surface of the club and earlier villa. The north-western part of the room retained flagstones, almost certainly original, whilst the floor to the south-east comprised a concrete slab. A single row of bricks was embedded in the floor, lying parallel to the partition wall. This may have been the foundation course for an insubstantial partition, which formed a 3.48m long and 0.77m wide internal corridor.

Plate 23: The flagstone floor in Cellar C4, looking south-east

3.3.25 At the north-western end of this corridor was a wooden beam set into the floor, which ran slightly beyond the edge of the corridor, suggesting a sliding door. At the south-eastern end of the corridor was a stone kerb, against the later concrete floor, which may have also been a doorway into the extension. Within the rubble backfill of this part of the cellar were several substantial fragments of architectural masonry (Plate 24). These included sandstone sections of circular columns and a column capital that closely matched those shown on an architects drawing of the lavish interior of the Turkish baths in 1859 (Plate 4).

3.3.26 Room C5 lay to the south-east of Cellars C2 and C3, and was excavated only partially due to the presence of asbestos (Plate 25). The surviving fabric of the room had clearly been remodelled during the twentieth century, although elements of the under-floor heating for the Turkish baths lay beneath the concrete floor (*Section 3.3.21 above*).

Plate 24: Stone capital recovered from demolition rubble in Cellar C4

Plate 25: Cellar C5, looking south-west

3.3.27 ***Cellars to the north of Lawson Street:*** excavation to the north of Lawson Street revealed a row of five cellars beneath single-depth workers' houses with cross passages between them (Plate 26). During excavation the houses were designated H1 to H5, and the cross passages as G1 to G4 (Fig 4). House H1 corresponds to N^{o} 10 Lawson Street, H2 to N^{o} 8, H3 to N^{o} 6, H4 to N^{o} 4, and H5 to N^{o} 2 Lawson Street.

3.3.28 All the houses followed a similar pattern of layout and construction, although each retained physical evidence for slight differences and alterations. The floor plan of each property measured approximately 6.2 x 4.5m, and was split into a full-width main room at the front 3.6m of the building, and two small cellars to the rear, each measuring 1.5 x 1.8m, separated by a small open yard, measuring 1.25 by 1.8m (Fig 4). Nearly all of the component walls were two courses wide, and comprised hand-made bricks bonded with lime-based mortar.

Plate 26: General view looking south-west across the excavated cellars and Lawson Street

3.3.29 All of the cellars had a private entrance into the main front room from a cross passage to the north-east, and an entrance into the south-western rear room from the cross passage to the south-west. This meant that the rear south-western room of each cellar was only accessible by the adjacent property. Each seemed to originally have had access through the rear wall of the main cellar into the small rear yard, and from there into the small north-east cellar room. Only cellar H3 retained clear physical evidence for access from the south-western rear room into the yard.

3.3.30 The main cellar rooms all had a cellar light window at the front, along the side of Lawson Street. All the cellars had an internal stair against the north-eastern wall, composed of brick with six stone slab treads (Plate 27), and a large fireplace set into the south-western wall (Plate 28).

Plate 27: The remains of the stair in Cellar H3

Plate 28: The remains of the fireplace in Cellar H4

3.3.31 The fireplaces were an average of 1.6m wide and 0.5m deep with an internal width of 1.15m. The sides of the fireplaces consisted of three courses of brick, the outermost two being the main structure with the inner course appearing to be a rough cladding, possibly in attempt to protect the outer two courses from the heat without the use of firebricks. The fireplaces had ranges set within them, although these had been destroyed almost entirely. Each had thin stone slabs flanking the front of the fireplace, with a thin stone crosspiece above, all carefully cut and filleted.

3.3.32 Within each cellar were found identical pieces of architectural masonry measuring 1.1 x 0.25 x 0.2m (Plate 29). Theses had a square motif carved into the top and a flat panel at the bottom with vertical fluting between them and chamfers cut into the rear edges. Two were found per cellar with most broken but two intact, and it was felt that these also flanked the fireplaces.

Plate 29: Worked stone fire surround

3.3.33 Each of the cellars contained the remains of a 'set-pot' boiler in the southern corner, situated between the fireplace and the front wall. These had been built with machine-pressed bricks and hard, dark grey mortar, indicative of later nineteenth-century construction (Plate 30). They each measured an average of 0.95m wide by 0.5m deep by 0.68m high, and had a hinged metal grill at the front to allow the fire inside to be fuelled and ash to be raked out. Each had a deep cast-iron vessel set into the top surface, and the surface was skimmed with cement. Most of the boilers were very fragmentary, but the most intact showed that the vessel was ringed with a firebrick 'screen' around its back and sides with an open front. The boilers had flues which vented either into the fireplace chimney of out through the wall into the cross passage.

Plate 30: 'Set-pot' boiler in Cellar H3

3.3.34 Each cellar appeared to have contained a flagstone floor originally, with a brick surface beneath the stair. Those flagstones that survived *in-situ* were located around the edges of the main cellar rooms, where presumably they received less impact during demolition than those in the centre of the room.

3.3.35 The front cellar rooms were all infilled with loose demolition rubble, and had evidently remained in use throughout the lifespan of the buildings. The small rooms to the rear and their associated yards, however, were filled with a mixed clayey sand and gravel with brick and stone inclusions. This material was also evident in the cross passages, and appeared to represent deliberate and considered backfilling of the structures. This seemingly enabled the construction of privies in the north-eastern room at ground-floor level, with foul pipes leading to the sewer inserted at the north-western end of the cross passages. Three sewers then ran north-west up the infilled cross passages and beyond the houses, presumably to join with main sewers serving the privies at the rear of double-depth housing fronting Booth Street East.

3.3.36 A further small cellar was excavated to the rear of H3, accessed from the south-western rear room (Fig 4). There was possibly a similar addition to the rear of H1, whilst H2 also had the remains of a wall running from its south-western rear room, but only at ground-floor level.

3.3.37 ***Cellar H1:*** the property at the north-eastern end of the excavated row (Cellar H1) had been partly destroyed by the insertion of a large, circular pre-cast concrete manhole. The surviving remains of the cellar to this house comprised a 3.5m long front room and a 1.9m long rear room (Plate 31).

Plate 31: The excavated remains of Cellar H1

3.3.38 The surviving rear room of Cellar H1 was not excavated fully for logistical and health and safety considerations, although it retained the remains of a concrete and flagstone floor at ground level, laid onto a mixed clayey gravel. Elements of a brick-built partition between the south-eastern rear room and the small yard were identified along the north-western edge of the excavated trench. An entrance into the yard at cellar level was also observed. This had been blocked with machine-made brick and hard grey cement, and had a wooden beam above it, presumably surviving from the original doorway. The south-western rear cellar was accessed through a 1.6m wide and 1.2m high brick archway from passage G1 (Plate 32).

3.3.39 The floor of the front cellar room retained elements of a flagstone floor, which was exposed at a depth of 1.8m below the modern ground surface. Part of the south-western wall of this room, between the fireplace and the wall adjacent and parallel to Lawson Street, had been reduced in width to a single course of bricks, a modification that was presumably necessitated by the installation of the 'set-pot' boiler in the southern corner of the room during the later nineteenth century (Plate 33).

Plate 32: Arched entrance to the rear yard from the passage G1

Plate 33: The remains of the boiler in the southern corner of Cellar H1

3.3.40 The fireplace set into the south-western wall of the front room was 1.6m wide and 0.48m deep, with an internal width of 0.92m (Plate 31), and retained the foundations of a brick-built housing for a range. The boiler in the southern corner survived very well, with just part of the front damaged and the grate removed (Plate 33). Part of the cast-iron vessel remained intact, with the base of the firebrick screen still *in-situ* around the rear and sides. The flue for this boiler seemingly existed the room via the south-western wall.

3.3.41 The cellar light window in the south-eastern wall of the main room was 1.42m wide and 0.66m deep, with a brick and stone sill situated 0.7m above floor level. The wall between the south-western edge of the window and the south-western wall had been largely destroyed during twentieth-century demolition.

3.3.42 Two stubs of two-course wide wall of hand-made bricks continued north-west from the rear of the house for 0.4m, at which point they were truncated at the top by an earth cable for the former Lamb Building. It was observed within the passage G1 that this wall continued beyond the north-west edge of the excavated trench, towards the rear of the Booth Street East houses, and continued down to cellar level. It may be that this was an additional rear room at cellar level, although this could not be confirmed.

3.3.43 Passage G1 was aligned north-west/south-east between Cellars H1 and H2 (Fig 4), and was 1.06m wide (Plate 34). The south-eastern end terminated at a brick wall, adjacent and parallel to Lawson Street, which incorporated a cellar window light that measured 0.48 x 0.46m and retained a stone cill.

Plate 34: Passage G1, looking south-east

3.3.44 There was no physical evidence for a wall at the north-western end of the passage, although this may have been removed by the insertion of a sewer pipe after that passage had been infilled with clayey sand and gravel. No floor surface survived in the passage.

3.3.45 The drain beneath the passage ran from out from the north-eastern wall of Cellar H2, serving a late privy, and turned north-west along the passage beyond the houses, to link in with the rear sewer for the Booth Street East houses. In line with the internal dividing walls of the two houses was a stone-capped brick drain running north-east/south-west across the passage, and then turning north-west along the north-eastern wall of Cellar H2. It was 0.6m wide and 0.35m deep (Plate 35).

Plate 35: Stone-capped drain in passage G1, looking south-east

3.3.46 ***Cellar H2:*** the footprint of Cellar H2 measured 6.3 x 4.44m, and comprised a large front room, and two small rooms the rear that were separated by a small yard. The main room at the front of the cellar measured 3.66 x 4.44m, although much of the historic fabric had been destroyed during demolition, with most of the north-eastern and south-east walls having been destroyed, and the entire original floor removed (Plate 36).

3.3.47 Within the surviving part of the north-eastern wall were scars that represented the position of the internal brick and stone steps, and a small section of flagstones indicated the location of a 1.15m wide doorway between this room and passage G1. The north-eastern wall was only a single brick course wide, suggesting that the original fabric had been remodelled. The remains of a cellar light window survived in the wall. This measured 0.9 x 0.45m, and retained elements of a brick cill that was situated 0.7m above the original floor level.

Plate 36: General view looking west across Cellar H2

3.3.48 The south-eastern wall of Cellar H2 had been partially rebuilt with the south-eastern 1.76m set back by 0.58m, widening the passage to the south-west to 1.41m at this point. The rebuild had been carried out very roughly using varying hand-made bricks of varying sizes, bonded with a crumbly lime-based mortar. A single course wide section of wall continued to the north-west from the corner of the rebuilt wall, inside the room and parallel to the two-course wide original south-western wall, to the internal dividing wall. This created a gap of 0.53m between this and the original wall, which had been filled in with clinker, ash and brick fragments. The later 'set-pot' boiler was built against the rebuilt part of the wall.

3.3.49 The position of the fireplace mirrored that in Cellar H1. It was 1.66m wide and 0.5m deep, with an internal width of 0.9m. The base of the range had survived showing a 0.3m wide central void for raking out ash (Plate 37). The 'set-pot' boiler was placed immediately to the south-east of the fireplace. This had been damaged during demolition, but sufficient fabric survived to demonstrate that it was of a similar construction to those identified in the other excavated cellars (Plate 37).

3.3.50 A 0.28m wide stone-capped brick drain ran south-west along the north-western internal partition wall in the cellar, probably below the level of the original flagstone floor. The south-western rear room was 1.25 x 1.88m, and was accessed through a brick archway from passage G2. The archway had been blocked with hand-made bricks in white lime-based mortar. The rear room to the north-east had a later privy built at ground-floor level (Plate 38), after the cellar room had been infilled with clayey sand and gravel, and had a sewer pipe running out through the north-eastern wall into passage G1.

Plate 37: The fireplace in the front room of Cellar H2

Plate 38: The foundations of the privy added to the rear of Cellar H2

3.3.51 The small open yard between the rear rooms of the cellar measured 1.06 x 1.88m, and appeared to have a brick-built archway leading into the north-eastern room (Plate 39). The yard and the two rear rooms had been infilled with a clayey sand and gravel, and the archways and doorway from the main front cellar into the rear yard blocked. Whereas the archway from passage G2 into the south-western rear room was blocked with hand-made bricks, the doorway into the rear yard from the front cellar and the archway from the yard to the north-eastern rear room were blocked with machine-made bricks, suggesting that the archway into the south-western rear room was blocked at an earlier date, possibly before the infilling of the rear rooms.

Plate 39: Blocked doorway to the rear yard in Cellar H2

3.3.52 Excavation revealed the two rear rooms had been furnished originally with a flagstone floor, whilst the rear yard had a brick floor. These surfaces were exposed at a depth of 1.8m below the modern ground level. The wall between the south-western rear room and the yard contained a 120mm upright cast-iron pipe, which ran vertically through the core of the wall to the floor surface (Plate 40).

3.3.53 Part of the rear yard and the north-eastern rear room had been truncated by a modern ceramic drainpipe. The south-western wall of this house continued to the north-west beyond the edge of the excavated area. This was built from hand-made bricks and stone slabs. It was only present as a foundation at ground level, and did not continue into cellar, as was seen in Cellar H3.

Plate 40: Pipe in the rear yard of Cellar H2

3.3.54 Passage G2 was aligned north-west/south-east between Cellars H2 and H3 (Fig 4), and was 0.87m wide, although the south-eastern end was wider, measuring 1.41m (Plate 41). The passage incorporated a 0.6 x 0.37m cellar light window with a stone slab cill in the wall that formed the south-eastern end. The passage had been infilled with clayey sand and gravel and brick fragments, and had a sewer pipe running from the north-eastern rear room of Cellar H3 and heading north-west along the passage beyond the buildings to link with the sewer to the rear of the Booth Street East properties. Just beyond the rear of the buildings it had been truncated by an earth cable for the former Lamb Building.

3.3.55 ***Cellar H3:*** this measured 6.12 x 4.57m, with a 3.6 x 4.57m main front room and two rear rooms that each measured 1.5 x 1.57m (Plate 42). The rear rooms were separated by a small yard that measured 1.25 x 1.57m. The north-eastern wall of the main room had a 0.73m wide doorway between the room and passage G2, within which it was possible to see that the passage had a brick floor at a depth of 1.8m below the existing ground surface. The cellar steps had survived within this room, and were built from brick with six stone treads keyed into the wall and a brick floor surface beneath the stairs (Plate 43).

3.3.56 The stairs appeared to have been rebuilt at some point as a construction break was clearly visible in the fabric of the wall at a point coinciding with the two ends of the stairs. At the base of the stairs, and in front of the doorway, within the lower backfill were broken pieces of chrysotile sheeting. This is likely to have surrounded the edges of the hatch at the top of the stairs, and possibly the entrance to the passage as well, and been used as a simple form of fire prevention during the later period of the cellar's use.

Plate 41: The south-eastern end of passage G2, looking north

Plate 42: General view across Cellar H3, looking west

Plate 43: Stairs in Cellar H3, looking north

3.3.57 The cellar light window in the south-eastern wall was 0.98 x 0.66m, with a brick sill 0.7m above floor level. The south-western wall was only a single brick course wide, and abutted the south-western wall of the south-western rear room, suggesting that it had been rebuilt. The fireplace set into this wall was 1.6m wide and 0.56m deep, with an internal width of 1.06m. Within it a brick range had been built with a 0.3m wide central sloping surface above a stone-topped void.

3.3.58 The 'set pot' boiler situated between the fireplace and the southern corner of the cellar was the most intact of the excavated examples. It was 1.01m wide and 0.6m high, standing 70mm proud of the front of the fireplace.

3.3.59 It was built from machine-made bricks, bonded with hard grey cement, with the surface rendered in cement with 0.5m cast-iron vessel set into it (Plate 44). Flanking the rear and north-western sides of the vessel were the remains of the firebrick 'screen'. In the front face of the boiler was a 0.4m high, 0.25m wide void with a 0.25m cast-iron hinged grate at its top half. The boiler flue vented into the fireplace chimney through the south-eastern side of the main fireplace structure.

3.3.60 This room also had the most intact flagstone floor, with only part of the centre missing. The rear rooms and yard had again been infilled with clayey sand and gravel and the entrance from the front room into the rear yard turned into a second window light, which measured 1.26 x 0.63m with a brick sill 0.5m above the floor level (Plate 45).

Plate 44: Hearth and boiler in Cellar H3 looking south

Plate 45: Cellar light window in Cellar H3, looking north-west

3.3.61 The south-western room to the rear of the cellar had a 1.57 x 0.36m stone and brick drain inserted at ground-floor level along its north-eastern wall. A 1.1m wide privy with a single-course brick wall at the south-eastern side had been constructed within the north-eastern rear room after infilling with a sewer pipe running into passage G2. Prior to having been infilled, the north-eastern room was accessed by a 1.3m wide brick archway from the rear yard, later blocked with machine-made bricks. A second 1.3m wide brick-built arch had originally provided access from the south-western room to the rear yard, the only instance of this arrangement in the excavated examples (Plate 46). A third arch led from the north-western wall of this room into a small 1.5 x 1.7m cellar-level room with a flagstone floor and two-course wide walls comprising hand-made bricks set in lime-based mortar (Plate 46). These arches had not been infilled with brick.

Plate 46: Arches in south-western rear room in Cellar H3, looking west

3.3.62 The rear room was also filled in with clayey sand and gravel and brick fragments, and had a flagstone floor laid above it at ground-floor level. The main north-western rear wall of the south-west and north-east rear rooms and the rear yard was much coarser in build than the rest of the walls, and abutted at both ends. It may have been rebuilt at some point, and was clearly always below ground as its outer surface was very rough. A fifth brick archway was observed running through the centre of the rear wall of the building, immediately to the north-east of the arch leading into the south-western outshut (Plate 47). This was also unblocked, running out from the rear yard, but had no evidence of any structures beyond it, and so its intended function remains uncertain.

Plate 47: Arches at the rear of Cellar H3, looking east

3.3.63 Passage G3 lay between Cellars H3 and H4, and was aligned north-west/south-east (Plate 48). It was 1.0m wide with a 0.5 x 0.33m cellar light window with a stone slab sill set into the brick walled south-eastern end. It had been infilled with clayey sand and gravel and brick fragments, and had a sewer pipe inserted. It retained elements of a brick floor at a depth of 1.8m below existing ground surface.

3.3.64 ***Cellar H4:*** this measured 6.3 x 4.55m, with a 3.44 x 4.55m main front cellar and two rooms to the rear, each measuring 1.25 x 1.6m, with a 1.14 x 1.6m yard between them at cellar level (Plate 49). The main front cellar was accessed through a 0.73m wide doorway in the north-eastern wall, situated 0.78m from the east corner. This doorway afforded access from passage G3.

3.3.65 The only remains of the cellar stairs to have survived were the brick floor below the stairs, and scars visible in the north-eastern wall, where the stone treads had been keyed in. The cellar light window in the south-eastern wall was 1.05 x 0.68m, and had a brick and stone slab sill 0.7m above floor level. The fireplace on the south-western wall was 1.52 x 0.46m, with an internal width of 1.15m (Plate 50). It had a 0.6m high brick range built into it with 0.4m wide flat surfaces at either side and a 0.3m wide sloping face in the centre with a stone capped void beneath. It was flanked by two thin stone slabs, with a stone crosspiece above, forming a fire surround. Between the fireplace and the southern corner of the cellar the 'set pot' boiler was very fragmentary, but enough remained to show that it was 0.94m wide and 0.46m deep with a flagstone base and three internal chambers of standard brick. The flue from this boiler vented through the south-eastern side of the fireplace into the main chimney.

Plate 48: Passage G3, looking south-east

Plate 49: General view across Cellar H4, looking south

Plate 50: Fireplace and boiler in Cellar H4, looking south-west

3.3.66 A 0.5m wide stone-capped brick drain ran north-east/south-west along the south-western internal partition wall below the flagstone floor (Plate 51). The flagstones only survived in the west corner of this room.

Plate 51: Drain below the floor in Cellar H4, looking south-west

3.3.67 The rear rooms and yard had again been infilled with clayey sand and gravel and brick fragments. The entrance from the main cellar into the rear yard had been blocked with hand-made bricks set in a lime-based mortar. No structures survived at ground level, but it can be assumed that a privy was added at ground level in the north-eastern room.

3.3.68 Excavation revealed that the cellar rooms had flagstone floors and the open yard had a brick floor. The north-eastern room was accessed via a brick archway from the yard. The south-western room was accessed from passage G4 (Plate 52), and retained an entranceway that originally had been an archway but had the upper courses rebuilt as a straight topped doorway, possibly to accommodate a door or gate.

Plate 52: Passage G4, looking south-east

3.3.69 Passage G4 lay between Cellars H4 and H5. It was aligned north-west/south-east, and was 0.86m wide with a 0.6 x 0.36m cellar light window with a stone cill set into the wall at its south-eastern end. Similar to the other passages, it had a brick floor at a depth of 1.8m below the existing ground surface, and had been infilled later with clayey sand and gravel and brick fragments. The infilled material had been cut for a sewer pipe that took a course from a privy at ground level in the north-eastern rear room Cellar H5, turning north-west to link with the rear sewer of the Booth Street East properties.

3.3.70 ***Cellar H5:*** this measured 6.3 x 4.6m with the front room measuring 3.5 x 4.6m, and a rear cellar room to the south-west measuring 1.45 x 1.9m (Plate 53). The northern corner of the rear of the building had been truncated by a later drain, which had removed the partition wall between the north-east rear room and the open yard between the two rooms. The flagstone floor had only survived at the base of the stairs, in front of the doorway.

Plate 53: General view across Cellar H5, looking west

3.3.71 It can be assumed that, as in the other properties, the north-eastern room was the same size as the south-western room, and had a privy inserted after being infilled with clayey sand and gravel. This had also removed any evidence of access between the main front room, the yard and the north-eastern room. Again it can be assumed that this was similar to that seen in the other properties, with a doorway from the main room into the yard and an archway from the yard into the north-eastern room. As the south-western rear room could not be accessed for further excavation it is not known how the room was accessed, although no doorway was visible within the dividing wall between that and the front room. This was accessed from passage G4 through a 0.67m wide doorway in the north-eastern wall. The internal stairs had partially survived with the south-west brick stair wall intact and three of the six stone treads. Below the stairs was a brick floor surface (Plate 54).

Plate 54: Stairs in Cellar H5, looking north-west

3.3.72 The window light in the south-eastern wall was 1.06 x 0.68m, with a brick and stone slab sill 0.7m above floor level. The fireplace on the south-western wall was well preserved (Plate 55). It was 1.6m wide, 0.6m deep and had an internal width of 1.15m. It was flanked by upright thin stone slabs with a third slab above as a crosspiece. The slabs had been carefully cut to fit as a fire surround with rounded filleted corners. The fireplace had been blocked with machine-made bricks in a hard dark grey cement, indicative of a late nineteenth- or early twentieth-century date. Between this and the south corner of the room was the remains of the 'set pot' boiler, although the top and front of this had been destroyed. The boiler was again of machine-made bricks in a hard grey mortar. It was 0.92m wide, and the same depth as the fireplace. It had a flag stone base and three internal brick chambers with a 0.26m wide void at the front for the grate.

3.3.73 Excavation revealed a 0.36m wide brick drain, originally stone-capped although this did not survive *in-situ*. The drain was located along the north-western partition wall.

3.3.74 The original construction cut for the cellars was identified to the rear of the property. It was *c* 0.5m wide from the rear of house H5, and ran parallel to it north-east. It was visible clearly for a distance of *c* 4.25m. Beyond this it appeared to have been cut by the laying of the later sewer pipes and the small extensions to the rear of houses H1, H2 and H3.

3.3.75 Immediately to the south-west of Cellar H5, at the southern end of the excavated area, was a brick and concrete floor at ground level (Plate 56). This continued into the trench edge to the north-west and south-west, and could be seen continuing beyond the houses to the north-west.

Plate 55: Fireplace and boiler in Cellar H5, looking south-west

Plate 56: Brick and concrete surface to the south-west of Cellar H5, looking north-west

4. FINDS

4.1 INTRODUCTION

4.1.1 There were, in all, some 534 fragments of artefacts and ecofacts from the site. All were in fair to good condition, and most were in relatively large fragments, with many joining sherds amongst the pottery and many complete glass bottles. With only two exceptions, there is no reason to place any of the pottery or glass fragments as earlier than the mid- to late nineteenth-century, and an overwhelming proportion dates from *c* 1900 to the 1950s. Whilst there are no obvious overall trends in the assemblage, there are opportunities to refine the dating on a room-by-room basis, and the assemblage is discussed accordingly.

4.2 TRENCH 1

4.2.1 A total of 85 fragments of pottery were recovered from Trench 1. Most is refined white earthenware in a range of tablewares, including a blue and white industrial slipware jug, and a range of transfer-printed cups and plates, as well as rather more utilitarian plain white dishes and bowls. Most of the transfer-prints are in 'willow pattern' but there is also part of a scalloped edge bowl in 'sea-leaf' pattern, in use by the 1850s (Godwin and Barker 2009), and other patterns including a polychrome rural scene. There is also a single vessel in sponged ware (produced between *c* 1830 and *c* 1900 (Plate 57); Bagdade and Bagdade 2004). One or two fragments are in the 'Chelsea sprig' pattern popular *c* 1860-1900, but remaining in production well into the twentieth century. There are also utilitarian stoneware bottles and kitchenwares, including a bottle stamped Belper, Denby and Codnor-Park Potteries, and dating to after 1857 to *c* 1900.

4.2.2 A slightly greenish coffin-shaped spirit bottle is the earliest glass vessel from the trench, dating between *c* 1880 and *c* 1905, and a blue 'poison bottle' probably dates to the latter part of the nineteenth century, such bottles being widely adopted after the introduction of a bill for the prevention of accidental poisoning in 1863, despite the failure of the bill (hansard-millbanksystems.com/commons/1863/june/22/Poison-bill). The remainder of the glass is considerably more recent: a Fletcher's sauce bottle must post-date the establishment of the company in 1914; a colourless sterilised milk bottle embossed Hygienic Dairies Ltd Manchester, post-dates 1927, when the dairy introduced sterilised milk (Manchester 2002-uk.com/celebs/commerce1/html). A second milk bottle, also for sterilised milk, is embossed Brough and Wild Dairies Ltd, Manchester. The dairy was still in existence in 1952, when it is mentioned in *The London Gazette* (July 1952). A dark green beer bottle is embossed Groves and Whitnall Ltd, Salford. The brewery passed out of existence in 1971 (grovesandwhitnall.co.uk). A 'war grade' vulcanite stopper (Plate 58) presumably dates to the 1940s.

4.2.3 There is a single clay tobacco pipe bowl, plain with leaf-decorated seams, which probably dates to the late nineteenth century, and nine stem fragments cannot be closely dated. A stamped metal button is of similar date. There is also a small fragment of coarse white-glazed wall tile. A few oyster shells and a single fragment of animal bone are likely to be food waste.

Plate 57: Fragment of a spongeware dish

Plate 58: 'War Grade' screw top bottle stopper

4.3 TRENCH 3

4.3.1 Material from Trench 3 comprised 69 fragments of pottery, three of glass, and one of clay tobacco pipe. Most of the pottery comprises plain and underglaze transfer-printed refined white earthenware tablewares, predominantly printed in blue, and with some 'Flow Blue' (in use since the late 1820s (Coysh and Henrywood 1982)). There group seems likely to date to the late nineteenth century at the earliest. The only other tableware present was a fragment of very poorly decorated white porcelain. Kitchenwares were represented by two fragments of late brown stonewares and four of coarse black-glazed redware storage vessels. The single fragment of clay tobacco pipe stem is probably contemporary with the pottery, but the glass seems more recent.

4.4 TRENCH 4

4.4.1 Trench 4 produced a small assemblage of ten artefact fragments, and a single oyster shell. There are four fragments of white earthenware, one of them bearing a backstamp of the Grindley pottery in Stoke on Trent (Plate 59), which was in use from 1936-54 (thepotteries.org). There were also single fragments of black-glazed storage vessel, and late grey stoneware. A ceramic button from this trench, made by the Prosser technique, must post-date its invention in 1840, but such buttons probably remained in use well into the twentieth century. The base of a machine-made dark green bottle must date to after the invention of the automated bottle making machine in 1905 (sha.org/bottle/machinemadedating.htm). There is also a chunk of what appears to be dark green glass cullet.

Plate 59: Grindley backstamp, 1936-54

4.5 CELLAR H1

4.5.1 Material recovered from the main room in Cellar H1 was unusual in being almost entirely black-glazed redware, with only three of the 12 fragments being refined white earthenware. It is possible, however, that the blackware derives from a single storage vessel. The pottery is not closely dated, but seems most likely to be of early twentieth-century date. A small cast copper alloy cog presumably derives from a relatively small clockwork item, most likely a clock, and the purpose of a rectangular leather object has not been identified.

4.5.2 A group of six complete bottles are all machine-made, and thus of twentieth-century date. Five are colourless and lack embossed legends except for a milk bottle from the Cheshire Dairies, Manchester, known to have been existence by 1930 when a patent was taken out on a metal bottle closure (patent.ipexl.com/GB/GB353441.html), and presumably before. A pale greenish amber bottle is embossed Sanderson Peter St Manchester. Unusually for marine molluscs from the site, three of the four shells from cellar 1A are cockles, with only one oyster.

4.6 CELLAR H2

4.6.1 Few finds were recovered from Cellar H2. A single, very worn copper alloy coin has been identified as a penny of George V (reigned 1910/11-1936), but the issue date remains illegible. Pottery comprises five fragments from a single pale blue underglaze-printed side plate, printed in willow pattern and with a diamond-shaped back-stamp bearing the word semi-china. A sixth fragment is from a second small plate in the same design. There is also a small stamped metal button. It would seem most likely that all the finds fall within the date range of the coin.

4.6.2 The rear room of Cellar H2 produced 11 fragments of pottery and five of oyster shell, the latter presumably food debris. Again the pottery is largely confined to refined white earthenwares, which include a blue feather-edged dish and similar saucer, and part of the base of a large imitation ‘scratch blue’ chamber pot of a kind produced well into the nineteenth century (Hume, 1969). The pottery also included a single fragment of brown stoneware and a rim-fragment from a black-glazed redware storage vessel, both likely to be of late date. There was, however, a single fragment of fine white salt-glazed stoneware from a plain straight-sided vessel. Most likely to date to the late eighteenth century, it is to be assumed that, like the slip-decorated fragment from Cellar H3, it is residual, or at the least, a curated object. A single heavy tobacco pipe bowl can be broadly dated to the end of the nineteenth century, possibly around 1880. The assemblage included a single fragment of animal bone, presumably food waste.

4.7 CELLAR H3

4.7.1 This cellar produced one of the larger finds groups, with 44 fragments of pottery, 28 of glass, and seven of other materials. The pottery includes two plain white earthenware plates and a plain teacup stamped 'Wood England'. The date of the pottery has not been established with confidence, but the mention, in the stamp, of England places it after 1891 (the potteries.org). A partial printed backstamp "TF &" has been identified as that of Thomas Forester and Sons Limited, and was only in use during the period 1942-47.

4.7.2 Although there are a few fragments of transfer-printed wares, and part of the gilded rim of a decorative jug, most of the vessels are very utilitarian and alongside tablewares, include paste jars, a stoneware ginger beer bottle impressed 'James Howard, Ardwick', which must post-date the 1875 Trademark Act (ipo.gov.uk), and a single fragment of a coarse terracotta flowerpot. There is, in addition, a single white porcelain electrical light fitting and a small fragment of blue-glazed wall tile, identical to that from Cellar H5.

4.7.3 A large group of 28 complete bottles and jars are all relatively late, most are machine made, and include small jars with external screw-threaded rims, a sauce bottle embossed Hazlewood and Co, a company founded in 1900, and a second bottle embossed "successors to the California Fig Syrup Co", which is again likely to date to after 1900. There were also beer bottles from the Wilson Brewery Newton Heath (must pre-date 1987, when the brewery was closed), from Openshaw Brewery Ltd, Manchester, from JW Lees and Co of Middleton Junction (founded in 1828 and still in existence), and a bottle embossed Austin Craven Ltd of Manchester; the company, bottlers and mineral water manufacturers, were taken over by Marston, Thompson, and Evershed Plc in 1962 (Richard and Turton 1990, 228). A small white opaque glass jar, embossed 'PONDS' must post-date 1907, when Pond's cold cream was introduced (pondsinstitute.co.uk/history).

4.7.4 A small hinged-pin brooch stamped from thin copper sheet is probably of a mid-twentieth-century date (Plate 60). A base metal knife blade and a complete metal fork are of interest in that the fork bears a stamped broad arrow, and the date 1945 (Plate 61), suggesting that it was military issue from WWII. Vulcanite screw thread bottle stoppers bearing the names of the Openshaw Brewery Co Ltd, and Cheetham Bros, Oldham, cannot be dated with such precision but are probably contemporary.

4.7.5 Seven fragments of pottery from the rear room in Cellar H3 are unusual in including a small abraded fragment of a hand-thrown slip-decorated dish, possibly made as early as the mid-late seventeenth century (Plate 62). It is however, without doubt residual, the remainder of the pottery being plain and transfer-printed refined white earthenwares of late nineteenth-century date. Interestingly one of the three fragments of clay tobacco pipe stem is 'wide bore' again suggesting an earlier date for a small element of the group. The small fragment of tobacco pipe bowl is a late form. A small glass bottle is of early twentieth century date and a vulcanite screw-thread bottle stopper cannot pre-date 1870 when the internal screw thread was introduced, and is likely to be significantly later.

Plate 60: Cheap stamped copper brooch

Plate 61: Military issue fork

Plate 62: Fragment of late seventeenth- to early eighteenth-century slip-decorated dish

4.8 CELLAR H4

4.8.1 Only 11 fragments of artefacts were recovered from Cellar H4. Pottery comprised four joining fragments of a late yellow-ware jar and two of under-glaze transfer-printed white earthenware. There was a single fragment of clay tobacco pipe stem. Three complete glass vessels came from within the boiler seen in this cellar. One, a bell-shaped ?ink bottle with 'sheared-off' top probably dates to the very late nineteenth century. The second is a pale green mineral water bottle embossed 'RA Barrett & Co Ashton-u-Lyne'. Founded in the 1860s, Barrett and Co began producing mineral water in 1876, and the company continued in existence until 1977 (forum.ashton-under-lyne.com). The bottle maker (John Kilner of Wakefield) was in operation from 1842-1937, although interestingly, it is possible that the Wakefield address was only used between 1847 and 1857 (gracesguide.co.uk/Kilner Bros), and thus conflicts with the available dating for Barrett and Co. The third bottle, a 'soda bomb' embossed Sandring and Son, Manchester, cannot be dated with precision; its shape (torpedo- or Hamilton-shaped) is long-lived, originating in 1809 and continuing throughout the century, but the term 'trademark' used in the embossed logo, points to a date after 1875 when trademarks were first widely registered (ipo.gov.uk). There was also *c* 60% of a large stone grinding wheel, probably used for sharpening blades.

4.8.2 Most of pottery the from the rear room of Cellar H4 are refined white earthenwares, or late nineteenth or early twentieth century date, the remaining two are late brown stonewares. There are also six fragments of tobacco pipe stem. A complete colourless bottle, originally containing Swan Ink, can be dated to the second quarter of the twentieth century, with the manufacturers, Mabie Todd, first producing pens and ink in Britain in 1915 and continuing until the 1950s. The legend Mabie Todd and Co Ltd, seen on the base of the bottle, was in use 1930-50 (gracesguide.co.uk).

4.9 CELLAR H5

4.9.1 Cellar H5 produced a relatively small assemblage of 23 fragments. The pottery is slightly unusual in that ii is a mix of late stoneware, predominantly a screw-threaded handled bottle, and a deep bowl, probably used in the kitchen. There are, in addition, a poor-quality small porcelain lid, and fragments of poor-quality unglazed painted pottery. Only three fragments of pottery came from one of the rear rooms, including a 'blob-top' stoneware bottle of the late nineteenth century and a single fragment of over-glazed painted white earthenware. The other rear room yielded six fragments of pottery, including two joining fragments of a plain china tea cup, with dark blue and gilt bands at the rim, a moulded tureen handle in refined white earthenware, and fragments of more practical vessels, probably for cooking. All seem to be of twentieth-century date, as is the neck of a colourless milk bottle with a crown cap closure, the latter introduced after 1892 and used mainly for homogenised sterilised milk, introduced after 1904 (Harding 1995, 115). A single vulcanite screw-threaded bottle stopper is embossed IND COOP & ALLSOPP LTD (Plate 63), and must date between 1935 and 1959 (gracesguide.com). A single colourless mineral water bottle with an internal screw thread and plain vulcanite stopper, is probably of mid-twentieth century date. The group of from Cellar H5 There are also two joining fragments of clay tobacco pipe stem, and a small fragment of white-glazed sanitary ware. Finds from this room also included a fragment of slate pencil, a type in use throughout the nineteenth century and well into the twentieth.

4.9.2 Parts of a pair of very worn, and much-repaired men's leather shoes are probably of a similar date to the pottery and glass. The remainder of the finds from this cellar are all associated with the building, and its fittings, there being a small brass padlock, part of a decorative white marble top, a turned wooden door handle, and fragments of blue-glazed wall tiles, probably decorative spacers rather than intended as simple wall coverings.

Plate 63: Vulcanite bottle stopper

4.10 CELLAR C1

4.10.1 All but one of the 15 fragments of pottery from this cellar are refined white earthenware tablewares of late nineteenth- or early twentieth-century date, most of them transfer-printed in 'willow pattern'. There is also a single fragment of brown stoneware, probably kitchen ware, of similar date. The four fragments of clay tobacco pipe include a green-glazed or varnished mouthpiece, and all seem to date to the late nineteenth and early twentieth century. Glass from this cellar is perhaps marginally earlier, being base and neck fragments from a dark olive green wine bottle, probably free-blown, and possibly of early to mid-nineteenth-century date.

4.11 CELLAR C3

4.11.1 Only six fragments of pottery came from this cellar, again, they are all refined white earthenware, and include approximately half of a small dish printed in 'willow pattern'. Glass is confined to five joining fragments of a small ridged blue poison bottle with applied top, dating probably to the last decades of the nineteenth century. A single small flatiron came from this cellar. There were also two large 'quarry' type tiles, one in a bright orange and one in dark grey, which presumably reflect the flooring, and a large firebrick, presumably associated with the heating system for the Turkish baths.

4.12 PASSAGE G2

4.10.1 The finds from Passage G2 are little different to those from other parts of the site, with a single rim fragment from a large black-glazed redware storage vessel, and eight fragments of transfer-printed refined white earthenwares. A single colourless bottle has the neck intended to receive a crown cork, meaning that it must post-date the invention of the closure in 1892 and probably post-dates 1906, when the Crown Cork and Seal Company first opened a plant in the UK (crowncork.com).

5. DISCUSSION

5.1 INTRODUCTION

5.1.1 The programme of archaeological investigation has provided a valuable opportunity to investigate the physical remains of the initial development and urbanisation of part of Manchester during the first half of the nineteenth century. It also provided substantive evidence for sanitary improvements to the workers' houses in the area, which became an issue of growing significance as the nineteenth century progressed. Furthermore, the excavation revealed building types that were not observed within the larger-scale excavations of other workers' housing in Manchester (*eg* Miller and Wild 2007; OA North 2011). Significantly, this demonstrates that whilst the sequence of historical mapping suggests phases of construction of relatively uniform housing types, the physical remains continue to produce an ever-increasing variety of solutions to the problem of housing the rapidly expanding population.

5.1.2 The results obtained from the excavation inform several of the initiatives for archaeological research of the industrial and modern periods stated in the current *Archaeological Research Framework for North West England* (Newman and McNeil 2007; McNeil and Newman 2007). In particular:

- *Initiative 7.6:* 'A study of the development of workers' housing in Greater Manchester and East Lancashire should be undertaken to examine the development of different housing types…' (McNeil and Newman 2007, 139);
- *Initiative 7.7:* 'Study the material culture of industrial workers' households…' (*ibid*);
- *Initiative 7.25:* 'Where threatened with possible redevelopment excavations are required of now undeveloped and cleared former working class areas regarded as slums' (*op cit*, 147);
- *Initiative 7.41:* 'The retention of later period artefacts and their routine analysis as part of all archaeological excavation projects' (*op cit*, 156).

5.1.3 The following section discusses the phased development of the site, based on the results of the archaeological investigation. This is coupled with relevant documentary and cartographic evidence, upon which the broad dating ascribed to each of the identified phases has been largely derived.

5.2 26 CLIFFORD STREET AND THE ALBERT CLUB

5.2.1 The north-western and north-eastern walls of the original villa that occupied 26 Clifford Street were exposed in the excavated area. It is also likely that elements of the flagstone surface in Cellar C4 represented part of the floor of the building.

5.2.2 The building was converted into the Albert Club in 1843, and the south-western part of the building was extended to the south-east as part of the remodelling that was carried out at that time. This seemed to include the addition of a partition in Cellar C4, dividing the room into two parts.

5.3 THE TURKISH BATHS

5.3.1 In 1859, the Albert Club was sold to William Potter and converted for use as a Turkish baths. The first Victorian Turkish baths in the British Isles was built in 1856 in Blarney, County Cork, and the first in England in 1857 at Broughton Street, Manchester, which was also designed and established by William Potter. This became one of six Turkish baths in Manchester that were opened during the 1860s. The typical components of a Turkish baths included 'hot rooms' with a continuous supply of warm dry air, together with 'hotter rooms' that had buckets of cold water for dousing the clients. There would also have bathing and massage facilities, and a 'cooling room' for relaxation.

5.3.2 Cellar C2 appeared to be a coal chute and storage area with access into Cellar C5, which contained a stoke hole, and originally a furnace, providing hot air to be circulated via the under-floor heating system. The floor of Cellar C3 had been raised to facilitate the installation of this system, creating a step down into Cellar C4. This room had an ornamental tiled floor, and would almost certainly have been one of the hot rooms. It may be that the unheated Cellar C4 was used as the 'cooling room'.

5.3.3 The south-western and south-eastern walls of Cellar C1 had been rebuilt, the base of which was very rough and obviously below the floor surface. The floor was missing with evidence of disturbance in the natural gravels beneath. This was excavated to the same level as the intact floors within Cellars C2, C3 and C4, and it thus seems possible that the floor in Cellar C1 was raised further and may have accommodated further 'hot rooms', with bathing and massage facilities. Access between these hot and cooling rooms may have been at ground-floor level. The fragments of ornate architectural masonry found within the fill of Cellar C4, and re-used as foundations in Cellar C1, suggest that the contemporary drawing of the interior of the baths may be accurate.

5.3.4 The baths was converted into the Manchester Southern Hospital for Women and Children in 1868, and continued in use as such until it was sold to the Salvation Army in 1910. The building was then used as a 'social work home and institute' and, by 1968, as a mens' hostel. It was still owned by the Salvation Army on a photograph of 1971, and was demolished by 1988.

5.4 LAWSON STREET HOUSES

5.4.1 Six single-depth workers' houses, each with a small yard to the rear, were built by William Lawson in 1837 after the purchase of three properties fronting Booth Street East from William Turner in order to access the rear of these properties. The houses first appear on the Ordnance Survey map of 1851, which was surveyed in 1845, although a smaller building shown here built between 1824 and 1831 may be a small outbuilding to one of the Booth Street East properties. The houses appeared to have had extensions built onto the rear of four of them by 1888, at which point the north-eastern rear rooms of each seem to become privies. They continue in this form until their demolition between 1932 and 1961.

5.4.2 Only five of the six buildings were uncovered during the excavation, as that at the north-eastern end of the terrace, and half of the adjacent property to the south-west, had been destroyed by the insertion a large modern manhole. All of the excavated cellars were of a uniform style, reflecting their construction as a single build, although each incorporated slight differences due to minor alterations and remodelling over their lifespan. Cellar H1 had part of the south-western wall rebuilt, resulting in a widening of passage G2. Cellar H3 had the rear north-western wall rebuilt, and both Cellars H3 and H4 appeared to have had the staircases and the section of wall they were tied into rebuilt. The surviving fabric of these alterations varied in quality, with the rebuild in Cellar H2 and the remodelling of the rear wall of Cellar H3 being very rough, whilst the alterations to the walls and steps in Cellars H3 and H4 were effected to the same quality as the original build. Similarly, where doors or archways had been blocked with machine made brick, the quality of workmanship appeared to be very high, whereas the earlier hand-made brick blocking of the yard entrance in Cellar H4, blocking of the archway in Cellar H2 and the rebuilding of the archway in Cellar H4 was of a lower quality. This may indicate different builders of greater or lesser skill or possibly that the later alterations were carried out by professional builders but the earlier ones by the residents themselves. Beyond the elements of rebuild, the houses were of a high quality for workers' houses, and the cellar fireplaces retained evidence of ornate decoration with stone fire surround and moulded columns.

5.4.3 The front cellars were accessed by steps descending from the ground-floor front rooms. A door at the rear of the front cellar led into the small open yard, and a small archway from there into the north-western rear room. A door also led from the front room through the north-eastern wall into the passage. From here the only other access was an archway that led into the south-western rear room of the adjacent house to the north-east.

5.4.4 This meant that the south-western rear room of any given property was only accessible from the next house to the south-west. Only Cellar H3 had an archway leading from the south-western room into the small rear yard. There was no access from the road into the passages. At the north-western end of the passages there was no evidence of steps up to the rear of the Booth Street East properties, and the construction cut visible at the rear of Cellar H5 would not have allowed room for any steps further along beyond the excavation edge.

5.4.5 Although an earth cable from the Lamb Building truncated the end of the cross passages, it only removed the top 0.5m and no evidence for access was observed below this. Although the later addition of sewer pipes in the passages may have removed any access to the north-west, it as likely that some evidence would have been visible in the rear extension walls in Cellars H1 and H3, but there was none. This could indicate that the cross passages were there solely to provide access from one house to the adjacent rear cellar room.

5.4.6 The Ordnance Survey map of 1888 shows that four of the six houses had extensions built onto the rear north-western side. This was seen in Cellars H1 and H3 as extended cellars, and Cellar H2 had an extension wall running from it but this did not go below ground level and was therefore not cellared. According to the mapping, house H5 should also have had an extension but no evidence of this was found, although if, like Cellar H2, this was only at ground-floor level, it may have been removed. Cellar H3 had a small archway giving access from its rear south-west cellar room into the extension, but modern disturbance meant that this could not be seen in Cellar H1. Cellar H3 had a second archway in its rear north-western wall leading from the rear yard, although as no structure was found beyond this its function remains unclear.

5.4.7 The front cellars had clearly been open and in use from the construction of the properties until their demolition, when they were filled with refuse and demolition rubble. The rear cellars, yards and extensions had been filled in at an earlier date with a clayey sand and gravel filled with brick fragments; the cross passages had been filled with the same material. At the same time the doorways between the front cellars and the rear yards had been blocked in machine-made brick, and in Cellar H3 turned into a second rear window light. The north-eastern rear rooms were converted to privies at ground level, and sewer pipes inserted into the backfilled cross passages. These pipes ran from the privies and then turned north-west up the adjacent cross passage, presumably feeding into sewers at the rear of the Booth Street East properties. It is possible that this was carried out in the late 1870s or early 1880s, in the wake of a raft of housing legislation.

5.4.8 The archways affording access between the rear rooms were not blocked when the rooms and passages were infilled, presumably because they did not lead anywhere. Only one arch was blocked, that in Cellar H2 which was infilled with hand-made bricks bonded with lime-based mortar. The arch in Cellar H4 had been rebuilt, also in hand-made bricks with a lime-based mortar, with a straight top rather than an archway, possibly for the insertion of a door or gate. This was likely to have been done before the infilling of the rear cellars in the 1870s/1880s, and indicates that there was an intention to restrict access to their rear cellars from the cross passages. Possibly at the same time that the rear cellars and yards were infilled the boilers were inserted, being made of similar brick to that used to block the doorways to the rear yards, machine-made brick with a hard dark grey cement. The fireplace in Cellar H5 was also blocked in the same brick and cement.

5.4.9 The comparatively high build quality of the houses suggests that they provided a better class of accommodation than workers' dwellings in the inner city areas, and this is borne out to some degree by the documentary evidence. From 1841 to 1911 the residents are mainly, although not exclusively, local, being listed as from Lancashire or Manchester, and very few of them were employed in the textile industries. Most of the listed professions were either sales people or craftsmen, such as a shoemaker, an organ builder and a cabinet maker. Each house appears to contain a single family, occasionally with a lodger, with no properties split into lodgings with multiple families.

5.4.10 The remodelling of the houses in the second half of the nineteenth century was almost certainly effected in response to legislation that was introduced to address the sub-standard condition of much of the housing stock. Whilst previous efforts had been made to improve the health and conditions of the urban poor from the middle of the century, it was only in the final years of the nineteenth century that programmes of large-scale and relatively expensive urban regeneration were undertaken.

5.4.11 An important step forward in housing improvement was provided by the Manchester Borough Police 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). The Lawson Street houses were erected prior to the implementation of this legislation, and therefore did not need to incorporate a privy legally. It seems unlikely that the enforcement committee assessed the Lawson Street houses, perhaps as the cellars were not used as dwellings separate from the rest of the house.

5.4.12 Further legislation introduced in 1853 under the Manchester New Streets Act 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, and only 176 cellars were closed in the first six years (Hylton 2003, 154; Pearlman 1956, 8). Renewed efforts commenced in 1867 with the introduction of the Manchester Waterworks and Improvement Act, which specified the minimum requirements for room sizes and window areas in dwellings, and also required that every new house had a yard at the rear, which had to be at least 70'^{2}. The Act also required a minimum street width of 30' (9.14m), or 36' (10.97m) where buildings were two storeys, and 45' (13.71m) for buildings of three storeys or more. Importantly, the Act allowed buildings to be closed without the provision of compensation to their owners, an issue which had consistently been a sticking point in Manchester (Hylton 2003, 154; Pearlman 1956, 28).

5.4.13 The enforcement of these new regulations was facilitated by the appointment of the first Medical Officer of Health, Dr John Leigh, by Manchester Council in 1868 as part of the Artisans' and Labourers' Dwellings Act (The Torrens Act) of that year, and the Building and Sanitary Regulations Committee then replaced the Health Committee. Although the 1868 Torrens Act recognised a national housing problem, it was limited in its effectiveness as it only dealt with single houses, providing for the gradual improvement or demolition of sub-standard housing, and for the building and maintenance of improved dwellings (Parkinson-Bailey 2000; Pearlman 1956, 27).

5.4.14 One of the major contributing factors to the poor living conditions in some urban areas was the lack of water supply, with typically only one pump per 32 houses in the mid-nineteenth century, and also a lack of drainage, so that people had to carry dirty water out of their houses to dispose of it. Privies often had to be shared by numerous households, with back-to-backs typically having one privy per 12 houses. An earlier bye law requiring one privy per three houses had been evaded by providing four seats within one privy. Not only were these shared conditions highly unacceptable, but the over-used brick-lined privies tended to leak, with the contents inevitably ending up entering the cellars of the nearest houses (Pearlman 1956, 25-6).

5.4.15 Sanitation of workers' dwellings had become a major political issue by the mid-nineteenth century, as it had been identified as one of the main factors in the appalling mortality rates amongst the urban poor. As late as 1890 the Medical Officer for Health reported that he could find no other reason for these abnormally high rates of mortality than bad housing conditions (Pearlman 1956). The mortality rate had averaged 26.9 deaths per thousand per year over the previous five years, compared with a figure of only 20.9 in Liverpool (*ibid*). This was in no small part due to the continued use of privy middens, and a lack of willingness to embrace the use of water closets. Research into the incidence of typhoid fever in Nottingham, undertaken by Dr Boobbyer between 1887 and 1896, demonstrated clearly the health benefits gained by using water closets, with the incidence being only a single case in 588 houses, compared with a case for every 120 houses with pail closets, and for every 37 houses still using privy middens (Moore 1909, 14).

5.4.16 However, in 1871, the Sanitary Committee had reiterated the opinion that privies and ashpits, properly regulated, were the best sanitation system for Manchester, although a loophole in both the 1867 and 1868 Acts meant that the number of privies actually provided was woefully inadequate; rather than providing one privy for every three houses, a single privy with four seats was often installed for a row of 12 houses, each of which might contain several dwellings. Even by this relatively enlightened stage of the nineteenth century, large blocks of back-to-backs were commonly only provided with a pair of privies, with a common midden between. This was often little more than a deep hole, usually brick-lined, but not water-tight, and regularly placed against the rear wall of a cellar dwelling, separated solely by the single-skin, or full brick thick cellar wall. Various accounts of ensuing damp, or worse still, inundation of 'liquor' litter the documentary sources.

5.4.17 The problem was brought to a head by the Public Health act of 1875, which prohibited 'the conveyance of sewage and filth water into any natural water course', and the 1876 River Pollution Prevention Act, which strengthened the earlier Act by prohibiting 'drainage and the putting of solid materials into streams'. Although water closets were being installed into domestic dwellings by this time, the cost and associated sewer adaptations necessary, made it unfeasible for widespread installation into workers' dwellings.

5.4.18 In Manchester, the authorities adopted the usage of pail closets in 1872, which, in its simplest form simply replaced the privy midden by inserting a bucket, or pail, beneath the seat. This could then be emptied by 'scavangers' or night soil men' and removed to a suitable site outside the city; Manchester Corporation purchased a site in Davyhulme in 1881 specifically for the purpose (Pearlman 1956), the 'soil' having allegedly been secretly poured into the rivers Medlock and Irwell, close to the processing plant in Holt Town (Platt 2005, 397).

5.4.19 This system was used throughout England, but was particularly popular in Birmingham, Rochdale and Manchester (Gray 1884). The ash closet, a variation of the pail closet, but with a separate chute to allow sifted ash to be thrown over the excrement, was ideally suited to Manchester, with the 'Dolly Varden' type being favoured (Parkinson-Bailey 2000, 40). Whilst it was hygienically less-effective than the earth closet, the ash closet was more suitable for use in the inner suburbs of Manchester, where there was almost no 'earth' but large quantities of ash. Uptake of pail closets was slow initially, with only 696 recorded in Manchester by 1873, rising sharply to 5,026 by 1875 (Wilson 1990, 127). However, following the 1875 Public Health Act, they were rapidly installed throughout the city, with 59,931 recorded in 1880 (*ibid*).

5.4.20 In 1875, the Artisans' and Labourers' Dwellings Improvement Act was introduced to provide the mechanism of slum clearance, the first act of its kind, as others, such as the 1868 Torrens Act, only dealt with individual buildings (Pearlman 1956, 28). However, Manchester Council was opposed to this on the grounds of expenditure, and it preferred to adopt a policy of gradually reconditioning areas. Most major slum clearance at this time was actually as a result of commerce, where areas were cleared for large warehouses or for railway lines (*ibid*). Finally, in 1890, the Artisans' and Labourers' Dwellings Improvement Act was reconsolidated, so that the council were to take responsibility for the construction of new dwellings. Slum clearance and regeneration then began in earnest in Manchester in the 1890s, almost 20 years after the government had envisaged it (*op cit*, 34). However, at the end of the nineteenth century, although approximately 6000 houses had been cleared, less than 3000 replacements had been built, resulting in a continued problem of overcrowding (*op cit*, 37).

5.4.21 By the time of the passing of the Manhood Suffrage Act in 1884, the programme of replacing ashpits with pail closets was almost complete (Platt 2005, 396), although Manchester still retained over 20,000 privy middens. The council's apparent obsession with the pail closet system can be demonstrated clearly by the construction of 24 dwellings in Holt Town in 1888 by the Manchester and Salford Workmen's Dwelling Company.

5.4.22 These were designed to provide more commodious and hygienic accommodation, with each house listed as containing a slop sink, an oven range, coal bunker, concrete floors (timber in the bedrooms upstairs), and constructed of salt-glazed brick to 5' (1.53m), below lime-washed common brick (*The Builder*, 8 December 1888). Each was intended originally to have a water closet, but this was changed to a pail closet at the request of the council (Pearlman 1956), possibly due to its proximity to the processing plant.

5.4.23 In 1890, a consolidation of previous acts led to the production of a further Artisans' Dwellings Act, which not only extended the demolition rights of the corporation, but sanctioned the principle of municipal house building, effectively making the council responsible for slum clearance and rebuilding. The previously ineffectual Unhealthy Dwellings Committee, formed in 1885, used the new legislation to implement its powers. This led to the construction of the Victoria Buildings, in Ancoats, approximately 600m to the south-east of the site. The project was completed in 1894, and represented an early triumph in municipal social housing, comprising 237 two-roomed and 48 single-room dwellings within a five-storey structure, with a lobby, sink and water closet for each pair of dwellings. A further, less imposing construction of through cottages on Sanitary (now Anita) Street, immediately to the west, provided single- and two-roomed flats, with much larger three-bedroomed houses constructed on the George Leigh Street frontage, all under municipal ownership. These schemes, accompanied the sanctioning of an effective waste-water sewerage scheme in 1889, completed by 1894 (Vogele 1998), following the construction of the Davyhulme Sewage Works (Parkinson-Bailey 2000, 40), which acted as a catalyst for the adoption of water closets within workers' dwellings, with 24,300 installed that year, and 46,000 having been installed in 1902, although still a secondary alternative to pail closets, which still numbered close to 80,000 (Stanbridge 1976). The conversion continued apace, but even by 1924, when 230,046 water closets had been installed, there were still 1,108 pail closets and 35 privy middens in use (Parkinson-Bailey 2000, 40).

5.4.24 The long-term physical and political problem of overcrowding was gradually remedied by the movement of the city center population to the suburbs, for instance 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; Nevell 2008, 162). The improvement in the housing stock in Manchester by the early Edwardian period is depicted on a plan produced in 1904 for the Citizens' Association for Manchester (Plate 64). Sub-standard housing, referred to as 'slum dwellings', are shown on the plan in dark brown which, despite the improvements implements to the sanitation, seems to include the present study area.

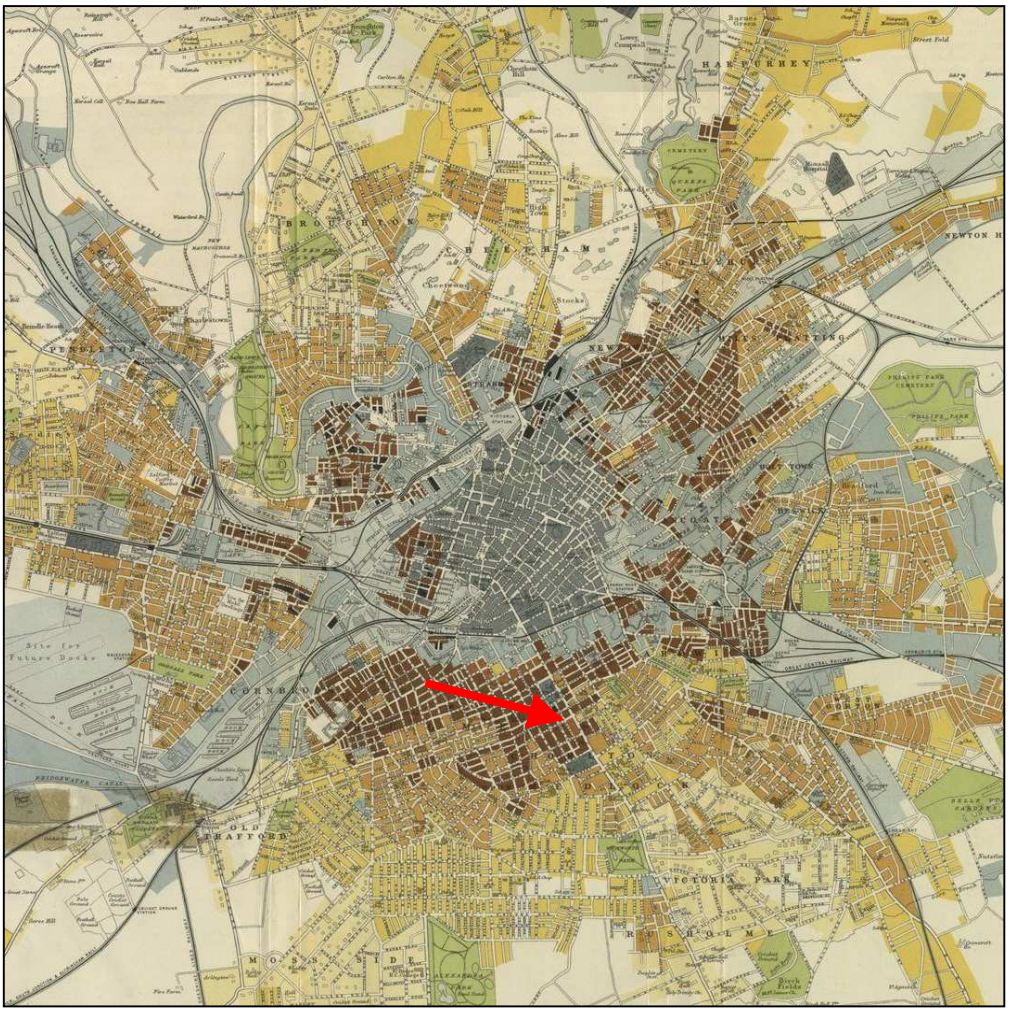

Plate 64: Citizens' Association of Manchester map of 1904, showing the distribution of slum property in the city (marked in dark brown). The red arrow marks the present study area

5.4.25 Whilst there is a large body of documentary evidence relating to such improvements in living conditions for the urban poor, it is generally difficult to establish within the archaeological record on such a sweeping scale. However, unlike the earlier phases, it can also be identified to within certain tolerances, by the widespread change of building materials utilised during the period. The most striking of these changes was the adoption of a new type of mortar, basically comprising a high percentage of ash, which was in plentiful supply in the industrial areas of northern England. Many alterations and repairs from this period were undertaken using a black, sooty mortar, instead of the earlier pale sand-based lime mortars, used since medieval times. Pre-cast ceramic pipes also became readily available, and were invaluable in facilitating the wholesale replacement of drainage and sanitation in many areas. Machine-made brick, and concrete were also introduced during this phase, but their uptake was more variable, and is generally associated with the last years of this phase.

5.4.26 Improvements within individual properties are often recorded (*eg* OA North 2006; OA North 2007; Miller *et al* 2010), and have even be seen at municipal level (OA North 2008a). Archaeological excavation of workers' housing on George Leigh Street in Ancoats, for instance, charted the demolition of blocks of houses in the 1890s, presumably to allow some improvement in air and light quality for the remaining properties. These houses also received new rear yards with outhouses, almost certainly containing a water closet, that were probably intended to reduce the spread of infection that was rife in areas of such close-quarter living (OA North 2008a). The excavations carried out in 2009 on Miller Street examined the upgrading of the sanitation and drainage systems over a much larger area, and revealed quite extraordinary levels of disruption to individual properties, with large and often deep drains being excavated not only in yards and under pavements and passageways, as seen previously, but also beneath cellars, seen on both Charter Street and Angel Street (OA North 2011). The excavation on Lawson Street has provided a similar picture, with major remodeling of the existing housing stock to improve the sanitary conditions.

6. CURATION AND CONSERVATION

6.1 RECIPIENT MUSEUM

6.1.1 The Museum of Science and Industry in Manchester has been nominated as the ultimate repository for the project archive:

Museum of Science and Industry in Manchester,
Liverpool Road,
Manchester

6.2 CONSERVATION

6.2.1 There are no conservation requirements.

6.3 STORAGE

6.3.1 The complete project archive, which will include written records, plans, black and white and colour photographs, and artefacts, will be prepared for long-term storage following the guidelines set out in *Environmental standards for the permanent storage of excavated material from archaeological sites* (UKIC 1984, Conservation Guidelines 3), and *Guidelines for the preparation of excavation archives for long-term storage* (Walker 1990).

6.4 DISSEMINATION

6.4.1 The complete results obtained from the archaeological investigation are incorporated in this final excavation report. In addition to the University of Manchester, copies of the report will be forwarded to the Museum of Science and Industry in Manchester, Manchester City Council Planning Department, and the Greater Manchester Historic Environment Record.

6.4.2 Dissemination of the findings to the wider public was also achieved effectively via a public open day. This included guided tours around the exposed archaeological remains, together with displays of the artefacts discovered, and information boards containing historical mapping of the site and the results obtained from historical research. The open day was extremely well received, and attracted numerous visitors from within the University and the local community.

Plate 65: Visitors attending the public open day

Plate 66: Visitors attending the public open day

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APPENDIX 1: WRITTEN SCHEME OF INVESTIGATION

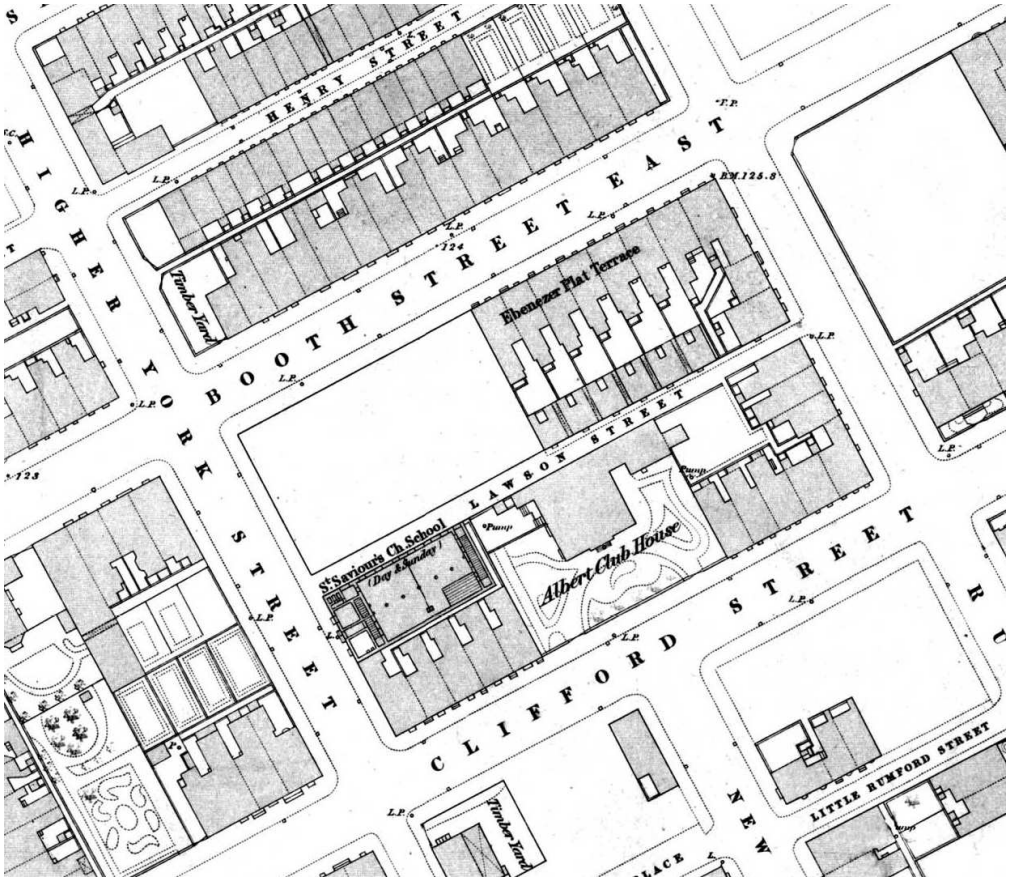
November 2012

Oxford Archaeology North

NATIONAL GRAPHENE INSTITUTE,

BOOTH STREET EAST,

MANCHESTER



ARCHAEOLOGICAL EVALUATION

WRITTEN SCHEME OF INVESTIGATION

Proposals

The following Written Scheme of Investigation is offered in response to a request from Mr S Lockwood, acting on behalf of the University of Manchester, for an archaeological evaluation in advance of the proposed development of land at bounded by Booth Street East and the former Clifford Street in Manchester.

1 BACKGROUND

1.1 CIRCUMSTANCES OF PROJECT

1.1.1 The University of Manchester has proposed to construct a new National Graphene Institute on land to the south of Booth Street East in Manchester (centred on NGR SJ 8460 9691). In order to support the planning application for the proposed development of the site, the University of Manchester commissioned an archaeological desk-based assessment of the site, which was carried out by Dr Peter Arrowsmith in October 2012 (Arrowmith 2012).

1.1.2 The archaeological assessment demonstrated that the proposed development site was developed initially between 1824 and 1831 as part of the growth of Chorlton-upon-Medlock as a suburb of Manchester. The earliest buildings on the site comprised workers' housing, and a building at 26 Clifford Street which in the nineteenth century was variously a villa, a social club with an association with Friedrich Engels, an early example of a Victorian Turkish baths, and a hospital for women and children. The assessment concluded that whilst the site did not contain any known archaeological remains that would merit preservation *in-situ*, there was considerable potential for buried remains of local interest to survive.

1.1.3 In order to establish the potential for archaeological remains, the University of Manchester commissioned Oxford Archaeology North (OA North) to undertake a programme of evaluation trenching. This has been formulated to meet the requirements of the Greater Manchester Archaeology Advisory Service (GMAAS), which provides planning advice on archaeological issues to Manchester City Council, and in the first instance allows for the targeted evaluation trenching of the site to establish the presence or absence of buried remains of archaeological interest. In the event of significant archaeological remains being discovered in the trenches, further archaeological investigation is likely to be required. Any such additional works will be carried out in accordance with an Updated Written Scheme of Investigation.

1.2 OXFORD ARCHAEOLOGY

1.2.1 Oxford Archaeology is an educational charity under the guidance of a board of trustees with over 35 years of experience in 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 300 members of staff), and can thus deploy considerable resources with extensive experience to deal with any archaeological obligations you or your clients may have. OA is an Institute for Archaeologists Registered Organisation (No 17). We have offices in Lancaster and Oxford, trading as Oxford Archaeology North (OA North) and Oxford Archaeology South (OA South) respectively, enabling us to provide a truly nationwide service. All work on the project will be undertaken in accordance with relevant professional standards, including:

- IfA's *Code of Conduct* (1999); *Code of Approved Practice for the Regulation of Contractual Arrangements in Field Archaeology* (1999); *Standard and Guidance for Archaeological Evaluations* (1999);
- English Heritage's *Management of Archaeological Projects*, 1991;
- The European Association of Archaeologists *Principles of Conduct for Archaeologists Involved in Contract Archaeological Work* (1998).

1.2.2 OA North has unrivalled experience in the assessment, evaluation and excavation of former industrial sites, particularly in the context of Manchester. We have an extensive portfolio of excavating the buried remains of former workers' housing sites in Manchester, including George Leigh Street, Bradley Street, Bengal Street in Ancoats, Danzic Street and Angel Street in Shudehill, and Minshull Street in Piccadilly, to name but a few.

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 establish the presence or absence of buried archaeological remains on the site and, if present, characterise the level of preservation and significance, and provide a good understanding of their potential.

2.2 OBJECTIVES

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

- to determine the presence, character, and extent of the former workers' housing that fronted onto Lawson Street, across the northern of the site;
- to determine the presence, character, and extent of the former workers' housing that fronted onto Clifford Street, in the south-eastern corner of the site;
- to determine the presence, character, and extent of 26 Clifford Street;
- to inform a decision as to whether further archaeological investigation will be required in advance of development ground works;
- to compile an archival record of any archaeological remains within the development area.

3 METHOD STATEMENT

3.1 The site will be investigated initially via the excavation of four trenches. In the event of significant archaeological remains being discovered in the trenches, it is likely that further archaeological investigation will be required. Any such additional works will be carried out in consultation with GMAAS.

3.2 EVALUATION

3.2.1 ***General Methodology:*** it is proposed that the site be investigated initially via four trenches, each measuring 2m wide and with a combined total length of 75m (Figures 1 and 2). An additional 10m of trenching should also be allowed, placed at the discretion of the site director, to resolve specific questions that come to light in the initial trenches.

- *Trench 1:* will be 20m in length, will be placed across the former workers' housing that fronted onto Lawson Street, as shown on the first edition Ordnance Survey map of 1851;
- *Trench 2:* will be 25m in length, and will be placed along the western boundary of the site. It will be targeted on the site of 26 Clifford Street, which was variously the Albert Club, a Turkish baths, and a hospital for women and children. The trench will also investigate the end property on Lawson Street, and the surface of Lawson Street;
- *Trench 3:* will be 10m in length, and will similarly be placed across the footprint of 26 Clifford Street;
- *Trench 4:* will be 20m in length, and will be placed along the south-eastern boundary of the site. It will be targeted on former houses that fronted Clifford Street.

3.2.2 Excavation of the modern ground surface will be undertaken by a machine of appropriate power using a toothed bucket and, where necessary, a breaker. The uppermost levels of overburden/demolition material will then be removed using the same machine, but fitted with a toothless ditching bucket, to the top of the first significant archaeological level. The work will be supervised closely by a suitably experienced archaeologist.

3.2.3 Machine excavation will then be used to define carefully the extent of any surviving foundations, floors, and other remains. Thereafter, structural remains will be cleaned manually to define their extent, nature, form and, where possible, date. If the excavation is to proceed below a depth of 1.2m, then the trenches will be widened sufficiently to allow the sides to be stepped in.

3.2.4 All information identified in the course of the site works will be recorded stratigraphically, using a system adapted from that used by the Centre for Archaeology Service of English Heritage. Results of the evaluation will be recorded on *pro-forma* context sheets, and will be accompanied with sufficient pictorial record (plans, sections and both black and white and colour photographs) to identify and illustrate individual features.

3.2.5 ***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.

3.2.6 ***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 high-resolution digital cameras and 35mm cameras on archivable black and white print film. All frames will include a visible, graduated metric scale. Photographs records will be maintained on special photographic *pro-forma* sheets.

3.2.7 ***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.

3.2.8 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*.

3.2.9 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.

3.2.10 ***Finds policy:*** finds recovery and sampling programmes will be in accordance with best practice (following current Institute for 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.

3.3 HEALTH AND SAFETY

3.3.1 Full regard will be given to all constraints during the course of the project. OA North 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.

3.3.2 OA North undertakes to safeguard, so far as is reasonably practicable, the health, safety and welfare of its staff and of others who may be affected by our work. This applies in particular to providing and maintaining suitable premises, ensuring the safety of all equipment supplied by the Company, and providing all reasonable safeguards and precautions against accidents. OA North will also take all reasonable steps to ensure the health and safety of all persons not in their employment, such as volunteers, students, visitors, and members of the public (this includes trespassers). OA North will ensure that no one suffers injury because of dangers arising from the state of the premises, or things done, or omitted to be done, on the premises.

3.3.3 OA North is fully familiar with and will comply with all current and relevant legislation, including, but not limited to:

- The Health and Safety at Work Act (1974);
- Management of Health and Safety at Work Regulations (1999);
- Manual Handling Operations Regulations 1992 (as amended in 2002);
- The Construction (Design and Management) Regulations (2007);
- The Control of Asbestos Regulations (2006);
- The Workplace (Health, Safety and Welfare) Regulations (1992);
- Construction (Health, Safety and Welfare) Regulations (1996);
- The Health and Safety (Miscellaneous Amendments) Regulations (2002);
- The Work at Height Regulations (2005);
- The Control of Substances Hazardous to Health Regulations (2002);
- The Health and Safety (First-Aid) Regulations (1981);
- The Regulatory Reform (Fire Safety) Order (2005);
- The Provision and Use of Work Equipment Regulations (1998);
- Lifting Operations and Lifting Equipment Regulations (1998).

3.3.4 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.

3.3.5 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 ***Project Monitoring:*** the aims of monitoring are to ensure that the archaeological works are undertaken within the limits set by the Written Scheme of Investigation, and to the satisfaction of the curatorial archaeologist at the Greater Manchester Archaeological Advisory Service (GMAAS). The curatorial archaeologist will be given at least five days' notice of when work is due to commence, and will be free to visit the site by prior arrangement with the project director. It is anticipated that there will be at least one formal monitoring meeting during the course of the evaluation, which should also be attended by the Client or his representative.

3.4.2 ***Contingencies:*** if there are more complex or generally deeper deposits than can be anticipated from the evidence available, there may need to be a corresponding increase in costs, which will be subject to agreement with the Client and the archaeological curator. Similarly, there will be recourse to a contingency if there is any requirement to fully excavate any human remains that may be present. These contingency costs are in accordance with the Institute for Archaeologists' guidance.

3.4.3 ***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 Written Scheme of Investigation can be fulfilled, but will require separate discussion and funding.

3.5 POST-EXCAVATION AND REPORT PRODUCTION

3.5.1 ***Report:*** a report will be produced within four working weeks of the completion of the fieldwork, and will include:

- a summary statement of the findings;
- the background to the evaluation, including location details;
- an outline of the methodology of the survey;
- Results obtained from historical research;
- a description of the site's setting, including topography and geology;
- an account of the documented historical background to the site;
- an assessment, and interpretation of the results of the evaluation;
- an assessment of any finds and samples recovered from the trenches;
- a description of the significance of the site in its context;
- recommendations for any further archaeological investigation that is considered merited to mitigate the impact of the development works;
- a catalogue of archive items, including a list of photographs, and details of the final deposition of the project archive.

3.5.2 ***Archive:*** the results of the archaeological investigation 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. As part of the archiving process, the on-line OASIS (On-line Access to Index of Archaeological Investigations) form will be completed.

3.5.3 The paper and finds archive for the archaeological work undertaken at the site will be deposited with the Museum of Science and Industry 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 CD (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.

4 WORK TIMETABLE

4.1 A one-week period should be allowed to excavate and record the evaluation trenches. In the event of significant archaeological remains being discovered in the evaluation trenches, a programme of further investigation may be anticipated.

4.2 A report will be submitted within four 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 FSA** (OA North Senior Project Manager) to whom all correspondence should be addressed. Ian has over 20 years experience of commercial archaeology, and has a particular interest in the archaeology of the Industrial Period, and particular that of Greater Manchester and Lancashire. He managed the excavation of the Percival, Vickers & Co Flint Glass Works in Manchester, and was responsible for managing the archaeological elements of the Murrays' Mills Major Repairs Project in Manchester, which culminated in the production of an academic monograph of the steam-powered mills in the Ancoats area of Manchester. He has also managed many other evaluations and excavations of former industrial sites in Manchester.

5.2 His role will be to ensure that the Written Scheme of Investigation 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 fieldwork is likely to be undertaken by **Graham Mottershead BA** (OA North Project Supervisor). Graham is an highly experienced field archaeologist, with over 20 years continuous experience of field archaeology. 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 two technician will be required for the initial stage of the fieldwork.

5.4 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.

APPENDIX 2: OCCUPANTS LISTED IN HISTORICAL SOURCES

	Occupants	**Age**	**Occupation**	**Place of Birth**
2 Lawson Street	Daniel Ball	40	Coach maker	Lancashire
	Lydia Ball	30		"
4 Lawson Street	Alice McAdim	25	Independent	Ireland
	John McAdim	1		Lancashire
6 Lawson Street	William Swindell	30	Grocer	Lancashire
	Frances Swindell	30		"
	Thomas Swindell	7		"
	Jane Swindell	1		"
8 Lawson Street	John Truman	35	Joiner	Lancashire
	Elizabeth Truman	35	Steam loom weaver	"
	Ann Craven	35	Card stripper	"
	Matthew Craven	29	Female servant	"
	Elizabeth Craven	15		"
	Matthew Craven	6	Frame tenter	"
	Sarah Bosom	25		"
	Martha Bosom	16mths	Twist maker up	"
	Thomas Rockliffe	15		"
10 Lawson Street	Uninhabited			
12 Lawson Street	Uninhabited			

Occupants of 2-12 Lawson Street listed in the 1841 Census Returns

	Occupants	**Age**	**Occupation**	**Place of Birth**
2 Lawson Street	Elizabeth Lawson	59	Proprietor of houses	Manchester
4 Lawson Street	John Lowe	36		Droylsden
	Sarah Lowe	32		Hollins Green, Lancashire
	Michael McKernan	34	Shoe maker	Ireland
	Alena McKernan	33		"
	John McKernan	11		Manchester
	Mary McKernan	6		"
	James McKernan	4		"
	Margaret McKernan	2		"
6 Lawson Street	Ann Clegg	39	Charwoman	
	Arthur Clegg	10		
8 Lawson Street	Marie Wright	38		Lancashire
	John Wright	10		"
	Joseph Wright	10		"
10 Lawson Street	Uninhabited			
12 Lawson Street	Thomas Cartledge	36	Porter / mechanic	Manchester
	Ann Cartledge	25		Stockport
	Mary Cartledge	2		"
	Susan Cartledge	1		Manchester

Occupants of 2-12 Lawson Street listed in the 1851 Census Returns

	Occupants	**Age**	**Occupation**	**Place of Birth**
2 Lawson Street	Henry France	31	Painter	Tyldesley
	Sarah France	34		Manchester
	Hannah France	7		"
	William France	5		"
	Henry France	3		"
	Sarah A France	2		"
	Jane France	6 months		"
	Edwin Wynne (nephew)	16	Mechanic	"
4 Lawson Street	Michael McKernan	48	Shoe maker	Ireland
	John McKernan	20	Organ builder	Manchester
	Mary McKernan	17		"
	James McKernan	14		"
	Margaret McKernan	12		"
	William McKeman	6		"
6 Lawson Street	William Wheeldon	26	Caprenter	Manchester
	Anne Wheeldon	25		Bolsterstone, Yorks.
8 Lawson Street	Henry Halsall	51	Cabinet maker	Ormskirk
	Alice Halsall	54		Upholland
10 Lawson Street	Edward Hughes	45	Car driver	Stockport
	Harriet Hughes	45		Longsight
	Frederick Hughes	8		"
12 Lawson Street	Jonathon Bailey	28	Porter	Morley, Cheshire
	Esther Bailey	29	Shopkeeper	Euxton, Lancs.
	Frank Bailey	3		Manchester
	Eyth Bailey	2		"

Occupants of 2-12 Lawson Street listed in the 1861 Census Returns

	Occupants	**Age**	**Occupation**	**Place of Birth**
2 Lawson Street	Henry France	41	House painter	Tyldesley
	Sarah France	44		Manchester
	Hannah France	17	Artificial flower maker	"
	William France	15	Painter's apprentice	"
	Henry France	13	Mechanic apprentice	"
	Sarah A France	12		"
	Jane France	10		"
	James France	7		"
	John France	4		"
	Frederick France	2		"
4 Lawson Street	Harriet Pimlott	25	Artificial flower maker	Manchester
	Sara Pimlott	6		"
6 Lawson Street	Thomas Lytheer	36	Calico printer engraver	Horncastle, Lincs.
	Elizabeth Lytheer	34		Manchester
	Mary Lytheer	9		Chorlton on Medlock
	Thomas Lytheer	7		Hulme
	Margaret Lytheer	6		"
	John Lytheer	3		Chorlton on Medlock
	Charlotte Lytheer	2 months		"
8 Lawson Street	Charles Woolfenden	26	Grocers apprentice	Manchester
	Elizabeth Woolfenden	23		"
	Florence Woolfenden	8 months		Oldham
10 Lawson Street	William Hoyle	35	Wheelwright	Bollington, Chesh.
	Elizabeth Hoyle	35		Middlewich, Chesh.
	Ada Hoyle	10		Bollington, Chesh.
	Elizabeth Hoyle	6		"
12 Lawson Street	Thomas Pimlott	49	Carter	Hazel Grove, Chesh.
	Eliza Pimlott	51		Falmouth, Cornwall

Occupants of 2-12 Lawson Street listed in the 1871 Census Returns

	Occupants	**Age**	**Occupation**	**Place of Birth**
2 Lawson Street	Thomas Jones	41	Bleacher's porter	Manchester
	Elizabeth Jones	38		"
	William Jones	17		"
	Mary Jones	9		"
	Elizabeth Jones	6		"
	Tom Jones	2		"
4 Lawson Street	Charles Goodier	36	Carter	Manchester
	Sarah Goodier	40		"
	Charles Goodier	18	Hooker cotton goods	"
	William Goodier	9		"
	Albert Goodier	6		Salford
6 Lawson Street	George Major	26	Coach fitter	Manchester
	Mary Major	23		"
	Elizabeth Major	3		"
	Pricilla Major	1		"
	Mary Platt (boarder)	62	Cotton spinner	Salford
8 Lawson Street	William Nuttall	71	Shoe maker	Wirksworth, Derbs.
	Hannah Nuttall	56		Manchester
	George Nuttall	32	Railway porter	"
	Agnes Nuttall	7		"
	Hannah Nuttall	5		"
10 Lawson Street	Samuel Holmes	33	Painter	Nottingham
	Mary Holmes	34		Didsbury
12 Lawson Street	Dominick McCausland	41	Iron foundry clerk	Ireland
	Ann McCausland	43		"
	Margaret McCausland	9		Manchester
	Richard O'Connell (boarder)	24	Brass fitter	Ireland

Occupants of 2-12 Lawson Street listed in the 1881 Census Returns

	Occupants	**Age**	**Occupation**	**Place of Birth**
2 Lawson Street	Richard Smyth	45	Coachman	Dublin
	Elizabeth Hartley	37	Housekeeper	Manchester
4 Lawson Street	Janet Lambert	31	Mantle maker	Scotland
6 Lawson Street	Louisa Black	46	Washerwoman	Not known
	Ann Turner	75	Living on her means	Not known
	Mary Smith	46	Laundress	Plymouth, Devon
8 Lawson Street	James France	27	Plumber	Manchester
	Margaret France	27		"
	Margaret France	5		"
10 Lawson Street	Walter Pratt	27	Groom	Great Langton, Yorks.
	Annie Pratt	29		Stockton, Durham
	Maud Pratt	3		Manchester
	Florie Pratt (sister)	35	Cook	Great Langton, Yorks.
	Nellie Pratt (niece)	3		Manchester
12 Lawson Street	Annie Dean	38	Machinist (underclothing)	Liverpool
	Eliza Jones (boarder)	74	Housekeeper (retired)	Manchester

Occupants of 2-12 Lawson Street listed in the 1891 Census Returns

	Occupants	**Age**	**Occupation**	**Place of Birth**
2 Lawson Street	Alfred Stocks	44	Solicitor's clerk	Pendleton
	Emma Stocks	34		Sale
	George Stocks	3		Manchester
4 Lawson Street	John Halliwell	39	Blacksmith	Manchester
	Mary Halliwell	37		"
	John Halliwell	9		"
	MarkHalliwell	5		"
6 Lawson Street	Richard Halliwell	35	Cotton warehouseman	Manchester
	Emma Halliwell	22		"
	May Halliwell	6		"
	Charlotte Halliwell	3		"
	Louise Halliwell	7 months		"
8 Lawson Street	Uninhabited			
10 Lawson Street	Mabel Clark	36	Living on own means	Fulford, Yorks.
12 Lawson Street	Mary Brady	41	Office cleaner	Rusholme
	Anna Brady (sister)	43	Office cleaner	"
	James Storey (nephew)	9		Manchester
	Lily Wolfenden (sister)	24	Working at home	Rusholme
	RH Wolfenden (sister)	1		Manchester

Occupants of 2-12 Lawson Street listed in the 1901 Census Returns

	Occupants	**Age**	**Occupation**	**Place of Birth**
2 Lawson Street	James Sydenham	23	Nailor	Manchester
	William Sydenham	19	Messenger	"
	Thomas Sydenham	14	Labourer	"
	Albert Sydenham	11	School	"
4 Lawson Street	William Duckworth	60	Warehouseman	Manchester
	Annie Duckworth	50	Charwoman	Chester
6 Lawson Street	Frederick Downsby	54	Cab proprietor	Spalding, Lincs.
	Sarah Downsby	55		Manchester
8 Lawson Street	John Whittaker	50	Blacksmith	Manchester
	Mary Whittaker	49		"
	John Whittaker	19	Labourer	"
	Mark Whittaker	15	Errand boy	"
10 Lawson Street	Uninhabited			
12 Lawson Street	Elizabeth Kay	35	Carboard box maker	Hulme

Occupants of 2-12 Lawson Street listed in the 1911 Census Returns

Year/Source	Occupant	Address
1838 trade directory	Jeptha Pacey, architect	28 Clifford Street
1841 Census	Jephtha Pacey, architect, family & servants	26 Clifford Street
1841 trade directory	Jeptha Pacey, soap boiler, Ducie Soap Works, Charlotte Street, Strangeways	House 28 Clifford Street
1843 trade directory	Jeptha Pacey, soap boiler	26 Clifford Street
1845 trade directory	Albert Club House, John Brierly steward	26 Clifford Street
1850 trade directory	Albert Club House William Clowes steward	20 Clifford Street
1855 trade directory	Albert Club	26 Clifford Street
1858 trade directory	Albert Club, William Clowes steward	26 Clifford Street
1861 trade directory	Roman and Turkish Baths, William Potter bath proprietor	26 Clifford Street
1861 Census	Turkish Baths and House, Willliam Potter turkish baths proprietor	26 Clifford Street
1863 trade directory	Roman and Turkish Baths, W Potter	Clifford Street
1865 trade directory	Turkish Baths, Thomas Matthew	26 Clifford Street
1869 trade directory	Turkish Baths and Billiard Room	26 Clifford Street
1871 Census	Hospital for Women and Children	Clifford Street
1871-2 trade directory	Manchester Southern Hospital for Women and Children	26 Clifford Street
1903 trade directory	Manchester Southern Hospital for Diseases of Women and Children	26 Clifford Street
1909 trade directory	William Mills, caretaker	26 & 28 Clifford Street
1911 trade directory	Salvation Army Social Work Home & Institute	26 Clifford Street

The occupants of 26 Clifford Street, from trade directories and Census Returns

ILLUSTRATIONS

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Figure 5: Excavation area showing the under-floor heating system for the Turkish baths, superimposed on the Ordnance Survey map of 1851

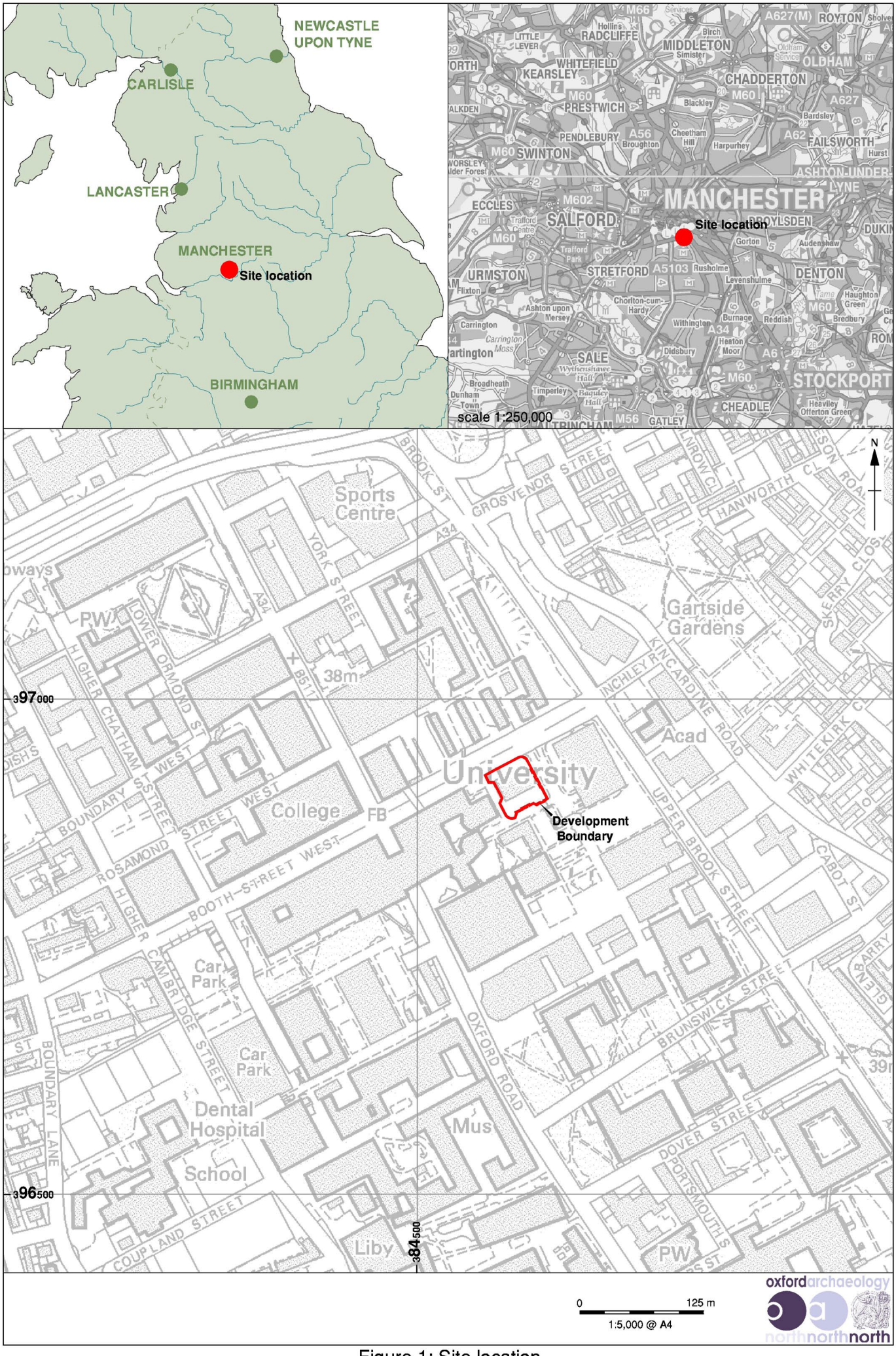

Figure 1: Site location

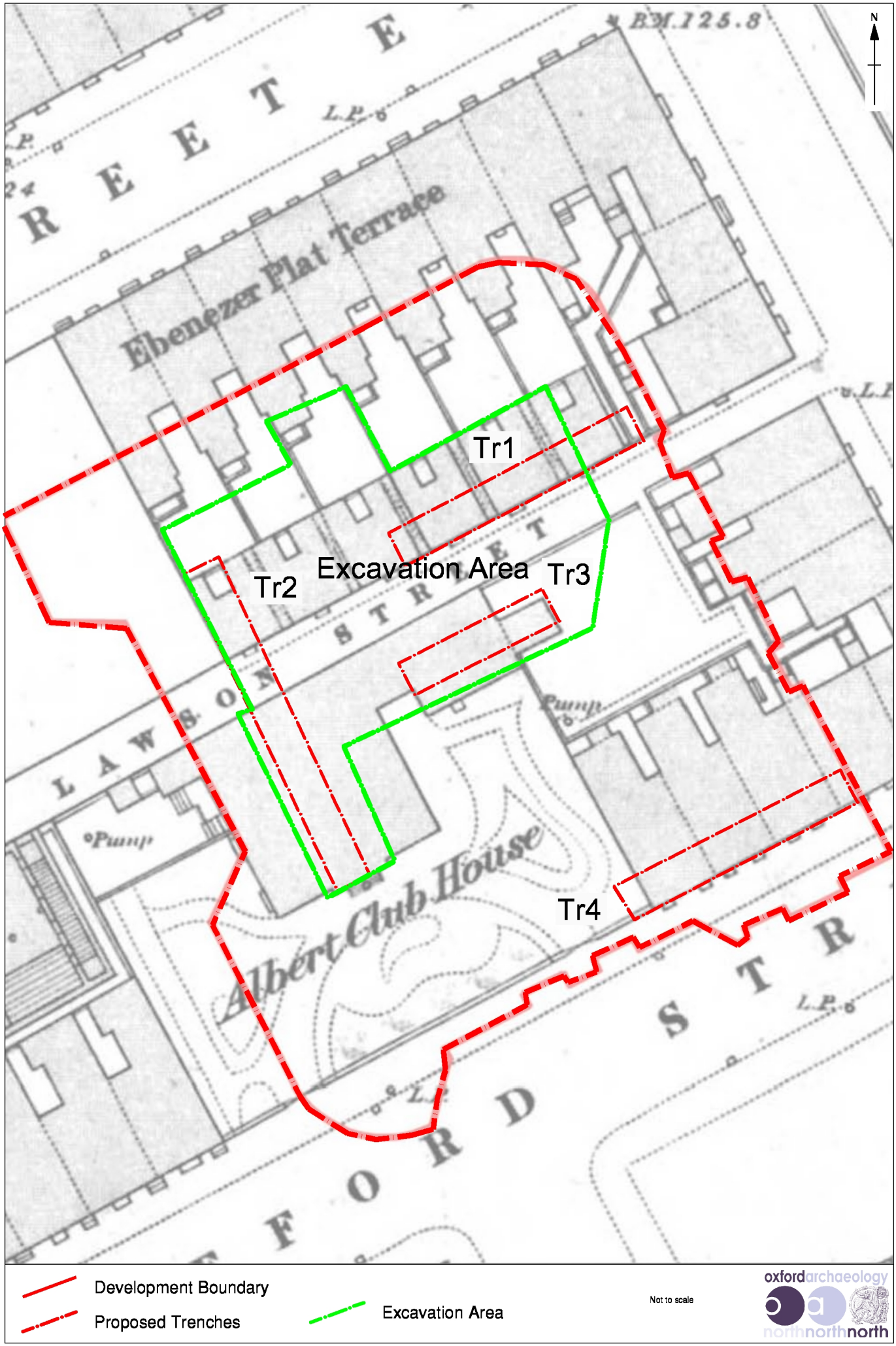

Figure 2: Excavation area and trial trench locations superimposed on the Ordnance Survey map, 1851

Figure 3: Plan of Trench 4, superimposed on the Ordnance Survey 5':1 mile map of 1851

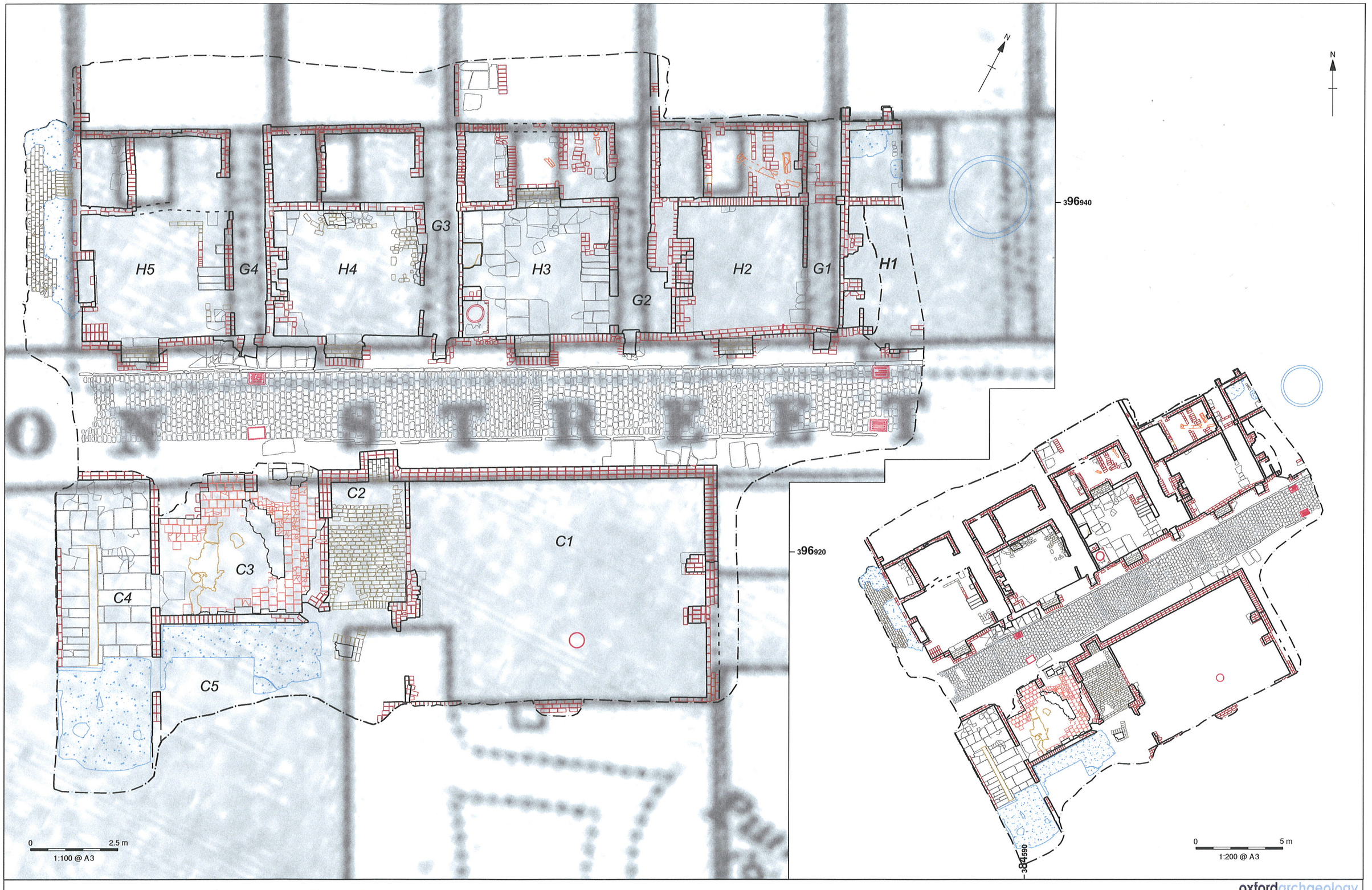

Figure 4: Excavation area, superimposed on the Ordnance Survey 5':1 mile map of 1851

Figure 5: Excavation area showing the under-floor heating system for the Turkish baths, superimposed on the Ordnance Survey map of 1851